SOT 2015 San Diego | Program

54th Annual Meeting and ToxExpo™

San Diego, California

March 22–26, 2015

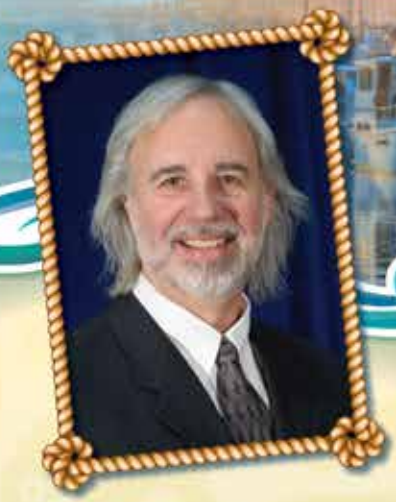
SOT | Society of Toxicology

Creating a Safer and Healthier World by Advancing the Science of Toxicology

www.toxicology.org

Society of Toxicology

San Diego California 2015



Awards Ceremony
(All Attendees Welcome)
Sunday, March 22
5:15 PM–6:30 PM
Ballroom 6A

Welcome Reception
(All Attendees Welcome)
Sunday, March 22
6:30 PM–7:30 PM
West Terrace

25-Year (Or More) Member Reception
(By Invitation Only)
Sunday, March 22
7:00 PM–8:00 PM
Room 5

SOT Annual Business Meeting
(All SOT Members Invited)
Tuesday, March 24
4:30 PM–6:00 PM
Ballroom 6A

These events take place in the San Diego Convention Center.

Dear Colleagues,

It is my pleasure to invite you to attend SOT's 54th Annual Meeting, March 22–26, 2015, at the San Diego Convention Center in San Diego, California. The Annual Meeting provides opportunities to learn from your colleagues about their latest scientific findings in the field of toxicology and related disciplines as well as from distinguished leaders who will expand your scientific horizons. In addition, the SOT Annual Meeting provides a venue for you to share your year's work. For the science of toxicology, this is the premier meeting that should not be missed.

Ample networking time allows Annual Meeting attendees to meet potential collaborators and mentors, and with increasing attendance from scientists around the world, those interactions can take on a global scope. The Annual Meeting also offers a chance to pause and pay tribute to those scientists who have distinguished themselves in their field of expertise as the recipients of the Society's most prestigious awards. I'm sure that all attendees also look forward to enjoying the company of friends and colleagues.

Finally, SOT attendees can take advantage of the ToxExpo, which is the world's largest exposition of its kind. Hundreds of exhibits offer a comprehensive marketplace for product information and cutting-edge technology.

The SOT Annual Meeting is the premier event the Society hosts every year to meet the needs of the entire toxicology community, showcasing the most leading-edge toxicology research. Please join me in San Diego for this meeting and help us to make the SOT 54th Annual Meeting an event to remember.

Sincerely,

Norbert E. Kaminski, PhD
2014–2015 SOT President

SOT 2015 San Diego

54th Annual Meeting and ToxExpo

Scientific Program Overview

THEMATIC APPROACH

The Scientific Program Committee has devised a thematic approach that encompasses five themes of topical interest. The Sunday CE course and Monday–Thursday session titles related to each theme are color-coded in this Program Overview.

- ✓ Advancing Clinical and Translational Toxicology
- ✖ Approaches for Protecting Vulnerable Populations
- › Epigenomic Influences in Toxicological Responses
- ✧ Safety Assessment Approaches for Product Development
- ⭘ Strategies for Exposure and Risk Assessments

A page reference follows the course or session information.

Sunday, March 23

7:00 AM to 7:45 AM

SUNRISE CONTINUING EDUCATION COURSE

1. New Horizons in Chemical Carcinogenesis: Advances in Mode of Action and Mechanism of Cancer Pathogenesis (p102)

8:15 AM to 12:00 Noon

MORNING CONTINUING EDUCATION COURSES

- ⭘ 2. An Introduction to the Exposome (p102)
- ⭘ 3. Demystifying Mixtures: From Study Design Selection to Risk Assessment Application (p103)
- ✧ 4. Safety Evaluation of CNS Administered Therapeutics—Study Design, Dose Routes, and Data Interpretation (p103)
- ✧ 5. The Future of Developmental and Reproductive Toxicology—Building a Bridge to the Animal Free Zone (p104)*
- ✓ 6. The New World of Cancer Immunotherapy: Challenges in Bench to Bedside Translation (p104)*
- ✧ 7. Toxicology and Regulatory Considerations for Combination Products (p105)

1:15 PM to 5:00 PM

AFTERNOON CONTINUING EDUCATION COURSES

- ✧ 8. Advances in Safety Assessment of Medical Devices (p105)
- ✧ 9. Interpretation of Cardiovascular Safety Data in Toxicology Studies (p106)*
- ✧ 10. Is Synthetic Biology the Future of Toxicology? (p106)
- ✧ 11. Skeletal System Endocrinology and Toxicology (p107)
- ✧ 12. Strategies in Investigative Toxicology in a Pharmaceutical Setting (p107)
- ⭘ 13. Toxicogenomics Meets Regulatory Decision-Making: How to Get Past Heat Maps, Network/Pathway Diagrams, and "Favorite" Genes (p108)*

Four CE Courses will be presented as live webcasts—Separate registration for webcasts required.

Morning Webcasts:

- **AM05—The Future of Developmental and Reproductive Toxicology—Building a Bridge to the Animal Free Zone**
- **AM06—The New World of Cancer Immunotherapy: Challenges in Bench to Bedside Translation**

(Both webcasts begin at 8:15 am US Pacific Time)

Afternoon Webcasts:

- **PM09—Interpretation of Cardiovascular Safety Data in Toxicology Studies**
- **PM13—Toxicogenomics Meets Regulatory Decision-Making: How to Get Past Heat Maps, Network/Pathway Diagrams, and "Favorite" Genes**

(Both webcasts begin at 1:15 pm US Pacific Time)

WWW.TOXICOLOGY.ORG/REGISTER

Monday, March 23

8:00 AM to 9:00 AM

PLENARY OPENING LECTURE

Life at the Speed of Light

Lecturer: J. Craig Venter, J. Craig Venter Institute (p134)

9:15 AM to 12:00 Noon

SYMPOSIUM SESSIONS

- ✓ New and Emerging Tobacco Products—Biomarkers of Exposure and Injury (p135)
- The Role of Connexin-Based Channels in Toxicity (p135)

WORKSHOP SESSIONS

- ✓ Environmental Exposures and Alzheimer's Disease: Epidemiology, Mechanisms, and Future Strategies (p136)
- ✧ Friend or Foe—Challenges and Perspectives for Nonclinical Development of Antibody-Drug Conjugates (p136)
- ✖ Linking Early-Life Stages: The First Step toward Lifecourse Risk Assessment (p137)
- The US Tox21 Collaboration: Advances Made and Lessons Learned (p137)
- › Toxicological Epigenomics: The Interface between the Environment and Human Health (p138)
- ✖ Transporters As Gatekeepers for Chemical Exposure in Reproductive Tissues (p138)

PLATFORM SESSION

- Disposition and Pharmacokinetics (p139)

SOT 2015 San Diego

If found, please return to:

Name:

Contact Telephone:

9:30 AM to 12:30 PM

POSTER SESSIONS

- Alternatives to Mammalian Models I—Cardio, Neuro, Developmental (p152)
- Biotransformation and Cytochrome P450 (p140)
- Developmental Neurotoxicology—*In Vitro* Screening (p154)
- Developmental Neurotoxicology—Nonmammalian Models (p153)
- Ecotoxicology (p160)
- ✓ Inflammation in Disease (p145)
- ✓ Inflammation: Methods and Mechanisms (p146)
- Liver (p142)
- Metals (p157)
- Nanotoxicology, General, Environmental, Metals (p155)
- Nonpharmaceutical Safety Assessment
- Persistent Organic Pollutants (p162)
- Pharmacogenomics and Genetic Polymorphisms (p142)
- ⚬ Risk Assessment I (p149)
- Stem Cell Biology in Toxicology Research (p163)

12:00 Noon to 1:30 PM

RESEARCH FUNDING SESSION

Research Funding Luncheon: Multiple Perspectives on the Grant Process (p166)

12:10 PM to 1:30 PM

ROUNDTABLE SESSIONS

- * Addressing Potential Age-Related Sensitivity to Neurotoxicity of Pyrethroids (p166)
- ⚬ Confronting and Overcoming the Barriers to Sharing Toxicological Research Data for Risk Assessment in the 21st Century (p167)

INFORMATIONAL SESSION

- Toxicological Application of Studies Funded by California Stem Cell Research and Cures Act (Prop 71) (p167)

EDUCATION-CAREER DEVELOPMENT SESSION

- Adaptive Leadership: Anticipating, Initiating, and Responding to Change (p168)

12:30 PM to 1:20 PM

MERIT AWARD LECTURE

Chronicles of Particles: From Micro- to Nano-Particles

Lecturer: Günter Oberdörster, University of Rochester Medical Center (p169)

1:00 PM to 4:30 PM

POSTER SESSIONS

- Alternatives to Mammalian Models II—Skin, Eye, Liver (p169)
- ✓ Autoimmunity/Hypersensitivity (p185)
- Biological Modeling (p190)
- Biomonitoring and Exposure Assessment (p174)
- Cell Death and Apoptosis (p178)
- Developmental Neurotoxicology—Stem Cells (p185)
- Epidemiology (p193)
- Genetic Toxicology I (p176)
- Liver and Models (p188)
- Natural Products (p172)
- ✧ Ocular Toxicology (p172)
- Pharmaceutical Safety: Large Molecule Case Studies (p182)
- Pharmaceutical Safety: Small Molecule Case Studies (p183)
- ⚬ Risk Assessment II (p180)

1:30 PM to 2:30 PM

MEET THE DIRECTORS

A Conversation with Linda Birnbaum and Jim Jones
Lecturers: Linda Birnbaum, NIEHS; and Jim Jones, US EPA (p194)

2:00 PM to 4:45 PM

SYMPOSIUM SESSIONS

- ✓ Cardio-Oncology Concerns Encourage Novel Approaches to Pharmaceutical Risk Assessment (p195)
- ✓ Immunostimulant Cancer Treatments: Toxicology Programs with an Autoimmmune "Twist" (p196)
- Nrf2 Signaling Pathways in Model Systems: A Master Regulator of Neurotoxicity and a Potential Therapeutic Target (p196)

WORKSHOP SESSIONS

- * Evaluating and Quantifying Stress for Inclusion in Cumulative Risk Assessment (p197)
- * Infant Formula Nutrition: Regulatory and Safety Evaluation of Ingredients (p197)
- Pulmonary Toxicity of Graphene Nanomaterials: An Emerging Concern in Manufacturing and Applications? (p198)

EDUCATION-CAREER DEVELOPMENT SESSION

- Challenges in the Life Cycle of a Toxicologist (p198)

PLATFORM SESSION

- 21st Century DART: Advances, Challenges, and Promises (p199)

4:45 PM to 6:00 PM

SOT/EUROTOX DEBATE

In Vitro Alternatives Are Ready to Be Implemented and Relied Upon for Human Safety Testing (p200)

Tuesday, March 24

8:00 AM to 8:50 AM

TRANSLATIONAL IMPACT AWARD LECTURE

How to Make a (Translational) Impact

Lecturer: Jefferey Burgess, University of Arizona (p203)

9:00 AM to 12:00 Noon

FRONTIERS FOR TOXICOLOGY SESSION

Bugs to Drugs: The Microbiome in Human Health, Disease, and Therapeutics (p204)

Mark D. Adams, J. Craig Venter Institute

Rob Knight, University of California San Diego

Pieter C. Dorrestein, University of California San Diego

Jeremy K. Nicholson, Imperial College London

9:00 AM to 11:45 AM

SYMPOSIUM SESSIONS

- ✧ Alternative Models to Study Classical Toxicants: A Mechanistic View (p205)
- Immune Responses to Different Classes of Inhaled Particulates: Unique vs. Shared Responses and Mechanisms (p205)
- ✓ Local and Systemic Toxicity from Cobalt and Chromium-Containing Hip Prostheses (p206)

WORKSHOP SESSIONS

- ⚬ Considering Pharmacokinetics As the Mechanistic Basis to Link Chemical Exposures to Adverse Outcome Pathways (p206)
- * Regulatory Neurodevelopmental Testing: New Guiding Principles for Harmonization of Data Collection and Analysis (p207)
- ⚬ The EDSP Screening Battery: A Work in Progress for Prioritizing Compounds for Quantitative Risk Assessment (p208)
- ⚬ Understanding and Communicating Uncertainty in Hazard Assessment and Dose Response (p208)

9:00 AM to 12:30 PM

POSTER SESSIONS

- Alternatives to Mammalian Models III (p229)
- Biomarkers (p231)
- Carcinogenesis I (p217)
- Educational Activities and Outreach (p225)
- Food Safety, *In Vitro* (p212)
- Gene Regulation and Signal Transduction (p223)
- Genetic Toxicology II (p221)
- ✓ Immunotoxicity I (p226)
- *In Vitro* Cardiovascular Safety (p228)
- Juvenile Toxicity (p221)
- Neurotoxicology, Metals—Lead and Others (p216)
- Neurotoxicology, Metals—Manganese (p215)
- Neurotoxicology, Metals—Mercury (p214)
- Oxidative Injury and Redox Biology (p219)
- Pharmaceutical Safety: Models and Methods (p209)
- Systems Biology and Toxicology (p211)

9:30 AM to 4:30 PM

RESEARCH FUNDING SESSION

Research Funding Information Room (p234)

12:00 Noon to 1:30 PM

NETWORKING TIME

1:00 PM to 4:30 PM

POSTER SESSIONS

- Cigarettes, E-Cigarettes, and Hookah (p256)
- Clinical and Translational Toxicology (p239)
- Computational Toxicology and Data Integration I (p241)
- Endocrine Toxicology (p252)
- Food Safety, *In Vivo* (p247)
- ✓ Immunotoxicity II (p243)
- ✓ Inhalants and Cardiopulmonary (p257)
- Nanotoxicology, Carbon-Based Nanomaterials (p236)
- Neurotoxicology, Neurodegenerative Disease—Alzheimer's Disease and Others (p254)
- Neurotoxicology, Neurodegenerative Disease—Parkinson's Disease (p255)
- Particulate Matter (p260)
- Reproductive Toxicology I (p248)
- Reproductive Toxicology II (p250)
- Skin (p238)
- Toxicity of Chemical Mixtures (p245)

1:30 PM to 4:15 PM

SYMPOSIUM SESSIONS

- ⚬ Incorporating *In Vitro* Pharmacokinetic Data and Tools into Toxicity Testing and Risk Assessments: State of the Science (p262)
- ✓ New Developments in the Management of Nerve Agent Poisoning (p262)
- ✓ Where the Metal Meets the Bone… (p263)

WORKSHOP SESSIONS

- ✧ An Ounce of Prevention Is Worth a Pound of Cure: How 21st Century Toxicology Can Transform Product Safety Assessments and Design of Lower-Toxicity Products (p263)
- ✓ Current Understanding of Immune-Mediated Adverse Drug Reactions (p264)
- *In Vitro* Microphysiological Systems—Developing Confidence in Predictive Ability (p264)

PLATFORM SESSIONS

- ⚬ Investigating Mode of Action in Chemical Carcinogenesis (p265)
- Prudent Animal Usage in Pharmaceutical Safety Testing (p266)

4:30 PM to 6:00 PM

SOT ANNUAL BUSINESS MEETING

Wednesday, March 25

8:00 AM to 9:00 AM

KEYNOTE MEDICAL RESEARCH COUNCIL (MRC) LECTURE

Environmental Influences on the Immune System via the Aryl Hydrocarbon Receptor

Lecturer: Brigitta Stockinger, MRC National Institute for Medical Research (p269)

9:00 AM to 11:45 AM

SYMPOSIUM SESSION

- Role of the Gut Microbiome in the Host Response to Xenobiotics (p269)

WORKSHOP SESSIONS

- An Experiment in Collective Wisdom Utilizing Real-Time Audience Input: Weight-of-Evidence Assessment for Chemical-Specific Modes of Action Utilizing Two Case Studies (p270)
- ✧ Application of High-Throughput *In Vitro* Assays in Assessing Small Molecule Safety (p270)
- ✓ Deciphering Clinical and Experimental Retinal Toxicology: An Eye on the Present and Future (p271)
- Evaluating Similarity across Related Complex Mixtures: The Challenge of Herbal Supplements (p271)

REGIONAL INTEREST SESSION

- ✖ Some Like It Hot: Impacts of Wildfires on Human Health (p272)

PLATFORM SESSIONS

- Applications of ToxCast/Tox21 Data: Confidence and Predictivity (p272)
- ✧ Emerging Concepts in Genotoxicity Assessment (p273)

9:00 AM to 12:30 PM

POSTER SESSIONS

- Animal Models of Disease (p282)
- Animal Models: Measurements, Validations, and Historical Data (p283)
- Animal Models: Methods (p284)
- Cardiovascular Toxicity and Hemodynamics (p280)
- Developmental Neurotoxicology (p278)
- Developmental Toxicology I (p274)
- Developmental Toxicology II (p276)
- Fetal Basis of Adult Disease (p273)
- General and Developmental Neurotoxicology of Therapeutic Agents and Drugs of Abuse (p279)
- ✧ Medical Devices: Risk Assessment and Test Methods (p294)
- Metals—As, Cd, Hg (p292)
- Nanotoxicology, *In Vitro* (p289)
- ⚬ Regulation/Policy (p287)
- ⚬ Risk Assessment III (p285)

9:30 AM to 4:30 PM

RESEARCH FUNDING SESSION

Research Funding Information Room (p296)

12:00 Noon to 1:20 PM

ROUNDTABLE SESSIONS

- Should Respiratory Sensitizers Be Listed As Substances of Very High Concern (SVHC) under REACH? (p297)
- ✧ Will Generally Recognized As Safe (GRAS) Become an Endangered Species? (p298)

INFORMATIONAL SESSION

- Risk Communication and Management in the Era of Social Media and the Internet: Serving Society's Needs with Accurate Information (p298)

EDUCATION-CAREER DEVELOPMENT SESSION

- What Toxicologist Do You Wanna Be? The Role of Toxicologists across Diverse Organizations (p299)

12:30 PM to 1:20 PM

DISTINGUISHED TOXICOLOGY SCHOLAR AWARD LECTURE

Allergic Sensitization: Defining Molecular Mechanisms and Characterizing Hazard and Risk

Lecturer: Ian Kimber, University of Manchester (p296)

1:00 PM to 4:30 PM

POSTER SESSIONS

- Bioinformatics (p311)
- Carcinogenesis II (p301)
- Chemical and Biological Weapons (p303)
- Computational Toxicology and Data Integration II (p312)
- Disposition and Pharmacokinetics: Drugs, Chemicals, and Transporters (p305)
- Epigenetics (p314)
- Kidney (p317)
- Nanotoxicology, *In Vivo* (p322)
- Neurotoxicology, General (p306)
- Neurotoxicology, Pesticides (p307)
- Pesticides (p309)
- Receptors (p319)
- › RNA-Based Biomarkers (p300)

1:30 PM to 4:15 PM

SYMPOSIUM SESSIONS

- Adult Neurogenesis in Chemical-Induced Neurotoxicities: A New Frontier in Toxicological Mechanistic Investigations, Biomarker Research, and Therapeutic Targeting (p324)
- ⚬ Advanced Approaches for Quantitative Risk Assessment Using Human Data with Applications across Disciplines (p324)

WORKSHOP SESSIONS

- › Genomics of Nonrodent Mammalian Species and Impacts on Nonclinical Safety Evaluation of Pharmaceuticals and Clinical Translation (p325)
- Increasing Interest and Engagement in Toxicology and STEM Disciplines: The Multiple Modalities and Impact of Research and Internship Opportunities for High School and Undergraduate Students (p325)
- Integrating Gene Expression Profiling into High-Throughput Toxicity Testing (p326)
- ✧ Strengths and Weaknesses of Mouse Models in Studies of Immunological Effects of Drugs and Chemicals (p326)
- ⚬ The Carcinogenicity of Outdoor Air Pollution: A Review of the IARC Evaluation of Outdoor Air Pollution and Particulate Matter in Polluted Air As Group 1 (Known) Human Lung Carcinogens and Possible Bladder Carcinogens (p327)
- ✧ Windfall or Pitfall: Is There a Need for Modification of Developmental and Reproductive Toxicology Studies When Endocrine Disruption Is the Mode of Action? (p328)

PLATFORM SESSION

- ✱ Inflammation in Disease Due to Environmental Exposures (p328)

4:30 PM to 5:50 PM

ROUNDTABLE SESSIONS

- › Epigenetics and Chemical Safety Assessment: Are We Ready? (p329)
- ✧ The Future of Carcinogenicity Testing (p330)

EDUCATION-CAREER DEVELOPMENT SESSION

- Crafting High-Impact Manuscripts: The Process from Hypothesis through Review and Publication (p330)

Thursday, March 26

8:30 AM to 12:00 Noon

POSTER SESSIONS

- Late-Breaking Poster Session
  Access via Mobile Event App or Online Planner.

9:00 AM to 11:45 AM

SYMPOSIUM SESSIONS

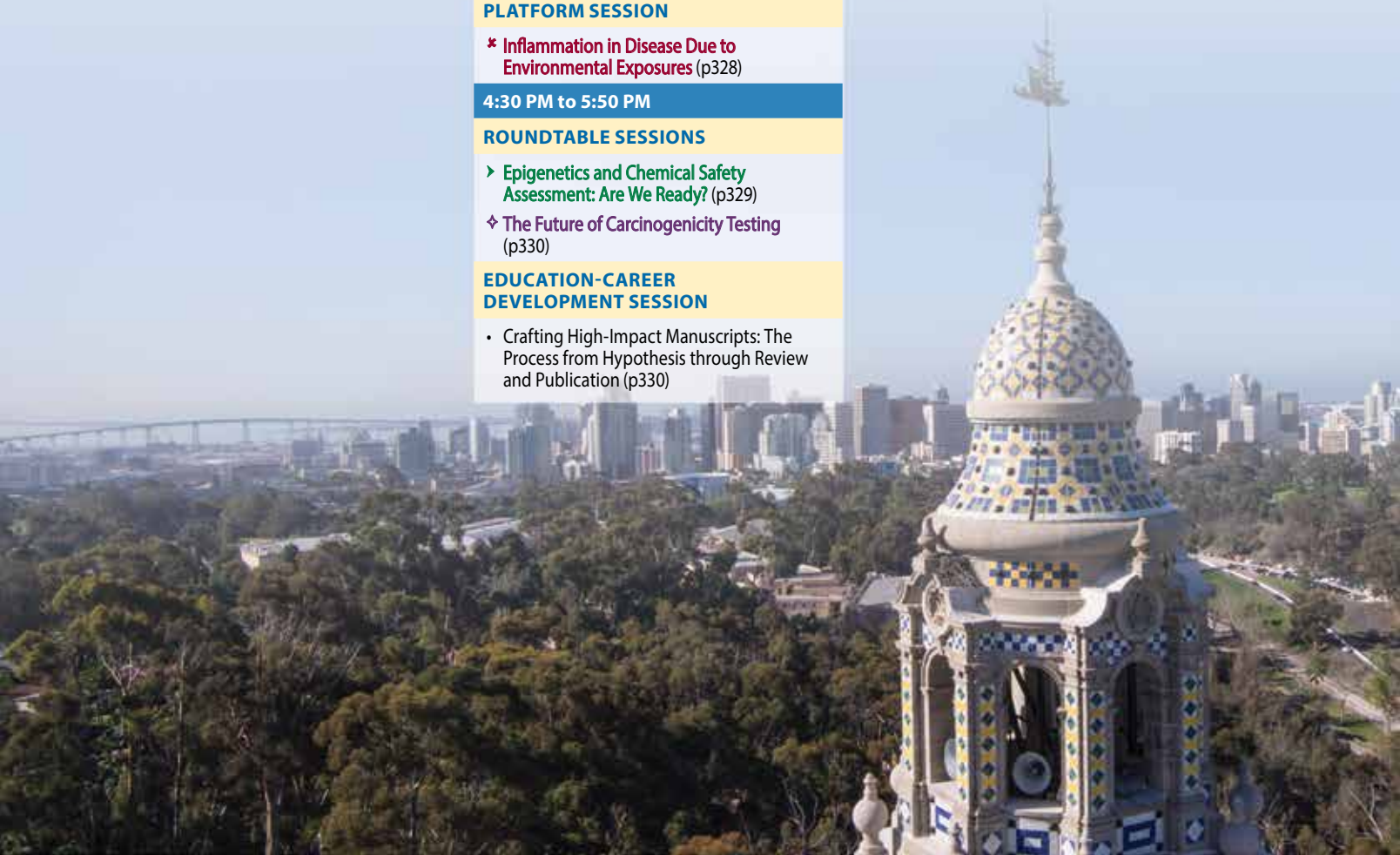
- › Chromatin Structure, Genomics, and Transcriptional Responses to Environmental Insults (p332)
- Comprehensive Analysis of Nano Silver Toxicity Profiles: Known, Unknown, and Surprises! (p332)
- › Epigenetics, Developmental Programming, and Immune Function: Where Do We Go from Here? (p333)
- ⚬ Exposure Assessment in the 21st Century: Needs and Challenges Facing High-Throughput Exposure Modeling (p334)

WORKSHOP SESSIONS

- Microphysiological Models of the Developing Nervous System: Biologically Driven Assembly Inspired by Embryology and Translated to Human Developmental Toxicology (p334)
- Painting the Future of Repeat-Dose Systemic Toxicity Testing: Progress from the European SEURAT-1 Project (p335)

PLATFORM SESSION

- POPs—*In Vitro, In Vivo,* and Computational Modeling Studies (p335)



54th Annual Meeting and ToxExpo
March 22–26, 2015
Program Contents

SOT | Society of Toxicology
Creating a Safer and Healthier World by Advancing the Science of Toxicology

ePosters—A Convenient Way to View Posters

Did you miss the opportunity to view a poster of interest?
In addition to attending Poster Sessions, you can view some posters through the SOT Mobile Event App.

Search and view the ePosters on your mobile device using the ePoster feature in the SOT Mobile Event App—before, during, and after the meeting (until May 11, 2015).

If you are a poster presenter, please take a few minutes to upload your PowerPoint or PDF poster through an Internet-based, user-friendly presentation system prior to the meeting at **https://cms.psav.com/sot2015** or during the meeting in the Speaker Ready Room at the San Diego Convention Center, Room 11B.

android BlackBerry iPad iPhone Mobile Web Windows Phone

The SOT 2015 Annual Meeting Mobile Event App

This year we are happy to announce an enhanced Mobile Event App and Online Planner. These tools offer you multiplatform mobile solutions for the SOT Annual Meeting and ToxExpo, provided free of charge to attendees and exhibitors. The Mobile Event App and Online Planner are available via the SOT website and app marketplaces. These mobile tools enable you, the attendee, to engage with organizers, exhibitors, and each other, and to manage your time and maximize your experience while at the Annual Meeting.

The Mobile Event App will allow you to:

- Connect with fellow attendees
- Build your own schedule and synchronize from the Online Planner to your iPad, tablet, and smartphone simply by logging in
  - Add individual presentations or entire sessions to your schedule
  - Add a specific session abstract to your schedule
  - Add your own items to your schedule
- View presentation details, abstracts, and ePosters
- Boolean search for items based on session title, abstract title, abstract keywords, thematic track, and author name or affiliation
- Identify and interact with speakers
- View the San Diego Convention Center map and San Diego city maps
- Navigate the real-time ToxExpo floor plan and search for products, specials, and exhibitors
- Contact exhibitors
- Integrate with ToXchange, Twitter, and Facebook

Online Planner Features:

- Boolean search schedule
- Separate speaker and abstract tabs
- Collapsible/expandable by day, hide abstracts
- Schedule export for iCal and PDF
- Schedule sync with Mobile Event App

To connect to the free wireless Internet, browse the available wireless networks and select the **SOT2015** wireless network. When prompted for a password, use **sotguest** to connect to the network.

Access information from any mobile device, including popular smartphones, tablets, iPads, and computers—synchronize your personal schedule by logging in.

See more details on inside back cover.

How to Use This Program

The Society of Toxicology's Annual Meeting is always an exciting opportunity to highlight advancements in the science of toxicology. In order to maximize the value of your Annual Meeting attendance, we offer this *Program* Publication Layout Overview, Program Schedule Scientific Session Reference, and Scientific Session Type Legend to assist you. We hope that you find this information useful and welcome your comments.

Program Publication Layout Overview

Section	Description
Front Fold-Out Cover—Scientific Program Overview	This quick reference guide lists the Annual Meeting scientific sessions with corresponding page numbers in the Program Schedule section. Color-coded presentation titles assist you in identifying sessions within each theme.
Daily Pocket Calendar (pages 5–15)	This at-a-glance calendar is your guide to the daily activities of the Annual Meeting, including special sessions; Regional Chapter, Special Interest Group, Specialty Section, and ancillary functions; and SOT committee meetings. We encourage you to tear out the daily guide for easy reference. Please note that the scientific session details are included at the end of each day's guide.
Schedule by Event Name (pages 15–24)	This is an alphabetical listing of all the functions held during the Annual Meeting. You may use this easy-to-read schedule to quickly locate an event. Please note that the scientific sessions are located in the Scientific Program Overview on the front fold-out cover or Daily Pocket Calendar on pages 5–15.
Scientific Session Index (pages 113–119)	This index lists the scientific sessions by type, date, and time. In addition, this information includes the session titles with abstract numbers, poster boards, session locations, and corresponding page numbers in the Program Schedule section.
Poster Session Schedules and Board Surface Maps (pages 121–128)	The Poster Session Schedule and Poster Board Surface Maps are displayed with a mock layout of the ToxExpo Exhibit Hall to assist you in finding poster sessions. Each poster schedule and surface map shows the poster session abstract numbers and the poster surface locations for each poster session time. Posters are displayed in the Exhibit Hall Monday–Wednesday and Sails Pavilion on Thursday.
Author Index (pages 338–364)	The numerals following the author names refer to the abstract numbers referenced in this *Program*, *The Toxicologist,* and the Mobile Event App or Online Planner. The asterisk after the abstract number indicates the author is the first presenter.
Abstract Keyword Index (pages 365–380)	This index provides a listing of keywords by subject or chemical and the relevant abstract(s) referenced in this *Program*, *The Toxicologist*, the Mobile Event App, and Online Planner.

Program Schedule Scientific Session Reference (pages 131–333)

The Program Schedule layout is ordered by date and start time. Please refer to the description below. Each scientific session listing includes a session abstract and list of speakers or the featured presenters.

Listing	Description
Session Type and Title	Session type and title display in bold type. A brief description for each scientific session type is listed below.
Endorser(s)/ Supporter(s):	This section lists the supporters from SOT Special Interest Groups, Specialty Sections, Regional Chapters, or SOT Committees. Endorsers/Supporters are listed alphabetically.
Abstract Number or Presentation Time	The first number listed is the abstract number, or the SOT final identifying number. For scientific sessions (but not Continuing Education Courses or Poster Presentations), the second number is the presentation time. Individual abstracts can be found using the Mobile Event App or Online Planner, in the PDF of *The Toxicologist* via the SOT website (free to all attendees), and in *The Toxicologist* publication (available for purchase on-site for $40).
Poster Sessions	The poster board surface number is listed above the title of each individual poster presentation for easy reference.

Session Type Legend

EC Education-Career Development Sessions (80 minutes)—Sessions that provide the tools and resources to toxicologists that will enhance their professional and scientific development

E Exhibitor-Hosted Sessions (60 minutes)—Informative sessions developed by an exhibiting company

FS Featured Sessions (50–165 minutes)—Keynote and other special lectures

IS Informational Sessions (80 minutes)—Scientific planning or membership development

PL Platform Sessions (165 minutes)—Oral presentations that cover new areas, concepts, or data

PS Poster Sessions (180–210 minutes)—Topic-specific presentations that cover new areas, concepts, or data

RI Regional Interest Session (165 minutes)—Central topics of relevance that describe public health and/or ecological problems of a particular region

R Roundtable Sessions (80 minutes)—Controversial subjects

S Symposium Sessions (165 minutes)—Cutting-edge science: new areas, concepts, or data

Thematic Sessions (45–225 minutes)—Timely topics of relevance to toxicology

W Workshop Sessions (165 minutes)—State-of-the-art knowledge in toxicology

Daily Pocket Calendar

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder. *(Calendar as of February 6; private events are not listed.)*

Saturday — March 21

Events are listed alphabetically by the event start time.

Most events will be held in the San Diego Convention Center unless otherwise noted. **Events at the San Diego Convention Center are noted as CC.**

7:30 AM to 8:00 AM
Council Orientation Breakfast
Marriott Marquis Carlsbad

8:00 AM to 12:00 Noon
Council Orientation Meeting
Marriott Marquis Cardiff

8:00 AM to 5:00 PM
ToxExpo Set Up
CC Exhibit Hall

10:00 AM to 5:00 PM
San Diego Festival of Science and Engineering
EXPO Day
Petco Park, San Diego *(Public Event)*

10:30 AM to 12:30 PM
Pick Your Poison: A Close Look at the Toxicants Surrounding Us (Presented by OASIS: Public Event)
TBD

12:00 Noon to 6:00 PM
American Board of Toxicology
Board of Directors Meeting
Marriott Marquis Encinitas

12:00 Noon to 1:00 PM
Council Luncheon
Marriott Marquis Carlsbad

1:00 PM to 5:30 PM
Council Meeting
Marriott Marquis Cardiff

4:00 PM to 7:00 PM
@SOT Center—Internet Access
CC Lobby C

4:00 PM to 7:00 PM
Housing Desk
CC Lobby A

4:00 PM to 7:00 PM
Registration
CC Lobby A

4:00 PM to 7:00 PM
SOT Office
CC Room 15A

4:00 PM to 7:00 PM
Speaker Ready Room
(Scientific Session and ePoster Upload)
CC Room 11B

4:30 PM to 5:15 PM
Continuing Education Committee Walk-Through
CC Ballroom 6B

5:00 PM to 5:15 PM
Undergraduate Education Program: Registration for CDI Travel Awardees
CC Room 33B Foyer

5:15 PM to 7:30 PM
Undergraduate Education Program: Opening Event *(CDI Travel Awardees)*
CC Room 33B

7:30 PM to 8:30 PM
Committee on Diversity Initiatives Reunion
(Invited: All Current and Past Participants and Volunteers in the Undergraduate Education Program)
CC Room 33B

Sunday — March 22

Events are listed alphabetically by the event start time.

Most events will be held in the San Diego Convention Center unless otherwise noted. **Events at the San Diego Convention Center are noted as CC.**

7:00 AM to 6:00 PM
@SOT Center—Internet Access
CC Lobby C

7:00 AM to 4:00 PM
Concession Stands
CC Lobby A

7:00 AM to 7:45 AM
Continuing Education Sunrise Mini-Course
(Ticket Required)
CC Ballroom 6B

7:00 AM to 8:00 PM
Registration
CC Lobby A

7:00 AM to 5:30 PM
SOT Office
CC Room 15A

7:00 AM to 5:30 PM
Speaker Ready Room
(Scientific Session and ePoster Upload)
CC Room 11B

7:30 AM to 9:30 AM
Career Resource and Development Committee Meeting
CC Room 12

8:00 AM to 8:00 PM
Coat/Luggage Check
CC Lobby C

8:00 AM to 5:00 PM
Guest/Spouse Hospitality Room
Marriott Marquis La Mesa

8:00 AM to 5:00 PM
Housing Desk
CC Lobby A

8:00 AM to 12:00 Noon
Scientific Liaison Coalition Meeting
CC Room 14B

8:00 AM to 5:00 PM
ToxExpo Set Up
CC Exhibit Hall

8:00 AM to 12:00 Noon
Toxicology Education Foundation Board of Trustees Meeting
Marriott Marquis Palomar

8:00 AM to 9:45 AM
Undergraduate Education Program: Toxicology Presentations *(CDI Travel Awardees and Registered Participants)*
CC Room 31C

8:15 AM to 12:00 Noon
Continuing Education Morning Courses
(Ticket Required)
CC Upper Level

9:55 AM to 11:00 AM
Undergraduate Education Program: Interactive Presentation *(CDI Travel Awardees and Registered Participants)*
CC Room 33B

11:10 AM to 12:00 Noon
Undergraduate Education Program: Toxicology Presentation *(CDI Travel Awardees and Registered Participants)*
CC Room 31 C

11:45 AM to 1:15 PM
Continuing Education Luncheon for Speakers, Committee, and Student Volunteers
(By Invitation Only)
CC Room 4

12:00 Noon to 1:00 PM
Toxicology Excellence for Risk Assessment: Alliance for Risk Assessment "Beyond Science and Decisions"
Marriott Marquis Miramar

12:00 Noon to 12:45 PM
Undergraduate Education Program: Lunch and Networking *(CDI Travel Awardees and Registered Participants)*
CC Room 33B

12:30 PM to 3:30 PM
Toxicological Sciences Associate Editors Meeting
Marriott Marquis Cardiff/Carlsbad

12:55 PM to 1:55 PM
Undergraduate Education Program: Breakout Sessions for Students—Planning for Graduate School
(CDI Travel Awardees and Registered Participants)
CC Rooms 32A, 32B, 30E

12:55 PM to 1:55 PM
Undergraduate Education Program: Breakout Session for Advisors: Tips for Advising Prospective Graduate Students *(CDI Advisor Travel Awardees)*
CC Room 33C

1:00 PM to 5:00 PM
Job Bank Center
CC Room 23A

1:15 PM to 5:00 PM
Continuing Education Afternoon Courses
(Ticket Required)
CC Upper Level

2:05 PM to 2:55 PM
Undergraduate Education Program: Career Roundtables—Opportunities in Toxicology
(CDI Travel Awardees and Registered Participants)
CC Room 33B

3:00 PM to 5:00 PM
Gabriel L. Plaa Award Interviews
CC Room 12

3:00 PM to 5:00 PM
Undergraduate Education Program: Open Time with Academic Toxicology Program Directors and Internship Hosts *(CDI Travel Awardees and Registered Participants)*
CC Room 31C

3:30 PM to 4:00 PM
Council Members Photographed
CC Room 5

4:00 PM to 5:00 PM
Awards Recipients Photographed *(By Invitation Only)*
CC Room 5

4:00 PM to 5:00 PM
K–12 Subcommittee Meeting
CC Room 14B

4:45 PM to 5:15 PM
Awards Ceremony Music—Performed by Amy Lynn Kanner
(All Attendees Welcome)
CC Ballroom 6A

5:15 PM to 6:30 PM
Awards Ceremony *(All Attendees Welcome)*
CC Ballroom 6A

6:30 PM to 7:30 PM
Welcome Reception *(All Attendees Welcome)*
CC West Terrace

7:00 PM to 8:00 PM
25-Year (Or More) Member Reception
(By Invitation Only)
CC Room 5

7:30 PM to 10:30 PM
Arizona Night
Marriott Marquis Torrey Pines

7:30 PM to 10:00 PM
Lovelace Respiratory Research Institute's Annual Reception
Marriott Marquis Catalina

7:30 PM to 9:00 PM
Student/Postdoctoral Scholar Mixer *(Ticket Required)*
CC Ballroom 20D

Daily Pocket Calendar (Continued)

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder.
(Calendar as of February 6; private events are not listed.)

Scientific Program Overview by Day & Time

Sunday — March 22

7:00 AM to 7:45 AM

CONTINUING EDUCATION SUNRISE MINI-COURSE

1. New Horizons in Chemical Carcinogenesis: Advances in Mode of Action and Mechanism of Cancer Pathogenesis (Ballroom 6B)

8:15 AM to 12:00 Noon

CONTINUING EDUCATION MORNING COURSES

2. An Introduction to the Exposome (Room 7)
3. Demystifying Mixtures: From Study Design Selection to Risk Assessment Application (Ballroom 6C)
4. Safety Evaluation of CNS Administered Therapeutics—Study Design, Dose Routes, and Data Interpretation (Ballroom 6D)
5. The Future of Developmental and Reproductive Toxicology—Building a Bridge to the Animal Free Zone (Ballroom 6F)
6. The New World of Cancer Immunotherapy: Challenges in Bench to Bedside Translation (Ballroom 6E)
7. Toxicology and Regulatory Considerations for Combination Products (Ballroom 6B)

1:15 PM to 5:00 PM

CONTINUING EDUCATION AFTERNOON COURSES

8. Advances in Safety Assessment of Medical Devices (Ballroom 6B)
9. Interpretation of Cardiovascular Safety Data in Toxicology Studies (Ballroom 6E)
10. Is Synthetic Biology the Future of Toxicology? (Ballroom 6C)
11. Skeletal System Endocrinology and Toxicology (Ballroom 6D)
12. Strategies in Investigative Toxicology in a Pharmaceutical Setting (Room 7)
13. Toxicogenomics Meets Regulatory Decision-Making: How to Get Past Heat Maps, Network/Pathway Diagrams, and "Favorite" Genes (Ballroom 6F)

Daily Pocket Calendar (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder.
(Calendar as of February 6; private events are not listed.)

Monday March 23

Events are listed alphabetically by the event start time.

Most events will be held in the San Diego Convention Center unless otherwise noted. **Events at the San Diego Convention Center are noted as CC.**

6:00 AM to 7:30 AM
Toxicologic and Exploratory Pathology Specialty Section Officers Meeting
CC Room 31B

6:15 AM to 7:45 AM
SOT Mentoring Breakfast *(Registration Required)*
CC Room 5B

6:30 AM to 8:00 AM
Carcinogenesis Specialty Section Officers Meeting
CC Room 25

6:30 AM to 8:00 AM
Clinical and Translational Toxicology Specialty Section Officers Meeting
CC Room 25

6:30 AM to 8:00 AM
Dermal Toxicology Specialty Section Officers Meeting
CC Room 25

6:30 AM to 8:00 AM
Food Safety Specialty Section Officers Meeting
CC Room 25

6:30 AM to 8:00 AM
Immunotoxicology Specialty Section Officers Meeting
CC Room 25

6:30 AM to 8:00 AM
In Vitro and Alternative Methods Specialty Section Officers Meeting
CC Room 25

6:30 AM to 8:00 AM
Inhalation and Respiratory Specialty Section Technical Meeting
CC Room 30A

6:30 AM to 8:00 AM
Mechanisms Specialty Section Officers Meeting
CC Room 25

6:30 AM to 7:30 AM
Mixtures Specialty Section Officers Meeting
Richard Walker's Pancake House

6:30 AM to 8:00 AM
Molecular and Systems Biology Specialty Section Officers Meeting
CC Room 25

6:30 AM to 8:00 AM
Neurotoxicology Specialty Section Officers Meeting
CC Room 25

6:30 AM to 8:00 AM
Past Presidents Breakfast
CC Room 15B

6:30 AM to 8:00 AM
Regulatory and Safety Evaluation Specialty Section Officers Meeting
CC Room 25

6:30 AM to 8:00 AM
Risk Assessment Specialty Section Officers Meeting
CC Room 25

6:45 AM to 8:00 AM
Hispanic Organization of Toxicologists Special Interest Group Officers Meeting
Marriott Marquis Marina Kitchen

7:00 AM to 6:00 PM
@SOT Center—Internet Access
CC Lobby C

7:00 AM to 8:00 AM
Central States Regional Chapter Meeting/Breakfast
Marriott Gaslamp Soleil @K Restaurant

7:00 AM to 8:00 PM
Coat/Luggage Check
CC Lobby C

7:00 AM to 4:00 PM
Concession Stands
CC Ballroom 6 Foyer

7:00 AM to 5:00 PM
Registration
CC Lobby A

7:00 AM to 8:30 AM
Reproductive and Developmental Toxicology Specialty Section Officers Meeting
CC Room 30D

7:00 AM to 7:45 AM
Scientific Program Committee Walk-Through
CC Ballroom 6A

7:00 AM to 5:00 PM
SOT Office
CC Room 15A

7:00 AM to 5:00 PM
Speaker Ready Room
(Scientific Session and ePoster Upload)
CC Room 11B

7:30 AM to 9:30 AM
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*
CC Exhibit Hall

8:00 AM to 5:00 PM
Guest/Spouse Hospitality Room
Marriott Marquis La Mesa

8:00 AM to 5:00 PM
Housing Desk
CC Lobby A

8:00 AM to 9:00 AM
Plenary Opening Lecture: Life at the Speed of Light, *Lecturer: J. Craig Venter, J. Craig Venter Institute*
CC Hall D

8:00 AM to 3:30 PM
Undergraduate Education Program: Meeting Participation
CC

8:30 AM to 2:00 PM
Concession Stands
CC Exhibit Hall

9:00 AM to 10:00 AM
Complimentary Coffee
CC Exhibit Hall

9:00 AM to 5:00 PM
Job Bank Center
CC Room 23A

9:00 AM to 4:30 PM
SOT Pavilion, Booth 526
CC Exhibit Hall

9:00 AM to 4:30 PM
ToxExpo Exhibits Open
CC Exhibit Hall

9:15 AM to 10:15 AM
Exhibitor-Hosted Session: BioreclamationIVT and InSphero Inc.
CC Room 24C

9:15 AM to 10:15 AM
Exhibitor-Hosted Session: Covance
CC Room 24B

9:15 AM to 10:15 AM
Exhibitor-Hosted Session: MPI Research
CC Room 24A

9:15 AM to 10:15 AM
Exhibitor-Hosted Session: Toxikon Corporation
CC Room 22

9:15 AM to 12:00 Noon
Scientific Sessions
CC Upper Level

9:30 AM to 11:30 AM
Global Collaboration Coffee
CC Room 4

9:30 AM to 12:30 PM
Poster Sessions
CC Exhibit Hall

10:00 AM to 11:00 AM
Trainee Discussion with Plenary Lecturer: Dr. Venter
(Ticket Required; SOT Student and Postdoctoral Members Only, Limited Seating)
CC Room 21

10:45 AM to 11:45 AM
Exhibitor-Hosted Session: Cyprotex
CC Room 24B

10:45 AM to 11:45 AM
Exhibitor-Hosted Session: Huntingdon Life Sciences/ Harlan Laboratories
CC Room 24C

10:45 AM to 11:45 AM
Exhibitor-Hosted Session: Lhasa Limited
CC Room 22

10:45 AM to 11:45 AM
Exhibitor-Hosted Session: Promega Corporation
CC Room 24A

11:00 AM to 12:00 Noon
CME Task Force Meeting
CC Room 12

11:45 AM to 12:15 PM
Regional Chapter, Special Interest Group, Specialty Section Poster Sessions—Representative Attended
(Near the SOT Pavilion, Booth 526)
CC Exhibit Hall

11:45 AM to 12:15 PM
Global Gallery of Toxicology Poster Session—Representative Attended
(Across from SOT Pavilion, Booth 526)
CC Exhibit Hall

12:00 Noon to 1:30 PM
Comparative and Veterinary Specialty Section Meeting/Luncheon
CC Room 3

12:00 Noon to 1:30 PM
Continuing Education Committee Meeting
CC Room 14A

12:00 Noon to 1:30 PM
Drug Discovery Toxicology Specialty Section Lunch with an Expert
CC Room 27

12:00 Noon to 1:30 PM
HESI Luncheon Seminar
Marriott Marquis Marina Ballroom D

12:00 Noon to 1:20 PM
In Vitro Toxicology Lecture and Luncheon for Students: Alternative *In Vitro* Approaches for Predicting the Health Impacts of Nanomaterials, *Lecturer: James C. Bonner, North Carolina State University (Ticket Required)*
CC Ballroom 20D

12:00 Noon to 2:00 PM
IQ Consortium Open SEND Session
Manchester Grand Hyatt Regatta

12:00 Noon to 2:00 PM
Mid-Atlantic Regional Chapter Luncheon
Roy's Restaurant Big Island Room

12:00 Noon to 1:30 PM
Research Funding Luncheon: Multiple Perspectives on the Grant Process
CC Room 5B

12:00 Noon to 1:30 PM
Special Interest Group Collaboration Group Meeting
CC Room 14B

12:00 Noon to 1:30 PM
Toxicologic and Exploratory Pathology Specialty Section Meeting/Luncheon
CC Room 2

12:00 Noon to 2:00 PM
Toxicology and Applied Pharmacology Editorial Board Meeting
Marriott Marquis Coronado

12:00 Noon to 1:00 PM
Website Task Force Meeting
CC Room 15B

12:10 PM to 1:30 PM
Scientific Sessions
CC Upper Level

12:15 PM to 1:15 PM
Exhibitor-Hosted Session: EPISKIN ACADEMY
CC Room 24A

12:15 PM to 1:15 PM
Exhibitor-Hosted Session: Fraunhofer ITEM
CC Room 24B

12:15 PM to 1:15 PM
Exhibitor-Hosted Session: PDS Preclinical Lifesciences Inc and Integrated Nonclinical Development Solutions (INDS) Inc
CC Room 22

12:15 PM to 1:15 PM
Exhibitor-Hosted Session: RTC and Ellegaard Göttingen Minipigs
CC Room 24C

12:15 PM to 1:30 PM
Toxicology Excellence for Risk Assessment: Turning Big Data to Knowledge (BD2K): A Discussion of the NIH BD2K Initiative and How It Might Advance the Practice of Toxicology and Risk Assessment
Marriott Marquis Del Mar

12:30 PM to 1:30 PM
International Neurotoxicology Association Business Meeting
Marriott Marquis Cardiff

12:30 PM to 1:20 PM
Merit Award Lecture: Chronicles of Particles: From Micro- to Nano-Particles, *Lecturer: Günter Oberdörster, University of Rochester Medical Center*
CC Ballroom 6B

12:30 PM to 1:00 PM
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*
CC Exhibit Hall

12:45 PM to 1:00 PM
Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing
CC Exhibit Hall

1:00 PM to 4:30 PM
Poster Sessions
CC Exhibit Hall

1:30 PM to 2:30 PM
Rapid Response Task Force Meeting
CC Room 12

1:30 PM to 2:30 PM
Meet the Directors: A Conversation with Linda Birnbaum, NIEHS; and Jim Jones, US EPA
CC Ballroom 6A

1:45 PM to 2:45 PM
Exhibitor-Hosted Session: Charles River
CC Room 24C

1:45 PM to 2:45 PM
Exhibitor-Hosted Session: IDEXX Laboratories
CC Room 24A

1:45 PM to 2:45 PM
Exhibitor-Hosted Session: Korea Institute of Toxicology
CC Room 22

1:45 PM to 2:45 PM
Exhibitor-Hosted Session: Lovelace Respiratory Research Institute
CC Room 24B

2:00 PM to 4:45 PM
Scientific Sessions
CC Upper Level

2:00 PM to 3:00 PM
Specialty Section Collaboration and Communication Group Meeting
CC Room 14A

2:00 PM to 3:00 PM
ToxLearn Work Group
CC Room 14B

2:30 PM to 3:30 PM
Complimentary Lemonade and Popcorn
CC Exhibit Hall

3:15 PM to 4:15 PM
Exhibitor-Hosted Session: BioReliance
CC Room 22

3:15 PM to 4:15 PM
Exhibitor-Hosted Session: InSphero Inc.
CC Room 24C

3:15 PM to 4:15 PM
Exhibitor-Hosted Session: MultiCASE Inc
CC Room 24B

Continued on next page

Daily Pocket Calendar (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder. *(Calendar as of February 6; private events are not listed.)*

Monday (Continued) — March 23

3:15 PM to 4:15 PM
Exhibitor-Hosted Session: NSF International
CC Room 24A

3:30 PM to 4:30 PM
Undergraduate Education Program:
Host Mentor and Peer Mentor Meeting
CC Room 32B

3:30 PM to 4:30 PM
Undergraduate Education Program: Presentation *(CDI Travel Awardees)*
CC Room 33B

4:00 PM to 5:00 PM
K–12 Regional Chapter Outreach Contacts Meeting
CC Room 14B

4:30 PM to 6:00 PM
American Board of Toxicology Open Mixer Meeting
Marriott Marquis Rancho Santa Fe

4:30 PM to 6:00 PM
Roundtable of Toxicology Consultants
Annual Business Meeting
Marriott Marquis La Costa

4:30 PM to 5:00 PM
Undergraduate Education Program:
Program Closing Session *(CDI Travel Awardees)*
CC Room 33B

4:45 PM to 5:45 PM
Exhibitor-Hosted Session: APTUIT LLC
CC Room 24B

4:45 PM to 5:45 PM
Exhibitor-Hosted Session: Instem
CC Room 24C

4:45 PM to 5:45 PM
Exhibitor-Hosted Session: Leadscope, Inc.
CC Room 24A

4:45 PM to 6:00 PM
SOT/EUROTOX Debate: *In Vitro* Alternatives Are Ready to Be Implemented and Relied Upon for Human Safety Testing, *Lecturers: George P. Daston, Procter & Gamble Company; Maurice P. Whelan, European Commission Joint Research Centre*
CC Ballroom 6A

5:00 PM to 7:30 PM
Human Toxicology Project Consortium: "AOPs 201": A Brief Seminar on Development, Recording, and Use of Adverse Outcome Pathways
Marriott Marquis Marina Ballroom F

5:00 PM to 6:30 PM
Allegheny-Erie and Michigan Regional Chapters Joint Reception
Marriott Marquis Balboa

5:00 PM to 8:00 PM
American Association of Chinese in Toxicology Special Interest Group Reception and Distinguished Chinese Toxicologist Lectureship Presentation
Marriott Marquis San Diego Ballroom B

5:00 PM to 7:00 PM
Elsevier Editorial Board Member Reception
Marriott Marquis Bayside Pavilion

5:00 PM to 6:00 PM
Ohio Valley and Midwest Regional Chapters Joint Reception
Henry's Pub

5:00 PM to 7:00 PM
Institute for In Vitro Sciences, Inc: Workshop Report: *In Vitro* COPD Models for Tobacco Regulatory Science—Highlights and Paths Forward
Marriott Marquis Torrey Pines

5:30 PM to 7:00 PM
MultiCASE Inc: Users and Friends Meeting
Marriott Marquis Newport Beach

5:30 PM to 7:30 PM
National Capital Area and North Carolina Regional Chapters Joint Reception
Karl Strauss Brewery

5:30 PM to 7:30 PM
Pacific Northwest Regional Chapter Reception
Harbor House

5:30 PM to 7:30 PM
Toxicologists of African Origin Special Interest Group Reception
Rama Thai

6:00 PM to 7:30 PM
Carcinogenesis Specialty Section Meeting/Reception
CC Room 31C

6:00 PM to 7:30 PM
Inhalation and Respiratory Specialty Section Meeting/Reception
CC Room 30A

6:00 PM to 7:30 PM
Mixtures Specialty Section Meeting/Reception
CC Room 30E

6:00 PM to 7:30 PM
Molecular and Systems Biology Specialty Section Meeting/Reception
CC Room 29A

6:00 PM to 7:30 PM
Regulatory and Safety Evaluation Specialty Section Meeting/Reception
CC Room 28A

6:00 PM to 10:00 PM
Southeastern Regional Chapter Reception
Dublin Square Authentic Irish Pub & Grille

6:00 PM to 8:00 PM
St. John's University Alumni and Friends Dinner
Marriott Marquis Miramar

6:30 PM to 8:00 PM
The Truth about Food: How the Sustainer of Life Can Also Be Poison *(Public Event)*
Reuben H. Fleet Science Center

7:00 PM to 9:00 PM
Association of Scientists of Indian Origin Special Interest Group Reception
Marriott Marquis Temecula

7:00 PM to 9:00 PM
Korean Toxicologists Association in America Meeting/Reception
Nippon Sushi Bar and Thai Food

7:00 PM to 10:00 PM
Toxicological Sciences/Oxford University Press Appreciation Dinner *(By Invitation Only)*
Meze

7:30 PM to 9:30 PM
Food and Chemical Toxicology Editorial Board Dinner Meeting
Marriott Marquis Marina Ballroom E

Scientific Program Overview by Day & Time

Monday — March 23

8:00 AM to 9:00 AM

PLENARY OPENING LECTURE

Life at the Speed of Light
Lecturer: J. Craig Venter, J. Craig Venter Institute
(Hall D)

9:15 AM to 12:00 Noon

SYMPOSIUM SESSIONS

- New and Emerging Tobacco Products—Biomarkers of Exposure and Injury (Ballroom 6A)
- The Role of Connexin-Based Channels in Toxicity (Room 1)

WORKSHOP SESSIONS

- Environmental Exposures and Alzheimer's Disease: Epidemiology, Mechanisms, and Future Strategies (Ballroom 6B)
- Friend or Foe—Challenges and Perspectives for Nonclinical Development of Antibody-Drug Conjugates (Room 7)
- Linking Early-Life Stages: The First Step toward Lifecourse Risk Assessment (Ballroom 6F)
- The US Tox21 Collaboration: Advances Made and Lessons Learned (Ballroom 6E)
- Toxicological Epigenomics: The Interface between the Environment and Human Health (Ballroom 6D)
- Transporters As Gatekeepers for Chemical Exposure in Reproductive Tissues (Ballroom 6C)

PLATFORM SESSION

- Disposition and Pharmacokinetics (Room 8)

9:30 AM to 12:30 PM

POSTER SESSIONS

(Exhibit Hall—*See Poster Board Surface Map on pages 122–123*)

- Alternatives to Mammalian Models I—Cardio, Neuro, Developmental
- Biotransformation and Cytochrome P450
- Developmental Neurotoxicology—*In Vitro* Screening
- Developmental Neurotoxicology—Nonmammalian Models
- Ecotoxicology
- Inflammation in Disease
- Inflammation: Methods and Mechanisms
- Liver
- Metals
- Nanotoxicology, General, Environmental, Metals
- Nonpharmaceutical Safety Assessment
- Persistent Organic Pollutants
- Pharmacogenomics and Genetic Polymorphisms
- Risk Assessment I
- Stem Cell Biology in Toxicology Research

12:00 Noon to 1:30 PM

RESEARCH FUNDING SESSION

Research Funding Luncheon: Multiple Perspectives on the Grant Process (Room 5B)

12:10 PM to 1:30 PM

ROUNDTABLE SESSIONS

- Addressing Potential Age-Related Sensitivity to Neurotoxicity of Pyrethroids (Ballroom 6F)
- Confronting and Overcoming the Barriers to Sharing Toxicological Research Data for Risk Assessment in the 21st Century (Ballroom 6E)

INFORMATIONAL SESSION

- Toxicological Application of Studies Funded by California Stem Cell Research and Cures Act (Prop 71) (Room 1)

EDUCATION-CAREER DEVELOPMENT SESSION

- Adaptive Leadership: Anticipating, Initiating, and Responding to Change (Room 7)

12:30 PM to 1:20 PM

MERIT AWARD LECTURE

Chronicles of Particles: From Micro- to Nano-Particles
Lecturer: Günter Oberdörster, University of Rochester Medical Center (Ballroom 6B)

1:00 PM to 4:30 PM

POSTER SESSIONS

(Exhibit Hall—*See Poster Board Surface Map on pages 122–123*)

- Alternatives to Mammalian Models II—Skin, Eye, Liver
- Autoimmunity/Hypersensitivity
- Biological Modeling
- Biomonitoring and Exposure Assessment
- Cell Death and Apoptosis
- Developmental Neurotoxicology—Stem Cells
- Epidemiology
- Genetic Toxicology I
- Liver and Models
- Natural Products
- Ocular Toxicology
- Pharmaceutical Safety: Large Molecule Case Studies
- Pharmaceutical Safety: Small Molecule Case Studies
- Risk Assessment II

1:30 PM to 2:30 PM

MEET THE DIRECTORS

A Conversation with Linda Birnbaum and Jim Jones
Lecturers: Linda Birnbaum, NIEHS; and Jim Jones, US EPA
(Ballroom 6A)

2:00 PM to 4:45 PM

SYMPOSIUM SESSIONS

- Cardio-Oncology Concerns Encourage Novel Approaches to Pharmaceutical Risk Assessment (Ballroom 6C)
- Immunostimulant Cancer Treatments: Toxicology Programs with an Autoimmmune "Twist" (Ballroom 6F)
- Nrf2 Signaling Pathways in Model Systems: A Master Regulator of Neurotoxicity and a Potential Therapeutic Target (Room 1)

WORKSHOP SESSIONS

- Evaluating and Quantifying Stress for Inclusion in Cumulative Risk Assessment (Ballroom 6E)
- Infant Formula Nutrition: Regulatory and Safety Evaluation of Ingredients (Ballroom 6B)
- Pulmonary Toxicity of Graphene Nanomaterials: An Emerging Concern in Manufacturing and Applications? (Ballroom 6D)

EDUCATION-CAREER DEVELOPMENT SESSION

- Challenges in the Life Cycle of a Toxicologist (Room 7)

PLATFORM SESSION

- 21st Century DART: Advances, Challenges, and Promises (Room 8)

4:45 PM to 6:00 PM

SOT/EUROTOX DEBATE

In Vitro Alternatives Are Ready to Be Implemented and Relied Upon for Human Safety Testing (Ballroom 6A)

Daily Pocket Calendar (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder. *(Calendar as of February 6; private events are not listed.)*

Tuesday — March 24

Events are listed alphabetically by the event start time.

Most events will be held in the San Diego Convention Center unless otherwise noted. **Events at the San Diego Convention Center are noted as CC.**

6:45 AM to 8:30 AM
Education Committee Meeting
CC Room 15B

6:45 AM to 7:45 AM
Graduate Student Leadership Committee Meeting
CC Room 9

7:00 AM to 6:00 PM
@SOT Center—Internet Access
CC Lobby C

7:00 AM to 8:00 AM
Awards Committee Meeting
CC Room 14B

7:00 AM to 8:30 AM
Calvert Labs Consultant Appreciation Breakfast
Marriott Marquis Cardiff

7:00 AM to 8:00 PM
Coat/Luggage Check
CC Lobby C

7:00 AM to 9:00 AM
IQ Consortium DruSafe
(Preclinical Safety Leadership Group)
Marriott Marquis Coronado

7:00 AM to 8:30 AM
Past Presidents' 5K Fun Run/Walk
Embarcadero Marina Park

7:00 AM to 4:30 PM
SOT Office
CC Room 15A

7:00 AM to 4:30 PM
Speaker Ready Room
(Scientific Session and ePoster Upload)
CC Room 11B

7:30 AM to 9:00 AM
American Association of Chinese in Toxicology/Korean Toxicologists Association in America Special Interest Groups Career Workshop 1: Current US Job Market for Toxicologists
CC Room 3

7:30 AM to 4:00 PM
Concession Stands
CC Ballroom 6 Foyer

7:30 AM to 9:00 AM
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*
CC Exhibit Hall

7:45 AM to 8:45 AM
Women in Toxicology Special Interest Group Executive Board Meeting
Marriott Marquis Malibu

8:00 AM to 5:00 PM
Guest/Spouse Hospitality Room
Marriott Marquis La Mesa

8:00 AM to 11:00 AM
Housing Desk
CC Lobby A

8:00 AM to 4:00 PM
Registration
CC Lobby A

8:00 AM to 8:50 AM
Translational Impact Award Lecture: How to Make a (Translational) Impact, *Lecturer: Jefferey Burgess, University of Arizona*
CC Ballroom 6B

8:30 AM to 2:00 PM
Concession Stands
CC Exhibit Hall

8:30 AM to 9:30 AM
Exhibitor-Hosted Session: Hepregen Corporation
CC Room 24B

8:30 AM to 9:30 AM
Exhibitor-Hosted Session: MPI Research
CC Room 22

8:30 AM to 9:30 AM
Exhibitor-Hosted Session: Toxikon Corporation
CC Room 24C

8:30 AM to 9:30 AM
Exhibitor-Hosted Session: WuXi AppTec
CC Room 24A

8:30 AM to 5:00 PM
Job Bank Center
CC Room 23A

8:30 AM to 4:30 PM
SOT Pavilion, Booth 526
CC Exhibit Hall

8:30 AM to 4:30 PM
ToxExpo Exhibits Open
CC Exhibit Hall

9:00 AM to 10:30 AM
Audit Committee Meeting
CC Room 13

9:00 AM to 10:00 AM
Complimentary Coffee
CC Exhibit Hall

9:00 AM to 12:00 Noon
Frontiers for Toxicology Session: Bugs to Drugs: The Microbiome in Human Health, Disease, and Therapeutics
CC Ballroom 6A

9:00 AM to 12:30 PM
Poster Sessions
CC Exhibit Hall

9:00 AM to 11:45 AM
Scientific Sessions
CC Upper Level

9:30 AM to 4:30 PM
Research Funding Information Room
CC Room 11A

10:00 AM to 11:00 AM
Exhibitor-Hosted Session: Algorithme Pharma
CC Room 24A

10:00 AM to 11:00 AM
Exhibitor-Hosted Session: Datacolor Inc.
CC Room 24B

10:00 AM to 11:00 AM
Exhibitor-Hosted Session: Huntingdon Life Sciences/ Harlan Laboratories
CC Room 22

10:00 AM to 11:00 AM
Exhibitor-Hosted Session: In Vitro ADMET Laboratories, LLC
CC Room 24C

10:30 AM to 12:30 PM
High School Poster Exposition
(Across from SOT Pavilion, Booth 526)
CC Exhibit Hall

11:00 AM to 12:00 Noon
ToxExpo Exhibit Hall Council Walk-Through
CC Exhibit Hall

11:30 AM to 12:30 PM
Exhibitor-Hosted Session: Cellular Dynamics International and ACEA Biosciences
CC Room 24B

11:30 AM to 12:30 PM
Exhibitor-Hosted Session: Data Sciences International
CC Room 22

11:30 AM to 12:30 PM
Exhibitor-Hosted Session: HTG Molecular Diagnostics
CC Room 24C

11:30 AM to 12:30 PM
Exhibitor-Hosted Session: Lovelace Respiratory Research Institute
CC Room 24A

11:45 AM to 1:30 PM
Toxicology Letters Editorial Board Meeting
Marriott Marquis Catalina

12:00 Noon to 1:30 PM
American Association of Chinese in Toxicology Special Interest Group Career Workshop 2: Opportunities for Toxicologists in China
CC Room 3

12:00 Noon to 2:00 PM
Association of Scientists of Indian Origin Special Interest Group Lunch and Learn
Marriott Marquis La Costa

12:00 Noon to 1:30 PM
Cardiovascular Toxicology Specialty Section Meeting/ Luncheon
CC Room 29A

12:00 Noon to 1:30 PM
Endowment Fund Board Meeting
CC Room 15B

12:00 Noon to 1:30 PM
Networking Time
CC

12:00 Noon to 2:00 PM
Northeast Regional Chapter Student Luncheon
CC Room 4

12:00 Noon to 1:30 PM
Occupational and Public Health Specialty Section Meeting/Luncheon
CC Room 25

12:00 Noon to 1:15 PM
Postdoctoral Assembly Luncheon *(Ticket Required)*
CC Ballroom 5

12:00 Noon to 2:00 PM
Regulatory and Safety Evaluation Specialty Section Brown Bag Luncheon: Global Regulatory Toxicology: First Stop EU
CC Room 2

12:00 Noon to 1:30 PM
Risk Assessment Specialty Section Mentoring Luncheon
CC Room 28A

12:15 PM to 1:25 PM
Graduate Education Subcommittee Meeting
CC Room 14A

12:30 PM to 1:00 PM
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*
CC Exhibit Hall

12:45 PM to 1:00 PM
Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing
CC Exhibit Hall

1:00 PM to 2:00 PM
Department of Defense Government Liaison Group
CC Room 14B

1:00 PM to 2:00 PM
Exhibitor-Hosted Session:
American Preclinical Services
CC Room 24A

1:00 PM to 2:00 PM
Exhibitor-Hosted Session: BioReliance
CC Room 22

1:00 PM to 2:00 PM
Exhibitor-Hosted Session: Charles River
CC Room 24C

1:00 PM to 2:00 PM
Exhibitor-Hosted Session: ICF International
CC Room 24B

1:00 PM to 4:30 PM
Poster Sessions
CC Exhibit Hall

1:30 PM to 4:15 PM
Scientific Sessions
CC Upper Level

1:30 PM to 2:00 PM
Undergraduate Education Subcommittee Meeting
CC Room 14A

2:00 PM to 5:00 PM
TRI-Service Toxicology Consortium
Marriott Marquis Coronado

2:15 PM to 3:30 PM
Undergraduate Educator Network Meeting
CC Room 14A

2:30 PM to 3:30 PM
Complimentary Lemonade and Popcorn
CC Exhibit Hall

2:30 PM to 3:30 PM
Exhibitor-Hosted Session: Battelle
CC Room 22

2:30 PM to 3:30 PM
Exhibitor-Hosted Session: CiToxLAB and Ellegaard Göttingen Minipigs
CC Room 24B

2:30 PM to 3:30 PM
Exhibitor-Hosted Session: InSphero Inc.
CC Room 24C

2:30 PM to 3:30 PM
Exhibitor-Hosted Session: Stemina Biomarker Discovery, Inc.
CC Room 24A

4:00 PM to 5:00 PM
Exhibitor-Hosted Session: Alberta Centre for Toxicology and The Hamner Institutes
CC Room 24A

4:00 PM to 5:00 PM
Exhibitor-Hosted Session: APTUIT LLC
CC Room 22

4:00 PM to 5:00 PM
Exhibitor-Hosted Session: PointCross LifeSciences, Inc
CC Room 24B

4:00 PM to 5:00 PM
Exhibitor-Hosted Session: Takara Bio Europe AB (formerly Cellartis)
CC Room 24C

4:00 PM to 5:00 PM
Undergraduate Student Meeting *(All Undergraduate Meeting Registrants Invited)*
CC Room 14A

4:30 PM to 6:00 PM
SOT Annual Business Meeting
(All SOT Members Invited)
CC Ballroom 6A

4:45 PM to 6:00 PM
ToxExpo 2016 Exhibit Space Selection Process
CC Room 22

5:00 PM to 7:00 PM
Lone Star and South Central Regional Chapters Mixer
Dussini's Loft Bar

6:00 PM to 7:30 PM
Drug Discovery Toxicology Specialty Section Meeting/Reception
CC Room 27

6:00 PM to 7:30 PM
Food Safety Specialty Section Meeting/Reception
CC Room 31C

6:00 PM to 7:30 PM
Immunotoxicology Specialty Section Meeting/Reception
CC Room 29A

6:00 PM to 7:30 PM
Medical Device and Combination Product Specialty Section Meeting/Reception
CC Room 33A

6:00 PM to 7:30 PM
Metals Specialty Section Meeting/Reception
CC Room 30E

6:00 PM to 9:00 PM
Mountain West and Southern California Regional Chapters Mixer
Museum of Photographic Arts

6:00 PM to 7:30 PM
Nanotoxicology Specialty Section Meeting/Reception
CC Room 30A

6:00 PM to 7:30 PM
Neurotoxicology Specialty Section Meeting/Reception
CC Room 25

Continued on next page

Daily Pocket Calendar (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder.
(Calendar as of February 6; private events are not listed.)

Tuesday (Continued) — March 24

6:00 PM to 7:30 PM
Ocular Toxicology Specialty Section Meeting/Reception
CC Room 32

6:00 PM to 7:30 PM
Risk Assessment Specialty Section Meeting/Reception
CC Room 28

6:30 PM to 8:30 PM
Chemico-Biological Interactions
Editorial Board Meeting
Marriott Marquis San Diego Ballroom C

6:30 PM to 9:30 PM
Hispanic Organization of Toxicologists
Special Interest Group Reception
and Awards Ceremony
Cafe Sevilla

6:30 PM to 8:00 PM
University of Cincinnati Kettering Alumni Meeting
Marriott Marquis Carlsbad

7:00 PM to 10:00 PM
University of Rochester Toxicology Program Annual
Alumni Reception
Marriott Marquis Catalina

7:30 PM to 10:30 PM
Northern California Regional Chapter Reception
Yard House

7:30 PM to 9:00 PM
Tox ShowDown *(All Attendees Welcome)*
Marriott Marquis Marina Ballroom D

8:00 PM to 11:00 PM
Toxicology Excellence for Risk Assessment's
Ice Cream Social
Marriott Marquis Coronado

9:00 PM to 11:00 PM
Rutgers University Joint Graduate Program Toxicology
Annual Dessert Reception
Marriott Marquis Rancho Santa Fe

Scientific Program Overview by Day & Time

Tuesday — March 24

8:00 AM to 8:50 AM

TRANSLATIONAL IMPACT AWARD LECTURE

How to Make a (Translational) Impact
Lecturer: Jefferey Burgess, University of Arizona (Ballroom 6B)

9:00 AM to 12:00 Noon

FRONTIERS FOR TOXICOLOGY SESSION

Bugs to Drugs: The Microbiome in Human Health, Disease, and Therapeutics (Ballroom 6A)

9:00 AM to 11:45 AM

SYMPOSIUM SESSIONS

- Alternative Models to Study Classical Toxicants: A Mechanistic View (Ballroom 6D)
- Immune Responses to Different Classes of Inhaled Particulates: Unique vs. Shared Responses and Mechanisms (Ballroom 6B)
- Local and Systemic Toxicity from Cobalt and Chromium-Containing Hip Prostheses (Ballroom 6C)

WORKSHOP SESSIONS

- Considering Pharmacokinetics As the Mechanistic Basis to Link Chemical Exposures to Adverse Outcome Pathways (Room 7)
- Regulatory Neurodevelopmental Testing: New Guiding Principles for Harmonization of Data Collection and Analysis (Ballroom 6F)
- The EDSP Screening Battery: A Work in Progress for Prioritizing Compounds for Quantitative Risk Assessment (Room 1)
- Understanding and Communicating Uncertainty in Hazard Assessment and Dose Response (Ballroom 6E)

9:00 AM to 12:30 PM

POSTER SESSIONS

(Exhibit Hall—*See Poster Board Surface Map on pages 124–125*)

- Alternatives to Mammalian Models III
- Biomarkers
- Carcinogenesis I
- Educational Activities and Outreach
- Food Safety, *In Vitro*
- Gene Regulation and Signal Transduction
- Genetic Toxicology II
- Immunotoxicity I
- *In Vitro* Cardiovascular Safety
- Juvenile Toxicity
- Neurotoxicology, Metals—Lead and Others
- Neurotoxicology, Metals—Manganese
- Neurotoxicology, Metals—Mercury
- Oxidative Injury and Redox Biology
- Pharmaceutical Safety: Models and Methods
- Systems Biology and Toxicology

9:30 AM to 4:30 PM

RESEARCH FUNDING SESSION

Research Funding Information Room (Room 11A)

12:00 Noon to 1:30 PM

NETWORKING TIME

1:00 PM to 4:30 PM

POSTER SESSIONS

(Exhibit Hall—*See Poster Board Surface Map on pages 124–125*)

- Cigarettes, E-Cigarettes, and Hookah
- Clinical and Translational Toxicology
- Computational Toxicology and Data Integration I
- Endocrine Toxicology
- Food Safety, *In Vivo*
- Immunotoxicity II
- Inhalants and Cardiopulmonary
- Nanotoxicology, Carbon-Based Nanomaterials
- Neurotoxicology, Neurodegenerative Disease—Alzheimer's Disease and Others
- Neurotoxicology, Neurodegenerative Disease—Parkinson's Disease
- Particulate Matter
- Reproductive Toxicology I
- Reproductive Toxicology II
- Skin
- Toxicity of Chemical Mixtures

1:30 PM to 4:15 PM

SYMPOSIUM SESSIONS

- Incorporating *In Vitro* Pharmacokinetic Data and Tools into Toxicity Testing and Risk Assessments: State of the Science (Ballroom 6B)
- New Developments in the Management of Nerve Agent Poisoning (Ballroom 6D)
- Where the Metal Meets the Bone… (Ballroom 6E)

WORKSHOP SESSIONS

- An Ounce of Prevention Is Worth a Pound of Cure: How 21st Century Toxicology Can Transform Product Safety Assessments and Design of Lower-Toxicity Products (Room 7)
- Current Understanding of Immune-Mediated Adverse Drug Reactions (Ballroom 6F)
- *In Vitro* Microphysiological Systems—Developing Confidence in Predictive Ability (Ballroom 6C)

PLATFORM SESSIONS

- Investigating Mode of Action in Chemical Carcinogenesis (Room 8)
- Prudent Animal Usage in Pharmaceutical Safety Testing (Room 1)

4:30 PM to 6:00 PM

SPECIAL MEMBER SESSION

SOT Annual Business Meeting (Ballroom 6A)

Daily Pocket Calendar (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder.
(Calendar as of February 6; private events are not listed.)

Wednesday — March 25

Events are listed alphabetically by the event start time.

Most events will be held in the San Diego Convention Center unless otherwise noted. **Events at the San Diego Convention Center are noted as CC.**

6:30 AM to 8:00 AM
Academy of Toxicological Sciences
Board of Directors Meeting
Marriott Marquis Solana

7:00 AM to 8:30 AM
American Board of Toxicology Breakfast on Global Toxicology Professional Certification: Why ABT Certification Is Important?
Buster's Beach House

7:00 AM to 8:00 PM
Coat/Luggage Check
CC Lobby C

7:00 AM to 8:30 AM
Committee on Diversity Initiatives Meeting
CC Room 14B

7:00 AM to 8:30 AM
Graduate Student Leadership Committee Executive Board Meeting
CC Room 14A

7:00 AM to 4:30 PM
SOT Office
CC Room 15A

7:00 AM to 4:30 PM
Speaker Ready Room
(Scientific Session and ePoster Upload)
CC Room 11B

7:00 AM to 8:00 AM
Special Interest Group Collaboration Group Global Hot Topic Event—Global Drug Development and Natural Products: End of an Era or an Endless Frontier?
CC Room 2

7:00 AM to 8:15 AM
ToxExpo Liaison Working Group
CC Room 13

7:00 AM to 7:45 AM
Toxic Substances Control Act Task Force Update: Strategy, Issues, and Outreach
CC Room 8

7:30 AM to 4:00 PM
Concession Stands
CC Ballroom 6 Foyer

7:30 AM to 8:30 AM
Contemporary Concepts in Toxicology Conference Committee Meeting
CC Room 15B

7:30 AM to 9:00 AM
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*
CC Exhibit Hall

8:00 AM to 6:00 PM
@SOT Center—Internet Access
CC Lobby C

8:00 AM to 5:00 PM
Guest/Spouse Hospitality Room
Marriott Marquis La Mesa

8:00 AM to 9:00 AM
Keynote Medical Research Council (MRC) Lecture: Environmental Influences on the Immune System via the Aryl Hydrocarbon Receptor,
Lecturer: Brigitta Stockinger, MRC National Institute for Medical Research
CC Ballroom 6A

8:00 AM to 4:00 PM
Registration
CC Lobby A

8:30 AM to 2:00 PM
Concession Stands
CC Exhibit Hall

8:30 AM to 5:00 PM
Job Bank Center
CC Room 23A

8:30 AM to 4:30 PM
SOT Pavilion, Booth 526
CC Exhibit Hall

8:30 AM to 4:30 PM
ToxExpo Exhibits Open
CC Exhibit Hall

9:00 AM to 10:00 AM
Complimentary Coffee
CC Exhibit Hall

9:00 AM to 12:30 PM
Poster Sessions
CC Exhibit Hall

9:00 AM to 11:45 AM
Scientific Sessions
CC Upper Level

9:15 AM to 10:15 AM
Exhibitor-Hosted Session: Charles River
CC Room 24C

9:15 AM to 10:15 AM
Exhibitor-Hosted Session: Covance
CC Room 24B

9:15 AM to 10:15 AM
Exhibitor-Hosted Session: MPI Research
CC Room 24A

9:30 AM to 4:30 PM
Research Funding Information Room
CC Room 11A

9:30 AM to 10:30 AM
Trainee Discussion with Medical Research Council (MRC) Lecturer: Dr. Stockinger *(Ticket Required; SOT Student and Postdoctoral Members Only, Limited Seating)*
CC Room 5B

10:45 AM to 11:45 AM
Exhibitor-Hosted Session: Hµrel Corporation
CC Room 24B

10:45 AM to 11:45 AM
Exhibitor-Hosted Session: Organovo
CC Room 24A

10:45 AM to 11:45 AM
Exhibitor-Hosted Session: Toxikon Corporation
CC Room 24C

11:30 AM to 12:30 PM
Finance Committee Meeting
CC Room 13

11:30 AM to 1:00 PM
Membership Committee Meeting
CC Room 15B

11:30 AM to 1:00 PM
Postdoctoral Assembly Executive Board Meeting
CC Room 33B

11:45 AM to 1:30 PM
Toxicology Editorial Board Meeting
Marriott Marquis Coronado

12:00 Noon to 2:00 PM
Board of Publications Meeting
CC Room 14B

12:00 Noon to 1:30 PM
Ethical, Legal, and Social Issues Specialty Section Meeting/Luncheon
CC Room 31A

12:00 Noon to 1:30 PM
In Vitro and Alternative Methods Specialty Section Meeting/Luncheon
CC Room 28A

12:00 Noon to 1:30 PM
Regional Chapter Collaboration and Communications Committee (RC4) Meeting
CC Room 12

12:00 Noon to 1:20 PM
Scientific Sessions
CC Upper Level

12:15 PM to 1:15 PM
Exhibitor-Hosted Session: EMD Millipore
CC Room 24A

12:15 PM to 1:15 PM
Exhibitor-Hosted Session: Huntingdon Life Sciences/ Harlan Laboratories
CC Room 24C

12:30 PM to 12:45 PM
Announcement of Exhibitor provided Raffle Prizes
CC Exhibit Hall

12:30 PM to 1:20 PM
Distinguished Toxicology Scholar Award Lecture: Allergic Sensitization: Defining Molecular Mechanisms and Characterizing Hazard and Risk,
Lecturer: Ian Kimber, University of Manchester
CC Ballroom 6B

12:30 PM to 1:00 PM
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*
CC Exhibit Hall

12:45 PM to 1:00 PM
Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing
CC Exhibit Hall

1:00 PM to 4:30 PM
Poster Sessions
CC Exhibit Hall

1:30 PM to 4:15 PM
Scientific Sessions
CC Upper Level

1:45 PM to 2:45 PM
Exhibitor-Hosted Session: Agilent Technologies
CC Room 24A

1:45 PM to 2:45 PM
Exhibitor-Hosted Session: BioReliance
CC Room 24B

2:30 PM to 3:30 PM
Complimentary Lemonade and Popcorn
CC Exhibit Hall

4:30 PM to 7:00 PM
EPA CSS STAR Center Awards Kick Off Session: Organotypic Culture Models for Predictive Toxicology Center
CC Room 5A

4:30 PM to 5:50 PM
Scientific Sessions
CC *(See Session Index or Mobile Event App for Locations)*

4:30 PM to 11:00 PM
ToxExpo Tear Down
CC Exhibit Hall

4:30 PM to 6:30 PM
Women in Toxicology Special Interest Group Reception
Marriott Marquis Marina Ballroom D

5:00 PM to 6:00 PM
Toxicology History Association
Marriott Marquis Newport Beach

6:00 PM to 7:30 PM
Biological Modeling Specialty Section Meeting/Reception
CC Room 30E

6:00 PM to 7:30 PM
Biotechnology Specialty Section Meeting/Reception
CC Room 31C

6:00 PM to 7:30 PM
Clinical and Translational Toxicology Specialty Section Meeting/Reception
CC Room 31A

6:00 PM to 7:30 PM
Dermal Toxicology Specialty Section Meeting/ Reception
CC Room 30C

6:00 PM to 7:30 PM
Mechanisms Specialty Section Meeting/Reception
CC Room 29

6:00 PM to 7:30 PM
Reproductive and Developmental Toxicology Specialty Section Meeting/Reception
CC Room 28A

6:00 PM to 7:30 PM
Stem Cells Specialty Section Meeting/Reception
CC Room 30A

7:00 PM to 8:30 PM
President's Reception *(By Invitation Only)*
Marriott Marquis San Diego Ballroom A

8:30 PM to 10:00 PM
Academy of Toxicological Sciences Reception *(Ticket Required)*
Marriott Marquis San Diego Ballroom C

Daily Pocket Calendar (Continued)

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder.
(Calendar as of February 6; private events are not listed.)

Scientific Program Overview by Day & Time

Wednesday — March 25

8:00 AM to 9:00 AM

KEYNOTE MEDICAL RESEARCH COUNCIL (MRC) LECTURE

Environmental Influences on the Immune System via the Aryl Hydrocarbon Receptor
Lecturer: Brigitta Stockinger, MRC National Institute for Medical Research (Ballroom 6A)

9:00 AM to 11:45 AM

SYMPOSIUM SESSION

- Role of the Gut Microbiome in the Host Response to Xenobiotics (Ballroom 6B)

WORKSHOP SESSIONS

- An Experiment in Collective Wisdom Utilizing Real-Time Audience Input: Weight-of-Evidence Assessment for Chemical-Specific Modes of Action Utilizing Two Case Studies (Ballroom 6F)
- Application of High-Throughput *In Vitro* Assays in Assessing Small Molecule Safety (Room 7)
- Deciphering Clinical and Experimental Retinal Toxicology: An Eye on the Present and Future (Ballroom 6E)
- Evaluating Similarity across Related Complex Mixtures: The Challenge of Herbal Supplements (Ballroom 6C)

REGIONAL INTEREST SESSION

- Some Like It Hot: Impacts of Wildfires on Human Health (Ballroom 6D)

PLATFORM SESSIONS

- Applications of ToxCast/Tox21 Data: Confidence and Predictivity (Room 1)
- Emerging Concepts in Genotoxicity Assessment (Room 8)

9:00 AM to 12:30 PM

POSTER SESSIONS

(Exhibit Hall—*See Poster Board Surface Map on pages 126–127*)

- Animal Models of Disease
- Animal Models: Measurements, Validations, and Historical Data
- Animal Models: Methods
- Cardiovascular Toxicity and Hemodynamics
- Developmental Neurotoxicology
- Developmental Toxicology I
- Developmental Toxicology II
- Fetal Basis of Adult Disease
- General and Developmental Neurotoxicology of Therapeutic Agents and Drugs of Abuse
- Medical Devices: Risk Assessment and Test Methods
- Metals—As, Cd, Hg
- Nanotoxicology, *In Vitro*
- Regulation/Policy
- Risk Assessment III

9:30 AM to 4:30 PM

RESEARCH FUNDING SESSION

Research Funding Information Room (Room 11A)

12:00 Noon to 1:20 PM

ROUNDTABLE SESSIONS

- Should Respiratory Sensitizers Be Listed As Substances of Very High Concern (SVHC) under REACH? (Ballroom 6E)
- Will Generally Recognized As Safe (GRAS) Become an Endangered Species? (Ballroom 6F)

INFORMATIONAL SESSION

- Risk Communication and Management in the Era of Social Media and the Internet: Serving Society's Needs with Accurate Information (Room 1)

EDUCATION-CAREER DEVELOPMENT SESSION

- What Toxicologist Do You Wanna Be? The Role of Toxicologists across Diverse Organizations (Room 7)

12:30 PM to 1:20 PM

DISTINGUISHED TOXICOLOGY SCHOLAR AWARD LECTURE

Allergic Sensitization: Defining Molecular Mechanisms and Characterizing Hazard and Risk
Lecturer: Ian Kimber, University of Manchester (Ballroom 6B)

1:00 PM to 4:30 PM

POSTER SESSIONS

(Exhibit Hall—*See Poster Board Surface Map on pages 126–127*)

- Bioinformatics
- Carcinogenesis II
- Chemical and Biological Weapons
- Computational Toxicology and Data Integration II
- Disposition and Pharmacokinetics: Drugs, Chemicals, and Transporters
- Epigenetics
- Kidney
- Nanotoxicology, *In Vivo*
- Neurotoxicology, General
- Neurotoxicology, Pesticides
- Pesticides
- Receptors
- RNA-Based Biomarkers

1:30 PM to 4:15 PM

SYMPOSIUM SESSIONS

- Adult Neurogenesis in Chemical-Induced Neurotoxicities: A New Frontier in Toxicological Mechanistic Investigations, Biomarker Research, and Therapeutic Targeting (Ballroom 6B)
- Advanced Approaches for Quantitative Risk Assessment Using Human Data with Applications across Disciplines (Ballroom 6A)

WORKSHOP SESSIONS

- Genomics of Nonrodent Mammalian Species and Impacts on Nonclinical Safety Evaluation of Pharmaceuticals and Clinical Translation (Ballroom 6D)
- Increasing Interest and Engagement in Toxicology and STEM Disciplines: The Multiple Modalities and Impact of Research and Internship Opportunities for High School and Undergraduate Students (Room 7)
- Integrating Gene Expression Profiling into High-Throughput Toxicity Testing (Ballroom 6C)
- Strengths and Weaknesses of Mouse Models in Studies of Immunological Effects of Drugs and Chemicals (Ballroom 6E)
- The Carcinogenicity of Outdoor Air Pollution: A Review of the IARC Evaluation of Outdoor Air Pollution and Particulate Matter in Polluted Air As Group 1 (Known) Human Lung Carcinogens and Possible Bladder Carcinogens (Room 1)
- Windfall or Pitfall: Is There a Need for Modification of Developmental and Reproductive Toxicology Studies When Endocrine Disruption Is the Mode of Action? (Ballroom 6F)

PLATFORM SESSION

- Inflammation in Disease Due to Environmental Exposures (Room 8)

4:30 PM to 5:50 PM

ROUNDTABLE SESSIONS

- Epigenetics and Chemical Safety Assessment: Are We Ready? (Ballroom 6D)
- The Future of Carcinogenicity Testing (Ballroom 6E)

EDUCATION-CAREER DEVELOPMENT SESSION

- Crafting High-Impact Manuscripts: The Process from Hypothesis through Review and Publication (Room 7)

ePosters—A Convenient Way to View Posters

Did you miss the opportunity to view a poster of interest?
In addition to attending Poster Sessions, you can view some posters through the SOT Mobile Event App.

Search and view the ePosters on your mobile device using the ePoster feature in the SOT Mobile Event App—before, during, and after the meeting (until May 11, 2015).

If you are a poster presenter, please take a few minutes to upload your PowerPoint or PDF poster through an Internet-based, user-friendly presentation system prior to the meeting at **https://cms.psav.com/sot2015** or during the meeting in the Speaker Ready Room at the San Diego Convention Center, Room 11B.

Daily Pocket Calendar (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.

For your convenience, please tear out and carry with you. Easily folds to nest within your badge holder.
(Calendar as of February 6; private events are not listed.)

Thursday — March 26

Events are listed alphabetically by the event start time.

Most events will be held in the San Diego Convention Center unless otherwise noted. **Events at the San Diego Convention Center are noted as CC.**

7:00 AM to 12:00 Noon
Coat/Luggage Check
CC Lobby C

7:00 AM to 8:30 AM
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*
CC Sails Pavilion

7:00 AM to 12:00 Noon
SOT Office
CC Room 15A

7:00 AM to 11:30 AM
Speaker Ready Room
(Scientific Session and ePoster Upload)
CC Room 11B

8:00 AM to 12:00 Noon
@SOT Center—Internet Access
CC Lobby C

8:00 AM to 12:00 Noon
Concession Stands
CC Ballroom 6 Foyer

8:00 AM to 10:00 AM
Guest/Spouse Hospitality Room
Marriott Marquis La Mesa

8:00 AM to 12:00 Noon
Registration
CC Lobby A

8:00 AM to 8:45 AM
Strategic Plan 2015–2018 Discussion Breakfast with Council
CC Room 3

8:30 AM to 12:00 Noon
Late-Breaking Poster Session
CC Sails Pavilion

9:00 AM to 11:45 AM
Scientific Sessions
CC Upper Level

12:00 Noon to 1:30 PM
Scientific Program Committee Meeting
CC Room 14A

12:30 PM to 4:00 PM
Satellite Meeting: Updates on 21st Century Toxicology Activities and Related Efforts: Invited Presentations and Open Microphone
Manchester Grand Hyatt Hillcrest

1:30 PM to 4:30 PM
Communicating Science Workshop
(By Invitation Only)
CC Room 8

Scientific Program Overview by Day & Time

Thursday — March 26

8:30 AM to 12:00 Noon

POSTER SESSION
(Sails Pavilion—*See Poster Board Surface Map on page 128*)
- Late-Breaking Poster Session

9:00 AM to 11:45 AM

SYMPOSIUM SESSIONS
- Chromatin Structure, Genomics, and Transcriptional Responses to Environmental Insults (Room 1)
- Comprehensive Analysis of Nano Silver Toxicity Profiles: Known, Unknown, and Surprises! (Ballroom 6E)
- Epigenetics, Developmental Programming, and Immune Function: Where Do We Go from Here? (Ballroom 6C)
- Exposure Assessment in the 21st Century: Needs and Challenges Facing High-Throughput Exposure Modeling (Ballroom 6D)

WORKSHOP SESSIONS
- Microphysiological Models of the Developing Nervous System: Biologically Driven Assembly Inspired by Embryology and Translated to Human Developmental Toxicology (Ballroom 6F)
- Painting the Future of Repeat-Dose Systemic Toxicity Testing: Progress from the European SEURAT-1 Project (Room 7)

PLATFORM SESSION
- POPs—*In Vitro, In Vivo,* and Computational Modeling Studies (Room 8)

The Global Impacts of SOT

To increase the impact of toxicology in addressing global health and environmental issues, SOT developed a number of initiatives to enrich toxicology resources for scientists throughout the world, especially in developing countries.

SOT Global Initiatives include:

Discounted SOT Membership for Scientists from Developing Countries*—Dues of $50, which includes free membership in one Special Interest Group and one Specialty Section, and many other benefits. Membership dues assistance is available for students and postdocs.

Free Continuing Education (CEd-Tox)—Online courses are available to scientists from developing countries.* Some courses offer English transcriptions with video start-stop capability.

Global Senior Scholar Exchange Program (GSSEP)—The program funds exchange visits between two Senior Scholar toxicologists from developing countries and their hosts who work in established toxicology programs in academia, government, and industry.

International ToxScholar Outreach Grants—SOT senior toxicologists visit campuses in developing countries through support from this grant.

Global Initiatives Funds—A total of $20,000 each year supports collaborative projects between SOT Regional Chapters (RC), Specialty Sections (SS), Special Interest Groups (SIG), SOT Committees, and other international organizations. Bring your ideas!

Global Travel Fellowships/Awards—Senior scientists from countries where toxicology is underrepresented receive travel funding to attend the SOT Annual Meeting. Graduate Student Travel Awards also are available for funding travel to the SOT Annual Meeting.

For more information on SOT Global Initiatives, go to **www.toxicology.org/ms/globalfunds.asp**.
Or visit the SOT Poster in the Global Gallery

* 2014 World Bank list of countries with GNI <$8,000.

Global Gallery of Toxicology

A Worldwide Vision for Toxicology

Toxicology-related scientific societies from around the world are invited to display a poster showcasing their key information, accomplishments, strategic initiatives, and activities.

Attendees interested in collaboration and discussion are invited to the Global Gallery Monday, March 23, 11:45 am–12:15 pm, for a representative-attended poster session with all Global Gallery participants.

In addition to the 30 2014 Global Gallery participating societies, new participants for the 2015 Annual Meeting include:
• Bulgarian Society of Toxicology • Chinese Society of Toxicology • Estonian Society of Toxicology • French Society of Toxicology • • International Society for the Study of Xenobiotics • International Society of Exposure Science • • Israeli Society of Toxicology • Japanese Society of Immunotoxicology • Korean Society of Toxicology • • Scientific Liaison Coalition • Society for Risk Analysis • Swedish Society of Toxicology •

Posters will be displayed prominently in the ToxExpo Exhibit Hall.

Please see details on page 50.

Schedule by Event Name

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner. *(Schedule as of February 6; private events are not listed.)*

Event:	Date:	Time:	Location:	Room:
@SOT Center—Internet Access	Saturday, Mar 21	4:00 PM to 7:00 PM	Convention Center	Lobby C
@SOT Center—Internet Access	Sunday, Mar 22	7:00 AM to 6:00 PM	Convention Center	Lobby C
@SOT Center—Internet Access	Monday, Mar 23	7:00 AM to 6:00 PM	Convention Center	Lobby C
@SOT Center—Internet Access	Tuesday, Mar 24	7:00 AM to 6:00 PM	Convention Center	Lobby C
@SOT Center—Internet Access	Wednesday, Mar 25	8:00 AM to 6:00 PM	Convention Center	Lobby C
@SOT Center—Internet Access	Thursday, Mar 26	8:00 AM to 12:00 Noon	Convention Center	Lobby C
25-Year (Or More) Member Reception *(By Invitation Only)*	Sunday, Mar 22	7:00 PM to 8:00 PM	Convention Center	Room 5
A				
Academy of Toxicological Sciences Board of Directors Meeting	Wednesday, Mar 25	6:30 AM to 8:00 AM	Marriott Marquis	Solana
Academy of Toxicological Sciences Reception *(Ticket Required)*	Wednesday, Mar 25	8:30 PM to 10:00 PM	Marriott Marquis	San Diego Ballroom C
Allegheny-Erie and Michigan Regional Chapters Joint Reception	Monday, Mar 23	5:00 PM to 6:30 PM	Marriott Marquis	Balboa
Alternative Models Developing in KIT for Predictive Toxicology	Monday, Mar 23	1:45 PM to 2:45 PM	Convention Center	Room 22
American Association of Chinese in Toxicology Special Interest Group Reception and Distinguished Chinese Toxicologist Lectureship Presentation	Monday, Mar 23	5:00 PM to 8:00 PM	Marriott Marquis	San Diego Ballroom B
American Association of Chinese in Toxicology/Korean Toxicologists Association in America Special Interest Groups Career Workshop 1: Current US Job Market for Toxicologists	Tuesday, Mar 24	7:30 AM to 9:00 AM	Convention Center	Room 3
American Association of Chinese in Toxicology Special Interest Group Career Workshop 2: Opportunities for Toxicologists in China	Tuesday, Mar 24	12:00 Noon to 1:30 PM	Convention Center	Room 3
American Board of Toxicology Board of Directors Meeting	Saturday, Mar 21	12:00 Noon to 6:00 PM	Marriott Marquis	Encinitas
American Board of Toxicology Breakfast on Global Toxicology Professional Certification: Why ABT Certification Is Important?	Wednesday, Mar 25	7:00 AM to 8:30 AM	Buster's Beach House	
American Board of Toxicology Open Mixer Meeting	Monday, Mar 23	4:30 PM to 6:00 PM	Marriott Marquis	Rancho Santa Fe
Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing	Monday, Mar 23	12:45 PM to 1:00 PM	Convention Center	Exhibit Hall
Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing	Tuesday, Mar 24	12:45 PM to 1:00 PM	Convention Center	Exhibit Hall
Announcement of Exhibitor provided Raffle Prizes	Wednesday, Mar 25	12:30 PM to 12:45 PM	Convention Center	Exhibit Hall
Announcement of Daily Winner of Diamond Level Supporter Exhibitor Drawing	Wednesday, Mar 25	12:45 PM to 1:00 PM	Convention Center	Exhibit Hall
Arizona Night	Sunday, Mar 22	7:30 PM to 10:30 PM	Marriott Marquis	Torrey Pines
Association of Scientists of Indian Origin Special Interest Group Lunch and Learn	Tuesday, Mar 24	12:00 Noon to 2:00 PM	Marriott Marquis	La Costa
Association of Scientists of Indian Origin Special Interest Group Reception	Monday, Mar 23	7:00 PM to 9:00 PM	Marriott Marquis	Temecula
Audit Committee Meeting	Tuesday, Mar 24	9:00 AM to 10:30 AM	Convention Center	Room 13
Awards Ceremony *(All Attendees Welcome)*	Sunday, Mar 22	5:15 PM to 6:30 PM	Convention Center	Ballroom 6A
Awards Ceremony Music—Performed by Amy Lynn Kanner *(All Attendees Welcome)*	Sunday, Mar 22	4:45 PM to 5:15 PM	Convention Center	Ballroom 6A
Awards Committee Meeting	Tuesday, Mar 24	7:00 AM to 8:00 AM	Convention Center	Room 14B
Awards Recipients Photographed *(By Invitation Only)*	Sunday, Mar 22	4:00 PM to 5:00 PM	Convention Center	Room 5
B				
Biological Modeling Specialty Section Meeting/Reception	Wednesday, Mar 25	6:00 PM to 7:30 PM	Convention Center	Room 30E
Biotechnology Specialty Section Meeting/Reception	Wednesday, Mar 25	6:00 PM to 7:30 PM	Convention Center	Room 31C
Board of Publications Meeting	Wednesday, Mar 25	12:00 Noon to 2:00 PM	Convention Center	Room 14B
C				
Calvert Labs Consultant Appreciation Breakfast	Tuesday, Mar 24	7:00 AM to 8:30 AM	Marriott Marquis	Cardiff
Carcinogenesis Specialty Section Meeting/Reception	Monday, Mar 23	6:00 PM to 7:30 PM	Convention Center	Room 31C
Carcinogenesis Specialty Section Officers Meeting	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 25

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner. *(Schedule as of February 6; private events are not listed.)*

Event:	Date:	Time:	Location:	Room:
Cardiovascular Toxicology Specialty Section Meeting/Luncheon	Tuesday, Mar 24	12:00 Noon to 1:30 PM	Convention Center	Room 29A
Career Resource and Development Committee Meeting	Sunday, Mar 22	7:30 AM to 9:30 AM	Convention Center	Room 12
Committee on Diversity Initiatives Reunion *(Invited: All Current and Past Participants and Volunteers in the Undergraduate Education Program)*	Saturday, Mar 21	7:30 PM to 8:30 PM	Convention Center	Room 33B
Central States Regional Chapter Meeting/Breakfast	Monday, Mar 23	7:00 AM to 8:00 AM	Marriott Gaslamp	Soleil @ K Restaurant
Chemico-Biological Interactions Editorial Board Meeting	Tuesday, Mar 24	6:30 PM to 8:30 PM	Marriott Marquis	San Diego Ballroom C
Clinical and Translational Toxicology Specialty Section Meeting/Reception	Wednesday, Mar 25	6:00 PM to 7:30 PM	Convention Center	Room 31A
Clinical and Translational Toxicology Specialty Section Officers Meeting	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 25
CME Task Force Meeting	Monday, Mar 23	11:00 AM to 12:00 Noon	Convention Center	Room 12
Coat/Luggage Check	Sunday, Mar 22	8:00 AM to 8:00 PM	Convention Center	Lobby C
Coat/Luggage Check	Monday, Mar 23	7:00 AM to 8:00 PM	Convention Center	Lobby C
Coat/Luggage Check	Tuesday, Mar 24	7:00 AM to 8:00 PM	Convention Center	Lobby C
Coat/Luggage Check	Wednesday, Mar 25	7:00 AM to 8:00 PM	Convention Center	Lobby C
Coat/Luggage Check	Thursday, Mar 26	7:00 AM to 12:00 Noon	Convention Center	Lobby C
Committee on Diversity Initiatives Meeting	Wednesday, Mar 25	7:00 AM to 8:30 AM	Convention Center	Room 14B
Communicating Science Workshop *(By Invitation Only)*	Thursday, Mar 26	1:30 PM to 4:30 PM	Convention Center	Room 8
Comparative and Veterinary Specialty Section Meeting/Luncheon	Monday, Mar 23	12:00 Noon to 1:30 PM	Convention Center	Room 3
Complimentary Coffee	Monday, Mar 23	9:00 AM to 10:00 AM	Convention Center	Exhibit Hall
Complimentary Coffee	Tuesday, Mar 24	9:00 AM to 10:00 AM	Convention Center	Exhibit Hall
Complimentary Coffee	Wednesday, Mar 25	9:00 AM to 10:00 AM	Convention Center	Exhibit Hall
Complimentary Lemonade and Popcorn	Monday, Mar 23	2:30 PM to 3:30 PM	Convention Center	Exhibit Hall
Complimentary Lemonade and Popcorn	Tuesday, Mar 24	2:30 PM to 3:30 PM	Convention Center	Exhibit Hall
Complimentary Lemonade and Popcorn	Wednesday, Mar 25	2:30 PM to 3:30 PM	Convention Center	Exhibit Hall
Concession Stands	Sunday, Mar 22	7:00 AM to 4:00 PM	Convention Center	Lobby A
Concession Stands	Monday, Mar 23	7:00 AM to 4:00 PM	Convention Center	Ballroom 6 Foyer
Concession Stands	Monday, Mar 23	8:30 AM to 2:00 PM	Convention Center	Exhibit Hall
Concession Stands	Tuesday, Mar 24	7:30 AM to 4:00 PM	Convention Center	Ballroom 6 Foyer
Concession Stands	Tuesday, Mar 24	8:30 AM to 2:00 PM	Convention Center	Exhibit Hall
Concession Stands	Wednesday, Mar 25	7:30 AM to 4:00 PM	Convention Center	Ballroom 6 Foyer
Concession Stands	Wednesday, Mar 25	8:30 AM to 2:00 PM	Convention Center	Exhibit Hall
Concession Stands	Thursday, Mar 26	8:00 AM to 12:00 Noon	Convention Center	Ballroom 6 Foyer
Contemporary Concepts in Toxicology Conference Committee Meeting	Wednesday, Mar 25	7:30 AM to 8:30 AM	Convention Center	Room 15B
Continuing Education Committee Walk-Through	Saturday, Mar 21	4:30 PM to 5:15 PM	Convention Center	Ballroom 6B
Continuing Education Luncheon for Speakers, Committee, and Student Volunteers *(By Invitation Only)*	Sunday, Mar 22	11:45 AM to 1:15 PM	Convention Center	Room 4
Continuing Education Sunrise Mini-Course *(Ticket Required)*	Sunday, Mar 22	7:00 AM to 7:45 AM	Convention Center	Ballroom 6B
Continuing Education Morning Courses *(Ticket Required)*	Sunday, Mar 22	8:15 AM to 12:00 Noon	Convention Center	Upper Level
Continuing Education Afternoon Courses *(Ticket Required)*	Sunday, Mar 22	1:15 PM to 5:00 PM	Convention Center	Upper Level
Continuing Education Committee Meeting	Monday, Mar 23	12:00 Noon to 1:30 PM	Convention Center	Room 14A
Council Luncheon	Saturday, Mar 21	12:00 Noon to 1:00 PM	Marriott Marquis	Carlsbad
Council Meeting	Saturday, Mar 21	1:00 PM to 5:30 PM	Marriott Marquis	Cardiff
Council Members Photographed	Sunday, Mar 22	3:30 PM to 4:00 PM	Convention Center	Room 5
Council Orientation Breakfast	Saturday, Mar 21	7:30 AM to 8:00 AM	Marriott Marquis	Carlsbad
Council Orientation Meeting	Saturday, Mar 21	8:00 AM to 12:00 Noon	Marriott Marquis	Cardiff

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.
(Schedule as of February 6; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
D				
Department of Defense Government Liaison Group	Tuesday, Mar 24	1:00 PM to 2:00 PM	Convention Center	Room 14B
Dermal Toxicology Specialty Section Meeting/Reception	Wednesday, Mar 25	6:00 PM to 7:30 PM	Convention Center	Room 30C
Dermal Toxicology Specialty Section Officers Meeting	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Distinguished Toxicology Scholar Award Lecture: Allergic Sensitization: Defining Molecular Mechanisms and Characterizing Hazard and Risk, *Lecturer: Ian Kimber, University of Manchester*	Wednesday, Mar 25	12:30 PM to 1:20 PM	Convention Center	Ballroom 6B
Drug Discovery Toxicology Specialty Section Lunch with an Expert	Monday, Mar 23	12:00 Noon to 1:30 PM	Convention Center	Room 27
Drug Discovery Toxicology Specialty Section Meeting/Reception	Tuesday, Mar 24	6:00 PM to 7:30 PM	Convention Center	Room 27
E				
Education Committee Meeting	Tuesday, Mar 24	6:45 AM to 8:30 AM	Convention Center	Room 15B
Elsevier Editorial Board Member Reception	Monday, Mar 23	5:00 PM to 7:00 PM	Marriott Marquis	Bayside Pavilion
Endowment Fund Board Meeting	Tuesday, Mar 24	12:00 Noon to 1:30 PM	Convention Center	Room 15B
EPA CSS STAR Center Awards Kick Off Session: Organotypic Culture Models for Predictive Toxicology Center	Wednesday, Mar 25	4:30 PM to 7:00 PM	Convention Center	Room 5A
Ethical, Legal, and Social Issues Specialty Section Meeting/Luncheon	Wednesday, Mar 25	12:00 Noon to 1:30 PM	Convention Center	Room 31A
Exhibitor-Hosted Sessions:				
Exhibitor-Hosted Session: Agilent Technologies	Wednesday, Mar 25	1:45 PM to 2:45 PM	Convention Center	Room 24A
Exhibitor-Hosted Session: Alberta Centre for Toxicology and The Hamner Institutes	Tuesday, Mar 24	4:00 PM to 5:00 PM	Convention Center	Room 24A
Exhibitor-Hosted Session: Algorithme Pharma	Tuesday, Mar 24	10:00 AM to 11:00 AM	Convention Center	Room 24A
Exhibitor-Hosted Session: American Preclinical Services	Tuesday, Mar 24	1:00 PM to 2:00 PM	Convention Center	Room 24A
Exhibitor-Hosted Session: APTUIT LLC	Monday, Mar 23	4:45 PM to 5:45 PM	Convention Center	Room 24B
Exhibitor-Hosted Session: APTUIT LLC	Tuesday, Mar 24	4:00 PM to 500 PM	Convention Center	Room 22
Exhibitor-Hosted Session: Battelle	Tuesday, Mar 24	2:30 PM to 3:30 PM	Convention Center	Room 22
Exhibitor-Hosted Session: BioreclamationIVT and InSphero	Monday, Mar 23	9:15 AM to 10:15 AM	Convention Center	Room 24C
Exhibitor-Hosted Session: BioReliance	Monday, Mar 23	3:15 PM to 4:15 PM	Convention Center	Room 22
Exhibitor-Hosted Session: BioReliance	Tuesday, Mar 24	1:00 PM to 2:00 PM	Convention Center	Room 22
Exhibitor-Hosted Session: BioReliance	Wednesday, Mar 25	1:45 PM to 2:45 PM	Convention Center	Room 24B
Exhibitor-Hosted Session: Cellular Dynamics International and ACEA Biosciences	Tuesday, Mar 24	11:30 AM to 12:30 PM	Convention Center	Room 24B
Exhibitor-Hosted Session: Charles River	Monday, Mar 23	1:45 PM to 2:45 PM	Convention Center	Room 24C
Exhibitor-Hosted Session: Charles River	Tuesday, Mar 24	1:00 PM to 2:00 PM	Convention Center	Room 24C
Exhibitor-Hosted Session: Charles River	Wednesday, Mar 25	9:15 AM to 10:15 AM	Convention Center	Room 24C
Exhibitor-Hosted Session: CiToxLAB and Ellegaard Göttingen Minipigs	Tuesday, Mar 24	2:30 PM to 3:30 PM	Convention Center	Room 24B
Exhibitor-Hosted Session: Covance	Monday, Mar 23	9:15 AM to 10:15 AM	Convention Center	Room 24B
Exhibitor-Hosted Session: Covance	Wednesday, Mar 25	9:15 AM to 10:15 AM	Convention Center	Room 24B
Exhibitor-Hosted Session: Cyprotex	Monday, Mar 23	10:45 AM to 11:45 AM	Convention Center	Room 24B
Exhibitor-Hosted Session: Data Sciences International	Tuesday, Mar 24	11:30 AM to 12:30 PM	Convention Center	Room 22
Exhibitor-Hosted Session: Datacolor Inc.	Tuesday, Mar 24	10:00 AM to 11:00 AM	Convention Center	Room 24B
Exhibitor-Hosted Session: EMD Millipore	Wednesday, Mar 25	12:15 PM to 1:15 PM	Convention Center	Room 24A
Exhibitor-Hosted Session: EPISKIN Academy	Monday, Mar 23	12:15 PM to 1:15 PM	Convention Center	Room 24A
Exhibitor-Hosted Session: Fraunhofer ITEM	Monday, Mar 23	12:15 PM to 1:15 PM	Convention Center	Room 24B
Exhibitor-Hosted Session: Hepregen Corporation	Tuesday, Mar 24	8:30 AM to 9:30 AM	Convention Center	Room 24B
Exhibitor-Hosted Session: HTG Molecular Diagnostics	Tuesday, Mar 24	11:30 AM to 12:30 PM	Convention Center	Room 24C

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner. *(Schedule as of February 6; private events are not listed.)*

Event:	Date:	Time:	Location:	Room:
Exhibitor-Hosted Session: Huntingdon Life Sciences/ Harlan Laboratories	Monday, Mar 23	10:45 AM to 11:45 AM	Convention Center	Room 24C
Exhibitor-Hosted Session: Huntingdon Life Sciences/ Harlan Laboratories	Tuesday, Mar 24	10:00 AM to 11:00 AM	Convention Center	Room 22
Exhibitor-Hosted Session: Huntingdon Life Sciences/ Harlan Laboratories	Wednesday, Mar 25	12:15 PM to 1:15 PM	Convention Center	Room 24C
Exhibitor-Hosted Session: Hμrel Corporation	Wednesday, Mar 25	10:45 AM to 11:45 AM	Convention Center	Room 24B
Exhibitor-Hosted Session: ICF International	Tuesday, Mar 24	1:00 PM to 2:00 PM	Convention Center	Room 24B
Exhibitor-Hosted Session: IDEXX Laboratories	Monday, Mar 23	1:45 PM to 2:45 PM	Convention Center	Room 24A
Exhibitor-Hosted Session: In Vitro ADMET Laboratories, LLC	Tuesday, Mar 24	10:00 AM to 11:00 AM	Convention Center	Room 24C
Exhibitor-Hosted Session: InSphero Inc.	Monday, Mar 23	3:15 PM to 4:15 PM	Convention Center	Room 24C
Exhibitor-Hosted Session: InSphero Inc.	Tuesday, Mar 24	2:30 PM to 3:30 PM	Convention Center	Room 24C
Exhibitor-Hosted Session: Instem	Monday, Mar 23	4:45 PM to 5:45 PM	Convention Center	Room 24C
Exhibitor-Hosted Session: Korea Institute of Toxicology	Monday, Mar 23	1:45 PM to 2:45 PM	Convention Center	Room 22
Exhibitor-Hosted Session: Leadscope, Inc.	Monday, Mar 23	4:45 PM to 5:45 PM	Convention Center	Room 24A
Exhibitor-Hosted Session: Lhasa Limited	Monday, Mar 23	10:45 AM to 11:45 AM	Convention Center	Room 22
Exhibitor-Hosted Session: Lovelace Respiratory Research Institute	Monday, Mar 23	1:45 PM to 2:45 PM	Convention Center	Room 24B
Exhibitor-Hosted Session: Lovelace Respiratory Research Institute	Tuesday, Mar 24	11:30 AM to 12:30 PM	Convention Center	Room 24A
Exhibitor-Hosted Session: MPI Research	Monday, Mar 23	9:15 AM to 10:15 AM	Convention Center	Room 24A
Exhibitor-Hosted Session: MPI Research	Tuesday, Mar 24	8:30 AM to 9:30 AM	Convention Center	Room 22
Exhibitor-Hosted Session: MPI Research	Wednesday, Mar 25	9:15 AM to 10:15 AM	Convention Center	Room 24A
Exhibitor-Hosted Session: MultiCASE Inc	Monday, Mar 23	3:15 PM to 4:15 PM	Convention Center	Room 24B
Exhibitor-Hosted Session: NSF International	Monday, Mar 23	3:15 PM to 4:15 PM	Convention Center	Room 24A
Exhibitor-Hosted Session: Organovo	Wednesday, Mar 25	10:45 AM to 11:45 AM	Convention Center	Room 24A
Exhibitor-Hosted Session: PDS Preclinical Lifesciences Inc and Integrated Nonclinical Development Solutions	Monday, Mar 23	12:15 PM to 1:15 PM	Convention Center	Room 22
Exhibitor-Hosted Session: PointCross LifeSciences, Inc	Tuesday, Mar 24	4:00 PM to 5:00 PM	Convention Center	Room 24B
Exhibitor-Hosted Session: Promega Corporation	Monday, Mar 23	10:45 AM to 11:45 AM	Convention Center	Room 24A
Exhibitor-Hosted Session: RTC and Ellegaard Göttingen Minipigs	Monday, Mar 23	12:15 PM to 1:15 PM	Convention Center	Room 24C
Exhibitor-Hosted Session: Stemina Biomarker Discovery, Inc.	Tuesday, Mar 24	2:30 PM to 3:30 PM	Convention Center	Room 24A
Exhibitor-Hosted Session: Takara Bio Europe AB (formerly Cellartis)	Tuesday, Mar 24	4:00 PM to 5:00 PM	Convention Center	Room 24C
Exhibitor-Hosted Session: Toxikon Corporation	Monday, Mar 23	9:15 AM to 10:15 AM	Convention Center	Room 22
Exhibitor-Hosted Session: Toxikon Corporation	Tuesday, Mar 24	8:30 AM to 9:30 AM	Convention Center	Room 24C
Exhibitor-Hosted Session: Toxikon Corporation	Wednesday, Mar 25	10:45 AM to 11:45 AM	Convention Center	Room 24C
Exhibitor-Hosted Session: WuXi AppTec	Tuesday, Mar 24	8:30 AM to 9:30 AM	Convention Center	Room 24A
F				
Finance Committee Meeting	Wednesday, Mar 25	11:30 AM to 12:30 PM	Convention Center	Room 13
Food and Chemical Toxicology Editorial Board Dinner Meeting	Monday, Mar 23	7:30 PM to 9:30 PM	Marriott Marquis	Marina Ballroom E
Food Safety Specialty Section Meeting/Reception	Tuesday, Mar 24	6:00 PM to 7:30 PM	Convention Center	Room 31C
Food Safety Specialty Section Officers Meeting	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Frontiers for Toxicology Session: Bugs to Drugs: The Microbiome in Human Health, Disease, and Therapeutics	Tuesday, Mar 24	9:00 AM to 12:00 Noon	Convention Center	Ballroom 6A
G				
Gabriel L. Plaa Award Interviews	Sunday, Mar 22	3:00 PM to 5:00 PM	Convention Center	Room 12
Global Collaboration Coffee	Monday, Mar 23	9:30 AM to 11:30 AM	Convention Center	Room 4
Global Gallery of Toxicology Poster Session—Representative Attended *(Across from SOT Pavilion, Booth 526)*	Monday, Mar 23	11:45 AM to 12:15 PM	Convention Center	Exhibit Hall
Graduate Education Subcommittee Meeting	Tuesday, Mar 24	12:15 PM to 1:25 PM	Convention Center	Room 14A
Graduate Student Leadership Committee Executive Board Meeting	Wednesday, Mar 25	7:00 AM to 8:30 AM	Convention Center	Room 14A

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.
(Schedule as of February 6; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
Graduate Student Leadership Committee Meeting	Tuesday, Mar 24	6:45 AM to 7:45 AM	Convention Center	Room 9
Guest/Spouse Hospitality Room	Sunday, Mar 22	8:00 AM to 5:00 PM	Marriott Marquis	La Mesa
Guest/Spouse Hospitality Room	Monday, Mar 23	8:00 AM to 5:00 PM	Marriott Marquis	La Mesa
Guest/Spouse Hospitality Room	Tuesday, Mar 24	8:00 AM to 5:00 PM	Marriott Marquis	La Mesa
Guest/Spouse Hospitality Room	Wednesday, Mar 25	8:00 AM to 5:00 PM	Marriott Marquis	La Mesa
Guest/Spouse Hospitality Room	Thursday, Mar 26	8:00 AM to 10:00 AM	Marriott Marquis	La Mesa
H				
HESI Luncheon Seminar	Monday, Mar 23	12:00 Noon to 1:30 PM	Marriott Marquis	Marina Ballroom D
High School Poster Exposition *(Across from SOT Pavilion, Booth 526)*	Tuesday, Mar 24	10:30 AM to 12:30 PM	Convention Center	Exhibit Hall
Hispanic Organization of Toxicologists Special Interest Group Officers Meeting	Monday, Mar 23	6:45 AM to 8:00 AM	Marriott Marquis	Marina Kitchen
Hispanic Organization of Toxicologists Special Interest Group Reception and Awards Ceremony	Tuesday, Mar 24	6:30 PM to 9:30 PM	Cafe Sevilla	
Housing Desk	Saturday, Mar 21	4:00 PM to 7:00 PM	Convention Center	Lobby A
Housing Desk	Sunday, Mar 22	8:00 AM to 5:00 PM	Convention Center	Lobby A
Housing Desk	Monday, Mar 23	8:00 AM to 5:00 PM	Convention Center	Lobby A
Housing Desk	Tuesday, Mar 24	8:00 AM to 11:00 AM	Convention Center	Lobby A
Human Toxicology Project Consortium: "AOPs 201": A Brief Seminar on Development, Recording, and Use of Adverse Outcome Pathways	Monday, Mar 23	5:00 PM to 7:30 PM	Marriott Marquis	Marina Ballroom F
I				
Immunotoxicology Specialty Section Meeting/Reception	Tuesday, Mar 24	6:00 PM to 7:30 PM	Convention Center	Room 29A
Immunotoxicology Specialty Section Officers Meeting	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 25
In Vitro and Alternative Methods Specialty Section Meeting/ Luncheon	Wednesday, Mar 25	12:00 Noon to 1:30 PM	Convention Center	Room 28A
In Vitro and Alternative Methods Specialty Section Officers Meeting	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 25
In Vitro Toxicology Lecture and Luncheon for Students: Alternative *In Vitro* Approaches for Predicting the Health Impacts of Nanomaterials, *Lecturer: James C. Bonner, North Carolina State University (Ticket Required)*	Monday, Mar 23	12:00 Noon to 1:20 PM	Convention Center	Ballroom 20D
Inhalation and Respiratory Specialty Section Meeting/Reception	Monday, Mar 23	6:00 PM to 7:30 PM	Convention Center	Room 30A
Inhalation and Respiratory Specialty Section Technical Meeting	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 30A
Institute for In Vitro Sciences, Inc: Workshop Report: *In Vitro* COPD Models for Tobacco Regulatory Science—Highlights and Paths Forward	Monday, Mar 23	5:00 PM to 7:00 PM	Marriott Marquis	Torrey Pines
International Neurotoxicology Association Business Meeting	Monday, Mar 23	12:30 PM to 1:30 PM	Marriott Marquis	Cardiff
IQ Consortium DruSafe (Preclinical Safety Leadership Group)	Tuesday, Mar 24	7:00 AM to 9:00 AM	Marriott Marquis	Coronado
IQ Consortium Open SEND Session	Monday, Mar 23	12:00 Noon to 2:00 PM	Manchester Grand Hyatt	Regatta
J				
Job Bank Center	Sunday, Mar 22	1:00 PM to 5:00 PM	Convention Center	Room 23A
Job Bank Center	Monday, Mar 23	9:00 AM to 5:00 PM	Convention Center	Room 23A
Job Bank Center	Tuesday, Mar 24	8:30 AM to 5:00 PM	Convention Center	Room 23A
Job Bank Center	Wednesday, Mar 25	8:30 AM to 5:00 PM	Convention Center	Room 23A
K				
K–12 Regional Chapter Outreach Contacts Meeting	Monday, Mar 23	4:00 PM to 5:00 PM	Convention Center	Room 14B
K–12 Subcommittee Meeting	Sunday, Mar 22	4:00 PM to 5:00 PM	Convention Center	Room 14B
Keynote Medical Research Council (MRC) Lecture: Environmental Influences on the Immune System via the Aryl Hydrocarbon Receptor, *Lecturer: Brigitta Stockinger, MRC National Institute for Medical Research*	Wednesday, Mar 25	8:00 AM to 9:00 AM	Convention Center	Ballroom 6A

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.
(Schedule as of February 6; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
Korean Toxicologists Association in America/American Association of Chinese in Toxicology Special Interest Groups Career Workshop 1: Current US Job Market for Toxicologists	Tuesday, Mar 24	7:30 AM to 9:00 AM	Convention Center	Room 3
Korean Toxicologists Association in America Meeting/Reception	Monday, Mar 23	7:00 PM to 9:00 PM	Nippon Sushi Bar and Thai Food	
L				
Lone Star and South Central Regional Chapters Mixer	Tuesday, Mar 24	5:00 PM to 7:00 PM	Dussin's Loft Bar	
Lovelace Respiratory Research Institute's Annual Reception	Sunday, Mar 22	7:30 PM to 10:00 PM	Marriott Marquis	Catalina
M				
Mechanisms Specialty Section Meeting/Reception	Wednesday, Mar 25	6:00 PM to 7:30 PM	Convention Center	Room 29
Mechanisms Specialty Section Officers Meeting	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Medical Device and Combination Product Specialty Section Meeting/ Reception	Tuesday, Mar 24	6:00 PM to 7:30 PM	Convention Center	Room 33A
Meet the Directors: A Conversation with Linda Birnbaum, NIEHS; and Jim Jones, US EPA	Monday, Mar 23	1:30 PM to 2:30 PM	Convention Center	Ballroom 6A
Membership Committee Meeting	Wednesday, Mar 25	11:30 AM to 1:00 PM	Convention Center	Room 15B
Merit Award Lecture: Chronicles of Particles: From Micro- to Nano-Particles, *Lecturer: Günter Oberdörster, University of Rochester Medical Center*	Monday, Mar 23	12:30 PM to 1:20 PM	Convention Center	Ballroom 6B
Metals Specialty Section Meeting/Reception	Tuesday, Mar 24	6:00 PM to 7:30 PM	Convention Center	Room 30E
Michigan and Allegheny-Erie Regional Chapters Joint Reception	Monday, Mar 23	5:00 PM to 6:30 PM	Marriott Marquis	Balboa
Mid-Atlantic Regional Chapter Luncheon	Monday, Mar 23	12:00 Noon to 2:00 PM	Roy's Restaurant	Big Island Room
Midwest and Ohio Valley Regional Chapters Joint Reception	Monday, Mar 23	5:00 PM to 6:00 PM	Henry's Pub	
Mixtures Specialty Section Meeting/Reception	Monday, Mar 23	6:00 PM to 7:30 PM	Convention Center	Room 30E
Mixtures Specialty Section Officers Meeting	Monday, Mar 23	6:30 AM to 7:30 AM	Richard Walker's Pancake House	
Molecular and Systems Biology Specialty Section Meeting/Reception	Monday, Mar 23	6:00 PM to 7:30 PM	Convention Center	Room 29A
Molecular and Systems Biology Specialty Section Officers Meeting	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Mountain West and Southern California Regional Chapters Mixer	Tuesday, Mar 24	6:00 PM to 9:00 PM	Museum of Photographic Arts	
MultiCASE Inc: Users and Friends Meeting	Monday, Mar 23	5:30 PM to 7:00 PM	Marriott Marquis	Newport Beach
N				
Nanotoxicology Specialty Section Meeting/Reception	Tuesday, Mar 24	6:00 PM to 7:30 PM	Convention Center	Room 30A
National Capital Area and North Carolina Regional Chapters Joint Reception	Monday, Mar 23	5:30 PM to 7:30 PM	Karl Strauss Brewery	
Networking Time	Tuesday, Mar 24	12:00 Noon to 1:30 PM	Convention Center	
Neurotoxicology Specialty Section Meeting/Reception	Tuesday, Mar 24	6:00 PM to 7:30 PM	Convention Center	Room 25
Neurotoxicology Specialty Section Officers Meeting	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 25
North Carolina and National Capital Area Regional Chapters Joint Reception	Monday, Mar 23	5:30 PM to 7:30 PM	Karl Strauss Brewery	
Northeast Regional Chapter Student Luncheon	Tuesday, Mar 24	12:00 Noon to 2:00 PM	Convention Center	Room 4
Northern California Regional Chapter Reception	Tuesday, Mar 24	7:30 PM to 10:30 PM	Yard House	
O				
Occupational and Public Health Specialty Section Meeting/Luncheon	Tuesday, Mar 24	12:00 Noon to 1:30 PM	Convention Center	Room 25
Ocular Toxicology Specialty Section Meeting/Reception	Tuesday, Mar 24	6:00 PM to 7:30 PM	Convention Center	Room 32
Ohio Valley and Midwest Regional Chapters Joint Reception	Monday, Mar 23	5:00 PM to 6:00 PM	Henry's Pub	
P				
Pacific Northwest Regional Chapter Reception	Monday, Mar 23	5:30 PM to 7:30 PM	Harbor House	
Past Presidents Breakfast	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 15B
Past Presidents' 5K Fun Run/Walk	Tuesday, Mar 24	7:00 AM to 8:30 AM	Embarcadero Marina Park	
Pick Your Poison: A Close Look at the Toxicants Surrounding Us (Presented by OASIS: Public Event)	Saturday, Mar 21	10:30 AM to 12:30 PM	TBD	

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.
(Schedule as of February 6; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
Plenary Opening Lecture: Life at the Speed of Light, *Lecturer: J. Craig Venter, J. Craig Venter Institute*	Monday, Mar 23	8:00 AM to 9:00 AM	Convention Center	Hall D
Postdoctoral Assembly Executive Board Meeting	Wednesday, Mar 25	11:30 AM to 1:00 PM	Convention Center	Room 33B
Postdoctoral Assembly Luncheon *(Ticket Required)*	Tuesday, Mar 24	12:00 Noon to 1:15 PM	Convention Center	Ballroom 5
Poster Sessions	Monday, Mar 23	9:30 AM to 12:30 PM	Convention Center	Exhibit Hall
Poster Sessions	Monday, Mar 23	1:00 PM to 4:30 PM	Convention Center	Exhibit Hall
Poster Sessions	Tuesday, Mar 24	9:00 AM to 12:30 PM	Convention Center	Exhibit Hall
Poster Sessions	Tuesday, Mar 24	1:00 PM to 4:30 PM	Convention Center	Exhibit Hall
Poster Sessions	Wednesday, Mar 25	9:00 AM to 12:30 PM	Convention Center	Exhibit Hall
Poster Sessions	Wednesday, Mar 25	1:00 PM to 4:30 PM	Convention Center	Exhibit Hall
Poster Session (Late-Breaking)	Thursday, Mar 26	8:30 AM to 12:00 Noon	Convention Center	Sails Pavilion
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*	Monday, Mar 23	7:30 AM to 9:30 AM	Convention Center	Exhibit Hall
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*	Monday, Mar 23	12:30 PM to 1:00 PM	Convention Center	Exhibit Hall
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*	Tuesday, Mar 24	7:30 AM to 9:00 AM	Convention Center	Exhibit Hall
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*	Tuesday, Mar 24	12:30 PM to 1:00 PM	Convention Center	Exhibit Hall
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*	Wednesday, Mar 25	7:30 AM to 9:00 AM	Convention Center	Exhibit Hall
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*	Wednesday, Mar 25	12:30 PM to 1:00 PM	Convention Center	Exhibit Hall
Poster Set Up *(See Poster Board Surface Maps or Mobile Event App for Details)*	Thursday, Mar 26	7:00 AM to 8:30 AM	Convention Center	Sails Pavilion
President's Reception *(By Invitation Only)*	Wednesday, Mar 25	7:00 PM to 8:30 PM	Marriott Marquis	San Diego Ballroom A
R				
Rapid Response Task Force Meeting	Monday, Mar 23	1:30 PM to 2:30 PM	Convention Center	Room 12
Regional Chapter Collaboration and Communications Committee (RC4) Meeting	Wednesday, Mar 25	12:00 Noon to 1:30 PM	Convention Center	Room 12
Regional Chapter, Special Interest Group, Specialty Section Poster Sessions—Representative Attended *(Near the SOT Pavilion, Booth 526)*	Monday, Mar 23	11:45 AM to 12:15 PM	Convention Center	Exhibit Hall
Registration	Saturday, Mar 21	4:00 PM to 7:00 PM	Convention Center	Lobby A
Registration	Sunday, Mar 22	7:00 AM to 8:00 PM	Convention Center	Lobby A
Registration	Monday, Mar 23	7:00 AM to 5:00 PM	Convention Center	Lobby A
Registration	Tuesday, Mar 24	8:00 AM to 4:00 PM	Convention Center	Lobby A
Registration	Wednesday, Mar 25	8:00 AM to 4:00 PM	Convention Center	Lobby A
Registration	Thursday, Mar 26	8:00 AM to 12:00 Noon	Convention Center	Lobby A
Regulatory and Safety Evaluation Specialty Section Brown Bag Luncheon: Global Regulatory Toxicology: First Stop EU	Tuesday, Mar 24	12:00 Noon to 2:00 PM	Convention Center	Room 2
Regulatory and Safety Evaluation Specialty Section Meeting/Reception	Monday, Mar 23	6:00 PM to 7:30 PM	Convention Center	Room 28A
Regulatory and Safety Evaluation Specialty Section Officers Meeting	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Reproductive and Developmental Toxicology Specialty Section Meeting/Reception	Wednesday, Mar 25	6:00 PM to 7:30 PM	Convention Center	Room 28A
Reproductive and Developmental Toxicology Specialty Section Officers Meeting	Monday, Mar 23	7:00 AM to 8:30 AM	Convention Center	Room 30D
Research Funding Information Room	Tuesday, Mar 24	9:30 AM to 4:30 PM	Convention Center	Room 11A
Research Funding Information Room	Wednesday, Mar 25	9:30 AM to 4:30 PM	Convention Center	Room 11A
Research Funding Luncheon: Multiple Perspectives on the Grant Process	Monday, Mar 23	12:00 Noon to 1:30 PM	Convention Center	Room 5B

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.
(Schedule as of February 6; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
Risk Assessment Specialty Section Meeting/Reception	Tuesday, Mar 24	6:00 PM to 7:30 PM	Convention Center	Room 28
Risk Assessment Specialty Section Mentoring Luncheon	Tuesday, Mar 24	12:00 Noon to 1:30 PM	Convention Center	Room 28A
Risk Assessment Specialty Section Officers Meeting	Monday, Mar 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Roundtable of Toxicology Consultants Annual Business Meeting	Monday, Mar 23	4:30 PM to 6:00 PM	Marriott Marquis	La Costa
Rutgers University Joint Graduate Program Toxicology Annual Dessert Reception	Tuesday, Mar 24	9:00 PM to 11:00 PM	Marriott Marquis	Rancho Santa Fe
S				
San Diego Festival of Science and Engineering EXPO Day *(Public Event)*	Saturday, Mar 21	10:00 AM to 5:00 PM	Petco Park, San Diego	
Satellite Meeting: Updates on 21st Century Toxicology Activities and Related Efforts: Invited Presentations and Open Microphone	Thursday, Mar 26	12:30 PM to 4:00 PM	Manchester Grand Hyatt	Hillcrest
Scientific Liaison Coalition Meeting	Sunday, Mar 22	8:00 AM to 12:00 Noon	Convention Center	Room 14B
Scientific Program Committee Meeting	Thursday, Mar 26	12:00 Noon to 1:30 PM	Convention Center	Room 14A
Scientific Program Committee Walk-Through	Monday, Mar 23	7:00 AM to 7:45 AM	Convention Center	Ballroom 6A
Scientific Sessions	Monday, Mar 23	9:15 AM to 12:00 Noon	Convention Center	Upper Level
Scientific Sessions	Monday, Mar 23	12:10 PM to 1:30 PM	Convention Center	Upper Level
Scientific Sessions	Monday, Mar 23	2:00 PM to 4:45 PM	Convention Center	Upper Level
Scientific Sessions	Tuesday, Mar 24	9:00 AM to 11:45 AM	Convention Center	Upper Level
Scientific Sessions	Tuesday, Mar 24	1:30 PM to 4:15 PM	Convention Center	Upper Level
Scientific Sessions	Wednesday, Mar 25	9:00 AM to 11:45 AM	Convention Center	Upper Level
Scientific Sessions	Wednesday, Mar 25	12:00 Noon to 1:20 PM	Convention Center	Upper Level
Scientific Sessions	Wednesday, Mar 25	1:30 PM to 4:15 PM	Convention Center	Upper Level
Scientific Sessions	Wednesday, Mar 25	4:30 PM to 5:50 PM	Convention Center	Upper Level
Scientific Sessions	Thursday, Mar 26	9:00 AM to 11:45 AM	Convention Center	Sails Pavilion
SOT Annual Business Meeting *(All SOT Members Invited)*	Tuesday, Mar 24	4:30 PM to 6:00 PM	Convention Center	Ballroom 6A
SOT Mentoring Breakfast *(Registration Required)*	Monday, Mar 23	6:15 AM to 7:45 AM	Convention Center	Room 5B
SOT Office	Saturday, Mar 21	4:00 PM to 7:00 PM	Convention Center	Room 15A
SOT Office	Sunday, Mar 22	7:00 AM to 5:30 PM	Convention Center	Room 15A
SOT Office	Monday, Mar 23	7:00 AM to 5:00 PM	Convention Center	Room 15A
SOT Office	Tuesday, Mar 24	7:00 AM to 4:30 PM	Convention Center	Room 15A
SOT Office	Wednesday, Mar 25	7:00 AM to 4:30 PM	Convention Center	Room 15A
SOT Office	Thursday, Mar 26	7:00 AM to 12:00 Noon	Convention Center	Room 15A
SOT Pavilion, Booth 526	Monday, Mar 23	9:00 AM to 4:30 PM	Convention Center	Exhibit Hall
SOT Pavilion, Booth 526	Tuesday, Mar 24	8:30 AM to 4:30 PM	Convention Center	Exhibit Hall
SOT Pavilion, Booth 526	Wednesday, Mar 25	8:30 AM to 4:30 PM	Convention Center	Exhibit Hall
SOT/EUROTOX Debate: *In Vitro* Alternatives Are Ready to Be Implemented and Relied Upon for Human Safety Testing, *Lecturers: George P. Daston, Procter & Gamble Company; Maurice P. Whelan, European Commission Joint Research Centre*	Monday, Mar 23	4:45 PM to 6:00 PM	Convention Center	Ballroom 6A
South Central and Lone Star Regional Chapters Mixer	Tuesday, Mar 24	5:00 PM to 7:00 PM	Dussin's Loft Bar	
Southeastern Regional Chapter Reception	Monday, Mar 23	6:00 PM to 10:00 PM	Dublin Square Authentic Irish Pub & Grille	
Southern California and Mountain West Regional Chapters Mixer	Tuesday, Mar 24	6:00 PM to 9:00 PM	Museum of Photographic Arts	
Speaker Ready Room *(Scientific Session and ePoster Upload)*	Saturday, Mar 21	4:00 PM to 7:00 PM	Convention Center	Room 11B
Speaker Ready Room *(Scientific Session and ePoster Upload)*	Sunday, Mar 22	7:00 AM to 5:30 PM	Convention Center	Room 11B
Speaker Ready Room *(Scientific Session and ePoster Upload)*	Monday, Mar 23	7:00 AM to 5:00 PM	Convention Center	Room 11B
Speaker Ready Room *(Scientific Session and ePoster Upload)*	Tuesday, Mar 24	7:00 AM to 4:30 PM	Convention Center	Room 11B
Speaker Ready Room *(Scientific Session and ePoster Upload)*	Wednesday, Mar 25	7:00 AM to 4:30 PM	Convention Center	Room 11B
Speaker Ready Room *(Scientific Session and ePoster Upload)*	Thursday, Mar 26	7:00 AM to 11:30 AM	Convention Center	Room 11B

Schedule by Event Name (Continued)

Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner. *(Schedule as of February 6; private events are not listed.)*

Event:	Date:	Time:	Location:	Room:
Special Interest Group Collaboration Group Global Hot Topic Event—Global Drug Development and Natural Products: End of an Era or an Endless Frontier?	Wednesday, Mar 25	7:00 AM to 8:00 AM	Convention Center	Room 2
Special Interest Group Collaboration Group Meeting	Monday, Mar 23	12:00 Noon to 1:30 PM	Convention Center	Room 14B
Specialty Section Collaboration and Communication Group Meeting	Monday, Mar 23	2:00 PM to 3:00 PM	Convention Center	Room 14A
St. John's University Alumni and Friends Dinner	Monday, Mar 23	6:00 PM to 8:00 PM	Marriott Marquis	Miramar
Stem Cells Specialty Section Meeting/Reception	Wednesday, Mar 25	6:00 PM to 7:30 PM	Convention Center	Room 30A
Strategic Plan 2015–2018 Discussion Breakfast with Council	Thursday, Mar 26	8:00 AM to 8:45 AM	Convention Center	Room 3
Student/Postdoctoral Scholar Mixer *(Ticket Required)*	Sunday, Mar 22	7:30 PM to 9:00 PM	Convention Center	Ballroom 20D
T				
The Truth about Food: How the Sustainer of Life Can Also Be Poison *(Public Event)*	Monday, Mar 23	6:30 PM to 8:00 PM	Reuben H. Fleet Science Center	
Tox ShowDown *(All Attendees Welcome)*	Tuesday, Mar 24	7:30 PM to 9:00 PM	Marriott Marquis	Marina Ballroom D
ToxExpo Exhibit Hall Council Walk-Through	Tuesday, Mar 24	11:00 AM to 12:00 Noon	Convention Center	Exhibit Hall
ToxExpo Exhibits Open	Monday, Mar 23	9:00 AM to 4:30 PM	Convention Center	Exhibit Hall
ToxExpo Exhibits Open	Tuesday, Mar 24	8:30 AM to 4:30 PM	Convention Center	Exhibit Hall
ToxExpo Exhibits Open	Wednesday, Mar 25	8:30 AM to 4:30 PM	Convention Center	Exhibit Hall
ToxExpo Liaison Working Group	Wednesday, Mar 25	7:00 AM to 8:15 AM	Convention Center	Room 13
ToxExpo Set Up	Saturday, Mar 21	8:00 AM to 5:00 PM	Convention Center	Exhibit Hall
ToxExpo Set Up	Sunday, Mar 22	8:00 AM to 5:00 PM	Convention Center	Exhibit Hall
ToxExpo Tear Down	Wednesday, Mar 25	4:30 PM to 11:00 PM	Convention Center	Exhibit Hall
Toxic Substances Control Act Task Force Update: Strategy, Issues, and Outreach	Wednesday, Mar 25	7:00 AM to 7:45 AM	Convention Center	Room 8
Toxicologic and Exploratory Pathology Specialty Section Meeting/Luncheon	Monday, Mar 23	12:00 Noon to 1:30 PM	Convention Center	Room 2
Toxicologic and Exploratory Pathology Specialty Section Officers Meeting	Monday, Mar 23	6:00 AM to 7:30 AM	Convention Center	Room 31B
Toxicological Sciences Associate Editors Meeting	Sunday, Mar 22	12:30 PM to 3:30 PM	Marriott Marquis	Cardiff/Carlsbad
Toxicological Sciences/Oxford University Press Appreciation Dinner (By Invitation Only)	Monday, Mar 23	7:00 PM to 10:00 PM	Meze	
Toxicologists of African Origin Special Interest Group Reception	Monday, Mar 23	5:30 PM to 7:30 PM	Rama Thai	
Toxicology and Applied Pharmacology Editorial Board Meeting	Monday, Mar 23	12:00 Noon to 2:00 PM	Marriott Marquis	Coronado
Toxicology Editorial Board Meeting	Wednesday, Mar 25	11:45 AM to 1:30 PM	Marriott Marquis	Coronado
Toxicology Education Foundation Board of Trustees Meeting	Sunday, Mar 22	8:00 AM to 12:00 Noon	Marriott Marquis	Palomar
Toxicology Excellence for Risk Assessment: Alliance for Risk Assessment "Beyond Science and Decisions"	Sunday, Mar 22	12:00 Noon to 1:00 PM	Marriott Marquis	Miramar
Toxicology Excellence for Risk Assessment: Turning Big Data to Knowledge (BD2K): A Discussion of the NIH BD2K Initiative and How It Might Advance the Practice of Toxicology and Risk Assessment	Monday, Mar 23	12:15 PM to 1:30 PM	Marriott Marquis	Del Mar
Toxicology Excellence for Risk Assessment's Ice Cream Social	Tuesday, Mar 24	8:00 PM to 11:00 PM	Marriott Marquis	Coronado
Toxicology History Association	Wednesday, Mar 25	5:00 PM to 6:00 PM	Marriott Marquis	Newport Beach
Toxicology Letters Editorial Board Meeting	Tuesday, Mar 24	11:45 AM to 1:30 PM	Marriott Marquis	Catalina
ToxLearn Work Group	Monday, Mar 23	2:00 PM to 3:00 PM	Convention Center	Room 14B
Trainee Discussion with Medical Research Council (MRC) Lecturer: Dr. Stockinger *(Ticket Required; SOT Student and Postdoctoral Members Only, Limited Seating)*	Wednesday, Mar 25	9:30 AM to 10:30 AM	Convention Center	Room 5B
Trainee Discussion with Plenary Lecturer: Dr. Venter *(Ticket Required; SOT Student and Postdoctoral Members Only, Limited Seating)*	Monday, Mar 23	10:00 AM to 11:00 AM	Convention Center	Room 21
Translational Impact Award Lecture: How to Make a (Translational) Impact, *Lecturer: Jefferey Burgess, University of Arizona*	Tuesday, Mar 24	8:00 AM to 8:50 AM	Convention Center	Ballroom 6B

Schedule by Event Name (Continued)

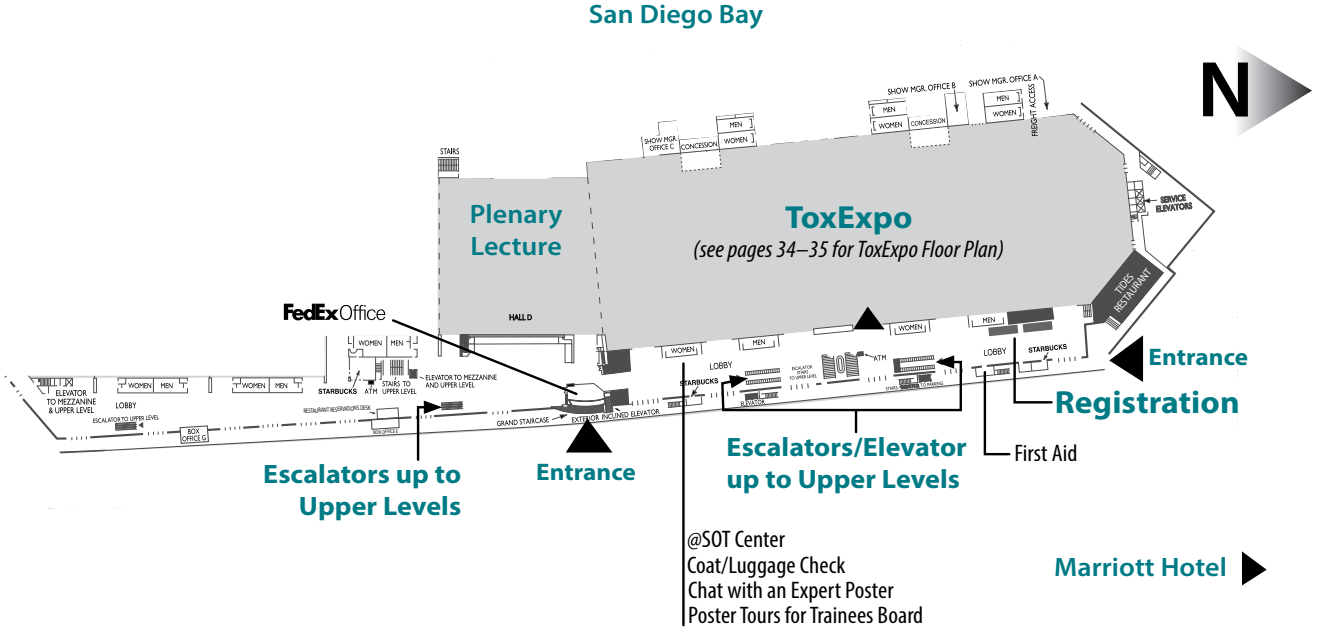
Tired of carrying the *Program* during the meeting? Access the real-time schedule via the Mobile Event App or Online Planner.
(Schedule as of February 6; private events are not listed.)

Event:	Date:	Time:	Location:	Room:
TRI-Service Toxicology Consortium	Tuesday, Mar 24	2:00 PM to 5:00 PM	Marriott Marquis	Coronado
U				
Undergraduate Education Program: Registration for CDI Travel Awardees	Saturday, Mar 21	5:00 PM to 5:15 PM	Convention Center	Room 33B Foyer
Undergraduate Education Program: Opening Event *(CDI Travel Awardees)*	Saturday, Mar 21	5:15 PM to 7:30 PM	Convention Center	Room 33B
Undergraduate Education Program: Toxicology Presentations *(CDI Travel Awardees and Registered Participants)*	Sunday, Mar 22	8:00 AM to 9:45 AM	Convention Center	Room 31C
Undergraduate Education Program: Interactive Presentation *(CDI Travel Awardees and Registered Participants)*	Sunday, Mar 22	9:55 AM to 11:00 AM	Convention Center	Room 33B
Undergraduate Education Program: Toxicology Presentation *(CDI Travel Awardees and Registered Participants)*	Sunday, Mar 22	11:10 AM to 12:00 Noon	Convention Center	Room 31C
Undergraduate Education Program: Lunch and Networking *(CDI Travel Awardees and Registered Participants)*	Sunday, Mar 22	12:00 Noon to 12:45 PM	Convention Center	Room 33B
Undergraduate Education Program: Breakout Session for Advisors—Tips for Advising Prospective Graduate Students *(CDI Advisor Travel Awardees)*	Sunday, Mar 22	12:55 PM to 1:55 PM	Convention Center	Room 33C
Undergraduate Education Program: Breakout Sessions for Students—Planning for Graduate School *(CDI Travel Awardees and Registered Participants)*	Sunday, Mar 22	12:55 PM to 1:55 PM	Convention Center	Rooms 32A, 32B, 30E
Undergraduate Education Program: Career Roundtables—Opportunities in Toxicology *(CDI Travel Awardees and Registered Participants)*	Sunday, Mar 22	2:05 PM to 2:55 PM	Convention Center	Room 33B
Undergraduate Education Program: Open Time with Academic Toxicology Program Directors and Internship Hosts *(CDI Travel Awardees and Registered Participants)*	Sunday, Mar 22	3:00 PM to 5:00 PM	Convention Center	Room 31C
Undergraduate Education Program: Meeting Participation	Monday, Mar 23	8:00 AM to 3:30 PM	Convention Center	
Undergraduate Education Program: Host Mentor and Peer Mentor Meeting	Monday, Mar 23	3:30 PM to 4:30 PM	Convention Center	Room 32B
Undergraduate Education Program: Presentation *(CDI Travel Awardees)*	Monday, Mar 23	3:30 PM to 4:30 PM	Convention Center	Room 33B
Undergraduate Education Program: Program Closing Session *(CDI Travel Awardees)*	Monday, Mar 23	4:30 PM to 5:00 PM	Convention Center	Room 33B
Undergraduate Education Subcommittee Meeting	Tuesday, Mar 24	1:30 PM to 2:00 PM	Convention Center	Room 14A
Undergraduate Educator Network Meeting	Tuesday, Mar 24	2:15 PM to 3:30 PM	Convention Center	Room 14A
Undergraduate Student Meeting *(All Undergraduate Meeting Registrants Invited)*	Tuesday, Mar 24	4:00 PM to 5:00 PM	Convention Center	Room 14A
University of Cincinnati Kettering Alumni Meeting	Tuesday, Mar 24	6:30 PM to 8:00 PM	Marriott Marquis	Carlsbad
University of Rochester Toxicology Program Annual Alumni Reception	Tuesday, Mar 24	7:00 PM to 10:00 PM	Marriott Marquis	Catalina
W				
Website Task Force Meeting	Monday, Mar 23	12:00 Noon to 1:00 PM	Convention Center	Room 15B
Welcome Reception *(All Attendees Welcome)*	Sunday, Mar 22	6:30 PM to 7:30 PM	Convention Center	West Terrace
Women in Toxicology Special Interest Group Executive Board Meeting	Tuesday, Mar 24	7:45 AM to 8:45 AM	Marriott Marquis	Malibu
Women in Toxicology Special Interest Group Reception	Wednesday, Mar 25	4:30 PM to 6:30 PM	Marriott Marquis	Marina Ballroom D

San Diego Convention Center Maps

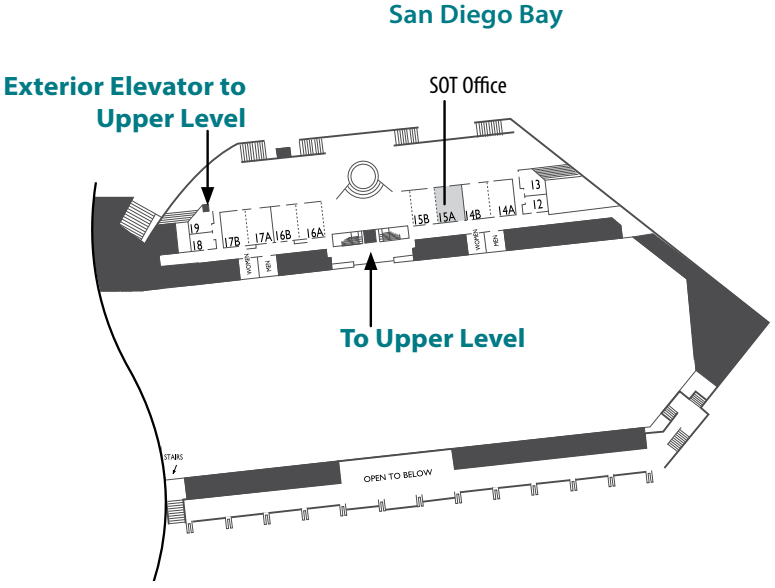
Ground Level

@SOT Center, Plenary Lecture, Registration, and ToxExpo



Mezzanine Level

SOT Headquarters Office and SOT Committee Meetings



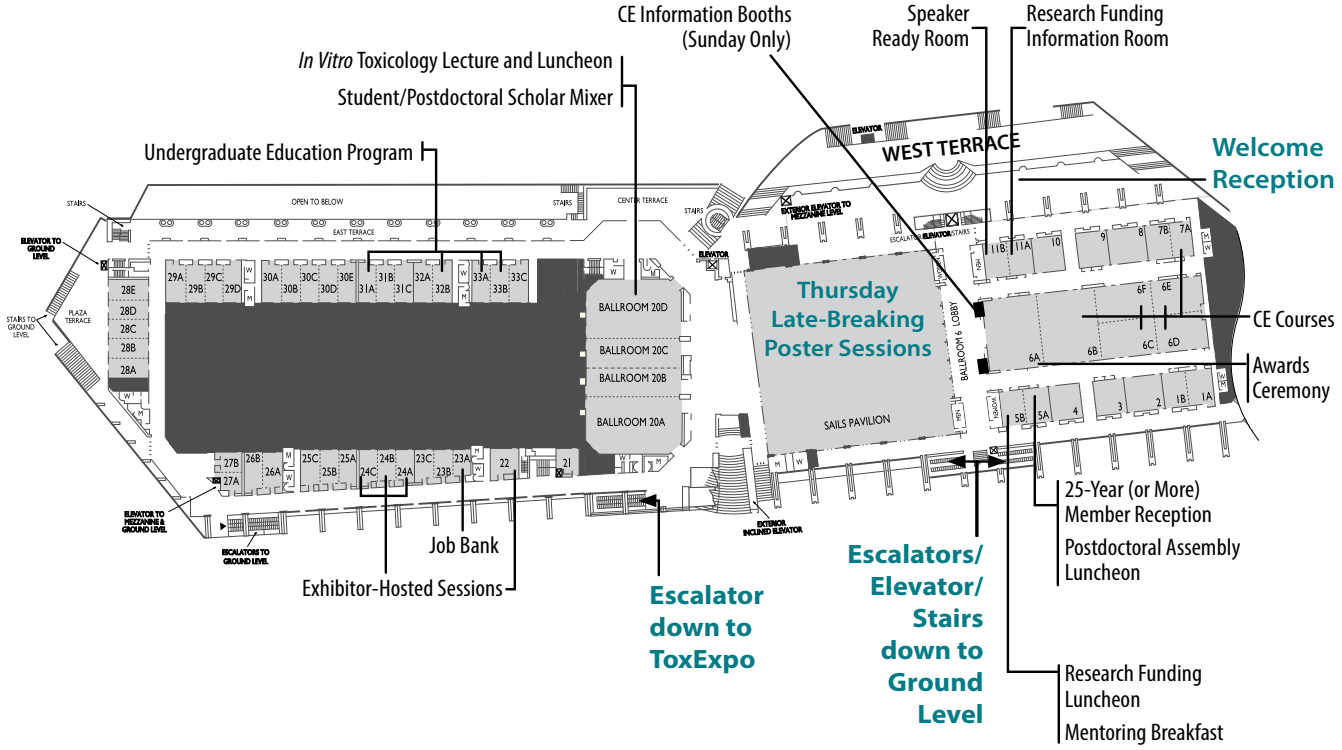
Marriott Hotel

San Diego Convention Center Maps (Continued)

Upper Level

CE Course Rooms, Poster Sessions, and Scientific Sessions; RC, SIG, and SS Events

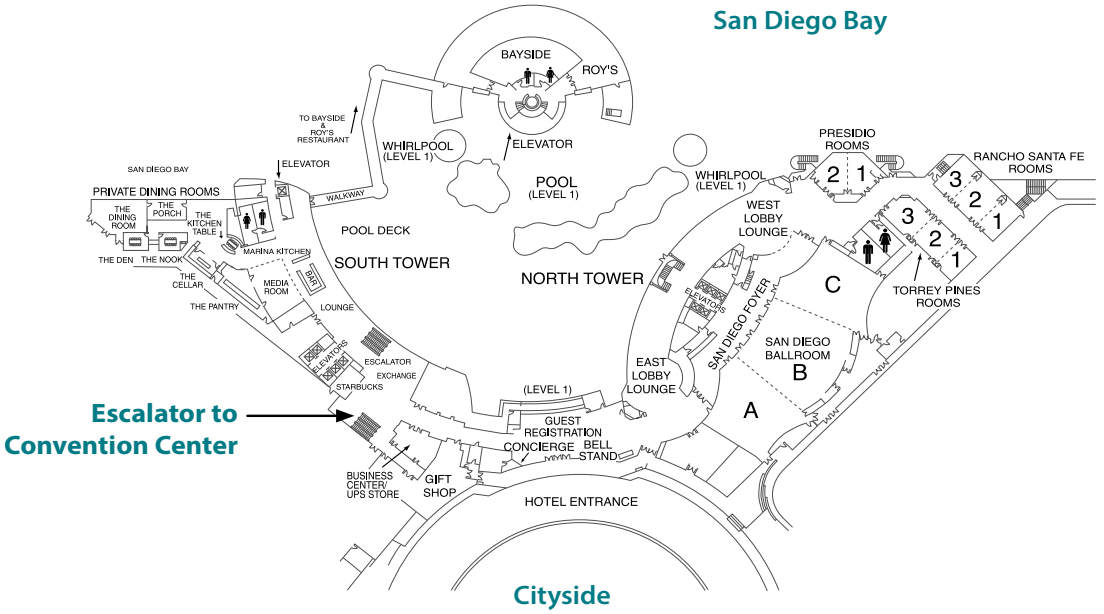
San Diego Bay



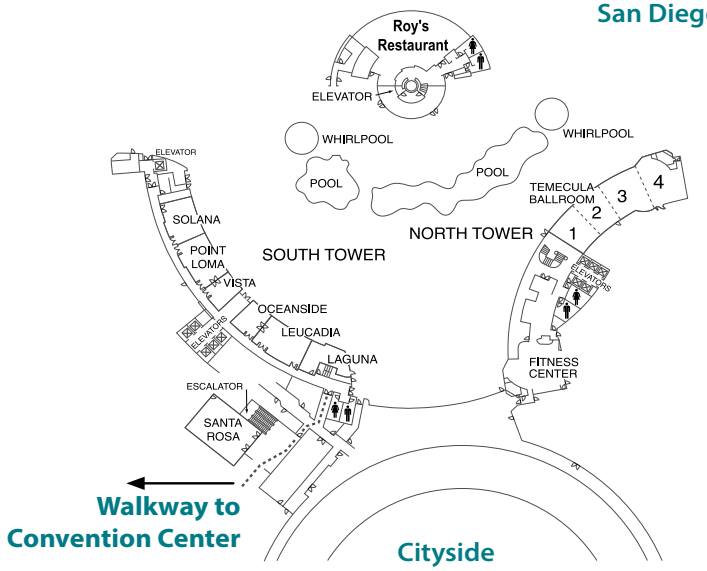
Harbor Drive • Cityside

San Diego Marriott Marquis and Marina Hotel Maps

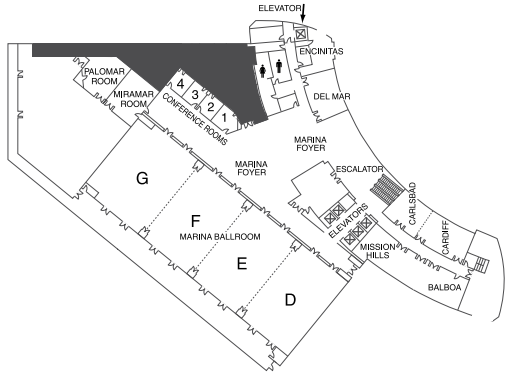
Lobby Level



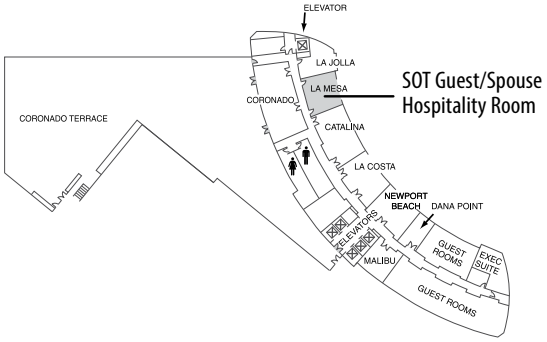
Level One



Level Three • South Tower



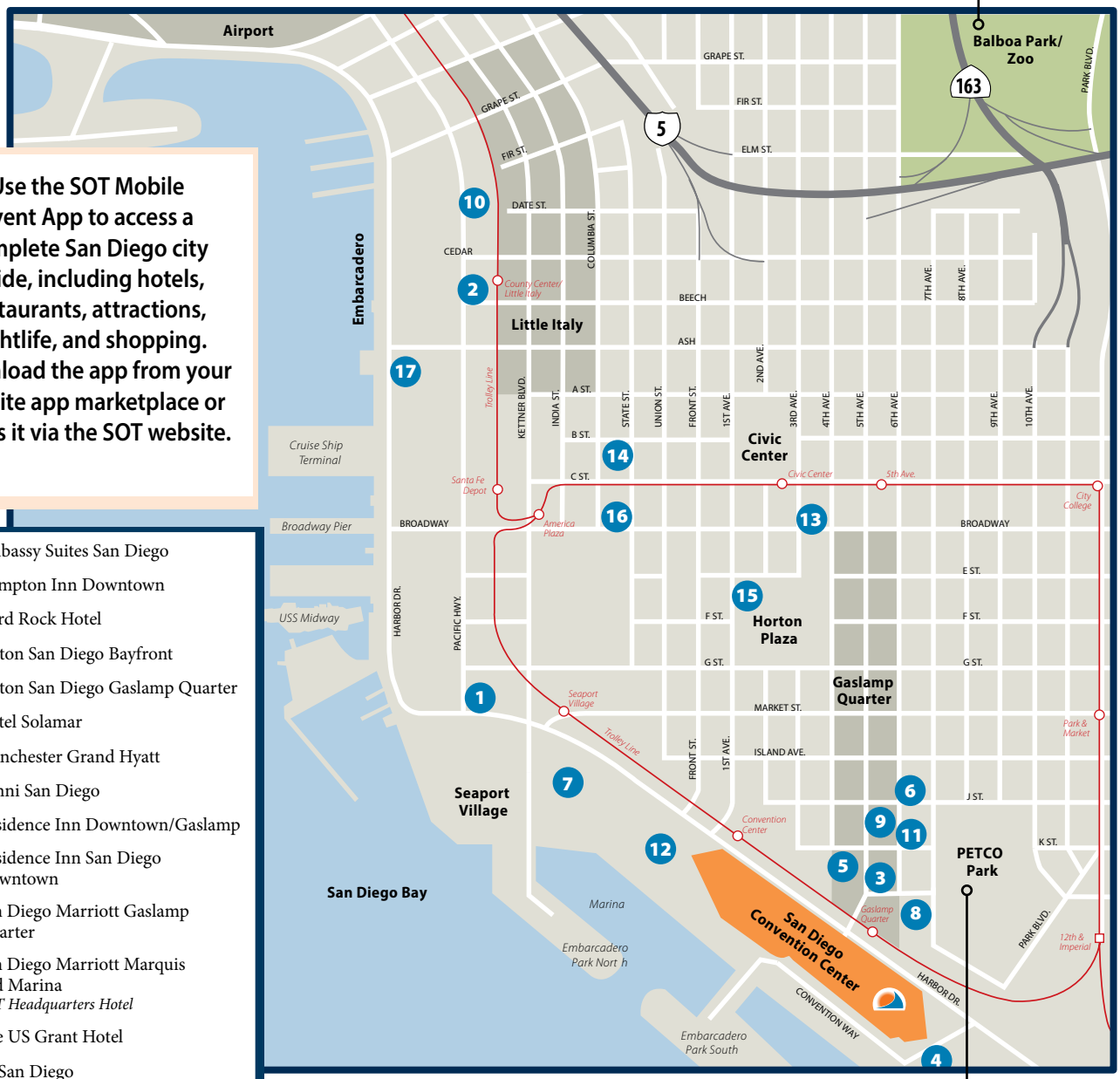
Level Four • South Tower



Map of San Diego Hotel Locations

San Diego Regional Science Fair Judging—Balboa Park, Wednesday, March 25, 11:00 AM to 2:30 PM (See page 97)

Use the SOT Mobile Event App to access a complete San Diego city guide, including hotels, restaurants, attractions, nightlife, and shopping. Download the app from your favorite app marketplace or access it via the SOT website.



1	Embassy Suites San Diego
2	Hampton Inn Downtown
3	Hard Rock Hotel
4	Hilton San Diego Bayfront
5	Hilton San Diego Gaslamp Quarter
6	Hotel Solamar
7	Manchester Grand Hyatt
8	Omni San Diego
9	Residence Inn Downtown/Gaslamp
10	Residence Inn San Diego Downtown
11	San Diego Marriott Gaslamp Quarter
12	San Diego Marriott Marquis and Marina *SOT Headquarters Hotel*
13	The US Grant Hotel
14	W San Diego
15	Westin Gaslamp Quarter
16	Westin San Diego
17	Wyndham San Diego Bayside
	San Diego Convention Center

San Diego Festival of Science and Engineering EXPO Day—Petco Park, Saturday, March 21, 10:00 AM to 5:00 PM (See page 96)

Metropolitan Transit System

The Metropolitan Transit System (MTS) offers fast and convenient service from the airport to the San Diego Convention Center. MTS operates a light rail system called the San Diego Trolley (**www.sdmts.com/trolley/trolley.asp**). In addition to the trolley, MTS bus route 992 directly services the airport and the downtown area. Please visit **www.sdmts.com/home1.asp** for information on various routes, fares, and schedules.

San Diego Hotel Accommodations

1) Embassy Suites San Diego

601 Pacific Highway, San Diego, CA 92101
Tel: 619.239.2400
www.sandiegobay.embassysuites.com

2) Hampton Inn Downtown

1531 Pacific Highway, San Diego, CA 92101
Tel: 619.233.8408
http://hamptoninn3.hilton.com

3) Hard Rock Hotel

207 5th Avenue, San Diego, CA 92101
Tel: 619.702.3000
www.hardrockhotelsd.com

4) Hilton San Diego Bayfront

1 Park Boulevard, San Diego, CA 92101
Tel: 619.564.3333
www.hiltonsandiegobayfront.com

5) Hilton San Diego Gaslamp Quarter

401 K Street, San Diego, CA 92101
Tel: 619.231.4040
www.sandiegogaslampquarter.hilton.com

6) Hotel Solamar

435 6th Avenue, San Diego, CA 92101
Tel: 619.819.9500
www.hotelsolamar.com

7) Manchester Grand Hyatt

1 Market Place, San Diego, CA 92101
Tel: 619.232.1234
www.manchestergrand.hyatt.com

8) Omni San Diego

675 L Street, San Diego, CA 92101
Tel: 619.231.6664
www.omnihotels.com/sandiego

9) Residence Inn Downtown/ Gaslamp

356 6th Avenue, San Diego, CA 92101
Tel: 619.487.1200
www.marriott.com/sanrg

10) Residence Inn San Diego Downtown

1747 Pacific Highway, San Diego, CA 92101
Tel: 619.338.8200
www.residenceinn.marriott.com

11) San Diego Marriott Gaslamp Quarter

660 K Street, San Diego, CA 92101
Tel: 619.696.0234
www.marriott.com/sangl

12) San Diego Marriott Marquis and Marina

SOT Headquarters Hotel

333 W. Harbor Drive, San Diego, CA 92101
Tel: 619.234.1500
www.marriott.com/sandt

13) The US Grant Hotel

326 Broadway, San Diego, CA 92101
Tel: 619.232.3121
www.usgrant.net

14) W San Diego

421 W. B Street, San Diego, CA 92101
Tel: 619.398.3100
www.thewsandiegohotel.com

15) Westin Gaslamp Quarter

910 Broadway Circle, San Diego, CA 92101
Tel: 619.239.2200
www.westingaslamp.com

16) Westin San Diego

400 W. Broadway, San Diego, CA 92101
Tel: 619.239.4500
www.westinsandiego.com

17) Wyndham San Diego Bayside

1355 N. Harbor Drive, San Diego, CA 92101
Tel: 619.232.3861
www.wyndhamsandiegobay.com

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February 25, 2015, 11:00 AM ET

- Regulatory Toxicology Testing for Small Molecules: Strategies and Outcome Analysis
- Risk Assessment of "Traditional" Biologics

April 16, 2015, 11:00 AM ET

- Risk Assessment of Humanized Monoclonal Antibodies and Antibody-Drug Conjugates
- Risk Assessment of Oligonucleotide Constructs

May 18, 2015, 11:00 AM ET

- Regulatory Authority Experience with Diverse APIs and Preclinical Safety Assessments Supporting FTIH
- "Case-by-Case" Regulatory Toxicology Testing in Drug Development in Rare or Debilitating Disease

June 18, 2015, 11:00 AM ET

- New Approaches in Regulatory Toxicology: Why We Need to Change
- Roadmap for Animal-Free Drug Testing

SOT | Contemporary Concepts in Toxicology

Stay Current During the 54th Annual Meeting and ToxExpo

During the 54th Annual Meeting and ToxExpo, Society of Toxicology reporters will provide timely commentary on the scientific sessions through the SOT *Communiqué* blog. Additionally, up-to-date news about the toxicological research, technology, and innovations being presented will be available through SOT's Facebook (www.facebook.com/societyoftoxicology) and Twitter feeds (@SOToxicology and @ToxExpo).

Want to start the conversations? Email marcia@toxicology.org to become an SOT reporter or use #2015SOT and #ToxExpo when posting to your own Facebook and Twitter accounts about content related to the meeting.

SOT Communiqué News

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To find up-to-date information use the SOT Mobile Event App or the Online Planner

SOT Pavilion

Your Place to Connect at the Annual Meeting

Located in the ToxExpo Exhibit Hall, the SOT Pavilion is your place to connect and learn about SOT programs, services, membership benefits, and more. Find out about the SOT Endowment Fund, *Toxicological Sciences*, SOT awards, supported awards and fellowships, ToXchange—the SOT member network—educational programs from K–12 throughout the toxicology career, and everything taking place at the Annual Meeting. The SOT Pavilion is your place on the exhibit floor for all you want to learn about SOT and more. It's a great place to connect, network, and discover what's new.

The SOT Pavilion is Booth 526 inside the Exhibit Hall.

Find out how you can:

- Apply to Join SOT or Check on Member Status
- Participate in Your SOT Regional Chapter, Special Interest Group, and/or Specialty Section
- Connect through the SOT Website
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- Get One-on-One SOT Mobile Event App and Online Planner Assistance
- Utilize the SOT Job Bank
- Actively Participate in ToXchange, the Private and Secure SOT Member Network
- Nominate and/or Apply for SOT Awards

SOT component group (Regional Chapters, Special Interest Groups, and Specialty Sections) and Global Gallery of Toxicology posters will be on display each day throughout ToxExpo hours. Stop by for a special "Representative Attended" poster session from 11:45 am–12:15 pm on Monday, March 23. "Meet the Leaders" each day from 3:00 pm–4:00 pm and learn more about the component groups within the Society of Toxicology.

Come see the High School Poster Exposition across from the SOT Pavilion from 10:30 am–12:30 pm on Tuesday, March 24.

Meet with *Toxicological Sciences* Editors

Monday–Wednesday

Gary W. Miller, Editor-in-Chief
10:00 am–11:00 am
and 2:00 pm–3:00 pm

Virginia Hawkins, Managing Editor
9:00 am–4:00 pm

A schedule of events in the SOT Pavilion can be found on page 56 or by using the 2015 SOT Mobile Event App.

ToxExpo

The Industry's Premier Gathering for Toxicological Products and Services

www.ToxExpo.com

PLAN YOUR VISIT:

HOURS

Monday, March 23
9:00 AM–4:30 PM

Tuesday, March 24
8:30 AM–4:30 PM

Wednesday, March 25
8:30 AM–4:30 PM

ToxExpo Floor Plan

Exhibit Hall • Ground Level

Connect with ToxExpo Exhibitors via the Mobile Event App!

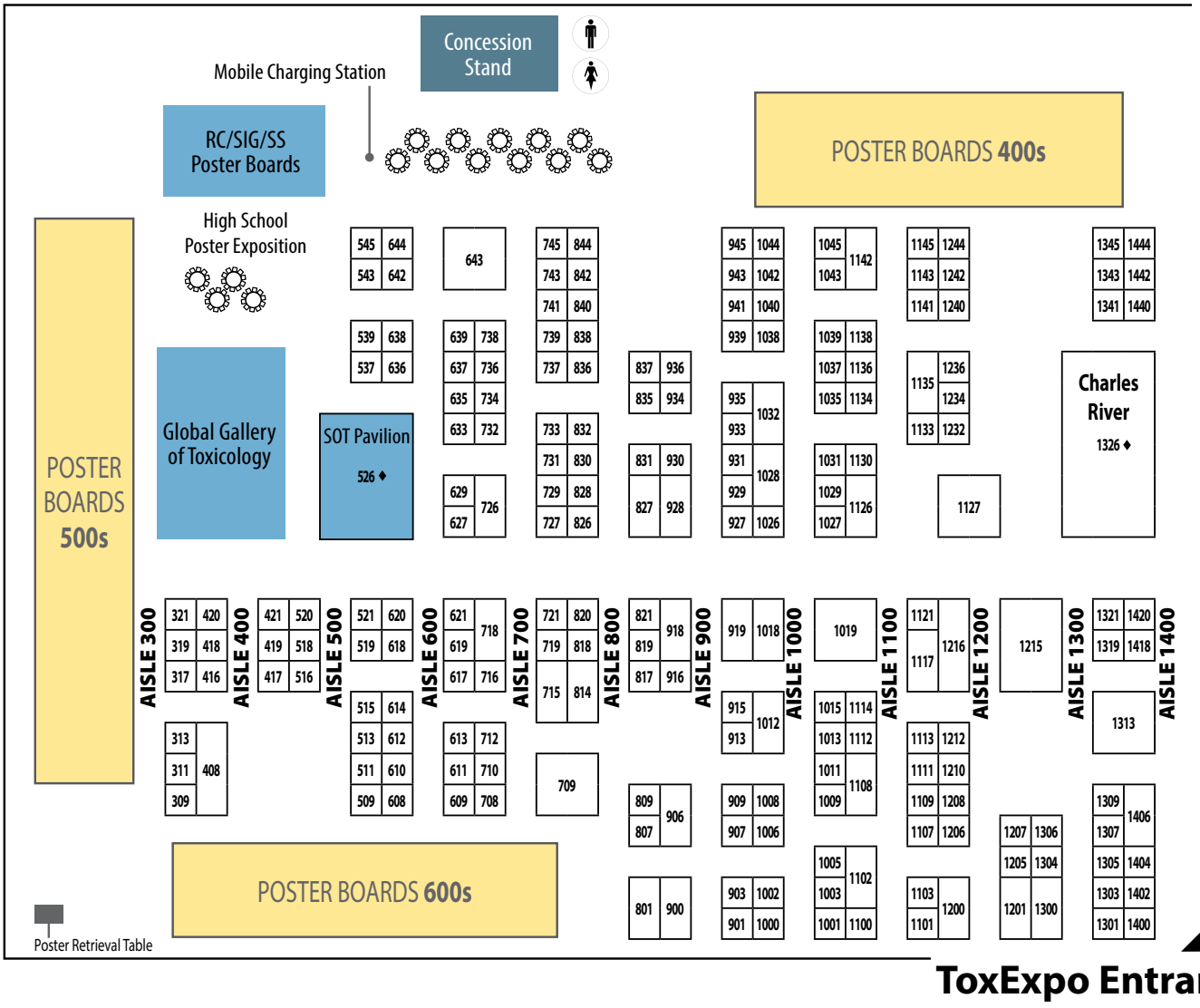
Search by exhibitor name, product category, or by using the interactive floor plan.

ToxExpo Hours:

Monday
9:00 AM–4:30 PM

Tuesday
8:30 AM–4:30 PM

Wednesday
8:30 AM–4:30 PM



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ToxExpo Floor Plan (Continued)

Exhibit Hall • Ground Level

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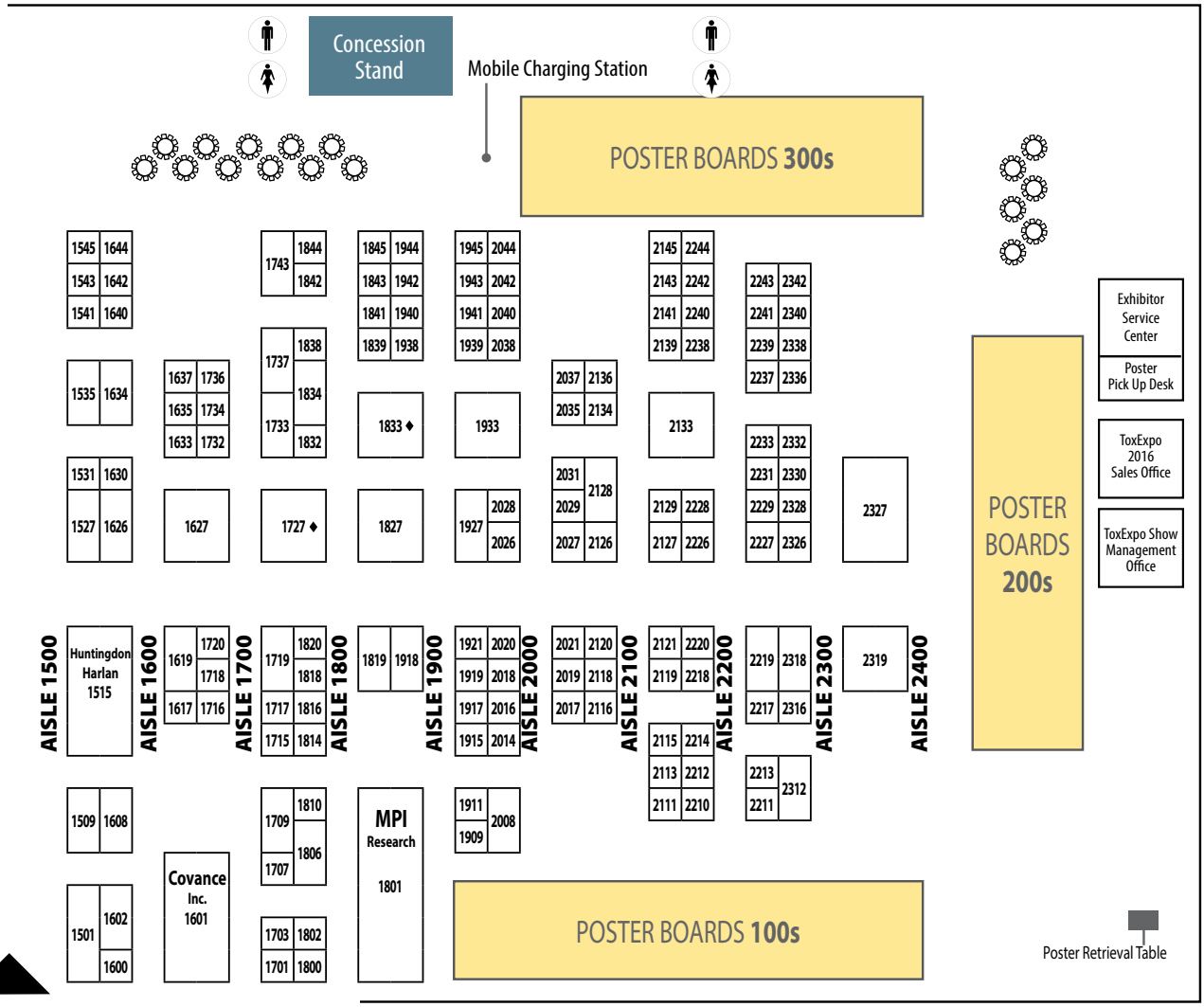
Escalator Clings—Enzo Life Sciences, MPI Research
Meeting Notepads—Battelle
Meeting Pens—ToxServices LLC

Charging Stations—Datacolor Inc., IDEXX Laboratories, Inc., Research Diets



ToxExpo Entrance

Copies of the *ToxExpo Directory* are available at Registration and inside the entrance of ToxExpo.

TOXEXPO

ToxExpo 2015 Exhibitors

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(As of February 6, 2015)

Please access the Mobile Event App or visit ***www.ToxExpo.com*** *or the* **ToxExpo Directory** *for product/service descriptions, a map of booth locations, and other information.*

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See complete listing of supporters on page 416 and back cover.

▲ SOT Affiliates are indicated by a triangle.
Complete list of SOT Affiliates can be found on page 413.

Companies that have been ToxExpo Exhibitors for 25 years or more are in bold.

♦ **SOT Pavilion 526**
- Endowment Opportunities
- Member Services, RC, SIG, and SS Activities
- Outreach Information
- *Toxicological Sciences*

Company Name	Booth Number
ABC Laboratories	1236
Absorption Systems	309
Accelera S.r.l.	2220
ACEA Biosciences, Inc.	906
ACGIH®	610
Advinus Therapeutics Limited	2121
AEgis Technologies Group	1000
Agena Bioscience	939
AI BioTech, LLC	1003
Alabama Research & Development	1541
ALCEDIAG	635
Alconox, Inc.	1630
Algorithme Pharma	1141
Alliance Pharma	1207
Alpha Genesis, Inc. (AGI)	900
Alpha MED Scientific Inc.	2211
Alturas Analytics, Inc.	1802
American Board of Toxicology (ABT)	1307
★ American College of Toxicology (ACT)	736
American College of Veterinary Ophthalmologists	2141
American Preclinical Services	1933
American Screening	2113
Americans for Medical Progress	511
Ani Lytics, Inc.	**1720**
Antech Diagnostics GLP	1304
Applied BioPhysics, Inc.	1005
Aptuit LLC	**719**
Aquaneering, Inc.	1842
Arbor Assays	2145
ArunA Biomedical, Inc.	2237
Asterand Bioscience	1008
Axiogenesis	903
Axion Biosystems, Inc.	817
BASF SE	2008
BASi (Bioanalytical Systems, Inc)	**1200**
♦ **Battelle**	**1727**
BBD BIOPHENIX S.L. - BIOBIDE	313
Bio Medic Data Systems, Inc.	**1501**
Bioculture (Mauritius) Ltd	1028
BioPorto Diagnostics A/S	907
Biopredic International	608
Biopta Ltd	1234
BioreclamationIVT	**1300**
BioReliance	**1313**
Biosearch Technologies, Inc.	2119
BioSpyder Technologies	2233
BioStat Consultants, Inc.	927
BioTox Sciences	1709
Bruker	1042
BSL BIOSERVICE Scientific Laboratories GmbH	837
★ **Calvert Laboratories, Inc.**	**918**
Cardno ChemRisk & Cardno	627
CARE Research LLC/Colorado Histo-Prep	**721**
Carter2 Systems, Inc.	2118
Cayman Chemical	1001
CBSET, Inc.	809
Cedarlane	1031
CellSystems GmbH	1845
Cellular Dynamics International, Inc.	801
Center for Drug Safety Evaluation and Research	2134
Certara	1945
CH Technologies (USA), Inc.	**1440**
ChanTest Corp.	901
♦▲ **Charles River**	**1326**
Chemical Solutions Ltd.	1718
Chilworth Technology Ltd	1734
CITI Program at University of Miami	734
CiToxLAB	2327
ClearH2O, Inc.	1043
Clever Sys Inc	1138
Comparative Biosciences (CBI)	737
CorDynamics	1206
Cosmo Bio USA, Inc.	831
▲ **Covance Inc.**	**1601**
CRC Press - Taylor & Francis Group LLC	**1626**
Critical Path Institute.	743
CTEH®	1136
CXR Biosciences Limited	1715
Cyprotex	1733
Data Sciences International (DSI)	**1918**
★ Datacolor Inc.	1816
Datamars, Inc.	844
Dermal Technology Laboratory Ltd	1637
Detroit R & D, Inc.	821
DiaPharma Group, Inc.	1938
DiscoveRx	2316
DMT-USA Inc.	521
Douglas Connect GmbH	617
DV Biologics	1402
Dynex Technologies	931
eBioscience, An Affymetrix Company	832
ECGVET, LLC	1100
Ellegaard Göttingen Minipigs A/S	1012
Elm Hill Breeding Labs, Inc.	2027
Elsevier	**1406**
EMD Millipore Corporation	408
emka TECHNOLOGIES, INC.	2018
Environ International Corp.	1345
Environmental Health Perspectives (EHP)	2127, 2129
Enzo Life Sciences	1045

Copies of the *ToxExpo Directory* are available at Registration and inside the entrance of ToxExpo.

ToxExpo 2015 Exhibitors (Continued)

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Company Name	Booth Number
EPISKIN	633
Epithelix	1244
EPL Archives, Inc.	1617
EPL, Inc.	**1619**
Eurofins Pharma Discovery Services	1319
★ EUROTOX 2015	636
Exemplar Genetics	1013
Exiqon, Inc	317
Experimur	1915
Exponent, Inc.	1306
ExPub (Expert Publishing)	1909
FlowMetric	828
Fraunhofer ITEM	928
Gene Tools LLC	2028
★▲ Genentech	1032
Genox Corporation	1210
Gentronix, Limited	1130
Gyros	1044
H&T Corporation	2019
Hamilton Thorne	1232
HemoGenix Inc	1109
Hepregen Corporation	629
Histo-Scientific Research Laboratories (HSRL)	1103
HistoTox Labs, Inc.	1716
HTG Molecular Diagnostics	1208
▲ **Huntingdon Life Sciences/Harlan Laboratories**	**1515**
Hμrel Corporation	2116
ICDD-sas	731
ICF International	2128
IDEXX Laboratories, Inc.	1112
IIT Research Institute (IITRI)	**1719**
ImQuest BioSciences	612
In Vitro ADMET Laboratories (IVAL)	**1420**
INDIGO Biosciences, Inc.	1006
Infinite Trading Inc	936
InSphero Inc.	2318
Instech Laboratories	**1535**
Instem	**1127**
Institute for In Vitro Sciences, Inc.	1026
Integrated Analytical Solutions, Inc.	733
Integrated Laboratory Systems, Inc. (ILS)	708
Integrated Nonclinical Development Solutions, Inc	1343
IntelliCyt Corporation	807
International Institute for the Advancement of Medicine	1820
Intertek	2115
InvitroCue	2210
Ionic Transport Assays, Inc	909
IPS Therapeutique	1134
ITR Canada (Bozo & ITR Group)	**1827**
IUTOX	537
Jackson Laboratory, The	1107
Jai Research Foundation (JRF - America)	919
Japanese Society of Toxicology	539
KAER Biotherapeutics	1841
Kallistem	2332
KCAS Bioanalytical Services	727
Kingfisher Biotech	930
Korea Institute of Toxicology (KIT)	1117
Kunming Biomed International (KBI)	1644
Lab Products, Inc.	**1400**

Company Name	Booth Number
LabLogic Systems, Ltd.	1212
Lampire Biological Laboratories, Inc.	1002
Leadscope, Inc.	716
Leyden Group	1814
Lhasa Limited	1635
Litron Laboratories	1818
Lomir Biomedical, Inc.	1819
Lovelace Respiratory Research Institute (LRRI)	1602
Luxcel Biosciences, Ltd.	2227
Malvern Instruments	2213
Marken	2016
Marshall BioResources	**1018**
Mary Ann Liebert, Inc.	1040
MatTek Corporation	620
MB Research Laboratories	1145
Medicilon Preclinical Research (Shanghai) LLC	1121
Medicyte GmbH	1037
Medline Industries, Inc.	929
Meso Scale Discovery	643
MetaSystems Group, Inc.	513
Mexican Society of Toxicology	638
Michelson Prize and Grants in Reproductive Biology	2240
Microchip ID	1839
MicroMatrices Associates Ltd	2017
Millar, Inc.	1035
Molecular Networks GmbH	1838
Moltox	1309
Mouse Specifics Inc	619
★▲ **MPI Research**	**1801**
★ **MRIGlobal**	**1543**
Multi Channel Systems	830
MultiCASE Inc	1133
NAMSA	916
Nanion Technologies Inc.	819
nanoComposix	1717
National Disease Research Interchange	842
♦ National Institute of Environmental Health Sciences (NIEHS)	2228
National Institute of Technology and Evaluation	2242
National Jewish Health	518
National Library of Medicine	2126
National Toxicology Program	2226
Nat'l Center for Toxicological Research	614
Nature Publishing Group	2218
NeuroScience Associates (NSA)	1444
NIH Countermeasures Against Chemical Threats (CounterACT) Research Program	838
Noveprim Group Ltd.	838
★ NSF International/Health Sciences	1108
Nucro-Technics Incorporated	**1305**
Oak Hill Genetics	934
Omni International	933
▲ Organovo	637
OtoScience Labs	729

(continued on next page)

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Pinpoint exhibitor booths and details quickly and easily with the interactive floor plan.

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TOXEXPO

ToxExpo 2015 Exhibitors (Continued)

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Company Name	Booth Number
Otto Trading, Inc.	2031
Oxford University Press	739
Pacific BioLabs	820
Partek Incorporated	1111
PDS Life Sciences.	**1634**
Perceptive Instruments Ltd.	1404
♦▲ Pfizer Worldwide Research and Development	1321
Pharmaron	827
PhenoVista Biosciences	2120
PhoenixBio Co., Ltd.	311
Phylonix Pharmaceuticals Inc	1800
PointCross Life Sciences	1242
Poly Scientific R&D Corp.	321
Porsolt	915
Pre-Clinical Research Services, Inc. (PCRS)	1240
PreLabs	1707
Primate Products, Inc.	**745**
Product Safety Labs	**1701**
Promega Corp	2319
Public Interest Incorporated Foundation Biosafety Research Center(BSRC)	420
Purina LabDiet	**1509**
PWG Genetics	1102
QIAGEN Bioinformatics	**1201**
QPS-THI	2029
QTest Labs	1737
Qualyst Transporter Solutions	609
Quidel	516
Quintiles	710
Quotient Bioresearch	621
ReachBio	2326
ReproCell	1143
Research Diets, Inc.	1027
Reveal Biosciences	519
Ricerca Biosciences LLC	**738**
Ridglan Farms, Inc	1303
RightAnswer.com	1011
Rockland Immunochemicals, Inc.	2217
Royal Society of Chemistry, Cambridge	2143
▲ RTC, Research Toxicology Centre S.p.A.	718
RTI International	814
SAGE Labs	618
Sarstedt Inc	421
Science/AAAS	1015
SCIREQ, Inc. (Scientific Respiratory Equipment)	2020
Seahorse Bioscience	520
▲ **Sequani Limited**	**1527**
Seventh Wave	1341
Shanghai InnoStar Biotech Co., Ltd (InnoStar)	1806
Simulations Plus, Inc.	2312
Sinclair Bio Resources	2035
Sinclair Research Center LLC	726
★ **Smithers**	**709**
SNBL USA SRC	712
▲ **SNBL USA, Ltd.**	**1215**
SoBran Inc	1029
Society of Quality Assurance (SQA)	1940
SOLVO Biotechnology	1732
Sony Corporation	509
Sophion Bioscience, Inc.	1844
Southern Research	**1301**
Springer	715
★ **SRI International**	**1126**
STEMCELL Technologies Inc	1101
Stemina Biomarker Discovery, Inc.	1919
Stillmeadow Inc.	**1418**
Strand Life Sciences	642
Strategic Applications, Inc. (SAI)	**1216**
Suburban Surgical Company	**1600**
Syngene International Limited	836
SynVivo	945
Taconic	**1142**
Takara Bio Europe AB	1009
Tandem Labs	2014
Tecniplast USA, Inc	2044
That's Nice	2037
THINKY U.S.A., INC.	2111
Three S Japan Co., Ltd.	2021
Tianjin Institute of Pharmaceutical Research	826
TNO Triskelion	1921
TOXI-COOP Toxicological Research Center	1640
★▲ Toxicology Excellence for Risk Assessment (TERA)	2231
Toxicology Regulatory Services (TRS)	1113
Toxicology Research Laboratory (TRL)	1545
Toxikon Corporation	**1627**
★ ToxServices LLC	1911
ToxStrategies	732
Toxys	2214
TPL Pathology Labs R&D	1038, 1039
Translational Bioscience Inc	639
Trevigen Inc.	1810
Triangle Research Labs, LLC	1736
TSE Systems, Inc.	1927
US Army Medical Research Institute of Chemical Defense (USAMRICD)	419
US EPA/Office of Research and Development	2133
Veritox, Inc.	1633
Vet Path Services (VPS)	1832
Vimta Labs Limited	1939
Vitrocell Systems GmbH	1442
Vitron, Inc.	**319**
Vivo Bio Tech Limited	935
vivoPharm	1834
Vivotecnia	835
VRL Laboratories	2219
Wake Forest Innovations	941
WestChina-Frontier PharmaTech Co., Ltd.	1135
★▲ **WIL Research**	**1019**
Wildlife International, a Division of EAG, Inc.	**1531**
World Precision Instruments	1114
Worldwide Clinical Trials	2026
Worldwide Primates, Inc.	1205
♦▲ WuXi AppTec	1833
Xenometrics	1703
XenoTech, LLC	818
XpressBio	2335, 2336
Xybion Medical Systems	1608
Yecuris Corporation	913
Zoologix, Inc.	1642
Zyleris PharmaTech	1917

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Exhibitor-Hosted Session Index

All sessions will be held at the San Diego Convention Center.

Exhibitor-Hosted Sessions E

(Listed by date and time, then alphabetically by presenter)

Exhibitor-Hosted Sessions are informative sessions developed by an exhibiting company.

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Monday

9:15 AM to 10:15 AM

Presented by	Topic	Room	Page
BioreclamationIVT and InSphero Inc.	3D Microtissue Cultures: Use in Long-Term Hepatocyte ADME-Tox Studies	Room 24C	140
Covance	From Candidate Drug to Clinical POC: Managing the Continuum	Room 24B	140
MPI Research	Safety Biomarkers in Preclinical Studies: A Clinical Pathology Perspective	Room 24A	140
Toxikon Corporation	Considerations for Nonclinical Safety Testing of Biologics, Biosimilars, and Biobetters	Room 22	140

10:45 AM to 11:45 AM

Presented by	Topic	Room	Page
Cyprotex	Utilization of *In Vitro* Mechanistic and 3D Models to Improve the Prediction of Hepatoxicity and Cardiotoxicity	Room 24B	165
Huntingdon Life Sciences/Harlan Laboratories	The Immunology of Immunogenicity?	Room 24C	164
Lhasa Limited	Computational Approach to Managing Mutagenicity Risk for ICH M7 and Beyond	Room 22	164
Promega Corporation	Adapting Cell-Based Assays to 3D Culture Models	Room 24A	164

12:15 PM to 1:15 PM

Presented by	Topic	Room	Page
EPISKIN Academy	Overview of Cutaneous Safety and Efficacy Assessment with Reconstructed Human Epidermis (RHE)	Room 24A	168
Fraunhofer ITEM	Alternative Methods in Inhalation Toxicology	Room 24B	168
PDS Preclinical Lifesciences Inc and Integrated Nonclinical Development Solutions (INDS) Inc	Impact of Electronic Standards on Drug Development Landscape	Room 22	168
RTC and Ellegaard Göttingen Minipigs	The Göttingen Minipig As Experimental Model for Anti-Neoplastic Drug Toxicity	Room 24C	169

1:45 PM to 2:45 PM

Presented by	Topic	Room	Page
Charles River	Diabetes and Weaker Bones—Exploring the Connection	Room 24C	195
IDEXX Laboratories	The Gut Microbiota As a Source of Variability in Animal Models	Room 24A	195
Korea Institute of Toxicology	Alternative Models Developing in KIT for Predictive Toxicology	Room 22	195
Lovelace Respiratory Research Institute	Solutions and Lessons Learned with Inhaled Compounds in the Pharmaceutical and Chemical Industries: Perspective and Insights from Key Opinion Leaders James Swenberg and Chet Leach	Room 24B	195

3:15 PM to 4:15 PM

Presented by	Topic	Room	Page
BioReliance	Further Exploration of Study Design for Tg.rasH2 Mouse Carcinogenicity Studies	Room 22	200
InSphero Inc.	3D Microtissues Meet OMICS Technologies and High-Content Imaging	Room 24C	200
MultiCASE Inc	*In Silico* Approach to the ICH M7 Challenges	Room 24B	200
NSF International	Chemical Risk Assessment Best Practices	Room 24A	200

4:45 PM to 5:45 PM

Presented by	Topic	Room	Page
APTUIT LLC	Strategies to Reduce Attrition in Early and Late Stages of Drug Development	Room 24B	201
Instem	Practical SEND Planning and Implementation: Key Learnings from a Dedicated Community of Experience and Expertise	Room 24C	201
Leadscope, Inc.	Semi-Automatic Generation of Expert Reports for ICH M7 Regulatory Submissions	Room 24A	201

TOXEXPO

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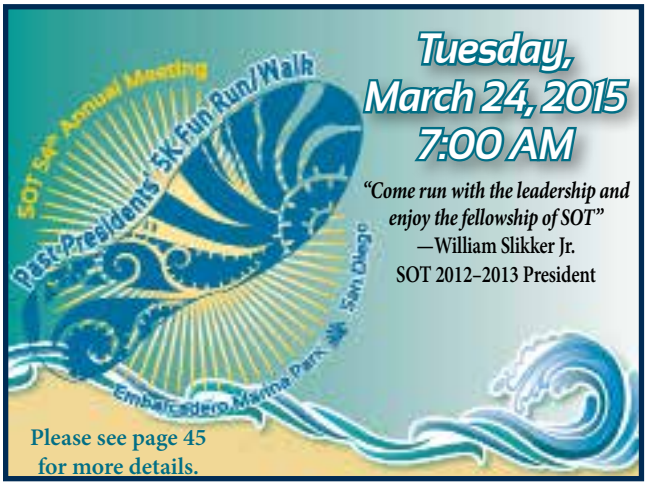
Exhibitor-Hosted Session Index (Continued)



Tuesday

8:30 AM to 9:30 AM

Presented by	Topic	Room	Page
Hepregen Corporation	The Use of Human HepatoPac, an *In Vitro* Microliver Platform, for Predictive Toxicology	Room 24B	204
MPI Research	Challenges, Conundrums, and the "Catch-22" in Abuse Liability Testing for NDA Approvals: The Bugaboo of Biologics?	Room 22	203
Toxikon Corporation	Key Factors an End-User Must Consider When Examining a Vendor's Extractable/Leachable Program	Room 24C	204
WuXi AppTec	Considerations and Challenges Associated with Medical Device Risk Assessment	Room 24A	203

10:00 AM to 11:00 AM

Presented by	Topic	Room	Page
Algorithme Pharma	Overcoming Challenges during Preclinical Sample Collection to Minimize the Impact on Toxicological Data	Room 24A	234
Datacolor Inc.	Application of Color Calibration in Photomicrography for Toxicologic Pathology	Room 24B	234
Huntingdon Life Sciences/Harlan Laboratories	Less Compound, Less Cost—How to Succeed in Early-Phase Inhalation Programs	Room 22	234
In Vitro ADMET Laboratories, LLC	*In Vitro* Hepatotoxicity Evaluation with Cryopreserved Human, Animal, and Transgenic Animal Hepatocytes	Room 24C	234

11:30 AM to 12:30 PM

Presented by	Topic	Room	Page
Cellular Dynamics International and ACEA Biosciences	Making Cardiotoxicity Prediction Simple and Relevant: Human iPSC-Cardiomyocytes and Integrated Impedance and Field Potential-Based Assays Enable Highly Predictive Cardiotoxicity Assessments across Multiple Mechanisms	Room 24B	235
Data Sciences International	Structural and Functional Endpoints in Repeat-Dose Toxicity Cardiovascular Risk Assessments and the Use of *In Vivo* Physiologic Monitoring	Room 22	235
HTG Molecular Diagnostics	Fully Automated and Easy-to-Use Solution for Your Cytochrome p450 Gene Expression Testing	Room 24C	234
Lovelace Respiratory Research Institute	Models of Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) Threats: Considerations for Drug Development under the Animal Rule	Room 24A	235

1:00 PM to 2:00 PM

Presented by	Topic	Room	Page
American Preclinical Services	Improved Methods for *In Vivo* and *In Vitro* Thrombogenicity Testing for Medical Devices	Room 24A	261
BioReliance	Revised OECD Test Guidelines for Genetic Toxicology	Room 22	261
Charles River	Usefulness of Biomarkers in Support of Preclinical Studies	Room 24C	261
ICF International	Using DRAGON to Implement Systematic Review: Lessons Learned	Room 24B	261

2:30 PM to 3:30 PM

Presented by	Topic	Room	Page
Battelle	The Path to Licensure: Ebola Vaccines	Room 22	267
CiToxLAB and Ellegaard Göttingen Minipigs	Reproductive and Juvenile Studies in Minipigs	Room 24B	266
InSphero Inc.	3D Liver Models and Beyond: 3D Hepatic, Cardiac, Pancreatic, and Neural Microtissue Models for Toxicity Testing	Room 24C	266
Stemina Biomarker Discovery, Inc.	Application Study: Human-Induced Pluripotent Stem (iPS) Cell Assay As a Tool for Compound Ranking Based on Human Developmental Toxicity Potential	Room 24A	266

Exhibitor-Hosted Session Index (Continued)

ToxExpo 2016 Exhibit Space Selection Process

Tuesday, March 25, at 4:45 PM in Room 22

Priority Point booth sales for 2016 will take place on an appointment basis at the ToxExpo Sales Office. Those companies in higher point levels will be contacted in advance of the show with their scheduled appointment time. If you did not receive an appointment in advance, please plan to attend the 2016 Sales Meeting.

4:00 PM to 5:00 PM

Presented by	Topic	Room	Page
Alberta Centre for Toxicology and The Hamner Institutes	Utilization of the Impedance-Based xCELLigence Real-Time Cell Analysis (RTCA) Technology for *In Vitro* Health Risk Assessment	Room 24A	267
APTUIT LLC	Efficiently Integrating CMC and Preclinical Safety/DMPK to Streamline the Access to Phase I: Is the Balance between Speed, Cost, and Risk Management Possible?	Room 22	267
PointCross LifeSciences, Inc	SEND Compliance with US FDA Guidance	Room 24B	267
Takara Bio Europe AB (formerly Cellartis)	Stem Cell-Derived Hepatocytes with Enhanced Drug Metabolizing Functions	Room 24C	267

Wednesday

9:15 AM to 10:15 AM

Presented by	Topic	Room	Page
Charles River	Consequences of Immunogenicity in Nonclinical Safety Studies	Room 24C	296
Covance	Metabolites in Safety Testing—A Novel Key to Turn for Your 3Rs Initiatives	Room 24B	296
MPI Research	Application of Molecular Imaging and Radiochemistry in Drug Development	Room 24A	296

10:45 AM to 11:45 AM

Presented by	Topic	Room	Page
Hµrel Corporation	HµREL: "Plug-and-Play" Primary Hepatic Models for a Variety of Definitive Hepatotoxicity Applications	Room 24B	297
Organovo	Unraveling the Gordian Knot of Predictive Toxicology: Can Next-Gen Culture Systems Solve the Puzzle?	Room 24A	297
Toxikon Corporation	Blending Biocompatibility and Pharmaceutical Testing Processes to Obtain Subacute, Subchronic, and Chronic Toxicity Evaluations of Medical Devices	Room 24C	296

12:15 PM to 1:15 PM

Presented by	Topic	Room	Page
EMD Millipore	Kidney Toxicity Biomarker Analysis Tips from the Experts: Why Just Multiplex When You Can MILLIPLEX?	Room 24A	299
Huntingdon Life Sciences/Harlan Laboratories	Advances in *In Vitro* and *In Silico* Techniques: Regulatory Acceptance Worldwide	Room 24C	299

1:45 PM to 2:45 PM

Presented by	Topic	Room	Page
Agilent Technologies	Sharpen the Focus of Your Toxicology Research Program Using Agilent's Integrated Biology 'Omics Solutions	Room 24A	329
BioReliance	Advanced *In Vitro* ADME and Toxicology Services Designed to Improve Drug Safety and Efficacy	Room 24B	329

Additional sessions may be scheduled after the printing of this Program. *Please see the* ToxExpo Directory *or use the Mobile Event App for the most current schedule.*

Win $500!

Visit Diamond Level Supporter booths (marked with a diamond symbol on pages 36–38) and drop your business card into the drawing box.

$500 American Express Gift Card awarded daily!

ePosters—A Convenient Way to View Posters

Did you miss the opportunity to view a poster of interest?

In addition to attending Poster Sessions, you can view some posters through the SOT Mobile Event App.

Search and view the ePosters on your mobile device using the ePoster feature in the SOT Mobile Event App—before, during, and after the meeting (until May 11, 2015).

If you are a poster presenter, please take a few minutes to upload your PowerPoint or PDF poster through an Internet-based, user-friendly presentation system prior to the meeting at **https://cms.psav.com/sot2015** or during the meeting in the Speaker Ready Room at the San Diego Convention Center, Room 11B.

Copies of the *ToxExpo Directory* are available at Registration and inside the entrance of ToxExpo.

TOXEXPO

Join SOT at the level of membership that's right for you!

Founded in 1961, the Society of Toxicology includes more than 7,800 members from nearly 60 countries worldwide. SOT members are drawn from academic institutions, industry, and government service, among other areas, and are active in myriad related fields and professions. All members partner with SOT in advancing science to enhance human, animal, and environmental health. You may apply to join the SOT at the following membership levels:

Student—be enrolled in a graduate degree program related to toxicology

Postdoctoral—hold a PhD or other doctoral degree (e.g., MD, DVM) with an interest in toxicology, and be under the direction of a research mentor

Associate—be engaged in continuing professional scientific activities in toxicology

Full—demonstrate a continuing professional interest in toxicology and have conducted and published original research, and/or be generally recognized as expert in some area of toxicology

Apply for—or upgrade to—the level of membership that's right for you! Please see the SOT website (**www.toxicology.org/ms/join.asp**) or visit the SOT Pavilion (Booth 526) for further information.

Undergraduate students may become **SOT Undergraduate Student Affiliates**.

As an SOT member you can…

Communicate, connect, and collaborate with colleagues via **ToXchange**, the professional, secure SOT member network, and keep current at **www.toxicology.org** with member-only information.

Qualify for reduced SOT member rates for the SOT Annual Meeting, Continuing Education Courses, and Contemporary Concepts in Toxicology topical meetings.

Access the official journal of SOT, *Toxicological Sciences,* online and/or choose to receive in print.

Utilize Career Resources such as the SOT Job Bank, and register to find or be a mentor on Mentor Match.

Qualify for exclusive SOT member awards from Graduate Student Travel Support and Research Training to Postdoctoral Fellowships, Traveling Lectureships, SOT Awards, and more!

Plus…
Join one or more of 27 Specialty Sections, 18 Regional Chapters, or 6 Special Interest Groups that provide a variety of networks for exchanging information and collaborating with peers. ***Note:*** Graduate Student and Postdoctoral members may ***join one Specialty Section and one Special Interest Group at no additional cost.***

Membership Fees:

Full Membership $138	**Postdoctoral Membership..... $35**
Associate Membership $138	**Student Membership $20**

Reduced Dues and Membership Dues Assistance for Scientists from Developing Countries*

Full and Associate Developing Countries Membership $50

Student and Postdoctoral Developing Countries Membership.....$10

Student and Postdoctoral members may also qualify for a dues waiver through the Membership Dues Assistance Program.

Special offer to nonmember 2015 Annual Meeting attendees: submit your completed application by May 1, 2015 and, upon acceptance, SOT will waive your 2015 membership dues!

Membership

www.toxicology.org

*For complete information about membership in the Society of Toxicology, visit the SOT website at **www.toxicology.org** and select "Join SOT" at the top of the page.

54th Annual Meeting and ToxExpo™
San Diego, California
March 22–26, 2015 • San Diego Convention Center

Registration

Annual Meeting Registration Fees

	On-Site
SOT Member	$420
Nonmember	$760
SOT Retired/Emeritus Member	$170
Postdoctoral SOT Member	$185
Postdoctoral Nonmember†	$270
Graduate Student SOT Member	$165
Graduate Student Nonmember†	$230
Undergraduate Student	$0
High School Student	$0
SOT Affiliate	$0
Press	$0
Guest *(Nonscientist)*	$100

(Guests do not have access to the Scientific Sessions or the ToxExpo.)
† = Rates for Physicians-in-Training Resident and Fellow Nonmembers and Medical Student Nonmembers, for PM11 (CE/CME) course only. Physicians-in-Training Resident and Fellow Nonmembers, and Medical Student Nonmembers, should contact SOT Headquarters for further registration information. Note: Registration fees are for the Annual Meeting and the CE/CME course only and not for the CME credits themselves.

Continuing Education Sunrise Mini-Course Fees

(includes continental breakfast)

(Only Annual Meeting Registrants May Enroll in CE Courses.)

	On-Site
SOT Member/Affiliate	$125
SOT Retired/Emeritus Member	$125
Nonmember	$145
Postdoctoral *(SOT Member or Nonmember)*	$125
Graduate or Undergraduate Student *(SOT Member or Nonmember)*	$95
Press	$0

Continuing Education Course Fees

(per morning or afternoon course)

(Only Annual Meeting Registrants May Enroll in CE Courses.)

	On-Site
SOT Member/SOT Affiliate	$220
SOT Retired/Emeritus Member	$180
Nonmember	$370
Postdoctoral *(SOT Member or Nonmember)* †	$160
Graduate or Undergraduate Student *(SOT Member or Nonmember)* †	$115
Press	$0

Annual Meeting Registration Includes:

- Awards Ceremony, Sunday, March 22, 5:15 pm–6:30 pm.
- Welcome Reception, Sunday, March 22, 6:30 pm–7:30 pm.
- Plenary Opening Lecture, Monday, March 23, 8:00 am–9:00 am.
- All Scientific Sessions, 9:15 am, Monday, March 23, through 12:00 noon, Thursday, March 26 (see Program Schedule beginning on page 131 for additional details).
- ToxExpo, Exhibit Hall, 9:00 am–4:30 pm, Monday, March 23; 8:30 am–4:30 pm, Tuesday, March 24, and Wednesday, March 25.

Participants also are encouraged to register for the Continuing Education Courses. These are available during three time intervals on Sunday, March 22—the Sunrise Mini-Course is 7:00 am–7:45 am, morning courses are 8:15 am–12:00 noon, and afternoon courses are 1:15 pm–5:00 pm.

Badges

Annual Meeting attendees who register by January 31, 2015, will receive badges and registration materials in the mail. Attendees who already have their 2015 Annual Meeting badges do not need to wait in the registration line. If you have registered and have NOT received your badge by mail, or need a replacement badge, go to the "BADGE PICK UP" registration counter to pick up your badge. You will be asked to show a photo ID.

If you have not registered for the meeting before you arrive in San Diego, please complete the on-site Registration Form found at the kiosks in the Registration area and proceed to the appropriate registration line.

For security reasons, badges may not be altered. Please go to the SOT on-site Registration to update information on your badge.

Registration Hours

The Registration Desk is located in the lobby of the Ground Level in the San Diego Convention Center.

Registration hours:

Saturday	4:00 PM–7:00 PM
Sunday	7:00 AM–8:00 PM
Monday	7:00 AM–5:00 PM
Tuesday	8:00 AM–4:00 PM
Wednesday	8:00 AM–4:00 PM
Thursday	8:00 AM–12:00 Noon

Registration Confirmation

You should receive a registration confirmation/receipt via email regardless of whether you registered online, by mail, or by fax. If you don't receive your confirmation within two weeks, please contact SOT Headquarters at sothq@toxicology.org, or call 703.438.3115.

2015 SOT Annual Meeting Policies

By registering for the 2015 SOT Annual Meeting, you are agreeing to the following terms and conditions:

For individuals who are not members of SOT, participation in SOT's Annual Meeting and ToxExpo is available only to bona fide individuals who are engaged in or promote the field of toxicology or biotechnology research and support the growth and development of the toxicology field. For organizations, participation in the SOT's Annual Meeting and ToxExpo is available only to bona fide organizations with public policy positions and business practices that are generally consistent with SOT's mission, goals, reputation, and its policies and principles as determined by SOT. SOT reserves the right to review applications for participation at SOT's Annual Meeting and ToxExpo to confirm that the applicant meets these criteria and may, at SOT's sole discretion, reject a registration by any individual or organization or withdraw registration privileges at any time if any individual or organization is found to be inconsistent with SOT's principles and interests.

Unless written notification by the registrant, stating otherwise, is submitted to SOT Headquarters prior to the Annual Meeting or while registering on-site, SOT Annual Meeting registrants grant SOT permission:

- To reproduce, copy, and publish image, voice, and any or all media taken at the Annual Meeting.
- To share registrant contact information with organizations that we believe might have a product or service of interest to you. Limited data provided to third parties include name, affiliation, title, and business address. Your telephone and fax numbers, and email will not be disclosed to third parties.
- To share registrant name and affiliation with SOT exhibiting companies.
- To be included in the Attendee listing accessible to meeting registrants using the Mobile Event App—registrant name and affiliation shared.

SOT Annual Meeting registrants are prohibited from:

- Inviting children under the age of 15 and guest/spouse registrants into the Exhibit Hall. Session chair must provide consent for the guest/spouse or child to attend the session.
- Soliciting in the ToxExpo Exhibit Hall unless they are an approved exhibitor. SOT and ToxExpo retains the right to have removed from the exposition any company that has not duly contracted for exhibit space.
- Taking photographs or other electronic capture of scientific sessions in meeting rooms or the ToxExpo without the consent of the session chair and the presenter(s)/author(s).
- Photographing colleagues against the backdrop of scientific posters on display without the express consent of the presenting author(s).
- Photographing exhibit booths.
- Speaking on cell phone while attending scientific sessions.

The policies adopted above will be enforced by the Society. Those individuals who do not comply will be asked to leave the session or ToxExpo floor. If you have any questions regarding these policies, please contact the SOT Headquarters Office.

Tuesday, March 24, 2015
7:00 AM

"Come run with the leadership and enjoy the fellowship of SOT"
– William Slikker Jr., SOT 2012–2013 President

Thank You to Our Supporter:
IDEXX Laboratories, Inc.

IDEXX BioResearch

To register, visit the Social Events under the Special Events section of the SOT Annual Meeting website.

Registration is only $20 and all proceeds will go toward the SOT Endowment Fund.

ePosters—A Convenient Way to View Posters

Did you miss the opportunity to view a poster of interest?
In addition to attending Poster Sessions, you can view some posters through the SOT Mobile Event App.

Search and view the ePosters on your mobile device using the ePoster feature in the SOT Mobile Event App—before, during, and after the meeting (until May 11, 2015).

If you are a poster presenter, please take a few minutes to upload your PowerPoint or PDF poster through an Internet-based, user-friendly presentation system prior to the meeting at **https://cms.psav.com/sot2015** or during the meeting in the Speaker Ready Room at the San Diego Convention Center, Room 11B.

General Information

Accessibility for Persons with Disabilities

The San Diego Convention Center and most of the SOT hotels are accessible to persons with disabilities. If you require special services, please mark the appropriate box on the Annual Meeting Registration Form.

LSA Interpretation Services

800.305.9673
www.lsaweb.com

Language Services Associates is a nationwide full-service firm providing translators and interpreters in 180 languages.

Scooter Rentals:

Scoot Around
888.441.7575
www.scootaround.com

If you require more information about accessibility, please contact Heidi Prange at SOT Headquarters: 703.438.3115 ext. 1424.

Annual Meeting Materials

All Annual Meeting registrants receive a copy of the *Program* that can be picked up on-site. In an effort to conserve resources, the printed *Program* will be mailed ONLY by request (in the US and Canada only). If you wish to receive your printed *Program* before the meeting (request made by February 28), please select the "I want to receive the printed *Program* before the meeting by mail" checkbox on the Registration Form, and the *Program* will be mailed in early March (in the US and Canada only). The *Program* and *The Toxicologist,** a special issue of *Toxicological Sciences* that includes all meeting abstracts, will be available for download on the SOT website prior to the Annual Meeting.

Pre-Registered: When you arrive at the San Diego Convention Center, if you have received your badge and your requested copy of the *Program* in the mail, you will only need to pick up a badge holder and a copy of the *ToxExpo Directory*, which will be available throughout the center and inside Exhibit Hall. If you have registered and have NOT received your badge by mail, or need a replacement badge, please visit the "BADGE PICK UP" registration counter located in Registration. Your 2015 Annual Meeting registration badge must be presented to obtain access to SOT functions.

Should you need to pick up materials on-site, present your badge to an attendant at one of the handout tables and your request will be fulfilled. Please read the information below:

- SOT Members in the United States and Canada attending the Annual Meeting who selected "I want to receive the printed *Program* before the meeting by mail" when they registered received the printed *Program* prior to the Annual Meeting.
- SOT Members in the United States and Canada not attending the Annual Meeting may request that a copy of the *Program* be mailed following the Annual Meeting. Send email requests to jimd@toxicology.org.
- SOT Members outside of the United States and Canada may pick up the printed *Program* at the meeting or may request that it be mailed following the Annual Meeting. Send email requests to jimd@toxicology.org.
- Non-SOT Members in the United States and Canada who registered on or before February 28 and selected the "I want to receive the printed *Program* before the meeting by mail" received the printed *Program* prior to the Annual Meeting. All non-SOT Members who registered after February 28 (and non-SOT Members from outside of the United States or Canada) may pick up the printed *Program* at the meeting.

Materials for Those Who Need to Register On-Site: If you have not already registered, please go to the counter in Registration in the San Diego Convention Center to complete this process. When you have received your registration badge and event/CE course tickets, simply stop by one of the handout tables and present your badge to obtain the Annual Meeting materials (i.e., the *Program*, the *ToxExpo Directory*, and other supplementary materials).

Download the Mobile Event App or access the Online Planner to view the most up-to-date meeting information. These tools enable you to engage with organizers, exhibitors, and each other, and to manage your time and maximize your experience at the Annual Meeting.

*Annual Meeting attendees may purchase a printed version of *The Toxicologist* for $40 per copy at the Registration desk in the San Diego Convention Center. You may preorder using the Registration Form and pick up a copy on-site or wait to purchase a copy on-site (while supplies last). *The Toxicologist* will be available for download (beginning February 2015) free of charge on the SOT website.

Attire

The official attire for the Annual Meeting is business casual. No coat or tie is required! We encourage you to bring comfortable clothing and shoes. Because meeting rooms may seem cold, please bring a sweater or jacket and/or dress in layers.

General Information (Continued)

Business Center

Tel: 619.525.5450
Fax: 619.525.5455
Email: usa1324@fedex.com

The San Diego Convention Center FedEx Office/Business Center is conveniently located in the lobby on the Ground Level across from Exhibit Hall D. The Business Center offers services such as FedEx shipping, common office supplies, Internet access, high-quality full color and black and white copying, printing, and uploading documents from a memory stick or CD.

Business Center Hours:

Saturday–Sunday ..... 9:00 AM–5:00 PM
Monday–Friday ..... 8:00 AM–5:00 PM

Career Resource and Development Services

As part of the Career Resource and Development (CRAD) services, the on-site Job Bank Center is located in the San Diego Convention Center in Rooms 23A (Office) and 23BC (Interview Rooms) on the Upper Level.

The Job Bank Center Hours:

Sunday ..... 1:00 PM–5:00 PM
Monday ..... 9:00 AM–5:00 PM
Tuesday ..... 8:30 AM–5:00 PM
Wednesday ..... 8:30 AM–5:00 PM

Full CRAD services and event details may be found on page 62.

Chat with an Expert

The Chat with an Expert (CWAE) events are informal gatherings of small groups of students and a Toxicology Expert. The Graduate Student Leadership Committee organizes these events to provide students with an opportunity to network with well-established toxicologists while obtaining career advice and meeting new colleagues. The groups are matched by research interests, and the Expert for each group identifies a time and place to assemble. The CWAE Poster provides all the details for the group meetings and is located on the Ground Level near the @SOT Center. Groups meet at the poster before proceeding to their informal meeting location.

Child Care Services

Arrangements for child care services during the Annual Meeting may be made by contacting the concierge desk at your hotel. To ensure safety, children are not permitted in session rooms, ToxExpo, or the poster areas.

Coat/Luggage Check

For your convenience, a coat/luggage check will be available near the Registration area. The coat/luggage check will be open Sunday, March 22, through Thursday, March 26. There will be a fee of $3 per item checked. Laptops, cameras, and other electronics will not be accepted.

Hours of operation:

Sunday ..... 8:00 AM–8:00 PM
Monday ..... 7:00 AM–8:00 PM
Tuesday ..... 7:00 AM–8:00 PM
Wednesday ..... 7:00 AM–8:00 PM
Thursday ..... 7:00 AM–12:00 Noon

Coat/Luggage Check hours are subject to change.

Exhibitor Information

Full exhibit information details may be found on page 33–41.

Exhibit Hall (Hours/Location)

Exhibit Hours at the San Diego Convention Center:

Monday ..... 9:00 AM–4:30 PM
Tuesday ..... 8:30 AM–4:30 PM
Wednesday ..... 8:30 AM–4:30 PM

The ToxExpo Exhibition is located on the Ground Level of the San Diego Convention Center. A map of the Exhibit Hall is located on pages 34–35. Exhibit personnel may enter the hall one hour before the ToxExpo opens with an Exhibitor badge. Poster presenters may enter the hall at the poster set-up times specified on page 121. *ToxExpo Directory* copies are available at Registration and inside the entrance of ToxExpo.

ToxExpo 2016 Exhibit Space Selection Process

Priority Point booth sales for 2016 will take place on an appointment basis at the ToxExpo Sales Office. Companies in higher point levels will be contacted in advance of the show with their scheduled appointment time. If you did not receive an appointment in advance, please plan to attend the 2016 Sales Meeting on Tuesday, March 24, at 4:45 pm in Room 22.

General Information (Continued)

First Aid and Emergency Services at the San Diego Convention Center

If an emergency should occur while at the San Diego Convention Center, proceed directly to the nearest house phone, located throughout the facility, and dial 5911 for security. You will be connected directly to the 24-hour manned security department at the convention center.

A First Aid room will be located in Box Office A, near Registration.

An emergency medical technician will be on duty:

Saturday	12:00 Noon–6:00 PM
Sunday	6:00 AM–8:00 PM
Monday	7:00 AM–8:00 PM
Tuesday	7:00 AM–8:00 PM
Wednesday	7:00 AM–8:00 PM
Thursday	7:00 AM–12:00 Noon

Please note that in accordance with regulations, the First Aid Administrator is not permitted to dispense any medication.

Food Services at the San Diego Convention Center

Coffee Breaks

The exhibiting companies are pleased to sponsor complimentary coffee in the Exhibit Hall 9:00 am–10:00 am Monday–Wednesday. See Exhibit Hall signage for locations.

Concessions

Concession stands are available in Exhibit Hall Monday at 9:00 am–2:00 pm and Tuesday–Wednesday at 8:30 am–2:00 pm. Breakfast and lunch items will be available for purchase, as well as coffee, soda, bottled water, and snacks. Seating is available in the Concession areas in the Exhibit Hall. Concessions are run by Centerplate Catering, providing outstanding and delectable food and beverage in the San Diego Convention Center. Several Starbucks are also located inside the center and will be open in the mornings for coffee/pastries.

Restaurants

A full restaurant listing may be found on the SOT website and via the City Guide feature in the Mobile Event App.

Green in San Diego

The San Diego Convention Center is committed to supporting and encouraging sustainable practices, including the hosting of environmentally-friendly "green" meetings in their building. Their highly successful conservation and recycling efforts have earned them LEED Silver Certification from the US Green Building Council and more than two dozen state and city awards for their eco-conscious initiatives over the past five years. They provide clients with energy-efficient facilities and venue. The convention center also has a long-standing recycling program that includes not only paper, but the collection of plastic, cardboard, and glass materials.

Outside of the San Diego Convention Center, the city of San Diego also is doing its part to be green, with its San Diego Area Green Business Project encouraging green practices among businesses in the region, by offering tools to implement more efficient and sustainable business operations.

Guest/Spouse Hospitality Room

The SOT Guest/Spouse Hospitality Room provides guest participants (nonscientists) with a place to meet and socialize with other guests. To visit the Hospitality Room, guests must register for the Annual Meeting with the person they are accompanying. Guests/spouses will not have access to the scientific sessions or ToxExpo. Please remember to wear your badge to all SOT events. The Guest/Spouse Hospitality Room will be located at the San Diego Marriott Marquis Hotel in the La Mesa Room.

Guest/Spouse Hospitality Room Hours:

Sunday	8:00 AM–5:00 PM
Monday	8:00 AM–5:00 PM
Tuesday	8:00 AM–5:00 PM
Wednesday	8:00 AM–5:00 PM
Thursday	8:00 AM–10:00 AM

Housing Desk

SOT Housing Partner—*Connections Housing*

For information regarding your hotel reservation on-site, please visit the SOT Housing Desk located in the Registration area of San Diego Convention Center.

Housing Desk Hours:

Saturday	4:00 PM–7:00 PM
Sunday	8:00 AM–5:00 PM
Monday	8:00 AM–5:00 PM
Tuesday	8:00 AM–11:00 AM

Housing desk hours are subject to change. For housing assistance after Tuesday, please call 404.918.9129.

General Information (Continued)

Internet Access at the San Diego Convention Center

SOT knows the importance of staying connected to your daily activities while attending the Annual Meeting and provides several ways for you to access the Internet while at the San Diego Convention Center.

@SOT—Internet Access

SOT will provide computers you can use to access the Internet. These computers are available to attendees in the @SOT center, located on the Ground Level of the San Diego Convention Center.

Free Wireless Internet Access

As a service to Annual Meeting attendees, SOT will be providing free wireless Internet access in designated areas of the San Diego Convention Center. SOT is providing wireless Internet access to help attendees access a new SOT Annual Meeting App and help make the Annual Meeting a more productive and enjoyable experience.

To connect to the free wireless Internet, browse the available wireless networks and select the SOT2015 wireless network. When prompted for a password, use sotguest to connect to the network. Once connected, launch your web browser and the SOT welcome splashpage will automatically load.

Letter of Attendance

Please stop by Registration after Tuesday morning if you would like a letter of attendance for your participation in the 2015 SOT Annual Meeting and/or the Continuing Education Course(s). If you missed your chance to get your attendance letter at the meeting, you can send your request to sothq@toxicology.org or call 703.438.3115.

Lost and Found

Lost and found articles may be taken to the SOT Headquarters Office, Room 15A, of the San Diego Convention Center. Any items left in the office after 11:30 am, Thursday, March 26, will be taken back to SOT Headquarters. If you do not remove your poster at the end of your session, you will find it on the "Poster Retrieval Tables" located in the Exhibit Hall. Any posters left behind at 4:30 pm on Wednesday will be taken to SOT Headquarters Office, Room 15A, Thursday morning, March 26. All posters not claimed by 1:00 pm on Thursday, March 26, will be recycled.

Media Support Services

SOT welcomes accredited representatives of media organizations. Journalists receive complimentary registration for all meeting sessions. Interviews can be arranged with SOT Council, members, and speakers. For information about the program speakers and/or sessions, please contact Michelle Werts at SOT Headquarters: 703.438.3115, ext. 1640, or email at michelle@toxicology.org.

Networking Time

The Scientific Program Committee has dedicated time on Tuesday, March 24, for attendee networking. We encourage you to connect and engage with your colleagues at the Annual Meeting from 12:00 noon to 1:30 pm on Tuesday between sessions. Only networking events and Exhibit Hall activities are scheduled during this time. Head into ToxExpo to network with your colleagues and expand your network!

Poster Displays

Global Gallery of Toxicology

All Global Gallery Posters displayed Monday–Wednesday during ToxExpo.
Representative Attended: Monday, March 23, 11:45 am–12:15 pm.

Toxicology societies from around the world are invited to participate in the Global Gallery of Toxicology. Now in its fifth year, posters showcasing the key information, accomplishments, and strategic initiatives of these societies will be prominently displayed during the Annual Meeting. Attendees interested in collaboration and discussion are invited to a special "Representative Attended" poster time from 11:45 am–12:15 pm on Monday, March 23. The goal of all of these societies is to further the science of toxicology and to advance human health and disease prevention. The Global Gallery posters are located prominently in the Exhibit Hall adjacent to the SOT Pavilion, Booth 526. A complete list of participating societies can be found on page 165. For more information, please contact Kevin Merritt at kevin@toxicology.org.

High School Poster Exposition

The research activities of high school students will be featured 10:30 am–12:30 pm on Tuesday, March 24, during a poster display near the SOT Pavilion. More information about the High School Poster Exposition can be found on page 97.

General Information (Continued)

Poster Tours for Trainees

Graduate students and postdoctoral scholars have the opportunity for a one-hour poster tour of posters selected by a guide. Participants sign up in advance and meet at the appointed time Monday, March 23, to Wednesday, March 25, at the Postdoctoral Assembly Poster Tour board on the Ground Level near the @SOT Center. See page 93 for more information.

RC, SIG, and SS Posters

SOT will have dedicated poster space available for the Regional Chapters, Special Interest Groups, and Specialty Sections at the 2015 SOT Annual Meeting. The poster area will be located near the SOT Pavilion, Booth 526, across from the Global Gallery in the ToxExpo Exhibit Hall and will be attended on Monday, March 23, 11:45 am–12:15 pm.

Scientific Poster Printing Service

SOT offers our poster presenters a convenient poster printing service through Shepard Exposition Services, the official general service contractor for the Annual Meeting. Presenters who submitted a print order by February 27, 2015, may pick up their poster on-site at the Exhibitor Service Center (at the end of the 2400 Aisle or rear right-hand side of the hall.)

Scientific Poster Sessions

Poster sessions will take place in the Exhibit Hall on Monday, March 23, 9:30 am–12:30 pm and 1:00 pm–4:30 pm; on Tuesday, March 24, and Wednesday, March 25, poster sessions will be presented 9:00 am–12:30 pm and 1:00 pm–4:30 pm. On Thursday, March 26, poster sessions are from 8:30 am –12:00 noon in Sails Pavilion.

Full Scientific Poster Session details and information about retrieving your poster may be found on page 121.

Scientific ePosters

SOT is pleased to offer our poster presenters the opportunity to share their research electronically as well as in their assigned poster sessions. If you are a poster presenter, please take a few minutes to upload your PowerPoint or PDF poster through an Internet-based, user-friendly presentation system prior to the meeting at **https://cms.psav.com/sot2015** or during the meeting at the Speaker Ready Room at the San Diego Convention Center, Room 11B. Attendees will be able to access ePosters though the Mobile Event App anytime during the meeting, and until May 11, 2015.

Program

This is the 2015 Annual Meeting *Program*. This publication is made available to all Annual Meeting registrants and SOT members. Physical copies are available on-site in the Registration area for anyone with a meeting badge. A PDF version is available on the SOT website.

Instructions for How to Use This *Program* are located on page 4.

Recording, Photography, and Electronic Device Policies

Each year, we welcome more than 6,500 attendees to the Society of Toxicology's Annual Meeting and ToxExpo. With almost 3,000 presentations, this meeting is the largest international forum for toxicological research.

The Society does not permit photography or the electronic capture of scientific sessions in meeting rooms or the ToxExpo without the consent of the session chair and the presenter(s)/author(s). This policy also includes photographing colleagues against the backdrop of scientific posters on display without the express consent of the presenting author(s).

- Photographing exhibit booths is prohibited.
- Electronic capture of scientific sessions by any method is prohibited.
- All cell phones and electronic devices must be put on mute while attending scientific sessions.

The policies adopted above will be enforced by the Society. Those individuals who do not comply will be asked to leave the session or ToxExpo floor. If you have any questions regarding these policies, please contact the SOT Headquarters Office.

Registration Hours

Registration will be located outside Hall A on the Ground Level of the San Diego Convention Center.

Registration Hours:

Saturday.....4:00 PM–7:00 PM
Sunday ..... 7:00 AM–8:00 PM
Monday.....7:00 AM–5:00 PM
Tuesday..... 8:00 AM–4:00 PM
Wednesday..... 8:00 AM–4:00 PM
Thursday .....8:00 AM–12:00 Noon

Full registration details may be found on page 43.

General Information (Continued)

Research Funding Information Room

SOT places a strong emphasis on the development of opportunities for research support and funding. As a service to its members and new investigators, SOT offers the Research Funding Information Room so that members and attendees may network and learn more about the various opportunities available to them. Program and review staff from federal agencies that fund research, including NIH, US FDA, NIEHS, CDC, and US EPA, will be available in the Research Funding Information Room (Room 11A) for individual conversations. Attendees may check the posted schedule for specific times agency staff members will be available during the week to answer questions about the scientific review process and various grant opportunities. The schedule will be available in the Registration area, the Research Funding Information Room, and during the *Research Funding Luncheon: Multiple Perspectives on the Grant Process* on Monday. See page 129 for more information.

Research Funding Information Room Hours:

Tuesday..... 9:30 AM–4:30 PM
Wednesday..... 9:30 AM–4:30 PM

Safety and Security

The possibility of demonstrators is very real given the nature of our conference. Activities might range from verbal confrontations, protests, and strikes, to riots. We recommend the following procedures:

- Have your name badge available upon entering the San Diego Convention Center. Wear your name badge in the convention center. When leaving the facility, remove it so as to blend with other people. Conceal bags and other items that might identify you as an SOT meeting attendee.
- If you see a demonstration or protest beginning, please contact any member of the SOT Annual Meeting staff and they will initiate an SOT response. If you see actions that appear threatening, notify the nearest security officer.
- Do not engage, defend either side, or subdue person(s) in any type of disturbance. Demonstrators are usually trying to attract media attention. Don't help them!
- SOT representatives will respond to media inquiries. Do not participate in interviews or other media responses.
- In the unlikely event that outsiders disrupt a scientific session or other event, SOT security officials have developed a contingency plan. Please follow directions from the chairperson and avoid becoming involved in the situation.

Safety Tips

Walk "smart" when you leave the San Diego Convention Center:

- Know your destination and the best way to reach it.
- Travel along sidewalks in lighted areas at night and don't walk alone.
- Establish a "buddy" system with another attendee to walk to and from the convention center.
- Share schedules and check up on each other periodically.
- Build your awareness of unknown surroundings by reviewing local information.
- Laptop computers, smartphones, and electronic tablets are attractive, easy targets for thieves. Be sure they are stored in a secure place.
- Jackets with pockets provide a convenient alternative to reduce the chance for lost or stolen handbags.

Our first priority is safety. The best way to stay safe is to be aware of your surroundings and to avoid situations where you feel uncomfortable.

San Diego General Information

San Diego is America's eighth-largest city with over 1.3 million residents. San Diego sits on the coast of the Pacific Ocean in Southern California, immediately adjacent to the border with Mexico and south of Los Angeles. It is nicknamed "America's Finest City;" with friendly locals, 70 miles of stunning coastline, world-class attractions, and a relaxed atmosphere all its own, it's easy to see how San Diego earned its nickname. For more information on things to do, where to eat, special events, etc., please visit **www.meetmeinsandiego.com/sot**.

Science in San Diego

Birch Aquarium at Scripps Institution of Oceanography

2300 Expedition Way | Tel: 858.534.FISH
www.aquarium.ucsd.edu

Tap into your inner oceanographer and learn about the creatures of the sea at Birch Aquarium at Scripps. Located in La Jolla, the aquarium is home to more than 3,000 specimens representing more than 380 species of fishes and invertebrates. Make sure to visit Tide-Pool Plaza, which features three living tide pools, where visitors can touch and learn about the pools' inhabitants.

Reuben H. Fleet Science Center

1875 El Prado Balboa Park | Tel: 619.238.1233
www.rhfleet.org

The Reuben H. Fleet Science Center is home to the world's first-ever IMAX® Dome Theater, which presents digital planetarium shows and IMAX movies daily. The center's eight galleries contain 12 permanent exhibitions and often host major traveling exhibitions, giving visitors the opportunity to explore 100+ interactive all-ages exhibits that bring science to life.

General Information (Continued)

San Diego Festival of Science and Engineering
Petco Park, 100 Park Boulevard | Tel: 858.455.0300 ext.104
www.lovestemsd.org

The San Diego Festival of Science and Engineering is March 14–20 and culminates in EXPO DAY at Petco Park on Saturday, March 21. The festival mission is to engage with and encourage kids in science and engineering, to inspire today's students to become tomorrow's science, technology, engineering, and math (STEM) innovators. Hundreds of community businesses and organizations present more than 35 interactive events with dynamic speakers throughout the week. This includes the Southern California SOT Regional Chapter, which will have a toxicology-focused booth at the EXPO. Bring the family. Volunteer. Enjoy the excitement of a giant science festival.

San Diego Natural History Museum
1788 El Prado Balboa Park | Tel: 619.232.3821
www.sdnhm.org

Founded in 1874, the San Diego Natural History Museum pays homage to its roots by keeping the focus of its exhibits on the Southern California region it calls home, both past and present day. The Museum often hosts multiple traveling exhibitions, so be sure to check the calendar before you go!

San Diego Zoo
2920 Zoo Drive | Tel: 619.718.3000
zoo.sandiegozoo.org

The world-famous San Diego Zoo is perhaps best known for its successful panda program, but there's certainly much more to check out than those black and white giants! Located in the heart of Balboa Park, the zoo is 100 acres in size and is home to more than 3,700 animals representing more than 650 species from around the world. As the first zoo to house its animals in habitats that mimic their natural environment, the zoo has been set up as a unique walking experience with regionally themed trails through rolling hills.

San Diego Zoo Safari Park
15500 San Pasqual Valley Road | Tel: 619.718.3000
www.sdzsafaripark.org

Get away from the hustle and bustle of downtown and visit San Diego Zoo Safari Park, a 1,800-acre wildlife reserve that boasts more than 2,600 animals. You can choose from among seven different safaris the park offers, or choose them all with the ultimate safari, so you don't miss a thing! See one of the Safari's Cheetah Ambassadors run at over 60 mph in the one-of-a-kind Cheetah Run. The Safari Park is a cutting-edge facility that lets you get up close and personal with animals in a completely different way than traditional zoos.

San Diego Area Activities

For things to do in San Diego,
go to **www.meetmeinsandiego.com/sot**.

Balboa Park
1549 El Prado | Tel: 619.239.0512
www.balboapark.org

Encompassing 1,200 acres, Balboa Park is home to 15 museums, beautiful gardens, and the world-famous San Diego Zoo. Often referred to as the "Smithsonian of the West," Balboa Park is the largest urban park in North America, bigger than even New York's Central Park in size. Balboa Park is celebrating its 100th anniversary in 2015, with plenty of special events to mark the occasion!

Cabrillo National Monument
1800 Cabrillo Memorial Drive | Tel: 619.557.5450
www.nps.gov/cabr/index.htm

A visit to San Diego's only national park offers fantastic views that can stretch from Mexico to Los Angeles on a clear winter's day. Visit the picturesque Old Point Loma Lighthouse, which has been restored to its original 1800s appearance and presents a peek into the daily life of a light keeper. South of the Lighthouse is the Kelp Forest Overlook, where visitors can spot Pacific gray whales during their migration season. On the western side of Point Loma, pools form during low tide in the rocky cavities; in them you may see colorful starfish, octopi, and a multitude of other creatures.

Carlsbad Flower Fields
5704 Paseo del Norte | Tel: 760.930.9123
www.theflowerfields.com

The Flower Fields® never set out to be an attraction, but this 50-acre working farm couldn't keep spectators away from the stunning fields of ranunculus flowers planted on a hillside overlooking the California coastline. The Flower Fields® bloom from early March to early May, giving visitors the incomparable opportunity to experience the rainbow rows of ranunculus flowers up close.

Gaslamp Quarter
614 5th Avenue | Tel: 619.233.5227
www.gaslamp.org/visitor-guide

San Diego's Gaslamp Quarter comprises 16-square blocks immediately across from the San Diego Convention Center. A mix of Victorian-era buildings and modern skyscrapers house more than 100 of the city's finest restaurants, pubs, nightclubs, and retail shops. The Quarter is loaded with cultural offerings that include theaters, art galleries, symphony halls, concert venues, museums, and Padres baseball.

General Information (Continued)

Hotel del Coronado
1500 Orange Avenue | Tel: 619.435.6611
www.hoteldel.com

Spend a day enjoying sun, sand, and shopping at the iconic Hotel del Coronado, located on the beaches of Coronado Island. Built in 1888 and designated a National Historic Landmark in 1977, this red-roofed building is the largest wooden structure in the country and is certainly the jewel of the "Crown City."

LEGOLAND® California
One LEGOLAND Drive | Tel: 760.918.5346
www.california.legoland.com

Come see over 30,000 models created using over 60 million LEGO® bricks at LEGOLAND® California Resort. This family-friendly amusement park has more than 60 rides, shows, and attractions, including three rollercoasters. The resort is also home to LEGOLAND® Water Park and SEA LIFE® Aquarium.

Old Town San Diego State Historic Park
2415 San Diego Avenue | Tel: 619.291.4903
www.oldtownsandiego.org

Old Town San Diego, considered the birthplace of California, was founded in 1769 as the first permanent Spanish settlement on the West Coast. Today visitors to this state park can explore 17 unique historic attractions along with museums, art galleries, and the Old Globe Theatre. The district offers up free tours with docents and live entertainment, featuring mariachi bands and dancers in period attire. If you have a craving for tacos, Old Town has the highest concentration of Mexican restaurants in San Diego.

SeaWorld® San Diego
500 SeaWorld Drive | Tel: 800.257.4268
www.seaworldparks.com/seaworld-sandiego

The original SeaWorld® opened in San Diego on March 21, 1964; 50 years later the park has expanded to several locations across the country and still entertains millions of visitors every year. Head to Shamu Stadium to catch one of their world-famous shows featuring orcas, but don't forget your poncho in case you end up in the splash zone! In addition to traditional aquarium exhibits, the park also offers a variety of interactive experiences with marine animals, including dolphins.

USS Midway Museum
910 Harbor Drive | Tel: 619.544.9600
www.midway.org

Visit the USS Midway Museum, and watch as history comes alive when you explore the longest-serving US Navy aircraft carrier of the 20th century! Climb into one of the museums, 29 meticulously restored airplanes, try one of their two flight simulators, or stop and talk to one of the docents stationed throughout the ship.

San Diego Golf Courses

Balboa Park Golf Course
2600 Golf Course Drive | Tel: 619.235.1184
(5 minutes from the convention center)

Offering outstanding views of downtown, the ocean, Coronado Bridge, and Lindbergh Aircraft Field, Balboa Park Golf Course grounds include a challenging par-72, 18-hole course and a 9-hole executive course. You will also find a driving range, putting greens, coffee shop, and halfway house at the oldest public golf course in San Diego.

Coronado Golf Course
2000 Visalia Row | Tel: 619.435.8129 ext. 3
(12 minutes from the convention center)

This oceanside course provides beautiful views of yachts on sparkling blue waters. Coronado Municipal Golf Course is conveniently located just minutes from downtown San Diego. The 18-hole course measures 6,590 yards from the blue tees and is a par 72.

Torrey Pines Golf Club
11480 N. Torrey Pines Road | Tel: 858.552.1662
(26 minutes from the convention center)

Located in La Jolla, Torrey Pines Golf Course sits on cliffs overlooking the Pacific Ocean and is widely recognized as a premier destination golf course, having played host to the US Open and many other PGA Tour events. Torrey Pines comprises two par-72, 18-hole courses, known as the North and South Courses. The course's namesake is the Torrey Pine, a tree that only grows in the wild along this small stretch of the coastline in San Diego County and on Santa Rosa Island.

San Diego Beaches

Coronado Beach
920 Ocean Boulevard
(13 minutes from the convention center)

Often voted one of America's best beaches by The Travel Channel, Coronado's beaches sparkle with soft, white sand. You won't find any big swells at this beach, making it great for families or just relaxing while soaking in the sun.

La Jolla Shores
8200 Camino Del Oro
(20 minutes from the convention center)

Watch the sun set from La Jolla Shores while you sit next to one of the firepits that dot this mile-long crescent beach. A favorite among beachgoers of all interests, this spot is popular for both swimming and surfing. With the Scripps Institute of Oceanography Pier at one end, you're likely to spot some (friendly) marine life.

General Information (Continued)

Mission Beach
3000 Mission Boulevard
(15 minutes from the convention center)

Mission Beach offers up a West Coast beach boardwalk experience. Two miles of sandy shores are right next to the carnival-like Belmont Park, where you can ride a rollercoaster or take a spin on a Tilt-A-Whirl.

Ocean Beach
5059 Newport Avenue
(14 minutes from the convention center)

Situated between the San Diego River and the hills of Point Loma, Ocean Beach is great for surfers who can catch the waves created by the jetties here. The beach is friendly for all types of beachgoers, even the four-legged kind!

Pacific Beach
4500 Ocean Avenue
(17 minutes from the convention center)

Pacific Beach is the iconic Southern California beach town. With three miles of boardwalk and a lively atmosphere, this is a great place to people watch or take a walk over to Crystal Pier, where you can see great views of the coastline.

San Diego Fun Facts

1. San Diego is the birthplace of California. The first European exploration of the West Coast was by Juan Rodriguez Cabrillo, a Portuguese navigator sailing for Spain, who landed in San Diego on September 28, 1542.
2. The world's oldest working ship, the Star of India, built in 1863, has her home port in San Diego.
3. The San Diego Zoo grew out of the exotic animal exhibitions abandoned after the 1915 Panama-California Exposition, which celebrated the opening of the Panama Canal.
4. From the early thirties up until the late seventies, San Diego was known as the "Tuna Capital of the World."
5. The Hotel Del Coronado is the largest wooden structure in the country. Marilyn Monroe filmed "Some Like it Hot" at the hotel, which has hosted ten United States presidents, as well as the 1970 state dinner which was the first held outside the White House. The resort also unveiled the world's first electrically lighted, outdoor Christmas tree in 1904.
6 Charles Lindbergh took off from San Diego in 1927, in the Spirit of St. Louis, and headed to New York before his famous non-stop flight to Paris.
7. The San Diego International Airport is the busiest single-runway major airport in the nation and the second-busiest in the world after London Gatwick.
8. San Diego County has the largest number of farms (almost 7,000) in the US. San Diego County also produces the most avocados of any region in the country.
9. The La Jolla Playhouse and Old Globe Theatre of San Diego have sent more shows to Broadway than any other US city.
10. San Diego's Geisel Library, in La Jolla, houses the world's largest collection of original Dr. Seuss manuscripts. Dr. Seuss (Ted Geisel) was a one-time resident of La Jolla.

Session Etiquette for Attendees

Attendees are encouraged to ask questions following the presentations by speakers or at the direction of the moderator.

Given the importance of the scientific program to attendees and out of respect for the presenters, we ask that you adhere to the following rules of etiquette:

- Cell phones and other electronic devices should be set on mute.
- Electronic capture of scientific sessions by any method is prohibited.
- Inviting children under the age of 15 and guest/spouse registrants into the Exhibit Hall is prohibited. Session chair must provide consent for the guest/spouse or child to attend the session.

These policies will be enforced by the Society. Individuals who do not comply will be asked to leave the session.

Any items that are left behind in any of the rooms should be taken to the SOT Headquarters Office, Room 15A.

If you have any questions regarding these polices, please contact the SOT Headquarters staff at Registration.

SOT Headquarters Office

The SOT Headquarters Office is located in the San Diego Convention Center, Room 15A, on the Mezzanine Level. SOT leadership and staff utilize this office to conduct SOT business while on-site. Use the office to report or reclaim lost and found items at the San Diego Convention Center.

SOT Headquarters Office Hours:

Saturday	4:00 PM–7:00 PM
Sunday	7:00 AM–5:30 PM
Monday	7:00 AM–5:00 PM
Tuesday	7:00 AM–4:30 PM
Wednesday	7:00 AM–4:30 PM
Thursday	7:00 AM–12:00 Noon

(continued to next page)

General Information (Continued)

SOT Pavilion

Located at Booth 526 in the ToxExpo Exhibit Hall, the SOT Pavilion is the place for you to connect and learn about SOT programs, services, membership benefits, and more. Find out about the SOT Endowment Fund, *Toxicological Sciences*, SOT awards, supported awards and fellowships, ToXchange—the SOT member network, educational programs from K–12 throughout the toxicology career, and everything taking place at the Annual Meeting.

All SOT Annual Meeting attendees are welcome to stop by at any time during ToxExpo hours.

Pavilion Hours:

Monday..... 9:00 AM–4:30 PM
Tuesday..... 8:30 AM–4:30 PM
Wednesday..... 8:30 AM–4:30 PM

Be sure to come by during one of the scheduled events listed below for specific information on these topics, programs, or component groups.

Pavilion Events

Monday, March 23 through Wednesday, March 25

Events will be held Monday through Wednesday unless otherwise noted.

9:00 AM–4:00 PM	**Hispanic Organization of Toxicologists Special Interest Group—**Meet and Greet
9:00 AM–4:00 PM	***Toxicological Sciences*—**Meet with Managing Editor Virginia Hawkins
9:00 AM–4:00 PM	**Toxicologists of African Origin Special Interest Group—**Meet and Greet *(Monday and Tuesday only)*
10:00 AM–11:00 AM	***Toxicological Sciences*—**Meet with Editor-in-Chief Gary W. Miller
2:00 PM–3:00 PM	***Toxicological Sciences*—**Meet with Editor-in-Chief Gary W. Miller
3:00 PM–4:00 PM	**Meet the Leaders**—Regional Chapters, Special Interest Groups, and Specialty Sections

Be sure to visit the Global Gallery, Regional Chapter, Special Interest Group, and Specialty Section poster displays across from the SOT Pavilion open throughout ToxExpo hours. Attendees interested in discussion and collaboration are encouraged to attend the Global Gallery and RC/SIG/SS "Representative Attended" poster session on Monday, March 23, from 11:45 am–12:15 pm. The High School Poster Exposition will be nearby on Tuesday from 10:30 am–12:30 pm.

Speaker Ready Room

The Speaker Ready Room will be located in Room 11B. SOT will provide all confirmed presenters in scientific sessions with login credentials to access the submission site to preload your presentations. Poster presenters should use the submission site at **https://cms.psav.com/sot2015** to upload ePosters. Scientific session presenters should use the submission site at **https://cms.psav.com/sot2015a** to preload presentations. All presentations should be preloaded in advance of the meeting, but not fewer than 30 minutes prior to the start of the sessions if loaded in the Speaker Ready Room. Presenters will not be able to upload a presentation in the session room.

Speaker Ready Room Hours:

Saturday..... 4:00 PM–7:00 PM
Sunday..... 7:00 AM–5:30 PM
Monday..... 7:00 AM–5:00 PM
Tuesday..... 7:00 AM–4:30 PM
Wednesday..... 7:00 AM–4:30 PM
Thursday..... 7:00 AM–11:30 AM

Supporting Opportunities

The SOT Annual Meeting Supporters play an integral role in the success of this important event which is the largest scientific gathering of toxicologists in the world. Becoming an Annual Meeting Supporter demonstrates your organization's commitment to SOT's vision of "creating a safer and healthier world by advancing the science of toxicology."

Being an Annual Meeting Supporter also provides an opportunity for better name recognition of your company among SOT members and the Annual Meeting attendees.

In addition, your support allows the Society to keep registration fees low, thereby enabling us to attract more than 6,500 attendees to the Annual Meeting.

There are five levels of support available:
Diamond ($10,000 or more), Platinum ($5,000–$9,999), Gold ($2,500–$4,999), Silver ($2,000–$2,499), and Contributor ($1,000–$1,999). You will find a complete menu of supporting opportunities designed to assist your organization in establishing a leadership position at the SOT Annual Meeting on the website at **www.toxicology.org**.

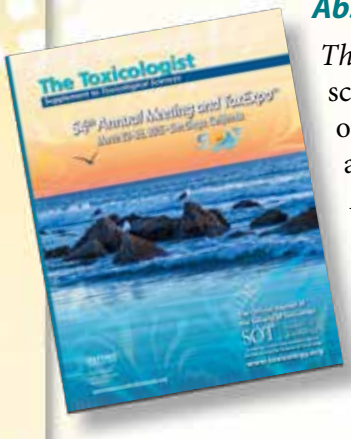
Supporter names are prominently displayed on the Annual Meeting website, as well as in print materials that are distributed before and during the Annual Meeting. Supporters also are recognized through signage displayed throughout the San Diego Convention Center during the Annual Meeting.

Annual Meeting support contributions are tax deductible per IRS regulations. For detailed information about SOT supporting opportunities, please contact Laura Helm at SOT Headquarters: 703.438.3115 or email: laura@toxicology.org.

For a complete list of our 2015 Annual Meeting Supporters (as of press time), please see page 416 and the back cover, or access them via the Mobile Event App.

The Toxicologist and Annual Meeting *Program*

The Toxicologist: *The Official Record of the 2015 Annual Meeting Abstracts*



The Toxicologist is an important scientific resource, as it is the official compilation of all accepted abstracts for the 54th Annual Meeting of the Society of Toxicology. With over 2,500 abstracts for the meeting, this supplementary issue of *Toxicological Sciences* is a critical publication to access the latest findings in toxicology.

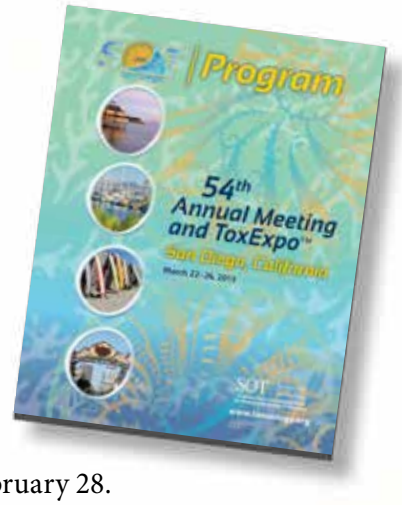
- Preorder a copy of the printed version of *The Toxicologist* via the registration form or purchase a copy on-site while supplies last for $40.
- *The Toxicologist* PDF is available for complimentary download via the SOT website.
- Full abstracts are accessible via the Mobile Event App or Online Planner available on the SOT website.

The Late-Breaking Abstract Supplement to *The Toxicologist* is available to download as a PDF via the SOT website in early March.

The late-breaking abstracts are searchable in the Mobile Event App and Online Planner.

The Program: *A Guide to the SOT 2015 Annual Meeting and ToxExpo*

The *Program* is the official guide to all the activities of the 2015 Annual Meeting and ToxExpo. The *Program* includes detailed information on the scientific sessions, including a session overviews, with the exception of the Poster and Platform Sessions. The *Program* includes the Poster Session schedule and a map of the Poster Sessions, as well as an abstract overview of all the Continuing Education course offerings. The *Program* details the schedule of events by name and a listing of all the special events, including 2015 award recipients, 2015 Honorary member, SOT Endowment Fund 2014 award recipients, recognition and special events, and Regional Chapter, Special Interest Group, and Specialty Section meetings and receptions. In addition, the *Program* includes a general section that highlights travel, hotel, registration, parking, and safety and security information. The complete listing of the ToxExpo exhibitors is provided along with the floor plan for the ToxExpo and a complete listing of Exhibitor-Hosted Sessions.



- The *Program* PDF is available for download via the SOT website.
- A copy of the *Program* is available on-site. In an effort to better use resources, the printed *Program* is mailed ONLY by requests received before February 28. (within the US and Canada only). The *Program* is mailed in early March.

General Information (Continued)

Transportation

Air Transportation

Preferred Carrier Airfare Discounts

SOT has established discounted rates through Southwest and United Airlines originating in the United States and Canada. Be sure to use the reference numbers when making your reservations. You may purchase your ticket online, call the airline directly using the toll-free numbers, or provide your travel agent with the reference/discount numbers listed below to receive the discount.

Southwest Airlines

Tel: 800.435.9792
www.swabiz.com
SOT Discount Code: 99150833

SOT's conference attendees will receive a discount and bonus Rapid Reward points from Southwest Airlines through our SWABIZ® account. Southwest Airlines is offering a 15% discount off Anytime and Business Select® fares and a 5% discount off select Wanna Get Away® fares for travel to and from the conference. Discounts are available for travel March 15–31, 2015.

United Airlines

Tel: 800.426.1122 *(a service fee will apply)*
www.united.com
SOT Discount Code: ZSSM552928

United Airlines is offering up to a 10% discount on fares for attendees traveling to San Diego for the SOT Annual Meeting. The discount is valid March 16–April 1, 2015. You may book your ticket at **www.united.com** (to receive an additional 3% discount and have service fees waived); in the offer code box, type **ZSSM552928** to receive the discount.

You may also book your reservation by calling United Meetings at 800.426.1122; however, a service fee will apply. International attendees should call their local United Airlines reservations office or email groupmeetings@united.com with their preferred itinerary and discount codes. If you are booking through a travel professional, please give them the following information: **Agreement Code: 552928, Z Code: ZSSM.**

SOT Travel Provider—ATC Travel Management

ATC Travel is the official travel management firm for SOT's 54th Annual Meeting. To take advantage of their services and savings, visit **www.atcmeetings.com/sot**, or call toll-free 800.458.9383 Monday through Friday, 8:30 am–7:00 pm (Eastern Standard Time) and ask to speak to anyone on our SOT-dedicated team, or email reservations@atcmeetings.com. To obtain the maximum discounted fares, call at least 60 days prior to departure. Please note that depending on your reservation method, ATC Travel Management charges a $10 online service fee or a live agent reservation fee. Before contacting ATC Travel Management, please gather the following information:

- Your name as it appears on your ID and your date of birth
- The desired dates of arrival to and departure from San Diego
- Your home city or originating airport
- Your approximate time of departure from the originating airport
- The number of persons traveling (adults/children)
- Your method of payment, either credit card or check
- Your airline frequent flyer number(s)

Identify yourself as a Society of Toxicology attendee. ATC Travel Management will find the best fare for you and email you an itinerary.

San Diego International Airport (SAN)

San Diego International Airport, also known as Lindbergh Field, is a public airport operated by the San Diego County Regional Airport Authority, and is located three miles northwest of downtown San Diego.

Train Transportation

Amtrak

Tel: 800.872.7245
www.amtrak.com

Amtrak operates out of Santa Fe Depot (also known as Union Station) in downtown San Diego. The Pacific Surfliner goes as far north as San Luis Obispo, with stops in Anaheim, Los Angeles, and Santa Barbara, and is a convenient and cost-effective option for traveling throughout Southern California.

Ground Transportation—From the Train Station

The San Diego Trolley Green Line leaves from the Santa Fe Depot and has stops at the San Diego Convention Center and Gaslamp District. Taxicabs are also available for hire outside the station.

General Information (Continued)

Ground Transportation—From the Airport

Ground transportation is located curbside at each of the three terminals.

Taxicabs

There are multiple companies that provide taxicab services for San Diego International Airport. After disembarking from your plane and picking up any checked bags, follow the signs leading to the transportation plazas. A transportation coordinator will place you in the first available taxi, unless you specify otherwise. All taxi rates are based per trip, not per person. Most taxi rates are about $17 to downtown.

Shuttle Services

SOT Discount Code: EA58G

SuperShuttle and Execucar provide the easiest and most cost-effective ground transportation service between San Diego International Airport and major hotels in the downtown area. Shuttles depart from 9:00 am to 9:00 pm daily for downtown hotels every 15 minutes. Passengers may purchase tickets at the airport baggage claim area. Ticket fares are $8 per person to downtown hotels or $16 for a roundtrip ticket. Book using the SOT discount code and receive an additional discount. Discounted online rates are $7 one-way and $14 for round-trip per person. For more information, visit SuperShuttle (**www.supershuttle.com/default.aspx?GC=EA58G**) or Execucar (**www.execucar.com**) and enter the discount code EA58G. The SOT discount is valid March 20–31, 2014, and only available online or over the telephone. For more information about SuperShuttle, call 602.244.9000 or for Execucar, call 800.410.4444.

Car Rental

Car rental reservation boards are located near the baggage claim areas of Terminals 1 and 2. Courtesy phones are provided to request shuttle transport to the car rental company you plan to use. Shuttles to car rental pickup operate regularly at the Terminal 1 center traffic aisle and at the traffic island at the far west end of Terminal 2. If you follow the signage to either of these areas, there will most likely be a shuttle waiting.

Hertz

800.654.2240 (US and Canada); 405.749.4434
www.hertz.com
Discount Number: CV#04X50003

Hertz is the official car rental company for the 54th SOT Annual Meeting. SOT discounted rates begin at $39 per day. These special group rates are good one week before and after the SOT Annual Meeting. To reserve your car online go to **www.hertz.com**. You may also call Hertz directly at the numbers listed above. Be sure to mention the SOT Hertz discount number **CV#04X50003**.

Public Transportation—Getting around Town

Metropolitan Transit System

The Metropolitan Transit System (MTS) offers fast and convenient service from the airport to the San Diego Convention Center. MTS operates a light rail system called the San Diego Trolley (**www.sdmts.com/trolley/trolley.asp**). In addition to the trolley and MTS bus route 992 directly services the airport and the downtown area.

Please visit **www.sdmts.com/home1.asp** for information on various routes, fares, and schedules.

San Diego Convention Center Location and Parking

The San Diego Convention Center has a large parking garage conveniently located underneath the center on Harbor Drive between First Avenue and Fifth Avenue. The daily rate is $15 with no in-and-out privileges or overnight parking allowed.

San Diego Convention Center

111 West Harbor Drive, San Diego, CA 92101

Metered street parking is available in areas surrounding the San Diego Convention Center at a rate of $1.25 per hour. Parking meters are enforced 8:00 am–6:00 pm, Monday through Saturday, unless otherwise noted.

Check the San Diego website for more information on parking at **www.visitsandiego.com**.

Overnight Parking

Gaslamp City Square Garage

461 4th Avenue, San Diego, CA 92101
Entry Location:
4th Avenue between Island Avenue and J Street

Due to city zoning restrictions, overnight parking is not permitted in San Diego Convention Center parking garages.

Please check the SOT Hotel Accommodations and Services PDF on the Annual Meeting website for valet and self-parking rates for your hotel.

SOT Ride Share

SOT is offering a ride-share program in conjunction with the Annual Meeting. For those who live close enough to the San Diego area or those who do not wish to fly, you may want to consider the ride-share program. Avoid airport hassles by driving and make it easier for other scientists to attend by sharing ideas. Students especially appreciate ways to make the meeting even more economical.

Once you have registered for the Annual Meeting, you can access the ride-share program. You can indicate whether you want to drive or be a passenger, and then see a list of others who

General Information (Continued)

have signed up. It will be up to you to match your plans with someone else who is registered, and then to remove your name when you have travel plans in place.

Weather

San Diego has a Mediterranean climate, typical of much of California. Days are frequently warm, with pleasantly cool evenings. The average high temperature for March is 66°F. For an up-to-date, detailed weather forecast, visit the National Weather Service Forecast Office at **www.wrh.noaa.gov/sgx**.

Photo is courtesy of New Orleans Convention & Visitors Bureau.

job bank

www.toxicology.org/jobbank

Your Employment and Recruitment Resource

Job Seekers—Find Your Next Opportunity

Employers Are Looking for Candidates through the SOT Job Bank

- Every SOT member can utilize the SOT Job Bank as a job seeker **free of charge.**
- SOT members can log in to instantly browse posted positions.
- Post your resume and activate your profile to be seen by potential employers.
- Review the positions posted by major corporations, academic institutions, government agencies, and private research organizations; positions are available at all experience levels.
- Search by geographic location, employer name, salary, and other criteria.
- Find potential matches to your skills and training at any stage of your career.
- Contact select employers for additional information on available positions.
- Gain access to information that will help you plan your near-term and long-term goals and objectives.
- See which sectors are hiring.
- Stay abreast of new and emerging fields.

Employers—Recruit Highly Qualified Candidates

The SOT Job Bank Is the Ideal Place to Streamline Your Hiring Process

- Join the many employers who rely on this cost-effective and efficient database to assist with their employment needs.
- Find the right candidate from among scientists trained in toxicology and the biological sciences with the expertise and work experience for which you are looking.
- Schedule interviews to be held during the SOT Annual Meeting at the on-site Job Bank Center.
- Reserve interview rooms in advance or on-site.
- SOT Affiliates receive a reduced registration rate in appreciation for supporting the Society in achieving its objectives.

The Online SOT Job Bank is available any time at
www.toxicology.org/jobbank

SOT | Society of Toxicology

Career Resource and Development Services

The Society of Toxicology's Career Resource and Development services include the online Mentor Match program and Job Bank, special Job Bank amenities at the Annual Meeting, career development seminars, and employer ads in SOT's newsletter, the *Communiqué*, which reaches the entire SOT membership and beyond.

Online Mentor Match Program

Be a Mentor, Mentee—or Both!

The Society of Toxicology recognizes the importance of mentoring in the scientific and professional development of its members. The Mentor Match online mentoring program, available only to SOT members, connects mentees with potential mentors, who can provide advice on career path selection, professional development, and life/work balance issues. SOT members are encouraged to share their professional knowledge and experience by serving as mentors for colleagues and for the next generation of toxicologists. The SOT Annual Meeting provides a great opportunity for the mentor and mentee to meet in person. We strongly encourage members of the Society to visit the Mentor Match site and register online as mentors and/or mentees. The Mentor Match program is accessible to all active SOT members by visiting **www.toxicology.org/mentormatch.**

SOT Online Job Bank

Free Job Search for SOT Members!

The Society's online Job Bank is easy for candidates and employers alike to access any time, any place via the SOT website at **www.toxicology.org/jobbank**.

This forum links job candidates with employment positions in toxicology and related biological sciences. The SOT Job Bank allows you to:

- Register as an employer or candidate
- Post employment positions
- Search the Job Bank database
- Contact candidates or employers

SOT Members can access the positions posted in the Job Bank and register as candidates at no charge.

The online Job Bank lists positions available at corporations, academic institutions, government agencies, and private research organizations. Employers rely on this online service to provide them with a robust database of candidates available for career opportunities ranging from junior- to senior-level positions.

The Job Bank helps streamline the process for candidates and employers. Candidates can gain access to a variety of positions suited to their experience, areas of expertise, and desired geographical location. In addition, job seekers can see which sectors are hiring and stay abreast of new and emerging fields.

Employers can attract potential candidates in a targeted and cost-effective manner through this SOT service. By having access to detailed candidate resumes, employers can determine the right match for a specific position and expedite the recruitment process. **SOT Corporate Affiliates receive a reduced rate for position posting in appreciation for supporting the Society in achieving its objectives.**

Job Seeker Registration for SOT Online Job Bank

Candidate Types	Fees
SOT Member	$ 0
Non-SOT Member	$80
Non-SOT Member—Postdoctoral	$45
Non-SOT Member—Student	$30

Employer Registration for SOT Online Job Bank

Employer Types	Fees
SOT Affiliate	$220
Corporation	$440
University or Government	$110
Nonprofit Organization	$110

Career Resource and Development Services (Continued)

Annual Meeting On-Site Job Bank Center

Located in the San Diego Convention Center, the on-site Job Bank Center provides Annual Meeting attendees with access to the SOT Job Bank system and facilitates face-to-face interviews. **All SOT Members and users with current registrations at the time of the Annual Meeting are welcome to use this service.**

A bank of computers will be available in the SOT Job Bank Center for updating your account information or posting, as well as printers for producing paper copies of candidate profiles and position descriptions. **If you are a candidate attending the Annual Meeting, you should bring multiple copies of your personal resume for interviews.** All candidates and positions should be sought via the online Job Bank. Attendees interested in learning more about using the Job Bank to facilitate your job search or employee recruitment are welcome to come to the Job Bank Office.

Employers recognize that the Annual Meeting On-Site Job Bank Center provides a cost-effective and efficient way to interview a distinguished pool of candidates. Employers and candidates may take advantage of the multiple spaces available for interviews in Room 23BC on the Upper Level. Rooms are available to be scheduled in advance of the meeting or on-site, on a first-come, first-served basis. Please contact careerresources@toxicology.org to make a reservation.

To ensure privacy for candidates, the SOT Job Bank Center is located away from the scientific sessions. Interview rooms will be fitted with modular hard walls to increase privacy.

Job seekers and employers are encouraged to use the SOT Job Bank year-round outside of the Annual Meeting, as new positions and candidates are continuously available.

The center is available during the following hours of operation:

Sunday ..... 1:00 PM–5:00 PM
Monday ..... 9:00 AM–5:00 PM
Tuesday ..... 8:30 AM–5:00 PM
Wednesday ..... 8:30 AM–5:00 PM

Online Job Bank access will be available—as always—through your personal computer and at the Annual Meeting @SOT Center (information on page 50).

For additional information, contact Kevin Merritt at SOT Headquarters: 703.438.3115 ext. 1601 or email: careerresources@toxicology.org.

SOT's Career Development Program Track

To help you develop your near-term and long-term career path, plan on attending the Education-Career Development Sessions scheduled this year that will be of special interest to you. Sessions include the following:

- Adaptive Leadership: Anticipating, Initiating, and Responding to Change—Monday, March 23, 12:10 pm to 1:30 pm, Room 7
- Challenges in the Life Cycle of a Toxicologist—Monday, March 23, 2:00 pm to 4:45 pm, Room 7
- What Toxicologist Do You Wanna Be? The Role of Toxicologists across Diverse Organizations—Wednesday, March 25, 12:00 noon to 1:20 pm, Room 7
- Crafting High-Impact Manuscripts: The Process from Hypothesis through Review and Publication—Wednesday, March 25, 4:30 pm to 5:50 pm, Room 7

Employer Ads in SOT *Communiqué*

The Society's newsletter/blog is disseminated each week and offers employers the opportunity to attract a pool of highly qualified candidates. It includes employment position advertisements from corporate, university, governmental, and nonprofit organizations wishing to reach the entire SOT membership and beyond. For more information, contact Marcia Lawson at SOT Headquarters: 703.438.3115 ext. 1446 or email: marcia@toxicology.org.

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Creating a Safer and Healthier World by Advancing the Science of Toxicology

SOT Encourages the Recruitment of Undergraduates to Toxicology

Undergraduates can sign up on the SOT website for special status as Undergraduate Student Affiliates

Participate in the Undergraduate ToXchange community

Special Programs for Undergraduates at the SOT Annual Meeting

These are coordinated by the SOT Education Committee and Committee on Diversity Initiatives.

- **Undergraduate Education Program for students from groups underrepresented in the sciences and their advisors**
- **Undergraduate Education Program for students at institutions that receive low federal funding in science, math, engineering, and technology**
- **Sunday Undergraduate Education Program for any undergraduate student registering for this event with Annual Meeting registration**
- **Pfizer SOT Undergraduate Student Travel Award and SOT Undergraduate Intern Travel Award for outstanding students presenting abstracts**
- **Annual Meeting Scavenger Hunt for Undergraduates**
- **Undergraduate Student Meeting, Tuesday, March 24, 4:00 pm–5:00 pm *(all undergraduates welcome)***

Support for toxicology career presentations through the ToxScholar Outreach Grants

Toxicologists receive travel support for visits to campuses to present seminars and meet informally with students to introduce toxicology and discuss career pathways. Funds are also available for international career presentations.

SOT Recognizes Undergraduate Educators

The SOT 2015 Undergraduate Educator Award is presented to Mindy F. Reynolds Washington College

Find more information at

www.toxicology.org

SOT 2015 Award Recipients

Achievement Award


Vishal S. Vaidya

Vishal S. Vaidya, PhD, is awarded the 2015 SOT Achievement Award.

Dr. Vaidya is the recipient of the Society of Toxicology 2015 Achievement Award. He has contributed to advancing regulatory science by modernizing toxicology and has set a high standard for future drug development and patient care. Dr. Vaidya has developed, evaluated, and validated highly novel tools for biomarker detection, comparing biomarkers (kidney injury molecule-1 [Kim-1], fibrinogen, extracellular microRNAs) using preclinical and clinical models of kidney injury in many collaborative studies. His work, supported by a National Institutes of Health/National Institute of Environmental Health Sciences (NIH/NIEHS) Pathway to Independence grant, in collaboration with the Predictive Safety Testing Consortium, led to the first kidney toxicity biomarker (kidney injury molecule-1) qualified by the US Food and Drug Administration (US FDA) and the European Medicines Agency in 2008. These studies are likely to have a very significant impact on the way scientists monitor kidney injury in drug development and also in the clinics. In 2011, Dr. Vaidya won the NIH/NIEHS Outstanding New Environmental Scientist (ONES) award, and in 2013 he was selected as one of six North American scientists to receive the Innovation in Regulatory Science Award from the Burroughs Wellcome Fund.

Dr. Vaidya received his PhD in toxicology from the University of Louisiana in 2003 and completed his postdoctoral fellowship in nephrology from Brigham and Women's Hospital in 2007. As an Assistant Professor at Harvard, he has faculty appointments at the Brigham and Women's Hospital, where he directs the Laboratory of Kidney Toxicology and Regeneration; at the Harvard Medical School where he heads the Systems Toxicology Program within the Harvard Program in Therapeutic Sciences; at the Harvard School of Public Health where he directs a five-credit graduate level course on principles of toxicology-molecular and translational toxicology every fall; and at the Harvard Clinical and Translational Science Center (Harvard Catalyst), where he directs the course "Understanding Biomarker Science: From Molecules to Images" every spring.

He has been a member of SOT since 1999. In 2001 he received the Novartis Graduate Student Fellowship Award that was presented at the SOT Annual Meeting. Over the years, Dr. Vaidya has received the Comparative and Veterinary Specialty Section Award (2002), Risk Assessment Specialty Section Award (2005), American Scientist of Indian Origin Young Investigator Award (2012), and SOT's Leading Edge in Basic Science Award (2014).

He also has been active within SOT committees, having served on the Career Resource and Development Committee, Continuing Education Committee, and as a councilor for the Northeast Regional Chapter of SOT. The Society is pleased to present Dr. Vaidya with the 2015 SOT Achievement Award.

Arnold J. Lehman Award


Richard A. Becker

Richard A. Becker, PhD, DABT, is awarded the 2015 SOT Arnold J. Lehman Award.

Dr. Becker is the recipient of the 2015 SOT Arnold J. Lehman Award. Dr. Becker has significantly contributed to the field of toxicology for over 30 years. During this time, he has been a major driving force for development and application of new technologies and approaches for improving the practice of human health risk assessment. He has consistently been one of the forerunners in support of efforts to move human risk assessment forward scientifically through innovative thinking and principled risk assessment practice.

In particular, his work with colleagues on development of methods for interpretation of chemical biomonitoring data, on hypothesis-driven weight-of-evidence frameworks for evaluating data for endocrine disruptors, on extending the work of the National Academy of Science from its Science and Decisions report, "Silver Book," and on enhanced tiered toxicity testing frameworks with triggers for assessing hazards and risks of commodity chemicals, are all important contributions to the debate of scientifically based safety assessment in the US and abroad.

Moreover, Dr. Becker has engaged and educated the scientific community through collaborative symposia that evaluate and review scientific evidence and strategies that enhance communication of chemical assessment information. All of these efforts have led to major progress in the use of new methodologies in health assessments conducted by industry, US federal agencies, and agencies around the world.

He received his PhD in pharmacology and toxicology from the University of California, Irvine. After postdoctoral training at the University of Toronto and the International Agency for Research on Cancer (IARC), he spent close to a dozen years as a scientist with the state of California. In 1999, he joined the American Chemistry Council (ACC), and in 2014, was appointed to lead ACC's Science and Research Division. He now manages ACC's Long-Range Research Initiative, a program focused on catalyzing innovations in toxicity testing and exposure science in the 21st Century.

Dr. Becker has been a member of the Society of Toxicology since 1990. During this time he has served on the Regulatory Affairs and Legislative Assistance Committee, as well as the Congressional Science Fellowship Review Subcommittee.

The Society is pleased to present Dr. Becker with the SOT 2015 Arnold J. Lehman Award.

SOT 2015 Award Recipients (Continued)

Best Postdoctoral Publication Awards

The Postdoctoral Assembly congratulates these three recipients for their accomplishments. These awards are presented during the Postdoctoral Assembly Luncheon.

John Clarke

John Clarke, PhD, University of Arizona, Tucson, AZ

Synergistic Interaction Between Genetics and Disease on Pravastatin Disposition

Clarke JD, Hardwick RN, Lake AD, Lickleig AJ, Goedken MJ, Klaassen CD, Cherrington NJ.

Journal of Hepatology, 2014 Jul, 61(1):139–147.

Yong Ho Kim

Yong Ho Kim, PhD, US Environmental Protection Agency, Research Triangle Park, NC

Cardiopulmonary Toxicity of Peat Wildfire Particulate Matter and the Predictive Utility of Precision Cut Lung Slices

Kim YH, Tong H, Daneils M, Boykin E, Krantz QT, McGee J, Hays M, Kovalcik K, Dye JA, Gilmour MI.

Particle and Fibre Toxicology, 2014 June, 11:29.

Christina Powers

Christina Powers, PhD, US Environmental Protection Agency, Ann Arbor, MI

Sparking Connections: Toward Better Linkages Between Research and Human Health Policy—An Example with Multiwalled Carbon Nanotubes

Powers CM, Gift J, Lehmann GM.

Toxicological Sciences, 2014 Sept, 141: 6–17.

Board of Publications Award for the Best Paper in *Toxicological Sciences*

The Society of Toxicology Board of Publications has selected the paper titled "Temporal Concordance Between Apical and Transcriptional Points of Departure for Chemical Risk Assessment" (*Toxicological Sciences* 2013, 134(1): 180–194).

Russell S. Thomas, Scott C. Wesselkamper, Nina Ching Y. Wang, Q. Jay Zhao, Dan D. Petersen, Jason C. Lambert, Ila Cote, Longlong Yang, Eric Healy, Michael B. Blank, Harvey J. Clewell III, Bruce C. Allen, and Melvin E. Andersen.

Ignorance Is Bliss?

Chemical risk assessment relies on sound information. Specifically, for regulatory agencies it is necessary to have comprehensive reviews on which to draw values for risk assessment. There are over 100,000 industrial chemicals that exist in our environment, yet the US Environmental Protection Agency (EPA) has fewer than 600 chemicals in their Integrated Risk Information System (IRIS), and the Office of Pesticide Programs (OPP) has evaluated just over 600 chemicals. What about the other 98,000+ chemicals?

Surprisingly, the current model deems that if we have no reliable toxicity data for a given chemical then it must be assumed to be safe. While we may be blissfully ignorant of the toxicity, this could indeed be very dangerous for the health of the human race and for the planet.

Biological science has undergone an 'omic renaissance over the past several years. We can measure transcripts, proteins, lipids, and metabolites in the hundreds of thousands, if not millions. These modern-day techniques, which are commonly used by toxicologists, are being underutilized when it comes to risk assessment. While data from 'omic approaches play supportive roles in helping identify pathways of toxicity and providing weight of evidence, they are not integrated into the risk assessment models. In the paper by Thomas and coworkers, the authors attempt to show that data from transcriptomics, using gene expression microarrays, can be used in a meaningful way in risk assessment models for cancer and non-cancer endpoints.

The authors examined six thoroughly studied chemicals and performed standard necropsy and histology, along with microarrays to identify benchmark dosing. The authors then analyzed tissue samples using microarrays from five days to 14 weeks and compared results to standard two-year rodent bioassays. Their analysis revealed that transcriptomics provided highly accurate information rivaling traditional approaches.

Risk assessment must rely on strong data from well thought-out studies. Regulatory agencies are notoriously slow to adopt more innovative approaches, but this paper suggests that the time is drawing near for the integration of 'omic technology. This paper provides a strong foundation for the use of transcriptomics in risk

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SOT 2015 Award Recipients (Continued)

assessment; indeed, the authors propose a framework for how this can be done. I, for one, would rather have a transcriptomic-based toxicological risk assessment for 20,000 chemicals than go with the ignorance approach we currently employ for the majority of our chemical space. Moreover, the generation of these types of data on thousands of chemicals would help populate computational models that may allow us to provide useful predictions on the other 80,000 chemicals.

In toxicology and risk assessment, ignorance is not bliss. Bliss comes from the generation of high-quality data and sophisticated and validated models of prediction on all of the chemicals that reach the marketplace. The paper by Thomas et al. represents a major step forward in spanning our gap of ignorance. Based upon this, the Board of Publications is pleased to award the Best Paper of the Year Award.

Distinguished Toxicology Scholar Award

Ian Kimber

Ian Kimber, OBE, BSc, MSc, PhD, FSB, FBTS, ATS, is awarded the 2015 SOT Distinguished Toxicology Scholar Award.

Dr. Kimber has worked in academia and industry, and he currently serves as Chair and Professor of Toxicology at the University of Manchester and Associate Dean for Business Development in the Faculty of Life Sciences.

Dr. Kimber has made many seminal contributions to immunotoxicology and the reduction of animals in research, as well as human and environmental safety. Dr. Kimber led the development of local lymph node assay (LLNA). As a validated *in vivo* test for skin sensitization, the LLNA has largely replaced the more animal-intensive previous test methods. The LLNA has been accepted by the OECD for Testing of Chemicals and the REACH Regulations as the first choice for *in vivo* testing. Dr. Kimber has pioneered changes in the approach taken by the international scientific community to the management of chemical and protein allergenicity. This has been achieved through progress in a number of areas including identification and characterization of cytokine signals that regulate epidermal Langerhans cell migration, the discovery that different classes of chemical allergens stimulate discrete adaptive immune responses, and development of a novel approach for characterization of the potential allergenicity of transgenic products in crop plants.

Dr. Kimber has made many contributions to toxicology, having authored over 500 peer-reviewed journal publications and more than 100 book chapters. He has delivered over 1,500 presentations at scientific meetings internationally. In the midst of this he has still managed to mentor over 40 PhD students.

Dr. Kimber has been a member of SOT since 1990. During this time, he has served in the leadership of the Immunotoxicology and Dermal Toxicology Specialty Sections, as well as on three ad hoc SOT Subcommittees. Dr. Kimber has distinguished himself such that he has received many honors in toxicology. He was awarded an SOT Enhancement of Animal Welfare Award in 2003, and the Immunotoxicology Specialty Section Career Achievement Award in 2005. In 2010, he received the EUROTOX Bo Holmstedt Prize for contributions to chemical and drug safety. Dr. Kimber is a past President of the British Toxicology Society (2012–2014), and a former Chairman of the Board of the UK National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs) (2008–2013). He was honored in 2011 when he was awarded an OBE (Officer of the Order of the British Empire) for services to science in the Queen's Birthday Honours List.

The Society is pleased to present Dr. Kimber with the 2015 Distinguished Toxicology Scholar Award.

FS **Distinguished Toxicology Scholar Award Lecture: Allergic Sensitization: Defining Molecular Mechanisms and Characterizing Hazard and Risk, Wednesday, March 25, 12:30 pm to 1:20 pm, Ballroom 6B**

Education Award

Theodore A. Slotkin

Theodore A. Slotkin, PhD, is awarded the 2015 SOT Education Award.

Dr. Slotkin has made impressive and significant contributions to education through his use of conventional and unconventional teaching techniques, including open discussions of current literature, of lay media, and of students' own research projects. Through classroom conversations, he ensures that students learn the requisite subject areas but always within a framework of critical evaluation of hypotheses and experimental outcomes. Dr. Slotkin has devoted significant effort and time to developing new courses and new curricula, including *Essentials of Pharmacology, Toxicology and Drug Design, and Experimental Design and Biostatistics for Basic Biomedical Scientists*. His ability to teach mathematical concepts to biologists is the hallmark of his success. With a career that spans four decades, he has had a major impact, having taught thousands of students and personally trained 26 undergraduates, 31 PhD students, and 23 postdoctoral researchers and visiting scientific scholars in his laboratory far beyond the requirements of his teaching duties. In many cases these trainees have gone on to successful careers in industry, government, and academia due in no small part to Dr. Slotkin's influence.

He has played integral roles in curriculum development for the Pharmacology PhD Program, the Integrated Toxicology and Environmental Health PhD program, and the Undergraduate Pharmacology Curriculum for Biology and Chemistry Majors. These are in addition to the key role he has played in other training programs, including those in Cell and Molecular Biology, Neurosciences, Pharmacological Sciences, and MD/PhD.

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SOT 2015 Award Recipients (Continued)

Dr. Slotkin received his PhD from the University of Rochester in 1970. Currently, he serves as Professor in the Departments of Pharmacology and Cancer Biology, Psychiatry and Behavioral Sciences, and Neurobiology, as well as the Integrated Toxicology Program at the Duke University Medical Center. Dr. Slotkin received a Board of Publications Best Paper Award in 1996 and has been a member of SOT since 1997.

The Society is pleased to present Dr. Slotkin with the 2015 Education Award.

Enhancement of Animal Welfare Award

Marcel Leist

Marcel Leist, PhD, is awarded the 2015 SOT Enhancement of Animal Welfare Award.

Dr. Leist has been involved in the improvement of animal welfare through active research and application of alternative methods to replace animal experiments for more than 25 years. During this time, Dr. Leist has contributed successfully to the establishment of multiple experimental *in vitro* models that provide data on toxicity of environmental chemicals and other compound classes and that allow drug efficacy testing without the use of animals.

Dr. Leist has played an important role in transatlantic efforts in the development of new animal-free testing strategies based on new methodologies and new concepts proposed by the National Academy of Sciences Committee on Toxicity Testing or the Tox21 consortium. Dr. Leist pioneered the use of cell-based systems in combination with human histology data to validate drug targets and to drive drug discovery projects up to clinical testing. The concept of using human cell-based disease models of neurodegenerative diseases Dr. Leist put into place 15 years ago has only just become mainstream thought in major pharmaceutical companies. The generation of LUHMES cells, an easily accessible model for human neurons, is used widely in the field of Parkinson's disease. He developed the neurite outgrowth assay, which is among the very few assays that can detect human neurotoxicants and clearly distinguish them from unspecified cytotoxicants.

This will likely become part of a battery of tests that will substitute animal-based neurotoxicity and developmental neurotoxicity testing. He has promoted the scientific exchange of scientists from academia, industry, and regulatory authorities on animal replacement issues. He has worked in collaboration with over 200 scientists worldwide to issue guidance to the entire field of toxicology for the last six years. A notable example is his roadmap for the transition to animal-free toxicity testing.

Dr. Leist received his PhD in 1993 from the University of Konstanz, Germany. Currently he serves as the Doerenkamp-Zbinden Chair for *In Vitro* Toxicology and Biomedicine and is a full Professor at the Department of Biology at the University of Konstanz. He has been a member of the Society since 2010.

The Society is pleased to present Dr. Leist with the 2014 Enhancement of Animal Welfare Award.

Global Senior Scholar Exchange Program

The Society of Toxicology Global Senior Scholar Exchange Program aims to increase the global impact of toxicology on human health and safety by working to strengthen toxicology programs and capacity in universities in developing countries. SOT sponsors specific collaborations between selected Senior Scholars from academic institutions in developing countries and SOT Member Hosts from established academic, government, and industry toxicology programs worldwide. The program enables an exchange visit of these scientists to support the developing country university's core toxicology curriculum, increase research collaborations, provide courses or symposia on toxicology topics of high priority in the developing country, and fund the senior scholar to attend the SOT Annual Meeting as an opportunity to present research and establish networking opportunities.

Sunisa Chaiklieng

Sunisa Chaiklieng, BSc, MSc, Dr Biol Hum,
Khon Kaen University, Muang, Thailand

Dr. Chaiklieng is an expert in risk assessment of occupational ergonomics and occupational exposures to benzene. She is an Assistant Professor of Occupational Health at Khon Kaen University in Thailand. She received her BSc and MSc from Mahidol University in Bangkok and her doctoral degree in biomedical science from Ulm University in Germany. She then continued her postdoctoral training at Ulm University at the Institute of Applied Physiology. Dr. Chaiklieng joined the Faculty of Public Health at Khon Kaen University in Thailand, which is a leader in public health research and training in northeast Thailand and includes the departments of environmental health science and occupational health, biostatistics and demography, epidemiology, health education, nutrition, and public health administration. At Khon Kaen University, Dr. Chaiklieng has been involved in teaching occupational and environmental toxicology, industrial toxicology, and risk assessment. She has also recently been appointed as director of a new occupational health and safety MSc program to begin in 2015. Dr. Chaiklieng has contributed to over 30 publications, has received awards for the best oral presentation at the 4th National Toxicology Conference in Toxicology in Bangkok, and was an SOT Endowment Fund/IUTOX travel fellowship winner in 2012.

The Global Senior Scholarship Exchange Program will assist Dr. Chaiklieng in strengthening the graduate program at Khon Kaen University through increasing understanding of the international accreditation requirements in occupational safety and health. One specific program that will be explored is the establishment of cooperative research in risk assessment of benzene exposure. This is particularly important in Thailand because workers at gas stations are at increased risk of exposure to benzene; therefore, there exists a need to establish biomarkers of benzene exposure and establish effective workplace surveillance of benzene levels. Meeting these needs will minimize exposures and improve the health of workers

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SOT 2015 Award Recipients (Continued)

in Thailand. Finally, collaborations can be developed between the faculty at Khon Kaen University and the host university to provide additional training opportunities, research projects and/or joint publications.

Norbert E. Kaminski

Host:
Norbert E. Kaminski, PhD, Michigan State University, East Lansing, MI

Dr. Chaiklieng will be hosted by Dr. Kaminski at Michigan State University (MSU). Dr. Kaminski is a Professor in the Department of Pharmacology and Toxicology and is the Director of the Center for Integrative Toxicology (CIT). The CIT at MSU is an outstanding environment for training in all aspects of toxicology through its interdepartmental MS and PhD programs. The CIT has over 60 affiliated faculty from more than 16 departments across campus, providing interdisciplinary training with strengths in biomedical, occupational, environmental, food-borne, and pharmaceutical toxicology. The CIT also houses the MSU Superfund Research Program Center Grant (funded by the National Institute for Environmental Health Sciences) and the recently established Center for Research on Ingredient Safety. Dr. Chaiklieng will benefit from learning about MSU's interdisciplinary toxicology curriculum. In addition, Dr. Kaminski will travel to Khon Kaen University to engage in teaching and explore research collaborations.

Deepak Dhakal

Deepak Dhakal, MS, *Tribhuvan University, Patan, Nepal*

Mr. Dhakal is Assistant Professor in the Department of Chemistry, Patan Multiple Campus, Institute of Science and Technology at Tribhuvan University (TU), Patan, Nepal. Mr. Dhakal has conducted research on pesticide residues in food commodities and clinical solid waste, with expertise in analytical chemistry and environmental toxicology. He has been instrumental in the inclusion of environmental chemistry in the curriculum at TU and the recent addition of environmental toxicology to the graduate curriculum.

He was also integral in establishing the National Society of Toxicology (Nepal) in 2009, and is currently serving as president. In this role, he has worked for the collection of national data about the classification of the toxic chemicals, including obsolete pesticides (PCB, POPs) in Nepal, with the help of UN organizations (UNIDO) since 2009. These obsolete pesticides may result in many health and environmental problems around the stored areas of the different parts of Nepal.

These and other potential environmental toxicology issues have led to an increased interest in the study of toxicology for Nepal. The Global Senior Scholar Exchange Program will assist Mr. Dhakal in strengthening the toxicology curriculum at TU to train researchers to help understand and address these environmental toxicology issues. These efforts include training on techniques for identifying, evaluating, and controlling emerging environmental contaminants such as those in drinking water, pesticide residues, and stored obsolete toxic chemicals like PCB and pesticides. Curriculum development will involve higher level of studies in toxicology, such as human health risk assessment of toxic chemicals, including obsolete toxic chemicals like PCBs that remain a source of concern in Nepal.

Aaron Barchowsky

Host:
Aaron Barchowsky, PhD, University of Pittsburgh, Pittsburgh, PA

Dr. Barchowsky will host Mr. Dhakal at the Department of Environmental and Occupational Health at the University of Pittsburgh. Dr. Barchowsky has been with the Department of Environmental and Occupational Health at the University of Pittsburgh since 2003, where he is currently a full Professor. His research interests are in investigating the cellular and molecular mechanisms underlying cardiovascular and lung diseases caused by environmental exposures to metals and chronic changes in redox status. The University of Pittsburgh has a history of research discoveries that have improved the health of populations around the globe. This tradition endures through Pitt's world-class faculty, who continue to build upon the legacy of individuals such as Jonas Salk, William Hammond, and Peter Safar, and through Pitt's outstanding student body, which continually embraces the field of global health and truly makes a difference on a worldwide scale. An example of commitment to advancing global health is the Graduate School of Public Health certificate in Global Health that is available to graduate students. Global health refers to health issues that transcend national boundaries. The field faces unprecedented challenges brought on by issues such as shifting immigration patterns, climate change, conflict, and global commerce.

SOT 2015 Award Recipients (Continued)

Merit Award

Günter Oberdörster

Günter Oberdörster, DVM, PhD, is awarded the 2015 SOT Merit Award.

Dr. Oberdörster is a pioneer in the field of research on aerosol behavior in the respiratory tract. His research has encouraged many breakthroughs in our understanding of particle deposition, clearance, and effects in the respiratory tract. His research has focused on furthering our understanding of the influence of aerosol characteristics on the toxicity and underlying mechanisms of inhaled materials. His observations in intact mammals including human subjects have helped to advance our understanding of the role of particle dose-metrics with respect to mass, number, surface area, and chemical composition in the pathogenesis of respiratory tract diseases. Ground-breaking findings of Dr. Oberdörster and his colleagues are key to understanding the toxicity of nanomaterials and ensuring safety in many beneficial applications. Because of this he is widely known as the "Father of Nanotoxicology" in many circles.

Dr. Oberdörster's early research at the Fraunhofer Institute on inhaled cadmium, nickel, and zinc compounds changed the understanding of the inhalation hazards of these elements. In the late 1970s, Dr. Oberdörster visited the University of Rochester as a Visiting Faculty member, which served only to nurture his interest in inhalation toxicology. In 1981 he was appointed Associate Professor there, promoted to Professor in 1989, and has continued making seminal contributions to the fields of aerosol sciences and respiratory toxicology through his research, teaching, and public service for four decades. During this time he has authored or co-authored over 300 publications.

Dr. Oberdörster received his Doctor of Veterinary Medicine degree in 1964 and a PhD in Pharmacology in 1966 from the University of Giessen in Germany. He has been an SOT member since 1983, with a brief interruption for ~1 year in 2000. During this time he has been very active within the Society, having presented papers regularly at the SOT Annual Meeting and has organized and chaired many scientific sessions. He has also been very active with the Inhalation and Respiratory Specialty Section, where he had served as President and was the recipient of the Career Achievement Award in 1996. He became an active member of the Nanotoxicology Specialty Section at its formation in 2009 and received a Special Recognition Award in 2014.

The Society is pleased to present Dr. Oberdörster with the 2015 Merit Award.

FS **Merit Award Lecture: Chronicles of Particles: From Micro- to Nano-Particles, Monday, March 23, 12:30 pm to 1:20 pm, Ballroom 6B**

Perry J. Gehring Diversity Student Travel Award

This award is presented during the CDI Reunion.

Latisha T. Pryor

Latisha T. Pryor, *Fort Valley State University, Oglethorpe, GA*

Abstract Number: 494
Poster Board Number: 211

Abstract Title: An Analysis of Varskin 5 Radiation Dosimetry Software

Institution Where Research Was Conducted: US Nuclear Regulatory Commission, Rockville, MD

SOT 2015 Award Recipients (Continued)

Pfizer SOT Endowment Fund Undergraduate Student Travel Awards

Weelic Chong

Weelic Chong, *Oberlin College, Oberlin, OH*

Abstract Number: 981
Poster Board Number: 236

Abstract Title: A Gene-Metal Screen Reveals Enhanced Selenium and Cadmium Neurotoxicity in Dopaminergic Cells Expressing Human Alpha-Synulein

Zuania Ideliz Cordero Badillo

Zuania Ideliz Cordero Badillo, *University of Puerto Rico, Rio Piedras, San Juan, PR*

Abstract Number: 952
Poster Board Number: 207

Abstract Title: Effects of Chronic Methylmercury Exposure on Expression of Voltage Gated Calcium Channel mRNA in Rat Forebrain

Institution Where Research Was Conducted: Michigan State University, East Lansing, MI

Emily A. Daniel

Emily A. Daniel, *William Jewell College, Liberty, MO*

Abstract Number: 697
Poster Board Number: 551

Abstract Title: Analysis of Acetaminophen-Induced Hepatotoxicity in Female C57BL/6J Mice Lacking the ATP-Binding Cassette Sub-Family C Member 4 (Abcc4, Mrp4)

Institution Where Research Was Conducted: University of Connecticut, Storrs, CT

Gifty Aboagye Dominah

Gifty Aboagye Dominah, *Oberlin College, Oberlin, OH*

Abstract Number: 1509
Poster Board Number: 544

Abstract Title: The Commonly Used Agrochemical Chlorpyrifos Enhances Huntington's Disease Neuropathology via Oxidative Stress and Mitochondrial Dysfunction

Scott H. Freeburg

Scott H. Freeburg, *Kenyon College, Gambier, OH*

Abstract Number: 2319
Poster Board Number: 613

Abstract Title: CYP1A6 Induction by TCDD Is More Sensitive to TALEN Mutation of AHR1β than AHR1α in the *Xenopus laevis* Cell Line XLK-WG

Kathryn E. Fulda

Kathryn E. Fulda, *Washington College, Chestertown, MD*

Abstract Number: 375
Poster Board Number: 622

Abstract Title: The Effects of Fluoxetine on the Startle Response of Adult Zebrafish (*Danio rerio*)

Samantha Hall

Samantha Hall, *Duke University, Durham, NC*

Abstract Number: 1514
Poster Board Number: 549

Abstract Title: Effects of fzo-1 and drp-1 Mutations on Dopaminergic Neurodegeneration in *C. elegans*

(continued to next page)

SOT 2015 Award Recipients (Continued)

Alexander Jones

Alexander Jones, *Purdue University, West Lafayette, IN*

Abstract Number: 330
Poster Board Number: 549

Abstract Title: Intranasal Manganese (Mn) Exposure Leads to a Significant Accumulation of Mn in Bone

Megan M. Koenecke

Megan M. Koenecke, *Kenyon College, Gambier, OH*

Abstract Number: 2320
Poster Board Number: 614

Abstract Title: Interactions between Thyroid Hormone and Dioxin Signaling in the Frog *Xenopus laevis*

Sloane Kathryn Miller

Sloane Kathryn Miller, *University of North Carolina at Chapel Hill, Chapel Hill, NC*

Abstract Number: 909
Poster Board Number: 134

Abstract Title: Formaldehyde-Associated Changes in Gene and Cytokine Expression Profiles within Nonhuman Primate Nose and Circulating Blood

Latisha T. Pryor

Latisha T. Pryor, *Fort Valley State University, Oglethorpe, GA*

Abstract Number: 494
Poster Board Number: 211

Abstract Title: An Analysis of Varskin 5 Radiation Dosimetry Software

Institution Where Research Was Conducted: US Nuclear Regulatory Commission, Rockville, MD

Yssa A. Rodriguez

Yssa A. Rodriguez, *St. Mary's University, San Antonio, TX*

Abstract Number: 955
Poster Board Number: 210

Abstract Title: Effects of Varying Extracellular Calcium Concentration on Me Hg-Induced Dopamine Release in Undifferentiated PC12 Cells

Institution Where Research Was Conducted: Michigan State University, East Lansing, MI

Nicole A. Sidebotham

Nicole A. Sidebotham, *Oregon State University, Corvallis, OR*

Abstract Number: 1753
Poster Board Number: 158

Abstract Title: Neurodevelopmental Exposure to the Mycotoxin Zearalenone Leads to Impaired Learning in Adult Zebrafish

Anna V. Wojcicki

Anna V. Wojcicki, *University of Minnesota, Minneapolis, MN*

Abstract Number: 112
Poster Board Number: 148

Abstract Title: Acetaminophen Increases Hepatocyte Tissue Factor Procoagulant Activity *In Vitro*

Institution Where Research Was Conducted: Michigan State University, East Lansing, MI

SOT 2015 Award Recipients (Continued)

Public Communications Award

Andrew D. Maynard

Andrew D. Maynard, PhD, is awarded the 2015 SOT Public Communications Award.

Dr. Maynard utilizes social media outlets in a novel way to communicate public health topics to broad audiences. He has been featured in nearly all media formats including television, print, web, and radio, and writes regularly for his personal blog, *2020 Science*. Dr. Maynard is most recognized for his established social media presence on a YouTube channel called Risk Bites. His work on Risk Bites is rooted in the sciences of toxicology, exposure assessment, epidemiology, and risk. With simple graphics and concise language, Dr. Maynard provides insight into risk and safety topics that are easily understandable. Risk Bites has featured in mainstream publications ranging from *USA Today* to the technology website Gizmodo. More recently, Dr. Maynard was recognized as one of "The Top 50 Science Stars on Twitter," by *Science* Magazine.

In the classroom, Dr. Maynard consistently challenges students to reach wider audiences of scientists and the general public alike by using innovative communications formats. His course "Communicating Science through Social Media" provided a unique approach to learning how to use social media as a tool to raise and help explain complex public health issues to those with or without advanced technical backgrounds.

In the scientific community, Dr. Maynard contributes significantly to peer-reviewed literature, serves on many journal editorial boards, actively participates in national and local conferences and workshops, and is a regularly invited lecturer. He is a recognized leader in the field of nanotechnology, and has been published widely on topics such as exposure, risk, regulation, toxicological impacts ,and the challenges associated with the evaluation of nanomaterials.

Dr. Maynard currently serves as the Director of the University of Michigan Risk Science Center. Based on his dedication to broadening public awareness of toxicological issues, the Society is pleased to present Dr. Maynard with the 2015 Public Communication Award.

SOT/AstraZeneca/SOT Endowment Fund/ IUTOX Travel Awards

Khaled Abdou

Khaled Abdou, PhD, Beni Suef University, Beni Suef, Egypt

Amos O. Abolaji

Amos O. Abolaji, PhD, University of Ibadan, Ibadan, Oyo State, Nigeria

Motunrayo G. Akande

Motunrayo G. Akande, PhD, University of Abuja, Abuja, Nigeria

(continued to next page)

SOT 2015 Award Recipients (Continued)

Huawei Duan

Huawei Duan, PhD, National Institute of Occupational Health and Poison Control, Beijing, China

Patient Guedenon

Patient Guedenon, PhD, University of Abomey-Calavi, Cotonou, Littoral, Benin

Jin Hongtao

Jin Hongtao, PhD, New Drug Safety Evaluation Center of Chinese Academy of Medical Sciences, Beijing, China

Carine J. Marks

Carine J. Marks, MSc, Tygerberg Hospital Poison Centre, Stellenbosch University, Cape Town, South Africa

Davaadorj Rendoo

Davaadorj Rendoo, MD, National Institute for Public Health, Ulaanbaatar, Mongolia

Palanisamy Sankar

Palanisamy Sankar, PhD, Tamil Nadu Veterinary and Animal Sciences University, Thanjavur, Tamil Nadu, India

Tawit Suriyo

Tawit Suriyo, PhD, Chulabhorn Research Institute, Laksi, Bangkok, Thailand

SOT 2015 Award Recipients (Continued)

SOT Undergraduate Intern Travel Awards

Hillary K. Markey

Hillary K. Markey, *Central Michigan University,* Freeland, MI

Abstract Number: 997
Poster Board Number: 252

Abstract Title: Analysis of DNA Methyltransferase Expression in a Transplacental Mouse Model with Indole-3-Carbinol Dietary Intervention during Exposure to Dibenzo[def,p]Chrysene

Institution Where Research Was Conducted: Oregon State University, Corvallis, OR

Royce Harrison Nichols

Royce Harrison Nichols, *King University,* Bristol, TN

Abstract Number: 2281
Poster Board Number: 545

Abstract Title: Diglycolic Acid, the Toxic Metabolite of Diethylene Glycol, Inhibits Renal Mitchondrial Respiration

Institution Where Research Was Conducted: Louisiana State University Health Sciences Center, Shreveport, LA

Translational Impact Award

Jefferey Burgess

Jefferey Burgess, MD, MS, MPH, is awarded the 2015 SOT Translational Impact Award.

Over the past ten years, Dr. Burgess has made significant contributions to translational research studying environmental arsenic exposure, the effects of combustion product exposure in firefighters, and exposure to diesel and alternative fuel emissions in miners.

Dr. Burgess's translational research was pivotal in providing an important link in arsenic exposure on the development of pulmonary diseases, incorporating previous findings on animal and *in vitro* model systems and applying into human studies. He has been able to validate specific arsenic-induced changes in lung and blood biomarker proteins associated with levels of arsenic exposures. More recently, Dr. Burgess has determined a significant source of arsenic exposure stems from ingested food sources. His work is helping to evaluate those levels of exposure and the subsequent biological response.

In addition, Dr. Burgess became interested in combustion product exposure in firefighters early in his career. This interest, paired with his understanding of chemical-induced toxic effect, his interactions with basic researchers, and his application of basic science markers as biomarkers in a targeted population, allowed him to translate science into studies that are providing a deeper assessment of firefighter's exposure and an approach to minimize the risk and health effects for this at-risk group. A major outcome of this work has been to increase firefighter use of respiratory protection during overhaul, the final phase of fighting a fire when self-contained breathing apparatus was previously was not worn and when chemical exposures were still elevated despite no visible smoke.

Similarly, Dr. Burgess has begun to address the health status of miners. He has used his basic science and clinical skills to examine the risk that miners have in their current working conditions. His focus has been on the use of diesel engines within the mines and the effects of emissions on miners' health. He is now examining the extent of exposure and associated health effects of diesel, biodiesel, and other alternative fuels in underground mining operations, which should help guide future efforts to reduce hazardous exposures in this setting.

Dr. Burgess currently serves as the Associate Dean of Research at the Mel and Enid Zuckerman College of Public Health at the University of Arizona.

The Society is pleased to present Dr. Burgess with the 2015 SOT Translational Impact Award.

FS **Translational Impact Award Lecture: How to Make a (Translational) Impact, Tuesday, March 24, 8:00 am to 8:50 am, Ballroom 6B**

SOT 2015 Award Recipients (Continued)

Undergraduate Educator Award

Mindy F. Reynolds

Mindy F. Reynolds, BS, PhD, is awarded the SOT 2015 Undergraduate Educator Award.

Dr. Reynolds has demonstrated dedication and a commitment to undergraduate education in toxicology. When she arrived at Washington College in 2008 there were no toxicology courses offered and no toxicological research was being conducted. Within her first year she had strived to develop a course in the principles of toxicology and by spring of 2009 she had begun to teach this course to undergraduate students. This course has been offered every spring since then. Dr. Reynolds also makes it a priority to oversee the independent research of undergraduate students each summer in an intensive 11-week research program.

In addition, Dr. Reynolds has given numerous presentations to undergraduate educators on the integration of toxicology into an undergraduate curriculum. She is very active within metals toxicology research which includes cytotoxic and genotoxic effects of multiple heavy metal exposure in human cells, but has expanded her research to include whole animal ecotoxicology in both vertebrate and invertebrate models. She actively involves students in this research and has mentored over 18 students on their senior thesis projects, several of which have dealt directly with her research.

Dr. Reynolds has been a member of the Society of Toxicology since 2004. Since that time she has been very active working toward her longtime mission of advancing the science of toxicology to undergraduates. She currently serves as Chair of the SOT Undergraduate Education Subcommittee and has served as a member of this committee since its inception in 2009. In 2010 she led the Undergraduate Subcommittee Work Group to develop an online resource for undergraduate instructors. Under her leadership the Subcommittee has developed multiple programs for faculty, including a webinar series. Dr. Reynolds was a featured speaker at the 2011 SOT Education Summit to provide perspective on undergraduate teaching to help develop SOT strategic efforts. Such is her commitment to her undergraduates that many students in her laboratory present their research annually at the SOT Annual Meeting and receive awards such as the Pfizer SOT Undergraduate Travel Award.

The Society is proud to present Dr. Reynolds with the 2015 SOT Undergraduate Educator Award.

Supported 2015 Award Recipients

Colgate-Palmolive Awards for Student Research Training in Alternative Methods

Prajakta Shimpi

Prajakta Shimpi, MS, University of Rhode Island, Kingston, RI

Project Title: Use of Cryopreserved Human Hepatocytes to Assess Whether Direct Exposure to Bisphenol-A (BPA) Induces Fatty Liver Disease

Host Institution: Xenotech, LLC, Lenexa, KS

Colgate-Palmolive Grants for Alternative Research

Alfredo Miranda de Goes

Alfredo Miranda de Goes, BSc, MSc, PhD, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil

Project Title: Production of Organotropic Skin Models for Alternative Methods of Skin Research and Irritation/Corrosion Tests

Lei Li Kerr

Lei Li Kerr, PhD, Miami University, Oxford, OH

Project Title: The Application of Microfluidic Channels for the Study of Nanomaterial Deposition in Nasal Olfactory Region

Colgate-Palmolive Postdoctoral Fellowship Award in *In Vitro* Toxicology

Fabian A. Grimm

Fabian A. Grimm, PhD, Texas A&M University, College Station, TX

Project Title: Advancing Predictive Safety Assessments through Biological Read across Using High-Content Screening of Induced Pluripotent Stem Cell (iPSC) Derived Cardiomyocytes and Hepatocytes

Syngenta Fellowship Award in Human Health Applications of New Technologies

Alok Ranjan

Alok Ranjan, BS, Texas Tech University Health Sciences Center, Amarillo, TX

Project Title: Penfluridol, an Antipsychotic Drug: A Novel Treatment Option for Breast Cancer Metastasis to Brain

SOT 2015 Honorary Membership

Honorary membership is awarded by the Society of Toxicology to people who are not members of the Society in recognition of outstanding and sustained contributions to advancing the science and field of toxicology. Shawn Douglas Lamb is named Society of Toxicology Honorary Member. Submitted by SOT 2014–2015 Past President Lois D. Lehman-McKeeman.

Shawn Douglas Lamb

Shawn Douglas Lamb served as Executive Director for the Society of Toxicology since 1993, retiring December 31, 2014. Under her vigilant eye, the Society has grown from an international membership of 3,000 to a vigorous society of over 8,000 members. As Executive Director, she has worked with 21 different SOT Presidents and Councils, contributed broadly to the Society's strategic planning, governance, growth, and outreach, and she has made personal contributions—too many to count—to the success of the Society.

In fact, as Council members rotate on and off and the presidential chain is new each year, Ms. Lamb has been the single constant factor in the Society's leadership over the past two decades. She has had a direct impact on every initiative undertaken or proposed by each SOT Council, Committee and Subcommittee, Task Force, or other ad hoc group. Her tireless dedication and steadfast support of these groups are paralleled only by her outstanding leadership. Ms. Lamb has demonstrated an uncanny ability to understand the complex challenges that face our Society. Her polished organizational skill has provided options toward solutions for any obstacles that have been encountered.

In addition to the role she has played within SOT, Ms. Lamb has been working with the global toxicological community for many years. She has an international reputation and stature in toxicology. She has served as the Executive Director of IUTOX, the International Union of Toxicology. As the founder of Association Innovation and Management, Inc. (AIM), an association management company focused on providing a complete and broad array of administrative services to professional scientifically-based client associations, she has shared our mission to improve human and environmental health.

Honorary membership in the Society is designed to recognize nonmembers who "embody outstanding and sustained achievements in the field of toxicology." We often honor those individuals who have made noteworthy contributions through research and education in the science. Ms. Lamb has developed international recognition as a collaborative voice for toxicologists. As an administrative leader of the Society, she has been a stalwart supporter of the growth and vitality of our Society. As with our other distinguished honorees who achieved recognition through their research, she has been extremely influential for our science. Given the breadth of her contributions in support of toxicology, it is only fitting that the SOT bestows Honorary Membership to Shawn Douglas Lamb.

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Investing in the Future ...

SOCIETY OF TOXICOLOGY
ENDOWMENT FUND

Building for the Future

Contributors to the SOT Endowment Fund are helping to build for the future of toxicology through long-term financial support that generates critical resources to enable the Society to fulfill its mission, now and in the years to come.

Since the Endowment Fund's inception in 2006, contributors have:

- Underwritten more than 140 Student Travel Awards to the SOT Annual Meeting.
- Recognized colleagues who have made enormous contributions to improving human health and the environment.
- Created funds that acknowledge the contributions of toxicology educators to undergraduate students in toxicology and toxicology-related areas.
- Strengthened global participation by providing financial support to scientists from developing countries to attend the SOT Annual Meeting.

The Society of Toxicology is matching contributions to all permanently restricted funds dollar for dollar (donations to temporarily restricted funds will vest once the fund has reached the required threshold for permanent status). The 1-to-1 match is effective for contributions made between July 1, 2013, and June 30, 2016, or until the $400,000 in matching funds has been expended.

Please help SOT continue to make a difference by becoming a contributor to the SOT Endowment Fund. For more information, visit www.toxicology.org/endowment.

The Endowment Fund Contribution Donor Form can be found on page 411.

SOT Endowment Fund 2014 Award Recipients

SOT Endowment Fund—Helping the Society Fulfill Its Mission to Build for the Future

The SOT Endowment Fund is a family of funds comprising the Education Fund, Global Activities Fund, SOT Priorities Fund, and the 34 Named Funds.

In the SOT 2013–2014 fiscal year, the Education, Global Activities, and SOT Strategic Priorities Society Funds, and the Named Endowment Funds, the Harry W. Hays Memorial Fund and the Sheldon D. Murphy Memorial Fund, contributed funding to SOT initiatives that addressed one or more of the Society's strategic objectives.

The Founders Award

The Founders Award was conferred on John A. Thomas. This award was established for his leadership in advancing the role of toxicology.

Undergraduate Educator Award

The Undergraduate Educator Award was conferred on William D. Atchison. This award was established to recognize efforts to increase the pipeline of future toxicologists and was funded through the SOT Endowment Education Fund.

SOT/AstraZeneca/SOT Endowment Fund/IUTOX Travel Awards

As part of our effort to strengthen global participation, the Global Activities Fund and the SOT Strategic Priorities Fund provided financial assistance for scientists from countries where toxicology is underrepresented to assist with travel to the Annual Meeting. The principal goal of these fellowships is to increase capacity in the developing country through strengthening toxicology within the university and the country. The International Union of Toxicology (IUTOX) administered the award review process. Historical listing of recipients can be found on page 403.

Student Travel to SOT Annual Meeting

Hundreds of students, many of them now leaders in SOT, attended their first SOT meeting by winning a Student Travel Award funded by the Society. From the early days of SOT to the present, it has been understood that such participation is essential to "building for the future of toxicology." For the 2014 Annual Meeting, the SOT Priorities and Education Society Endowment Funds provided funding for an additional ten students, who might not otherwise have found funding to participate in the Annual Meeting.

SOT Endowment Fund 2014 Award Recipients

Mary Amdur Student Award Fund

Mary A. Popovech, MPH, *New York University, School of Medicine, Tuxedo, NY*

Young Soo Choi Student Scholarship Award Fund

Jinyoung Lee, MPH, *Purdue University, West Lafayette, IN*

Laxman S. Desai Association of Scientists of Indian Origin Student Award Fund

Neel Fofaria, BS, *Texas Tech University Health Sciences Center, Amarillo, TX*

Kevin Kumar, BS, *Vanderbilt University School of Medicine, Nashville, TN*

John Doull Student Award Fund

Melanie Adler, PhD, *Brigham and Women's Hospital, HIM, Renal Division, Boston, MA*

Education Fund: Undergraduate Educator Award

William D. Atchison, PhD, *Michigan State University, East Lansing, MI*

Founders Fund

John A. Thomas, PhD, ATS, *Indiana University School of Medicine-Fishers, Indianapolis, IN*

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(continued to next page)

SOT Endowment Fund 2014 Award Recipients (Continued)

Perry J. Gehring Biological Modeling Student Award Fund

Huali Wu, PhD, *The Hamner Institutes for Health Sciences, Durham, NC*

Perry J. Gehring Diversity Student Travel Award Fund

Pamella B. Tijerina, *New York University School of Medicine, Tuxedo Park, NY*

Perry J. Gehring Risk Assessment Student Award Fund

Mia Johansson, MSc, *Work Environment Toxicology, Institute of Environmental Medicine,* ***Karolinska Institutet,*** *Stockholm, Uppland, Sweden*

Perry J. Gehring Risk Assessment Best Postdoctoral Fellow Abstract Award Fund

Rachel Church, PhD, *The Hamner Institute for Drug Safety Sciences, Research Triangle Park, NC*

Vera W. Hudson and Elizabeth K. Weisburger Scholarship Fund

Mary A. Popovech, MPH, *New York University School of Medicine, Tuxedo, NY*

Frank C. Lu Food Safety Student Award Fund

Mansi Krishan, PhD, *University of Cincinnati, Cincinnati, OH*

Jean Lu Student Scholarship Award Fund

Chuanwen Lu, PhD, *Texas Tech University, Lubbock, TX*

Roger O. McClellan Student Award Fund

Kazuhisa Miyakawa, BVSc, *Michigan State University, East Lansing, MI*

Harihara Mehendale Association of Scientists of Indian Origin Student Award Fund

Siva Prasad Bitragunta, MSc, *Birla Institute of Technology and Science, India, Hyderabad, Andhra Pradesh, India*

Shirisha Chittiboyina, PhD, *School of Public Health, Indiana University Bloomington, IN*

Molecular Biology Specialty Section Postdoctoral Fellow Research Award

Jill Franzosa, PhD, *US EPA/National Center for Computational Toxicology, Research Triangle Park, NC*

Shaun McCullough, MS, PhD, *US Environmental Protection Agency, Chapel Hill, NC*

Tongde Wu, PhD, *University of Arizona, Tucson, AZ*

Molecular Biology Student Award Fund

Tejas Lahoti, PhD, *The Pennsylvania State University, State College, PA*

Xi Li, BSc, *Texas A&M University, College Station, TX*

Mary A. Popovech, MPH, *New York University School of Medicine, Tuxedo, NY*

SOT Endowment Fund 2014 Award Recipients (Continued)

Emil A. Pfitzer Drug Discovery Postdoc Award Fund

Rachel Church, PhD, *The Hamner Institutes for Health Sciences, Research Triangle Park, NC*

Rachel Goldsmith, PhD, *National Toxicology Program, Durham, NC*

Hua Shen, PhD, *University of California Berkeley, Berkeley, CA*

Emil A. Pfitzer Drug Discovery Student Award Fund

Muhammet Ay, MS, *Iowa State University, Ames, IA*

Kazuhisa Miyakawa, BVSc, *Michigan State University, East Lansing, MI*

Roshni Rao, MS, *University of South Carolina, Columbia, SC*

Gabriel L. Plaa Education Award Fund

John Clarke, PhD, *University of Arizona, Tucson, AZ*

Tetyana Kobets, MD, MSPH, *Division of Biochemical Toxicology, National Center for Toxicological Research (NCTR), Jefferson, AR*

Kathryn Page, BSc, PhD, *University of California Berkeley, Berkeley, CA*

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To become an Endowment Fund contributor and enjoy the fulfillment of knowing that you are helping to build for the future of toxicology, please visit the Endowment Fund section of the SOT website. You can make a difference in the lives of toxicologists by your generous support.
Add your name to the Honor Roll of Contributors.

Please refer to the Mobile Event App or Online Planner or these sections of this Program*—Daily Pocket Calendar, Event Listing, or Program Schedule—for date, time, and location of the Committee on Diversity Initiatives, Regional Chapter, Specialty Interest Group, and Specialty Section receptions, where the Endowment Fund Awards are conferred.*

SOT Endowment Fund 2014 Award Recipients (Continued)

Renal Toxicology Fellowship Award Fund

Mark Canet, BS, *University of Arizona, Tucson, AZ*

L. Jay Stallons, PhD, *Elanco Animal Health, Greenfield, IN*

Raghu Tadagavadi, DVM, MVSc, PhD, DABT, *Pennsylvania State University College of Medicine, Hershey, PA*

Robert J. Rubin Student Travel Award Fund

Vivekkumar Dadhania, MS (Pharm), *University of Louisiana at Monroe, Monroe, LA*

Mary Francis, BA, *Rutgers University, Piscataway, NJ*

Dharm V. Singh Association of Scientists of Indian Origin Student Award Fund

Gul Mustafa, PhD, *University of Texas Medical Branch, Galveston, TX*

Nagender Reddy Panyala, PhD, MSc, *Lawrence Berkeley National Laboratory, Berkeley, CA*

Dharm V. Singh Carcinogenesis Award Fund

Christal Lewis, BS, *Rutgers Biomedical Health Sciences, Piscataway, NJ*

Carl C. Smith Student Mechanisms Award Fund

Dilshan Harischandra, BS, *Iowa State University, Ames, IA*

Swetha Rudraiah, MVSc, *University of Connecticut, Storrs, CT*

Christopher Schaupp, BA, *University of Washington, Seattle, WA*

Priyanka Trivedi, MS (Pharm), *National Institute of Pharmaceutical Education and Research, Mohali, Punjab, India*

Ronald G. Thurman Student Travel Award Fund

Dwayne Carter, BS, *University of Texas, Galveston, TX*

Kazuhisa Miyakawa, BVSc, *Michigan State University, East Lansing, MI*

Pranav Shah, BPharma, *University of Houston, Houston, TX*

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- Northland
- Ohio Valley
- Pacific Northwest
- South Central
- Southeastern
- Southern California

Special Interest Groups

- American Association of Chinese in Toxicology
- Association of Scientists of Indian Origin
- Hispanic Organization of Toxicologists
- Korean Toxicologists Association in America
- Toxicologists of African Origin
- Women in Toxicology

Enhance Your Annual Meeting Experience

Participate in Regional Chapter, Special Interest Group, and Specialty Section Meetings/Receptions.

Component group meetings and receptions offer an excellent opportunity to network at the SOT Annual Meeting. If you're a component group member, be sure to attend your Regional Chapter, Special Interest Group, or Specialty Section meeting/reception to connect and engage with your peers. It's a great time to catch up with long-time friends and colleagues, or make new ones!

Women in Toxicology Special Interest Group 2014 Reception

Regulatory and Safety Evaluation Specialty Section 2014 Meeting/Reception

Metals Specialty Section 2014 Meeting/Reception

Are you interested in joining a Regional Chapter, Special Interest Group, or Specialty Section? Attend a component group networking meeting/reception at the Annual Meeting. There's no better way to meet, network, and decide on joining a component group. You'll be glad you did!

Component group meetings/receptions may be found on pages 90-92 of this *Program*. For a full and complete listing, visit the SOT website, Mobile Event App, or Online Planner.

Component Groups

Specialty Sections

- Biological Modeling
- Biotechnology
- Carcinogenesis
- Cardiovascular Toxicology
- Clinical and Translational Toxicology
- Comparative and Veterinary
- Dermal Toxicology
- Drug Discovery Toxicology
- Ethical, Legal, and Social Issues
- Food Safety
- Immunotoxicology
- *In Vitro* and Alternative Methods
- Inhalation and Respiratory
- Mechanisms
- Medical Device and Combination Product
- Metals
- Mixtures
- Molecular and Systems Biology
- Nanotoxicology
- Neurotoxicology
- Occupational and Public Health
- Ocular Toxicology
- Regulatory and Safety Evaluation
- Reproductive and Developmental Toxicology
- Risk Assessment
- Stem Cells
- Toxicologic and Exploratory Pathology

Social Events

All activities will be held at the San Diego Convention Center unless otherwise noted.

Regional Chapter, Special Interest Group, and Specialty Section Receptions

Monday, March 23–Wednesday, March 25, Various Times

Many of the SOT RC, SIG, and SS meet during the SOT Annual Meeting. All current and prospective RC, SIG, and SS members are encouraged to attend. More information can be found on pages 90–92.

SATURDAY

Committee on Diversity Initiatives Reunion

Saturday, March 21, 7:30 PM to 8:30 PM
Room 33B *(Invited: All Current and Past Participants and Volunteers in the Undergraduate Education Program)*

Hosted by:
Committee on Diversity Initiatives

Please connect with the Committee on Diversity Initiatives (CDI) as we celebrate the Undergraduate Education Program and the people who make it successful. The CDI Reunion will provide a great opportunity for former students, organizers of the program, and volunteers to gather and celebrate 26 years of success in encouraging the next generation of scientists. Please welcome and network with this year's undergraduate student participants and the Gehring Diversity Student Travel Awardee. Dessert, coffee, and tea will be served, so please mark your calendars and start the 54th Annual Meeting with a fun and interactive evening at the CDI Reunion.

SUNDAY

Awards Ceremony

Sunday, March 22, 4:45 PM to 6:30 PM
Ballroom 6A
(All Attendees Welcome)

Pre-Ceremony Musical Performance

Performed by Amy Kanner
4:45 PM to 5:15 PM

Amy Lynn Kanner will perform for SOT Annual Meeting attendees prior to the SOT Awards Ceremony. Amy's passion is playing the harp. She is also a composer and recording artist—her CD, "Garden of Delights," features performances on multiple instruments. Amy is also a physician and a graduate of the International Harp Therapy program—utilizing the unique resonance of the harp to create an atmosphere of relaxation and respite for both patients and health care staff. Find additional event details on the SOT 2015 Annual Meeting website at **www.toxicology.org/ai/meet/am2015/socialevents.asp**.

Awards Ceremony

5:15 PM to 6:30 PM

Please join the Awards Committee, in conjunction with Council, the Board of Publications, and the Education Committee as we honor scientists who have distinguished themselves with presentation of awards at our prestigious SOT Awards Ceremony (pages 65–78) following the pre-ceremony musical performance. Please refer to the Awards and Fellowships section of the SOT website for complete details.

Welcome Reception

Sunday, March 22, 6:30 PM to 7:30 PM
West Terrace
(All Attendees Welcome)

Continue the celebration by attending the Welcome Reception following the Awards Ceremony. The Welcome Reception is a great opportunity to renew old friendships and to make new acquaintances. Please join the Society in this kick-off of the Annual Meeting.

25-Year (or More) Member Reception

Sunday, March 22, 7:00 PM to 8:00 PM
Room 5

If you have been a member of the Society of Toxicology for 25 years or more, please join your colleagues to celebrate and recognize the scientists who established the Society. Be sure to wear your anniversary pin.

MONDAY

SOT Mentoring Breakfast

Monday, March 23, 6:15 AM to 7:45 AM
Room 5B
(Registration Required)

Endorser(s):
Career Resource and Development Committee
Graduate Student Leadership Committee
Postdoctoral Assembly

The Society of Toxicology recognizes the importance of mentoring in the scientific and professional development of its members. As such, the Career Resource and Development Committee, in conjunction with the Postdoctoral Assembly and Graduate Student Leadership Committee, is pleased to host the fourth annual Mentoring Breakfast.

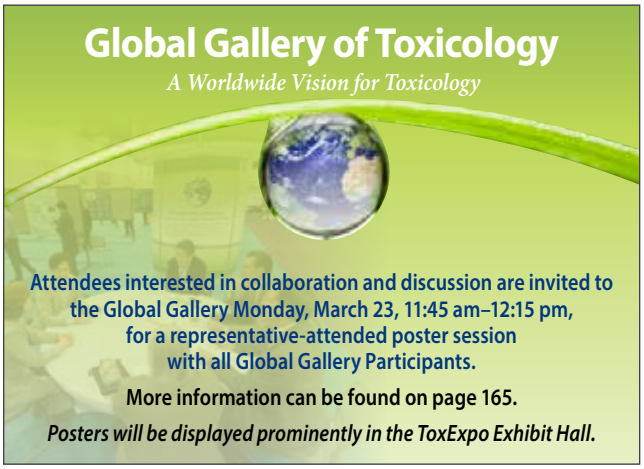
The Mentoring Breakfast is for SOT members at any career stage—from graduate students and postdoctoral fellows to senior scientists—who are seeking a mentor. A brief introduction will be followed by small group discussions led by trained facilitators. Facilitators will work to match participants with compatible mentors.

Social Events (Continued)

Global Collaboration Coffee

Monday, March 23, 9:30 AM to 11:30 AM
Room 4

The Society of Toxicology invites all Global Gallery poster presenters and representatives of societies from around the world to the Global Collaboration Coffee. Other invitees include SOT Special Interest Group leaders, IUTOX Executive Committee members, SOT Councilors, 2015 Global Senior Scholars and their hosts, and the 2015 recipients of the SOT/AstraZeneca/SOT Endowment Fund/IUTOX Travel Award. This event offers an opportunity for scientific leaders to meet, discuss important issues facing the global toxicology community, and lay the groundwork for future collaborations. Following the coffee, attendees will adjourn together to the Global Gallery where presenters will share their posters in a "Representative Attended" poster time from 11:45 am–12:15 pm. See the Global Gallery information that follows for more details.



Global Gallery of Toxicology

Monday, March 23, 11:45 am to 12:15 pm
Representative Attended
Exhibit Hall *(Across from SOT Pavilion, Booth 526)*

Toxicology Societies from around the world are invited to participate in the Global Gallery of Toxicology. Now in its fourth year, posters showcasing the key information, accomplishments, and strategic initiatives of these societies will be prominently displayed during the meeting. In addition, the 2015 Global Gallery poster session has a "Representative Attended" poster time of 11:45 am–12:15 pm on Monday, March 23. The goal of SOT and of all these societies is to further the science of toxicology to advance human health and disease prevention. The Global Gallery posters are located in the Exhibit Hall near SOT Pavilion, Booth 526. A complete list of participants can be found on page 165. For more information, please contact Kevin Merritt at kevin@toxicology.org.

Research Funding Luncheon: Multiple Perspectives on the Grant Process

Monday, March 23, 12:00 Noon to 1:30 PM
Room 5B

Hosted by:
Career Resource and Development Committee

Grant writing is a challenging endeavor. One must effectively communicate the significance, innovation, and approach of their research project in a clear, but concise manner, with appropriate grammar. While there are some aspects of grant writing that apply regardless of the grant application phase, such as a clearly stated hypothesis and specific aims, the style and required elements of the various phases of the grant writing process can differ significantly. Thus, the goals of this session are to discuss the various phases of the grant writing process, including preparing a new application versus a competitive renewal, composing the rebuttal and revised grant application, how best to create a "new" proposal if a grant has not been funded after two review cycles, and an overview of the review process and choosing the best scientific review group. Four experts will expertly cover these topics and participate in a panel discussion at the end of the session.

- **Essentials in Grantsmanship from a Program Officer's Perspective**
  Annette Kirshner, NIEHS Health Scientist Administrator, Research Triangle Park, NC
- **The NIH Application Review Process from a SRO's Perspective**
  Janice Allen, NIEHS Scientific Review Branch, Research Triangle Park, NC
- **Taking a Look Behind the Curtain: What REALLY Happens at Study Section?**
  Cheryl Walker, Texas A&M Institute of Biosciences and Technology, Houston, TX
- **Science to Achieve Results (STAR), US EPA's Competitive Extramural Grants Program: Process and Opportunities**
  Mitch Lasat, US EPA, Washington, DC
- **Roundtable Discussion and Questions**

See page 129 for more information.

Social Events (Continued)

In Vitro Toxicology Lecture and Luncheon for Students: Alternative *In Vitro* Approaches for Predicting the Health Impacts of Nanomaterials

Monday, March 23, 12:00 Noon to 1:20 PM
Ballroom 20D
(Ticket Required)

Chairperson(s): *Richard Pollenz, University of South Florida, Tampa, FL; Emily G. Notch, Western New England University, Springfield, MA; and Daniel J. Spade, Brown University, Providence, RI.*

Lecturer: *James C. Bonner, North Carolina State University, Raleigh, NC*

Supported by:
An educational grant from the Colgate-Palmolive Company

Hosted by:
Education Committee

The goal of the *In Vitro* Toxicology Lecture series is to feature important research using *in vitro* and alternative techniques to study basic mechanisms and to illustrate how these test methods benefit animal welfare by refining, reducing, and replacing animal use whenever it is feasible.

Undergraduates, graduate students, postdoctoral scholars, and recipients of Colgate-Palmolive awards are among the guests at the *In Vitro* Toxicology Lecture and Luncheon. Students and postdoctoral scholars register for $10 (nonrefundable) via the Annual Meeting registration. Dr. Bonner will present an introduction to the topic and then participants will discuss related questions and report responses. More information can be found on page 94.

TUESDAY

Past Presidents' 5K Fun Run/Walk

Tuesday, March 24, 7:00 AM
Embarcadero Marina Park

Supported by:
IDEXX Laboratories, Inc.

When you pack for SOT 2015, don't forget your running shoes so you can join us for the fifth annual Past Presidents' 5K Fun Run/Walk! Open to anyone interested, this event is a great opportunity to meet old friends and make new acquaintances in a casual environment, joining SOT's Past Presidents in showing support for SOT. Whether you're in it for some friendly competition or would rather take a leisurely stroll, this event's emphasis is on camaraderie and will bring together runners and walkers of all levels and paces. Come join us—we look forward to seeing you!

To register, visit the Special Events section of the SOT Annual Meeting website. Registration is only $20, and all proceeds will go toward the SOT Endowment Fund.

Research Funding Information Room

Tuesday, March 24 and Wednesday, March 25,
9:30 AM to 4:30 PM
Room 11A

Hosted by:
Career Resource and Development Committee

SOT places a strong emphasis on the development of opportunities for research support and funding. As a service to its members and new investigators, SOT offers the Research Funding Information Room so that members and attendees may network and learn more about the various opportunities available to them. Program and review staff from federal agencies that fund research, including NIH, US FDA, NIEHS, CDC, and US EPA will be available in the Research Funding Information Room (Room 11A) for individual conversations. Attendees may check the posted schedule for specific times agency staff members will be available during the week to answer questions about the scientific review process and various grant opportunities. The schedule will be available in the Registration area, the Research Funding Information Room, and during the *Research Funding Luncheon: Multiple Perspectives on the Grant Process* on Monday.

Postdoctoral Assembly Luncheon

Tuesday, March 24, 12:00 Noon to 1:15 PM
Ballroom 5
(Ticket Required)

Chairperson(s): *Colleen E. McLoughlin, National Institute for Occupational Safety and Health, Morgantown, WV.*

Hosted by:
Postdoctoral Assembly

To encourage increased participation and networking among postdoctoral scholars, this year the Postdoctoral Assembly (PDA) Board has planned the PDA Luncheon to be more casual than a seated lunch. Finishing up a discussion from your morning poster session? Leaving early to run off to set up a poster or attend another meeting? That's no problem; come stop in when you can! You can enjoy a buffet lunch and move around the room to mingle with others, including PDA officers, Postdoctoral Representatives, and SOT Councilors. This is the time for postdocs to relax, celebrate achievements, and have fun.

Social Events (Continued)

Undergraduate Educator Network Meeting

Tuesday, March 24, 2:15 PM to 3:30 PM
Room 14A

Chairperson(s): *Mindy F. Reynolds, Washington College, Chestertown, MD.*

Hosted by:
Education Committee
Undergraduate Education Subcommittee

The Education Committee and the Undergraduate Education Subcommittee are hosting the Undergraduate Educator Network Meeting for all faculty involved in the teaching of toxicology to undergraduates, or for those interested in including toxicology at the undergraduate level. Hear an update on initiatives for undergraduate faculty, provide your input, and network.

Undergraduate Student Meeting

Tuesday, March 24, 4:00 PM to 5:00 PM
Room 14A
(All Undergraduate Meeting Registrants Are Invited)

Chairperson(s): *Mindy F. Reynolds, Washington College, Chestertown, MD.*

Hosted by:
Education Committee
Undergraduate Education Subcommittee

All undergraduate students attending the meeting are encouraged to participate in an informal meeting to talk about shared interests related to career paths in toxicology, discuss undergraduate tox-related activities, clubs, and majors on their campuses, and to provide feedback to the Undergraduate Education Subcommittee. Bring your Scavenger Hunt card to turn in.

SOT Annual Business Meeting

Tuesday, March 24, 4:30 PM to 6:00 PM
Ballroom 6A
(All SOT Members Invited)

Members are invited and encouraged to attend the 54th SOT Annual Business Meeting. The agenda includes discussion of plans for 2015–2016, a financial summary, a review of the 2014–2015 activities, and an introduction of the 2015–2018 Strategic Plan.

Tox ShowDown

Tuesday, March 24, 7:30 PM to 9:00 PM
Marriott Marquis Marina Ballroom D
(All Attendees Welcome)

Chairperson(s): *Sue M. Ford, St. John's University, Jamaica, NY; and Phil Wexler, NIH-NLM, Bethesda, MD.*

Hosted by:
Graduate Student Leadership Committee

Join the Graduate Student Leadership Committee (GSLC) and your peers Tuesday night for the *Tox ShowDown*, an engaging quiz game patterned off of the popular long-running show *It's Academic*. Three teams—The Endocrine Distruptors, the Free Radicals, and the Toxic Metabolites—will compete at answering questions concerning toxicology not only in its historical and scientific context, but as it relates to arts and culture. Supported by GSLC, this event is sure to be both informative and entertaining and a perfect way to celebrate the halfway point of the SOT Annual Meeting. The game will provide attendees with a break, albeit still toxicologically oriented, from the more technical business of the meeting.

WEDNESDAY

Special Interest Group Global Hot Topics Event—Global Drug Development and Natural Products: End of an Era or an Endless Frontier?

Wednesday, March 25, 7:00 AM to 8:00 AM
Room 2

Chairperson(s): *Linval DePass, Durect Corporation, Cupertino, CA.*

Hosted by:
Special Interest Group Collaboration Group

The Special Interest Group Collaboration Group (SIG-CG) is excited to announce the second Global Hot Topics Event. The topic of this year's event is natural products, and we have lined up two outstanding speakers for this event. The first speaker will be John C. Vederas, Department of Chemistry, University of Alberta, Edmonton, Alberta, Canada.

Dr. Vederas is internationally known for his research on natural products. The topic of his presentation is Global Drug Development and Natural Products: End of an Era or an Endless Frontier? The second speaker will be Jon C. Mirsalis, SRI International, Menlo Park, California. Dr. Mirsalis has done extensive studies on the potential toxicity of natural products and substances derived from them. The topic of his presentation will be Toxicity of Natural Product Therapeutics: Health Aid or Poison Pill? Continental breakfast will be served at this special event to which all attendees are invited.

Sunrise Session: Toxic Substances Control Act Task Force Update: Strategy, Issues, and Outreach

Wednesday, March 25, 7:00 AM to 7:45 AM
Room 8

Chairperson(s): *Mark Lafranconi, Principal Toxicologist, Environmental Resource Management, Cincinnati, OH.*

Following the November elections in which Republicans took control of both houses of Congress, the Society of Toxicology Toxic Substances Control Act (TSCA) Task Force stands ready to continue efforts to push for reform on Capitol Hill of TSCA.

This past year, the Society's group has made substantial progress in meeting with staff and various senators and members of Congress to talk about the important role that toxicology plays relative to TSCA and the significance that sound science plays in crafting reform legislation that is more efficient and effective in meeting the mandate for greater public safety than the 1976 statute.

Rep. John Shimkus (R-IL), chairman of the House Energy and Commerce Environment Subcommittee, is leading the effort in the US House of Representatives to modernize TSCA. Chairman Shimkus says he will continue to try to work with Democrats in the new Congress to "produce a bill that creates jobs and protects consumers." On the Democratic side, Rep. Gene Green (D-TX), a senior member of the subcommittee, said recently in an article in *Chemical News*: "TSCA reform remains a priority for Congress, regardless of election results. The hard work and discussions that we have put in, during the 113th Congress, have laid the groundwork for next year (2015)." Senator Jim Inhofe (R-OK), who replaced Sen. Barbara Boxer (D-CA) as chairman of the Senate Environment and Public Works Committee, also is seen as moving TSCA reform forward: "We look forward to continuing toward smart, bipartisan reform to ensure the safety of everyday chemicals, and regulatory certainty to spur innovation and job creation."

Task Force members will take the lead during this special sunrise session to detail the Task Force's efforts this past year and plans for 2015 in the House of Representatives and the Senate to make SOT an important stakeholder in this ongoing legislative issue.

THURSDAY

2015–2018 Strategic Plan Discussion Breakfast

Thursday, March 26, 8:00 AM to 8:45 AM
Room 3

Join the SOT Council for a detailed discussion of the new 2015–2018 Strategic Plan. This breakfast discussion will provide ample time for the membership to meet one-on-one with Council to gain an in-depth knowledge of the 2015–2018 Strategic Plan and the process forward.

Life science is in the midst of rapid change as the result of new insights derived from biotechnology, powerful computational tools, and systems-level approaches that identify the underlying basis for the emergent properties that characterize living systems. Toxicology needs to be a vital part of these changes and in many ways is well-situated because it has always been an integrative science.

The SOT Council has developed a new strategic plan that focuses on meeting the challenge of keeping toxicology in the forefront of scientific advancements that benefit public and environmental health. The SOT strategy takes advantage of data from a representative member survey as well as targeted, in-depth interviews with key toxicology thought leaders. The strategy is intended to highlight the changes that the Council sees as necessary in order to keep toxicology at the cutting-edge of biomedical research.

The new strategy does not supplant the core functions of the Society—providing forums for scientific exchange, member services, and education. It is, however, intended to enhance them in a way that is consistent with SOT's mission, vision, and guiding values.

RC, SIG, and SS Receptions

(as of February 6)

Regional Chapter Meetings, Luncheons, and Receptions

Monday, March 23, through Wednesday, March 25, Various Times

Many of the SOT Regional Chapters meet during the SOT Annual Meeting. All current and prospective Regional Chapter members are encouraged to attend.

Event	Date	Time	Location	Room
Allegheny-Erie and Michigan Regional Chapters Joint Reception	Monday, March 23	5:00 PM to 6:30 PM	Marriott Marquis	Balboa
Central States Regional Chapter Meeting/Breakfast	Monday, March 23	7:00 AM to 8:00 AM	Marriott Gaslamp	Soleil @ K Restaurant
Lone Star and South Central Regional Chapters Mixer	Tuesday, March 24	5:00 PM to 7:00 PM	Dussini's Loft Bar	
Mid-Atlantic Regional Chapter Luncheon	Monday, March 23	12:00 Noon to 2:00 PM	Roy's Restaurant	Big Island Room
Mountain West and Southern California Regional Chapters Mixer	Tuesday, March 24	6:00 PM to 9:00 PM	Museum of Photographic Arts	
National Capital Area and North Carolina Regional Chapters Joint Reception	Monday, March 23	5:30 PM to 7:30 PM	Karl Strauss Brewery	
Northeast Regional Chapter Student Luncheon	Tuesday, March 24	12:00 Noon to 2:00 PM	Convention Center	Room 4
Northern California Regional Chapter Reception	Tuesday, March 24	7:30 PM to 10:30 PM	Yard House	
Ohio Valley and Midwest Regional Chapters Joint Reception	Monday, March 23	5:00 PM to 6:00 PM	Henry's Pub	
Pacific Northwest Regional Chapter Reception	Monday, March 23	5:30 PM to 7:30 PM	Harbor House	
Regional Chapter Collaboration and Communications Committee Meeting	Wednesday, March 25	12:00 Noon to 1:30 PM	Convention Center	Room 12
Southeastern Regional Chapter Reception	Monday, March 23	6:00 PM to 10:00 PM	Dublin Square Authentic Irish Pub & Grille	

Special Interest Group Meetings, Luncheons, and Receptions

Monday, March 23, through Wednesday, March 25, Various Times

Each of the six Special Interest Groups will hold a meeting/reception during the 2015 SOT Annual Meeting. All current and prospective SOT Special Interest Group members are encouraged to attend.

Event	Date	Time	Location	Room
American Association of Chinese in Toxicology Special Interest Group Reception and Distinguished Chinese Toxicologist Lectureship Presentation	Monday, March 23	5:00 PM to 8:00 PM	Marriott Marquis	San Diego Ballroom B
American Association of Chinese in Toxicology/Korean Toxicologists Association in America Special Interest Groups Career Workshop 1: Current US Job Market for Toxicologists	Tuesday, March 24	7:30 AM to 9:00 AM	Convention Center	Room 3
American Association of Chinese in Toxicology Special Interest Group Career Workshop 2: Opportunities for Toxicologists in China	Tuesday, March 24	12:00 Noon to 1:30 PM	Convention Center	Room 3
Association of Scientists of Indian Origin Special Interest Group Lunch and Learn	Tuesday, March 24	12:00 Noon to 2:00 PM	Marriott Marquis	La Costa
Association of Scientists of Indian Origin Special Interest Group Reception	Monday, March 23	7:00 PM to 9:00 PM	Marriott Marquis	Temecula
Hispanic Organization of Toxicologists Special Interest Group Officers Meeting	Monday, March 23	6:45 AM to 8:00 AM	Marriott Marquis	Marina Kitchen
Hispanic Organization of Toxicologists Special Interest Group Reception and Awards Ceremony	Tuesday, March 24	6:30 PM to 9:30 PM	Cafe Sevilla	
Korean Toxicologists Association in America Meeting/Reception	Monday, March 23	7:00 PM to 9:00 PM	Nippon Sushi Bar and Thai Food	
Special Interest Group Collaboration Group Meeting	Monday, March 23	12:00 Noon to 1:30 PM	Convention Center	Room 14B

(continued to next page)

RC, SIG, and SS Receptions (Continued)

(as of February 6)

Special Interest Group Meetings, Luncheons, and Receptions (Continued)

Event	Date	Time	Location	Room
Special Interest Group Collaboration Group Global Hot Topic Event—Global Drug Development and Natural Products: End of an Era or an Endless Frontier?	Wednesday, March 25	7:00 AM to 8:00 AM	Convention Center	Room 2
Toxicologists of African Origin Special Interest Group Reception	Monday, March 23	5:30 PM to 7:30 PM	Rama Thai	
Women in Toxicology Special Interest Group Executive Board Meeting	Tuesday, March 24	7:45 AM to 8:45 AM	Marriott Marquis	Malibu
Women in Toxicology Special Interest Group Reception	Wednesday, March 25	4:30 PM to 6:30 PM	Marriott Marquis	Marina Ballroom D

Specialty Section Meetings, Luncheons, and Receptions

Monday, March 23, through Wednesday, March 25, Various Times

Each of the 27 SOT Specialty Sections will hold either a luncheon or early evening meeting/reception during the SOT 2015 Annual Meeting. All current and prospective SOT Specialty Section members are encouraged to attend.

Event	Date	Time	Location	Room
Biological Modeling Specialty Section Meeting/Reception	Wednesday, March 25	6:00 PM to 7:30 PM	Convention Center	Room 30E
Biotechnology Specialty Section Meeting/Reception	Wednesday, March 25	6:00 PM to 7:30 PM	Convention Center	Room 31C
Carcinogenesis Specialty Section Meeting/Reception	Monday, March 23	6:00 PM to 7:30 PM	Convention Center	Room 31C
Carcinogenesis Specialty Section Officers Meeting	Monday, March 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Cardiovascular Toxicology Specialty Section Meeting/Luncheon	Tuesday, March 24	12:00 Noon to 1:30 PM	Convention Center	Room 29A
Clinical and Translational Toxicology Specialty Section Meeting/Reception	Wednesday, March 25	6:00 PM to 7:30 PM	Convention Center	Room 31A
Clinical and Translational Toxicology Specialty Section Officers Meeting	Monday, March 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Comparative and Veterinary Specialty Section Meeting/Luncheon	Monday, March 23	12:00 Noon to 1:30 PM	Convention Center	Room 3
Dermal Toxicology Specialty Section Meeting/Reception	Wednesday, March 25	6:00 PM to 7:30 PM	Convention Center	Room 30C
Dermal Toxicology Specialty Section Officers Meeting	Monday, March 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Drug Discovery Toxicology Specialty Section Lunch with an Expert	Monday, March 23	12:00 Noon to 1:30 PM	Convention Center	Room 27
Drug Discovery Toxicology Specialty Section Meeting/Reception	Tuesday, March 24	6:00 PM to 7:30 PM	Convention Center	Room 27
Ethical, Legal, and Social Issues Specialty Section Meeting/Luncheon	Wednesday, March 25	12:00 Noon to 1:30 PM	Convention Center	Room 31A
Food Safety Specialty Section Meeting/Reception	Tuesday, March 24	6:00 PM to 7:30 PM	Convention Center	Room 31C
Food Safety Specialty Section Officers Meeting	Monday, March 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Immunotoxicology Specialty Section Meeting/Reception	Tuesday, March 24	6:00 PM to 7:30 PM	Convention Center	Room 29A
Immunotoxicology Specialty Section Officers Meeting	Monday, March 23	6:30 AM to 8:00 AM	Convention Center	Room 25
In Vitro and Alternative Methods Specialty Section Meeting/Luncheon	Wednesday, March 25	12:00 Noon to 1:30 PM	Convention Center	Room 28A
In Vitro and Alternative Methods Specialty Section Officers Meeting	Monday, March 23	6:30 AM to 8:00 AM	Convention Center	Room 25

(continued to next page)

RC, SIG, and SS Receptions (Continued)

(as of February 6)

Specialty Section Meetings, Luncheons, and Receptions (Continued)

Event	Date	Time	Location	Room
Inhalation and Respiratory Specialty Section Meeting/Reception	Monday, March 23	6:00 PM to 7:30 PM	Convention Center	Room 30A
Inhalation and Respiratory Specialty Section Technical Meeting	Monday, March 23	6:30 AM to 8:00 AM	Convention Center	Room 30A
Mechanisms Specialty Section Meeting/Reception	Wednesday, March 25	6:00 PM to 7:30 PM	Convention Center	Room 29
Mechanisms Specialty Section Officers Meeting	Monday, March 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Medical Device and Combination Product Specialty Section Meeting/Reception	Tuesday, March 24	6:00 PM to 7:30 PM	Convention Center	Room 33A
Metals Specialty Section Meeting/Reception	Tuesday, March 24	6:00 PM to 7:30 PM	Convention Center	Room 30E
Mixtures Specialty Section Meeting/Reception	Monday, March 23	6:00 PM to 7:30 PM	Convention Center	Room 30E
Mixtures Specialty Section Officers Meeting	Monday, March 23	6:30 AM to 7:30 AM	Richard Walker's Pancake House	
Molecular and Systems Biology Specialty Section Meeting/Reception	Monday, March 23	6:00 PM to 7:30 PM	Convention Center	Room 29A
Molecular and Systems Biology Specialty Section Officers Meeting	Monday, March 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Nanotoxicology Specialty Section Meeting/Reception	Tuesday, March 24	6:00 PM to 7:30 PM	Convention Center	Room 30A
Neurotoxicology Specialty Section Meeting/Reception	Tuesday, March 24	6:00 PM to 7:30 PM	Convention Center	Room 25
Neurotoxicology Specialty Section Officers Meeting	Monday, March 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Occupational and Public Health Specialty Section Meeting/Luncheon	Tuesday, March 24	12:00 Noon to 1:30 PM	Convention Center	Room 25
Ocular Toxicology Specialty Section Meeting/Reception	Tuesday, March 24	6:00 PM to 7:30 PM	Convention Center	Room 32
Regulatory and Safety Evaluation Specialty Section Brown Bag Luncheon: Global Regulatory Toxicology: First Stop EU	Tuesday, March 24	12:00 Noon to 2:00 PM	Convention Center	Room 2
Regulatory and Safety Evaluation Specialty Section Meeting/Reception	Monday, March 23	6:00 PM to 7:30 PM	Convention Center	Room 28A
Regulatory and Safety Evaluation Specialty Section Officers Meeting	Monday, March 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Reproductive and Developmental Toxicology Specialty Section Meeting/Reception	Wednesday, March 25	6:00 PM to 7:30 PM	Convention Center	Room 28A
Reproductive and Developmental Toxicology Specialty Section Officers Meeting	Monday, March 23	7:00 AM to 8:30 AM	Convention Center	Room 30D
Risk Assessment Specialty Section Meeting/Reception	Tuesday, March 24	6:00 PM to 7:30 PM	Convention Center	Room 28
Risk Assessment Specialty Section Mentoring Luncheon	Tuesday, March 24	12:00 Noon to 1:30 PM	Convention Center	Room 28A
Risk Assessment Specialty Section Officers Meeting	Monday, March 23	6:30 AM to 8:00 AM	Convention Center	Room 25
Specialty Section Collaboration and Communication Group Meeting	Monday, March 23	2:00 PM to 3:00 PM	Convention Center	Room 14A
Stem Cells Specialty Section Meeting/Reception	Wednesday, March 25	6:00 PM to 7:30 PM	Convention Center	Room 30A
Toxicologic and Exploratory Pathology Specialty Section Meeting/Luncheon	Monday, March 23	12:00 Noon to 1:30 PM	Convention Center	Room 2
Toxicologic and Exploratory Pathology Specialty Section Officers	Monday, March 23	6:00 AM to 7:30 AM	Convention Center	Room 31B

Student and Postdoctoral Scholar Events

Student/Postdoctoral Scholar Mixer

Sunday, March 22, 7:30 PM to 9:00 PM

Ballroom 20D

(Ticket Required)

Hosted by:
Graduate Student Leadership Committee

The Graduate Student Leadership Committee hosts this opportunity for students and postdoctoral scholars to gather, to meet new colleagues, and to re-establish relationships in an informal atmosphere at the beginning of the meeting. Tickets are obtained at no cost by registering for this event on the Annual Meeting Registration Form and are required. Complimentary refreshments and a cash bar will be available.

Chat with an Expert

Monday, March 23 to Thursday, March 26

Time Varies by Group

(Meet at the Chat with an Expert Poster on the Ground Level near the @SOT Center)

Hosted by:
Graduate Student Leadership Committee

The purpose of Chat with an Expert is to provide students and postdoctoral scholars with the opportunity to network informally with well-established toxicologists while obtaining career advice and meeting new colleagues. Small groups are composed by matching research interests of students and postdocs with those of an expert. The expert for each group identifies a time and a place for an informal meeting, and the group meets at the Chat with an Expert poster before proceeding to the meeting location. This program also includes opportunities for postdocs to host informal meetings with graduate students. Sign up via the Graduate Student section of the SOT website. Details for each group meeting will be sent to participants in advance of the meeting.

Poster Tours for Trainees

Monday, March 23 to Wednesday, March 25

(Meet at Poster Tour Board on the Ground Level near the @SOT Center)

Hosted by:
Postdoctoral Assembly

The Postdoctoral Assembly organizes Poster Tours for Trainees for graduate students and postdoctoral scientists to participate in a one-hour guided poster tour with a toxicologist guide. These small group tours provide the opportunity for trainees to take part in critical evaluation of cutting-edge toxicology methods and research findings and network with a senior toxicologist. Options to sign up for specific times will be provided on the Annual Meeting website and during the Student/Postdoctoral Mixer. Groups meet at the appointed time at the Poster Tours for Trainees Board on the Ground Level near the @SOT Center.

SOT Undergraduate Scavenger Hunt

Monday, March 23 and Tuesday, March 24

Hosted by:
Undergraduate Education Subcommittee

Undergraduates can participate in this scavenger hunt by picking up a scavenger hunt card at the Registration Desk, SOT Headquarters Office, or print a copy from the Annual Meeting website Special Events: Student and Postdoc Events webpage. On Monday and Tuesday students must find individuals who match the descriptions on the card. Tuesday afternoon the cards will be collected at the Undergraduate Student Meeting. The first 100 students turning in a completed card will receive a prize. Meeting attendees should be on the lookout for undergraduates searching to complete their cards and, if asked, please sign the description which best fits you.

SOT Mentoring Breakfast

Monday, March 23, 6:15 AM to 7:45 AM

Room 5B

(Registration Required)

Endorser(s):
Career Resource and Development Committee
Graduate Student Leadership Committee
Postdoctoral Assembly

The Society of Toxicology recognizes the importance of mentoring in the scientific and professional development of its members. As such, the Career Resource and Development Committee, in conjunction with the Postdoctoral Assembly and Graduate Student Leadership Committee, is pleased to host the fourth annual Mentoring Breakfast.

The Mentoring Breakfast is for SOT members at any career stage—from graduate students and postdoctoral fellows to senior scientists—who are seeking a mentor. A brief introduction will be followed by small group discussions led by trained facilitators. Facilitators will work to match participants with compatible mentors.

Student and Postdoctoral Scholar Events (Continued)

Trainee Discussion with Plenary Lecturer: Dr. Venter

Monday, March 23, 10:00 AM to 11:00 AM
Room 21
(Ticket Required; SOT Student and Postdoctoral Members Only, Limited Seating)

Chairperson(s): *Colleen E. McLoughlin, CDC-NIOSH, Morgantown, WV.*

Lecturer: *J. Craig Venter, J. Craig Venter Institute, San Diego, CA.*

Graduate students and postdoctoral scholars have the special opportunity of meeting for informal discussion with Dr. Venter after his Plenary Opening Lecture (*see page 134*). The limited tickets for this event could be obtained with your Annual Meeting registration.

In Vitro Toxicology Lecture and Luncheon for Students: Alternative *In Vitro* Approaches for Predicting the Health Impacts of Nanomaterials

Monday, March 23, 12:00 Noon to 1:20 PM
Ballroom 20D
(Ticket Required)

Chairperson(s): *Richard Pollenz, University of South Florida, Tampa, FL, Emily G. Notch, Western New England University, Springfield, MA; and Daniel J. Spade, Brown University, Providence, RI.*

Lecturer: *James C. Bonner, North Carolina State University, Raleigh, NC*

Supported by:
An educational grant from the Colgate-Palmolive Company

Hosted by:
Education Committee

The goal of the *In Vitro* Toxicology Lecture series is to feature important research using *in vitro* and alternative techniques to study basic mechanisms and to illustrate how these test methods benefit animal welfare by refining, reducing, and replacing animal use whenever it is feasible. Undergraduate students, graduate students, postdoctoral scholars, and recipients of Colgate-Palmolive awards are among the guests at the *In Vitro* Toxicology Lecture and Luncheon.

Students and postdoctoral scholars register for $10 (nonrefundable) via the Annual Meeting registration. Dr. Bonner will present an introduction to the topic, challenge participants to discuss an *in vitro* engagement exercise with everyone at their tables, and then participants will report their ideas to the general audience.

The development of *in vitro* alternative approaches to test chemical toxicity and reduce the need for *in vivo* rodent testing continues to be a key area of focus for toxicologists and the public in general. While traditional toxicology methods have relied heavily on animals, new high-throughput screening approaches to generate toxicological data are becoming increasingly available for the safety assessment of chemicals. The emergence of the nanotechnology revolution has made the demand for alternative testing more urgent than ever to address a rapidly expanding number and variety of engineered nanomaterials.

Nanotechnology is anticipated to bring societal benefits in the areas of medicine, engineering, electronics, and energy. However, it is also inevitable that some nanomaterials will present risks for disease in humans exposed occupationally or as a result of exposure to consumer products that incorporate nanomaterials. As the number of different types and modifications of nanomaterials in research, development, and commercialization continues to grow exponentially, a reliable and robust scientific approach to screen nanomaterial toxicity will require *in vitro* cell systems that can predict disease in mice and humans *in vivo*.

A promising new toxicological paradigm for nanomaterials will be discussed, using carbon nanotubes as a case study, which utilizes alternative test strategies to reduce reliance on animal testing through the use of *in vitro* cell-based model systems. The most appropriate types of *in vitro* systems for predicting specific types of disease (e.g., cancer, fibrosis, asthma) will be addressed for hazard assessment of nanomaterials at various stages of synthesis, product development, and overall life cycle.

Postdoctoral Assembly Luncheon

Tuesday, March 24, 12:00 Noon to 1:15 PM
Ballroom 5
(Ticket Required)

Chairperson(s): *Colleen E. McLoughlin, National Institute for Occupational Safety and Health, Morgantown, WV.*

Hosted by:
Postdoctoral Assembly

To encourage increased participation and networking among postdoctoral scholars, this year the Postdoctoral Assembly (PDA) Board has planned the PDA Luncheon to be more casual than a seated lunch. Finishing up a discussion from your morning poster session? Leaving early to run off to set up a poster or attend another meeting? That's no problem; come stop in when you can! You can enjoy a buffet lunch and move around the room to mingle with others, including PDA officers, Postdoctoral Representatives, and SOT Councilors. This is the time for postdocs to relax, celebrate achievements, and have fun.

Student and Postdoctoral Scholar Events (Continued)

Undergraduate Student Meeting

Tuesday, March 24, 4:00 PM to 5:00 PM
Room 14A
(All Undergraduate Meeting Registrants Invited)

Chairperson(s): *Mindy F. Reynolds, Washington College, Chestertown, MD.*

Endorser(s):
Education Committee
Undergraduate Education Subcommittee

All undergraduate students attending the meeting are encouraged to participate in an informal meeting to talk about shared interests related to career paths in toxicology, discuss undergraduate tox-related activities, clubs, and majors on their campuses, and to provide feedback to the Undergraduate Education Subcommittee. Bring your Scavenger Hunt card to turn in.

Trainee Discussion with Medical Research Council (MRC) Lecturer: Dr. Stockinger

Wednesday, March 25, 9:30 AM to 10:30 AM
Room 5B
(Ticket Required; SOT Student and Postdoctoral Members Only, Limited Seating)

Chairperson(s): *Kathryn E. Page, University of California Berkeley, Berkeley, CA.*

Lecturer: *Brigitta Stockinger, MRC National Institute for Medical Research, London, United Kingdom.*

Graduate students and postdoctoral scholars have the special opportunity of meeting for informal discussion with Dr. Stockinger after her Keynote MRC Lecture (*see page 269*). The limited tickets for this event could be obtained with your Annual Meeting registration.

Scientific Session Highlights for Students and Postdocs

The following scientific sessions were organized or endorsed by the SOT Graduate Student Leadership Committee and/or the Postdoctoral Assembly. Some include graduate student and postdoctoral member speakers, and all are on topics relevant to trainees. Graduate students and postdocs are encouraged to attend these sessions.

Symposium Session: Alternative Models to Study Classical Toxicants: A Mechanistic View

Tuesday Morning, March 24
9:00 AM to 11:45 AM, CC Ballroom 6D

Chairperson(s): *Kathryn E. Page, Nutritional Sciences and Toxicology, UC Berkeley, Berkeley, CA, and Monica R. Langley, Biomedical Sciences, Iowa State University, Ames, IA.*

Endorser(s):
Graduate Student Leadership Committee
Mechanisms Specialty Section
Postdoctoral Assembly

Education-Career Development Session: What Toxicologist Do You Wanna Be? The Role of Toxicologists across Diverse Organizations

Wednesday Afternoon, March 25
12:00 Noon to 1:20 PM, CC Room 7

Chairperson(s): *Sudheer Beedanagari, Bristol-Myers Squibb, East Brunswick, NJ, and Erica D. Bruce, Baylor University, Waco, TX.*

Endorser(s):
Association of Scientists of Indian Origin Special Interest Group
Career Resource and Development Committee
Graduate Student Leadership Committee

Workshop Session: Increasing Interest and Engagement in Toxicology and STEM Disciplines: The Multiple Modalities and Impact of Research and Internship Opportunities for High School and Undergraduate Students

Wednesday Afternoon, March 25
1:30 PM to 4:15 PM, CC Room 7

Chairperson(s): *Richard S. Pollenz, Cell Biology, University of South Florida, Tampa, FL, and William D. Atchison, Department of Pharmacology/Toxicology, Michigan State University, East Lansing, MI.*

Endorser(s):
Committee on Diversity Initiatives
Education Committee
Postdoctoral Assembly

Education-Career Development Session: Crafting High-Impact Manuscripts: The Process from Hypothesis through Review and Publication

Wednesday Afternoon, March 25
4:30 PM to 5:50 PM, CC Room 7

Chairperson(s): *Caitlin Murphy, University of Texas at Austin, Austin, TX,and Karin Streifel, University of California Davis, Davis, CA.*

Endorser(s):
Board of Publications
Career Resource and Development Committee
Postdoctoral Assembly

Education Outreach Activities and Events

San Diego Festival of Science and Engineering EXPO Day

Saturday, March 21, 10:00 AM to 5:00 PM
Petco Park, Downtown San Diego

Chairperson(s): *Virunya Bhat, NSF International, San Diego, CA.*

Hosted by:
Southern California Regional Chapter

Endorser(s):
Education Committee
K–12 Subcommittee

The Southern California Regional Chapter will host a booth at the free and largest annual Southern California festival of science, technology, engineering, and math (STEM) education. What's all the buzz about caffeine? Stop by "ToxTown" to test your caffeine trivia knowledge about beverages, food, and consumer products with added caffeine. Come play Tic-Tac-Tox, watch a specially-coordinated new "Risk Bites" YouTube episode. Chat with Andrew Maynard, creator of "RiskBites" and recipient of the 2015 SOT Public Communications Award. Engage with toxicologists in other hands-on activities designed to foster an appreciation of the science and profession of toxicology. Bring your family to participate or volunteer to help build for the future of toxicology!

Undergraduate Education Program

Saturday, March 21 to Monday, March 23
Room 33B

Chairperson(s): *Kristini Miles, Kimberly-Clark Corporation, Roswell, GA; and Jorge Naciff, Procter & Gamble Company, Mason, OH.*

Hosted by:
Committee for Diversity Initiatives (CDI)

Saturday, March 21

Open to CDI Travel Awardees and Invited Guests.

5:00 PM–5:15 PM	**Registration for Students with Committee on Diversity Initiatives Travel Awards,** ***Room 33B***
5:15 PM–7:25 PM	**Opening Event,** ***Room 33B***
	Welcome, Kristini Miles, Kimberly-Clark Corporation, Roswell, GA.
5:25 PM–5:55 PM	**The Tox Squad Icebreaker**, Vicente Santa Cruz, Chevron Phillips Chemical Company LP, The Woodlands, TX.
6:45 PM–7:15 PM	**Introduction to Toxicology,** Joshua P. Gray, US Coast Guard Academy, New London, CT
7:30 PM–8:30 PM	**Committee on Diversity Initiatives Reunion,** ***Room 33B*** Open to anyone previously involved with CDI programs.
	Recognition of the 2015 Perry J. Gehring Diversity Student Travel Award Recipient Latisha T. Pryor, 2014 Program Alumna, Fort Valley State University, Oglethorpe, GA.

Sunday, March 22

Open to CDI Travel Award Recipients, Mentors, and Organizers and Undergraduates who register with Annual Meeting registration.

Chairperson(s): *Kristini Miles, Kimberly-Clark Corporation, Roswell, GA; and Jorge Naciff, Procter & Gamble Company, Mason, OH.*

8:05 AM–8:15 AM	**Welcome from SOT President,** ***Room 31C*** Norbert E. Kaminski, Michigan State University, East Lansing, MI. ***Chair:*** Jorge Naciff, Procter & Gamble Company, Mason, OH.
8:15 AM–9:00 AM	**Comparative Toxicology of the Blood-CSF Brain Barrier,** Alice R. Villalobos, Texas A&M University, College Station, TX.
9:00 AM–9:45 AM	**Introduction to Nanotechnology Health and Safety,** Jared M. Brown, University of Colorado Denver, Aurora, CO.
9:45 AM–9:55 AM	**Break**
9:55 AM–11:00 AM	**Interactive Presentation,** ***Room 33B*** ***Facilitator:*** Teresa Dodd-Butera, California State University, San Bernardino, San Bernardino, CA.
11:10 AM–12:00 Noon	**Human Health Assessment: Hazard Evaluation and Risk Assessment,** ***Room 31B,*** Marquea D. King, US EPA, Washington, DC.
12:00 Noon–12:40 PM	**Lunch and Networking,** ***Room 33B***
12:55 PM–1:55 PM	**Breakout Sessions for Students: What Is Graduate School and What Can I Expect? How to Get into Graduate School** ***Breakout 1, Room 32A*** ***Graduate Student Facilitator:*** Jessica Shapiro, University of Arizona, Tucson, AZ; ***Academic Advisor Facilitator:*** Jose Manautou, University of Connecticut, Storrs, CT. ***Breakout 2, Room 32B*** ***Graduate Student Facilitator:*** Vanessa De La Rosa, University of New Mexico, Albuquerque, NM; ***Academic Advisor Facilitator:*** Angela Slitt, University of Rhode Island, Kingston, RI. ***Breakout 3, Room 30E*** ***Graduate Student Facilitator:*** Megan Culbreth, Albert Einstein College of Medicine, Bronx, NY; ***Academic Advisor Facilitator:*** James Luyendyk, Michigan State University, East Lansing, MI.
12:55 PM–1:55 PM	**Breakout Session for Advisors: Tips for Advising Prospective Graduate Students or How to Get Your Students Accepted to Graduate School,** ***Room 33C, Facilitator:*** William D. Atchison, Michigan State University, Lansing, MI.

Education Outreach Activities and Events (Continued)

Sunday, March 22 *(con't)*

1:55 PM–2:05 PM **Break**

2:05 PM–2:55 PM **Career Roundtable: Opportunities in Toxicology,** ***Room 33B***
Chair: Robert Casillas, MRIGlobal, Mason, OH.

Team 1 ***Academia:*** Neera Tewari-Singh, University of Colorado Denver, Denver, CO; ***Government:*** Mary Martin Gant, NIEHS, Bethesda, MD; ***Industry:*** Sharon Holt Daily, GSK, Research Triangle Park, NC.

Team 2 ***Academia:*** Amy Romoser, Texas A&M University, College Station, TX; ***Government:*** Pedro L. Del Valle, US FDA CDER, Silver Spring, MD; ***Industry:*** Jennifer L. Rayner, SRC, Arlington, VA.

Team 3 ***Academia:*** Annelise Nguyen, Kansas State University, Manhatten, KS; ***Government:*** Minerva Mercado Feliciano, US EPA, Washington, DC; ***Industry:*** Veron Browne, MRIGlobal, Kansas City, MO.

3:00 PM–5:00 PM **Open Time with Academic Toxicology Program Directors and Internship Hosts,** ***Room 31B***
Chair: Judy Zelikoff, New York University of Medicine, Tuxedo Park, NY.
Featuring representatives from academic programs across the country recruiting talented students interested in advanced studies in the biomedical sciences.

5:15 PM–6:30 PM **Awards Ceremony,** ***Ballroom 6A***

6:30 PM–7:30 PM **Welcome Reception,** ***West Terrace***

7:30 PM–8:30 PM **Student/Postdoctoral Scholar Mixer,** ***Ballroom 20D***

Monday, March 23

Open to CDI Travel Award Recipients, Mentors, and Organizers.

8:00 AM–9:00 AM **Plenary Lecture,** ***Hall D***
Life at the Speed of Light, J. Craig Venter, J. Craig Venter Institute, San Diego, CA.

9:10 AM–11:30 AM **Groups Attend Morning Annual Meeting Sessions**

11:45 AM **Students and Mentors Meet,** ***Room 33B***

12:00 Noon–1:20 PM ***In Vitro*** **Lecture and Luncheon for Students,** ***Ballroom 20D***
Alternative *In Vitro* Approaches for Predicting the Health Impacts of Nanomaterials, James C. Bonner, North Carolina State University, Raleigh, NC.

1:20 PM–3:15 PM **Groups Attend Afternoon Annual Meeting Sessions**

3:30 PM–4:30 PM **From Toxic Molecules to Precision Medicine: A Journey of Discovery and Opportunity,** ***Room 33B,*** Kenneth S. Ramos, University of Arizona, Tucson, AZ.

3:30 PM–4:30 PM **Host Mentor and Peer Mentor Meeting,** ***Room 32B***
Chair: Jorge Naciff, Procter & Gamble Company, Mason, OH; and Sakina Elzebair Eltom, Meharry Medical College, Nashville, TN.

4:30 PM–5:00 PM **Program Closing Session,** ***Room 33B***
Chair: Kristini Miles, Kimberly-Clark Corporation, Roswell, GA.

High School Poster Exposition

Tuesday, March 24, 10:30 AM to 12:30 PM
Exhibit Hall *(Across from SOT Pavilion, Booth 526)*

Chairperson(s): *Marie Meagher Bourgeois, University of Southern Florida, Tampa, FL.*

Hosted by:
Education Committee
K–12 Subcommittee

High school student research related to toxicology is featured in an area across from SOT Pavilion. This display recognizes student effort and provides the high school students who have engaged in research with scientific meeting experience. Meeting attendees are invited to drop by to visit with these outstanding potential future toxicologists. More information is available on the SOT Annual Meeting website.

San Diego Regional Science Fair Judging

Wednesday, March 25, 11:00 AM to 2:30 PM
Balboa Park, Downtown San Diego

Chairperson(s): *Virunya Bhat, NSF International, San Diego, CA.*

Hosted by:
Southern California Regional Chapter

Endorser(s):
Education Committee
K–12 Subcommittee

Meet at the San Diego Convention Center to travel to the nearby Greater San Diego Science and Engineering Fair to assist the Southern California Regional Chapter in their annual tradition of selecting awards for students with outstanding projects related to toxicology.

SOT | Society of Toxicology
ENDOWMENT
Investing in the Future ...

SOCIETY OF TOXICOLOGY ENDOWMENT FUND

As we express our gratitude, we must never forget that the highest appreciation is not to utter words, but to live by them.

John F. Kennedy

The Society of Toxicology has been there for you through the years, providing educational opportunities to help you stay current in this ever-changing world. Make a donation today to the Society Endowment Fund as a symbol of your gratitude and your commitment to the future.

The Society of Toxicology is matching contributions to all permanently restricted funds dollar for dollar (donations to temporarily restricted funds will vest once the fund has reached the required threshold for permanent status). The 1-to-1 match is effective for contributions made between July 1, 2013, and June 30, 2016, or until the $400,000 in matching funds has been expended.

Please help SOT continue to make a difference by becoming a contributor to the SOT Endowment Fund. For more information, go to www.toxicology.org/endowment.

Satellite Meetings

Updates on 21st Century Toxicology Activities and Related Efforts: Invited Presentations and Open Microphone

Thursday, March 26, 12:30 PM–4:00 PM
Manchester Grand Hyatt Hillcrest

Presented by:
The Center for Alternatives to Animal Testing and Human Toxicology Project Consortium

Purpose of the Meeting: If you're planning to attend the SOT Annual Meeting in San Diego this March, please join the Center for Alternatives to Animal Testing (CAAT) and the Human Toxicology Project Consortium (HTPC) for our annual satellite meeting on 21st century toxicology. The satellite meeting provides an informal setting in which interested stakeholders can update each other on efforts to advance *in vitro*, pathway-based testing and related approaches.

The meeting will feature a limited number of invited presentations, but also leave ample time for an open microphone segment, in which participants are welcome to give brief presentations on germane topics, with or without slides.

The draft program is as follows:

12:30 PM **Box Lunch and Welcome**
Thomas Hartung, Johns Hopkins University

1:00 PM **Invited Speakers**
(10-minute presentations, each followed by 5 minutes of discussion)

Tox21 Update
Alex Merrick, US National Toxicology Program

ToxCast Update
Russell Thomas, US Environmental Protection Agency

Hamner TT21C-Related Activity Update
Melvin Andersen, Hamner Institutes for Biomedical Sciences

SEURAT Update
Michael Schwarz, University of Tuebingen

The Center for Alternatives to Animal Testing's TT21C-Related Activity Update
Thomas Hartung, Johns Hopkins University

Human Toxicology Project Consortium Update
Catherine Willett, Humane Society of the United States

Evidence-Based Toxicology Update
Martin Stephens, Johns Hopkins University

2:45 PM **Open Microphone for Additional Presentations and Discussion**

4:00 PM **Adjourn**

SOT | Contemporary Concepts in Toxicology

Advance the Science of Toxicology

Consider Organizing a Contemporary Concepts in Toxicology Meeting

Contemporary Concepts in Toxicology (CCT) Meetings expand the opportunities and forums for members to engage in the exchange of ideas and information relevant to toxicology. CCT Meetings are one- to two-day focused, open registration, scientific meetings in contemporary and rapidly progressing areas of toxicological sciences. CCT Meetings also can be held as webinars.

If you think that your research area could be enhanced by thought leader collaboration or that public health and safety could be improved by disseminating your research findings more broadly, please consider organizing an SOT CCT Meeting. The CCT Conferences Committee and the SOT Headquarters staff are prepared to help move your meeting forward.

The Society will underwrite all the liabilities of the CCT Meeting (up to the $25,000 in seed money) with the expectation that the meeting at least break even financially. Profit sharing for SOT component groups is available. For more information about CCT Meetings, please visit the SOT website at **www.toxicology.org/cct**.

CCT Meetings focus on a wide range of topics. Plan to attend this year's CCT and webinar series. See page 31 for more information about the webinar series.

- FutureTox III: Transforming 21st Century Science into Risk Assessment and Regulatory Decision-Making
  November 19–20, 2015
  Arlington, Virginia

In order to sustain the quality standards of the Society, only meetings in which SOT maintains scientific and administrative control will be considered. Meetings developed and administered by other organizations may be eligible for sponsorship and/or endorsement by the Society of Toxicology.

www.toxicology.org

CEd-Tox

SOT | Society of Toxicology

Creating a Safer and Healthier World by Advancing the Science of Toxicology

Continuing Education Courses Online

CEd-Tox offers a great, affordable way to expand your professional development or stay current in the field of toxicology, all year long. Forty-one diverse CE courses from past SOT Annual Meetings are now available, including slide presentations and audio.

SOT Graduate Student and Postdoctoral members receive complimentary access to all courses!

Whether to update your knowledge or to explore a new area, we invite you to register for CEd-Tox. For more information or to register, visit the SOT website: **www.toxicology.org/cedtox.asp**.

Cardiovascular Toxicology:
- Current Nonclinical Strategies and Methods for Evaluating Drug-Induced Cardiovascular Toxicity (2011)*

Dermal Toxicology:
- Cutaneous Toxicity: *In Vitro* Methods for Toxicity and Safety Evaluation (2012)

Drug Discovery Toxicology:
- Mitochondrial Toxicity: Animal Models and Screening Methods in Drug Development (2010)*
- The What, When, and How of Nonclinical Support for an IND Submission (2013)*

Food Safety:
- Weighing in on Nutrition—Essential Concepts for Toxicologists (2013)

Immunotoxicology:
- Drug Hypersensitivity Reactions: Risk Assessment and Management (2011)
- Overview and Application of the WHO-IPCS Harmonized Guidance for Immunotoxicity Risk Assessment for Chemicals (2012)*

***In Vitro* and Alternative Methods:**
- Alternative *In Vitro* Tox Testing for the 21st Century (2012)*
- Quantitative *In Vitro* to *In Vivo* Extrapolation: The Essential Element of *In Vitro* Assay-Based Risk Assessment (2011)*

Inhalation and Respiratory:
- Comparative Biology of the Lung (2010)*
- Inhalation Studies: Challenges and Complexities (2014)

Mechanisms:
- Computational and Experimental Aspects of microRNAs in Toxicology (2014)

Medical Device:
- Combination Products: Toxicology and Regulatory Challenges (2014)

Metals:
- Toxic Effects of Metals (2013)*

Mixtures:
- Toxicology and Risk Assessment of Chemical Mixtures (2011)*

Molecular and Systems Biology:
- Applications of Computational Systems Biology for Toxicology (2011)
- Epigenetics in Toxicology: Introduction, Mechanistic Understanding and Applications in Safety Assessment (2011)*

Nanotoxicology:
- Evaluating Toxicity of Engineered Nanomaterials: Issues with Conventional Toxicology Approaches (2011)

Neurotoxicology:
- The Practice and Implementation of Neural Stem Cell-Based Approaches to Neurotoxicology (2013)

Occupational and Public Health:
- Protecting Human Health: Use of Toxicological and Epidemiological Data in Determining Safe Levels for Human Exposure (2011)*

Ocular Toxicology:
- Assessment of Ocular Toxicity in Toxicology Studies Conducted for Regulatory Purposes (2010)*

Regulatory and Safety Evaluation:
- Current Trends in Genetic Toxicology Testing (2014)
- New Technologies and Approaches in Genetic Toxicology and Their Expanding Role in General Toxicology and Safety Assessment (2011)*
- Translation of Safety Biomarkers in Drug Discovery and Development (2009)

Reproductive and Developmental Toxicology:
- Basic Embryology and Developmental Toxicity Testing (2012)
- Biology and Toxicology of the Peri- and Postnatal Development (2011)
- Nonclinical Pediatric Drug Development: Considerations, Study Designs, and Strategies (2014)

Risk Assessment:
- Basic Principles of Risk Assessment (2013)*
- Best Practices for Developing, Characterizing, and Applying Physiologically-Based Pharmacokinetic Models in Risk Assessment (2011)
- Epidemiology for Toxicologists: What the Numbers Really Mean (2014)

Stem Cells:
- Stem Cells in Toxicology (2012)*
- Stem Cells Utility in Toxicology Screening (2011)

Toxicologic and Exploratory Pathology:
- Segment-Specific Renal Pathology for the Nonpathologist (2010)*
- Stress As a Confounding Factor (2009)

*English Language Transcription Available

Continuing Education

Continuing Education Courses

The Continuing Education (CE) Program offers a wide range of courses that cover established knowledge in toxicology, as well as new developments in toxicology and related disciplines. Courses can be applied toward certifying and licensing board requirements and may also be used for recertification with the American Board of Toxicology (ABT). Both basic and advanced course topics are offered. The basic course is intended to provide a broad overview of an area or to assist individuals in learning new techniques or approaches. The advanced course is intended to be of interest to individuals with previous knowledge of the subject or already working in the field.

All courses will be held on Sunday, March 22, 2015, at the San Diego Convention Center. Please check the signage in the Registration area and at the CE Booth for room assignments. Note: Your course materials will be available in the room immediately prior to the course (they will not be available at the Registration area). If you have your course ticket, go directly to the assigned course room. If you have not received your course ticket or have not registered, please check in at Registration on Saturday afternoon/evening or on Sunday morning. If you have misplaced your ticket, please go to the Continuing Education Booth near the course classrooms on Sunday. The booth will be open from 6:30 am–5:30 pm.

7:00 AM–7:45 AM Continuing Education Sunrise Mini-Course:

1. New Horizons in Chemical Carcinogenesis: Advances in Mode of Action and Mechanism of Cancer Pathogenesis

8:15 AM–12:00 Noon Continuing Education Morning (AM) Courses:

2. An Introduction to the Exposome
3. Demystifying Mixtures: From Study Design Selection to Risk Assessment Application
4. Safety Evaluation of CNS Administered Therapeutics—Study Design, Dose Routes, and Data Interpretation
5. The Future of Developmental and Reproductive Toxicology—Building a Bridge to the Animal Free Zone
6. The New World of Cancer Immunotherapy: Challenges in Bench to Bedside Translation
7. Toxicology and Regulatory Considerations for Combination Products

1:15 PM–5:00 PM Continuing Education Afternoon (PM) Courses:

8. Advances in Safety Assessment of Medical Devices
9. Interpretation of Cardiovascular Safety Data in Toxicology Studies
10. Is Synthetic Biology the Future of Toxicology?
11. Skeletal System Endocrinology and Toxicology
12. Strategies in Investigative Toxicology in a Pharmaceutical Setting
13. Toxicogenomics Meets Regulatory Decision-Making: How to Get Past Heat Maps, Network/Pathway Diagrams, and "Favorite" Genes

Registration for the Annual Meeting and a Continuing Education course ticket are required.

Four CE Courses will be presented as live webcasts—Separate registration for webcasts required.

Morning Webcasts:
- **AM05—The Future of Developmental and Reproductive Toxicology—Building a Bridge to the Animal Free Zone**
- **AM06—The New World of Cancer Immunotherapy: Challenges in Bench to Bedside Translation**

(Both webcasts begin at 8:15 am US Pacific Time)

Afternoon Webcasts:
- **PM09—Interpretation of Cardiovascular Safety Data in Toxicology Studies**
- **PM13—Toxicogenomics Meets Regulatory Decision-Making: How to Get Past Heat Maps, Network/Pathway Diagrams, and "Favorite" Genes**

(Both webcasts begin at 1:15 pm US Pacific Time)

WWW.TOXICOLOGY.ORG/REGISTER

CE Continuing Education Courses Thematic Sessions

Abstract #

2015 Continuing Education Courses

SUNDAY MORNING

Sunday Morning, March 22
7:00 AM to 7:45 AM
CC Ballroom 6B

CE

Continuing Education: New Horizons in Chemical Carcinogenesis: Advances in Mode of Action and Mechanism of Cancer Pathogenesis

SR01 **CE Basic**

Chairperson(s): *James E. Klaunig, Indiana University, Bloomington, IN; and Udayan M. Apte, University of Kansas Medical Center, Kansas City, KS.*

Endorser(s):
Carcinogenesis Specialty Section

The ability of chemicals to cause cancer is an endpoint with a deep impact on public health. Understanding the mode of action of chemical carcinogens is critical for risk assessment of the chemicals. The mechanisms by which chemicals can cause cell transformation and neoplastic growth have been central to the discipline of toxicology. It is now apparent that the previous simplistic view that chemicals interact with DNA, inducing a mutation which results in the formation of a neoplasm, is incomplete. Chemical modulation of metabolism, nuclear receptors, gene expression, DNA repair processes, immune surveillance, inflammation, cell-to-cell communication, and changes in target cell function and structure, and their ability to activate stem/progenitor cells, contribute to the formation of preneoplastic cells and their progression to the malignant state. The multitude of changes in the target cell and its microenvironment must be considered in applying mode of action analysis to potential carcinogenic human risk. Besides the estrogen, CAR, PPAR, and AHR receptors, other nuclear receptors, including HNF4a, TR, Nur77, and LXR, previously not associated with cancer pathogenesis, appear to play a critical role in the formation and progression of cancer. While the role of these receptors in metabolic processes and differentiation has been known, new studies indicate these proteins are central in cancer pathogenesis via either their canonical or non-canonical actions driven by chemical exposure. This course will review our current level of understanding of chemical carcinogenesis as well as discussing some new frontiers that have implications in cancer pathogenesis from chemical exposure.

#1	7:00	**Part 1: Mode of Action and Mechanism of Cancer Pathogenesis.** *J. E. Klaunig.* Indiana University, Bloomington, IN.
	7:20	**Part 2: New Horizons in Chemical Carcinogenesis: Advances in MOA.** *U. Apte.* University of Kansas Medical Center, Kansas City, KS.

Sunday Morning, March 22
8:15 AM to 12:00 Noon
CC Room 7

CE

Continuing Education: An Introduction to the Exposome

AM02 **CE Basic**

Strategies for Exposure and Risk Assessments

Chairperson(s): *Gary W. Miller, Emory University, Atlanta, GA; and Martyn T. Smith, University of California Berkeley, Berkeley, CA.*

Endorser(s):
Mixtures Specialty Section
Postdoctoral Assembly
Risk Assessment Specialty Section

The exposome has been defined as the totality of our exposures throughout our lifetime. Such a definition defies measurement, making it less than useful as a scientific construct. More recently, the concept of the exposome

Continuing Education (Continued)

Abstract #

has evolved to represent a measurable entity that encompasses our complex exposures and how our bodies respond to such exposures. The addition of the biological response component to the definition of the exposome positions the field of toxicology to make major contributions to the field. By providing an intellectual foil to the genome-centric framework in biomedical research, the exposome has the potential to elevate the importance of the environment in scientific circles and promote a framework that faithfully integrates the importance of the environment in health and disease. This course will introduce the attendees to the concept of the exposome, explain how it can be used to advance toxicological research by providing a clear translational output, and explain some of the innovative approaches being used to measure the exposome. In order for the exposome to become a useful concept it will be necessary to: (1) capture and quantify the complex exposures, (2) identify and quantify the diverse biological responses, and (3) integrate these disparate datasets with advanced conceptual thinking and innovative bioinformatic and mathematical approaches. This course was designed to address these three objectives in an informative and interactive setting.

#2	8:15	**An Introduction to the Exposome.** *G. W. Miller.* Emory University, Atlanta, GA.
	8:15	**The Exposome: Introduction and Implications for Toxicology.** G. W. Miller. Emory University, Atlanta, GA.
	9:15	**Exposure Pathways, Biomarkers and the Exposome: Predictions, Insight, and Uncertainty.** J. F. Wambaugh. US EPA, Research Triangle Park, NC.
	10:00	**Coffee Break.**
	10:30	**The Blood Exposome.** M. T. Smith. University of California Berkeley, Berkeley, CA.
	11:15	**Exposome Bioinformatics: EWAS and Beyond.** C. Patel. Harvard Medical School, Boston, MA.

Sunday Morning, March 22
8:15 AM to 12:00 Noon
CC Ballroom 6C

CE

Continuing Education: Demystifying Mixtures: From Study Design Selection to Risk Assessment Application

AM03 **CE Basic**

Strategies for Exposure and Risk Assessments

Chairperson(s): *Jane Ellen Simmons, US EPA, Research Triangle Park, NC; and Cynthia V. Rider, NIEHS, Research Triangle Park, NC.*

Endorser(s):
Mixtures Specialty Section
Occupational and Public Health Specialty Section
Risk Assessment Specialty Section

Assessing chemical mixture toxicity is often considered an intractable problem. Difficulty increases for complex mixtures as much of their composition is typically unknown. Although mixtures toxicology and risk assessment (RA) are more complex than for single chemicals due to potential interactions, significant advances have been made in recent years. As a number of experiments are designed poorly from a mixtures perspective, this course will provide coherent strategies for design, analysis of mixtures experiments for robust conclusions, and data that are useful in mixtures RA. Key principles and concepts underlying modern mixtures toxicology, RA, legislation, policy, and guidance in the United States and other nations will be reviewed. Guidance based on data quality will be provided for application of either whole mixture or component-based RA approaches. Whole mixture RA discussions will include recent research on methods to determine whether mixtures are sufficiently similar such that toxicity information for one mixture can be used to estimate the toxicity of another. Most mixtures RAs are component-based and a number of approaches will be illustrated—highlighting key differences. Those include the hazard index (HI), target organ HI, interaction weighted HI, and index-chemical based (relative potency factor and toxic equivalency factor) approaches. This course emphasizes recent advances and will be of value to experimentalists wanting to conduct mixture studies meaningful for evaluation of risk or safety, and risk assessors who evaluate mixtures data and apply mixtures RA methods.

Abstract #

#3	8:15	**Demystifying Mixtures: From Study Design Selection to Risk Assessment Application.** *J. Simmons.* US EPA, Research Triangle Park, NC.
	8:15	**Regulatory Drivers and Available Resources.** M. Mumtaz. CDC, ATSDR, Atlanta, GA.
	8:40	**Berenbaum and Beyond: Concepts and Theories Underlying Mixtures Research and Cumulative Risk Assessment.** C. V. Rider. NIEHS, Research Triangle Park, NC.
	9:15	**Designing the Good, Eliminating the Bad and the Ugly.** J. Simmons. US EPA, Research Triangle Park, NC.
	10:00	**Coffee Break.**
	10:30	**Data Quality Assessment and Whole Mixture Assessments (Mixture of Concern, Sufficiently Similar Mixture, Group of Similar Mixtures).** G. Rice. US EPA, Cincinnati, OH.
	11:15	**Component-Based Additivity Approaches: Benefits and Uncertainties.** R. Hertzberg. Emory University, Atlanta, GA.

Sunday Morning, March 22
8:15 AM to 12:00 Noon
CC Ballroom 6D

CE

Continuing Education: Safety Evaluation of CNS Administered Therapeutics—Study Design, Dose Response, and Data Interpretation

AM04 **CE Basic**

Safety Assessment Approaches for Product Development

Chairperson(s): *Brian R. Vuillemenot, Genentech, Inc., South San Francisco, CA; and Sven H. Korte, Covance Laboratories GmbH, Muenster, Germany.*

Endorser(s):
Biotechnology Specialty Section
Neurotoxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section

Many diseases affecting the central nervous system (CNS) are inadequately treated by traditional systemic delivery methods, partly because of the inability of large molecules to bypass the blood-brain barrier. Delivery of large molecules, cells, and other novel therapies directly to the central nervous system via direct parenchymal injection/infusion or catheterization into the intrathecal and/or ventricular spaces overcomes this obstacle and delivers the therapeutics close to the target region. Clinical experience using direct CNS administration of compounds for pain relief and chemotherapy has grown over the past decades, suggesting the same approach can be applied to the treatment of degenerative and inherited disorders. Administration of drugs directly into the brain or cerebrospinal fluid (CSF) may involve some risk, including reaction of the spinal cord or brain tissue adjacent to the device. The preclinical studies used to evaluate the safety of CNS administered compounds must differentiate between the effects of the delivery method, the therapy, and the combination. Reliable, well-characterized animal models for CNS administration of test articles have been developed, which enable nonclinical development of these potential therapeutics. This course will discuss the technical challenges of preclinical intrathecal studies, design of studies and nonclinical programs, evaluation of results, and considerations for special endpoints in the studies. The course is targeted to pathologists, toxicologists, administrators, and regulatory personnel who may need to design, conduct, or review these complicated but increasingly worthwhile investigations.

Continuing Education (Continued)

Abstract #

#4	8:15	**Safety Evaluation of CNS Administered Therapeutics—Study Design, Dose Routes, and Data Interpretation.** *B. Vuillemenot*. Genentech, Inc., South San Francisco, CA.
	8:15	**Development of CNS Administered Biologics: Overview, Challenges, and a Case History.** B. Vuillemenot. Genentech, Inc., South San Francisco, CA.
	8:50	**Procedures of Intrathecal Drug Delivery and CSF Sampling in Juvenile Nonhuman Primate Studies.** S. H. Korte. Covance Laboratories Inc., Muenster, Germany.
	9:20	**Intraparenchymal CNS Delivery.** R. B. Boyd. Northern Biomedical Research, Inc., Spring Lake, MI.
	10:00	**Coffee Break.**
	10:30	**Morphologic Assessment of Studies Involving Direct Delivery to the CNS.** M. T. Butt. Tox Path Specialists, LLC, Frederick, MD.
	11:15	**Translation of Nonclinical Intrathecal Data to the Clinic.** T. L. Wright. Shire, Lexington, MA.

Sunday Morning, March 22
8:15 AM to 12:00 Noon
CC Ballroom 6F

CE

Continuing Education: The Future of Developmental and Reproductive Toxicology—Building a Bridge to the Animal Free Zone

AM05 **CE Advanced**

Also Presented As Live Webcast—Webcast Registration Required.

Safety Assessment Approaches for Product Development

Chairperson(s): *Reza J. Rasoulpour, Dow AgroSciences, Indianapolis, IN; and Patrick Allard, University of California Los Angeles, Los Angeles, CA.*

Endorser(s):
Regulatory and Safety Evaluation Specialty Section
Reproductive and Developmental Toxicology Specialty Section

In this new age of predictive toxicity, adverse outcome pathways, and replacements for traditional testing designs, the world of developmental and reproductive toxicology is the final frontier. The sheer complexity of a developing mammalian embryo/fetus coupled to, and dependent upon, maternal care to follow the predesigned path toward normal development still holds many mysteries. In the past several years, there have been breakthroughs in our thinking of developmental and reproductive toxicology alternative assays that now take what was once inconceivable to something that is merely on the horizon. The course focus will be to explore several different examples utilizing novel model system approaches to predict reproductive and developmental toxicity endpoints. The course will include an introductory overview on the history of this area and the unique challenges upon finding alternatives for reproductive and developmental assays. Fundamental developmental processes including the roundworm, *C. elegans*, as a model organism for prediction of germline toxicities, will be presented. The course will explore alternative vertebrate models and gain insight on the opportunities and challenges with the popular zebrafish as an alternative model for evaluating developmental toxicity and novel downstream safety assessment applications. The course will conclude with presentations on how different alternative assays such as whole embryo culture, zebrafish, and embryonic stem cells can be coupled together to develop a fingerprint to predict developmental toxicity, and a presentation about how the interrogation of different developmental pathways can be combined with computational approaches to develop virtual developmental and reproductive toxicity platforms, such as the virtual embryo. Scientists at multiple levels (graduate students to very experienced scientists) in academia, government, or industry who are interested in learning the current state of the science for developmental and reproductive toxicity assessment are encouraged to attend this course. Course learning objectives are (1) The current state of the science for different approaches in understanding potential for developmental and reproductive toxicity; (2) unique challenges and opportunities that exist within the developmental and reproductive toxicity assessment area compared to other disciplines within toxicology; (3) the pros and cons of utilizing single model species tools versus combining multiple species for predictive assays; and (4) steps that are underway for the longterm replacement of these studies with approaches in bioprofiling combined with computational modeling.

Abstract #

#5	8:15	**The Future of Developmental and Reproductive Toxicology—Building a Bridge to the Animal Free Zone.** *R. J. Rasoulpour*. Dow AgroSciences, Indianapolis, IN.
	8:15	**Introduction and Overview.** R. J. Rasoulpour. Dow AgroSciences, Indianapolis, IN.
	8:30	**Utilizing *C. elegans* As a Predictive Model for Germline Disruption.** P. Allard. University of California Los Angeles, Los Angeles, CA.
	9:15	**Alternative Development Toxicity Assessment Using Zebrafish—Routine Safety Assessment and Applications.** D. J. Fort. Fort Environmental Laboratories, Stillwater, OK.
	10:00	**Coffee Break.**
	10:30	**Combining Rodent Whole Embryo Culture, Zebrafish, and Embryonic Stem Cell Assays to Generate Predictive Signatures.** K. Augustine. Bristol-Myers Squibb Company, Pennington, NJ.
	11:15	**Building Cellular Pathways for the Future—The Virtual Embryo.** T. B. Knudsen. US EPA, Research Triangle Park, NC.

Sunday Morning, March 22
8:15 AM to 12:00 Noon
CC Ballroom 6E

CE

Continuing Education: The New World of Cancer Immunotherapy: Challenges in Bench to Bedside Translation

AM06 **CE Basic**

Also Presented As Live Webcast—Webcast Registration Required.

Advancing Clinical and Translational Toxicology

Chairperson(s): *Rodney Prell, Genentech Inc., South San Francisco, CA; and Rafael A. Ponce, Amgen, Seattle, WA.*

Endorser(s):
Biotechnology Specialty Section
Immunotoxicology Specialty Section

The concept of harnessing the immune system to eradicate cancer has been a long-term goal in immunology and oncology. After years of disappointment, the field of cancer immunotherapy (CIT) has gained a strong foothold with the recent approval of two immunotherapies (ipilimumab and sipuleucel-T), and encouraging data emerging from clinical trials testing checkpoint inhibitors, chimeric antigen T cells, oncolytic vaccines, and other modalities. This intensifying effort to identify new CIT targets and/or develop new modalities to harness the immune system presents new challenges for assessing nonclinical safety to support clinical development. For nonclinical safety assessment, understanding the threshold between desired immunological activity (desired pharmacology), and the potential for exaggerated immunologic stimulation is paramount in the clinical dose selection and identifying biomarkers for patient monitoring. Therefore, CIT drug development may require creative models and study designs that incorporate extensive immune monitoring that has not been routinely included when testing conventional cancer therapeutics. The course objective is to provide a general overview of the field of cancer immunotherapy, highlight the unique challenges for CIT drug development, and generate discussion with regard to assessing the unique challenges of developing this new oncology therapeu-

Continuing Education (Continued)

Abstract #

tics to ensure patient safety. Presenters will introduce the concept of cancer immunotherapy and summarize the current landscape of the field of CIT drug development, including the various pathways and modalities currently under development, and discuss the scientific limitations of conventional models for evaluating the pharmacology of novel immunotherapeutics, as well as the promise of novel models that may improve translatability of results to the clinical setting. The course will look into the challenges for nonclinical safety assessment of cancer immunotherapy molecules. Case studies from different CIT modalities will illustrate the challenges. Unique clinical challenges of developing CIT molecules, and the regulatory perspective on the need for nonclinical, clinical, and regulatory scientists to partner to ensure patient safety when developing CIT molecules, will also be presented.

#6	8:15	**The New World of Cancer Immunotherapy: Challenges in Bench to Bedside Translation.** *R. Prell.* Genentech Inc., South San Francisco, CA.
	8:15	**Introduction into the Transformative World of Cancer Immunotherapy.** R. Prell. Genentech Inc., South San Francisco, CA.
	8:30	**Developing Novel Nonclinical Models to Improve CIT Drug Development.** K. A. Bahjat. Providence Cancer Center, Portland, OR.
	9:15	**Ipilimumab Nonclinical Safety Assessment: Lessons Learned.** H. G. Haggerty. Bristol-Myers Squibb Company, New Brunswick, NJ.
	10:00	**Coffee Break.**
	10:30	**Clinical Perspective: Approaches and Challenges to CIT Development.** W. Overwijk. MD Anderson Cancer Center, Houston, TX.
	11:15	**Approaches and Challenges for Cancer Immunotherapy from a Regulatory Perspective.** S. Ricci. US FDA, Silver Spring, MD.

Sunday Morning, March 22
8:15 AM to 12:00 Noon
CC Ballroom 6B

CE

Continuing Education: Toxicology and Regulatory Considerations for Combination Products

AM07 **CE Basic**

Safety Assessment Approaches for Product Development

Chairperson(s): *Jon N. Cammack, AstraZeneca Biologics, Gaithersburg, MD; and Chandramallika (Molly) Ghosh, US FDA, Silver Spring, MD.*

Endorser(s):
Drug Discovery Toxicology Specialty Section
Medical Device and Combination Product Specialty Section
Regulatory and Safety Evaluation Specialty Section

Therapeutic and diagnostic products that combine drugs, devices, and/or biological elements are termed, and regulated by the US FDA, as combination products. Technological advances continue to merge product types and blur the historical lines of separation between traditional drugs, biologics, and medical devices. Further, the increasing use of absorbable platforms adds another level of complexity to the development and regulation of certain combination products. US FDA's medical product centers, the Center for Biologics Evaluation and Research (CBER), the Center for Drug Evaluation and Research (CDER), and the Center for Devices and Radiological Health (CDRH), are utilizing evolving collaborative efforts in order to address the regulatory challenges of combination products. Because combination products involve components that would normally be developed and regulated under different types of processes and policies, and frequently submitted to different US FDA centers, these products raise challenging development, regulatory, and review management questions. Differences in these pathways for each combination product type can impact the processes for all aspects of product development and management, especially preclinical testing, but also clinical investigation, marketing applications,

Abstract #

manufacturing and quality control, adverse event reporting, promotion and advertising, and post-approval modifications. The 2014 Sunrise Combination Products CE course introduced the emerging topic; the 2015 CE course will provide in-depth detail on the evolving regulatory processes in developing a successful preclinical evaluation program. In addition to examples of product development scenarios (including drug/biologic-device and antibody drug conjugate combination products), US FDA will provide a reviewer perspective on key program considerations.

#7	8:15	**Toxicology and Regulatory Considerations for Combination Products.** *J. N. Cammack.* AstraZeneca Biologics, Gaithersburg, MD.
	8:15	**Regulatory Overview of Combination Products: Introduction, Definitions, Terms, High-Level Review of New FDA GMP Rules.** T. Nguyen. US FDA, Silver Spring, MD.
	8:40	**Preclinical Development Challenges for a Hypothetical Drug Pump.** K. P. Coleman. Medtronic, Inc., Minneapolis, MN.
	9:15	**Case Study of a Preclinical Development Program for a mAb Pre-Filled Syringe Biologic-Device Combination Product.** J. N. Cammack. AstraZeneca Biologics, Gaithersburg, MD.
	10:00	**Coffee Break.**
	10:30	**Considerations for Preclinical Development of Antibody-Drug Conjugates.** M. Z. Dieter. AbbVie, Chicago, IL.
	11:15	**FDA Reviewer Perspective—Considerations for Bench, Biocompatibility, and Animal Testing of Absorbable Drug-Eluting Stents.** J. Goode. US FDA, Silver Spring, MD.

SUNDAY AFTERNOON

Sunday Morning, March 22
1:15 PM to 5:00 PM
CC Ballroom 6B

CE

Continuing Education: Advances in Safety Assessment of Medical Devices

PM08 **CE Basic**

Safety Assessment Approaches for Product Development

Chairperson(s): *Niranjan S. Goud, Boston Scientific Corporation, Spencer, IN; and Ron Brown, US FDA, Silver Spring, MD.*

Endorser(s):
Association of Scientists of Indian Origin Special Interest Group
Medical Device and Combination Product Specialty Section
Risk Assessment Specialty Section

Medical devices used in the diagnosis and treatment of various diseases are manufactured from polymeric materials and metal alloys, each of which may be associated with safety concerns for the patient. The aim of this course is to provide an outline of the various *in vitro, in vivo,* and *in silico* methodologies for the safety assessment of medical devices and to discuss how risk assessment approaches can be used in the biological evaluation process for medical devices. Presentations will provide an overview of the biocompatibility test methods recommended by ISO 10993, US Pharmacopeia, and ASTM and will include examples of test failures and how to resolve them without compromising patient safety. The course will begin with a broad overview of the approaches used to evaluate the biological safety of medical devices. Following the introductory talk, there will be presentations on two high-profile and toxicologically important topics, the potential health risks associated with the use of metallic hip implants, and approaches to evaluating the biological safety of plastic dental materials. One chal-

CE Continuing Education Courses Thematic Sessions

Continuing Education (Continued)

Abstract #

lenge in conducting toxicological risk assessments of compounds released from medical device materials is when there are no adequate toxicity data for these compounds. The course will conclude with a presentation that provides practical guidance on the derivation of exposure limits for leachable chemicals released from medical devices when only limited toxicity data are available. This course should be of broad interest to toxicologists and health care professionals involved in evaluating patient risks to new treatment modalities, and in particular to toxicologists involved in evaluating the safety of medical devices and combination products containing drugs or biologics.

#8	1:15	**Advances in Safety Assessment of Medical Devices.** *N. S. Goud*. Boston Scientific Corporation, Spencer, IN.
	1:15	**Methods in Assessing the Biocompatibility of Medical Devices.** N. S. Goud. Boston Scientific Corporation, Spencer, IN.
	2:15	**The Use of Plastic Materials in Dentistry—An Issue of Concern?** J. E. Dahl. Nordic Institute of Dental Materials, Oslo, Norway.
	3:00	**Coffee Break.**
	3:30	**Risk Assessment of Orthopedic Implants--Case Study of Metal on Metal Hip Prothesis.** W.V. Christian, Cardno ChemRisk, Pittsburgh, PA.
	4:15	**Derivation of Tolerable Intake Values for Compounds with Limited Toxicity Data.** R. P. Brown. US FDA, Silver Spring, MD.

Sunday Morning, March 22
1:15 PM to 5:00 PM
CC Ballroom 6E

Continuing Education: Interpretation of Cardiovascular Safety Data in Toxicology Studies

PM09 **CE Advanced**

Also Presented As Live Webcast—Webcast Registration Required.

Safety Assessment Approaches for Product Development

Chairperson(s): *John J. Kremer, Covance Laboratories Inc., Madison, WI; and Hong Wang, Genentech, Inc., South San Francisco, CA.*

Endorser(s):
Cardiovascular Toxicology Specialty Section
Drug Discovery Toxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section

The value of integrating cardiovascular (CV) safety evaluation into general toxicology studies has been increasingly recognized in drug development for both pharmaceutical and biotechnology-derived products. These combined study approaches offer a unique opportunity to gain a holistic understanding of drug-related functional, biochemical, and morphological changes in the context of proper pharmacokinetic/pharmacodynamic (PK/PD) data. Past courses have focused on the best practices, including study design and execution for integrating CV endpoints into toxicology studies. This course will provide a comprehensive and detailed discussion on the interpretation of CV findings as part of a toxicology study. For example, how are CV functional data interpreted (e.g. heart rate, blood pressure, electrocardiogram, contractility) as compared to traditional endpoints (e.g. pathology)? Is a physiological finding (e.g. a decrease in contractility) a primary effect or a compensatory effect to other changes? Is it due to a direct CV effect or secondary to drug-related toxicity? How/when should a CV finding be interpreted as a "hazard" versus "adverse"? What are the potential mechanisms for toxicity? How do I utilize the holistic data to design the next steps? How does surgically implanted instrumentation affect or potentially confound a pathology evaluation? The course will start with outlining the questions and focus on how these assessments are used and interpreted in this emerging paradigm of combined CV/toxicology studies. The target audience consists of toxicologists who may have limited exposure to CV or safety pharmacology data or are looking to expand their knowledge in this area. By the end of this symposium, the audience should better understand the considerations and strategies in integrating CV/toxicology studies as well as real-world case studies (or best practices) for interpretation of these data for drug safety assessment.

Abstract #

#9	1:15	**Interpretation of Cardiovascular Safety Data in Toxicology Studies.** *J. J. Kremer*. Covance Laboratories Inc., Madison, WI.
	1:15	**Study Design Considerations to Improve Cardiovascular Safety Assessment.** J. J. Kremer. Covance Laboratories Inc., Madison, WI.
	2:15	**Hemodynamic Data: Toward Maximal Information Extraction.** B. Olivier. Michigan State University, East Lansing, MI.
	3:00	**Coffee Break.**
	3:30	**Pathologist Viewpoint on Mapping Physiological Data to Other Indices of Toxicity Including Histopathology.** W. Halpern. Genentech Inc., South San Francisco, CA.
	4:15	**Doxorubicin in NHPs: A Case Study in Using Multiple Parameters to Assess CV Function As Part of a Toxicology Study.** M. Engwall. Amgen, Thousand Oaks, CA.

Sunday Morning, March 22
1:15 PM to 5:00 PM
CC Ballroom 6C

Continuing Education: Is Synthetic Biology the Future of Toxicology?

PM10 **CE Advanced**

Safety Assessment Approaches for Product Development

Chairperson(s): *Saber M. Hussain, US Air Force, Wright-Patterson AFB, OH; and Dan Huh, University of Pennsylvania, Philadelphia, PA.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**

One frequent critique of traditional *in vitro* study design is lack of functional correlation between a submerged cellular monolayer and a full organ or tissue system. However, scientists do agree that during preliminary toxicological screening, when little is known regarding the behavior of a new molecule, simple *in vitro* models coupled with basic toxicological endpoints are critical for generating a baseline response and determining future actions. Currently, a significant discrepancy exists between *in vitro* and *in vivo* correlations. One approach to bridge this gap is through the development of enhanced *in vitro* systems that more closely mimic an accurate physiological environment. When examining a physiological system, two key components to be addressed are (1) the three dimensional aspect of an organ or tissue and the cell to cell communication that occurs within this structure; and (2) the dynamic environment that flows in and around the tissue, arising from the cardiovascular system. Early improvements in traditional *in vitro* designs explored co-cultures that included immune cells, the addition of dynamic media flow, and three dimensional matrices (though limited studies have combined multiple of these variables). The focus of the course is to evaluate the current trends in synthetic biology that are advantageous to enhanced *in vitro* design. One major focus will be on current organ-on-a-chip research, which incorporates cell to cell communication coupled with dynamic flow of media or air, depending on cell type. In addition, since inhalation is a predominant route of toxicological exposure, this course will explore the design of an artificial nose that represents inhalation and the ability of a compound to cross the olfactory bulb in an effort to predict a neurotoxicity risk.

#10	1:15	**Is Synthetic Biology the Future of Toxicology?** *S. M. Hussain*. US Air Force, Wright-Patterson AFB, OH.

CE Continuing Education Courses Thematic Sessions

Continuing Education (Continued)

Abstract #

1:15 **Introduction.** S. M. Hussain. US Air Force, Wright-Patterson AFB, OH.

1:30 **A Human Breathing Lung-on-a-Chip for Toxicology Studies.** D. Huh. University of Pennsylvania, Philadelphia, PA.

2:15 **Developing Microengineered Models of Liver Toxicology.** S. R. Khetani. Colorado State University, Fort Collins, CO.

3:00 **Coffee Break.**

3:30 **Microvascular Systems on a Chip.** K. Pant. CFD Research Corporation, Huntsville, AL.

4:15 **Development of Artificial Respiratory Device for Nanomaterial Toxicity.** L. Kerr. Miami University, Miami, OH.

Sunday Morning, March 22
1:15 PM to 5:00 PM
CC Ballroom 6D

CE

Continuing Education: Skeletal System Endocrinology and Toxicology

PM11 **CE Basic/CME**

Safety Assessment Approaches for Product Development

Jointly Provided by: *University of Arkansas for Medical Sciences College of Medicine and SOT Approved for AMA PRA Category 1 Credit™—See Mobile Event App for details.*

Chairperson(s): *Alan M. Hoberman, Charles River Laboratories, Horsham, PA; and Susan Y. Smith, Charles River Laboratories, Senneville, QC, Canada.*

Endorser(s):
Clinical and Translational Toxicology Specialty Section
Immunotoxicology Specialty Section
Reproductive and Developmental Toxicology Specialty Section

The skeleton has traditionally been considered within the framework of two tenets: A hard structure for protection of the organism, and a major reservoir for the maintenance of serum calcium. Bone remodeling, the process of remaking our skeleton every decade, reinforces that structure/function correlate. However, emerging evidence suggests the skeleton is intimately related to other organ systems, including but not limited to organs involved in energy metabolism, reproductive system, immune system, central nervous system, and muscle, through paracrine, endocrine, and neural networks. The goal of this course is to explore these interactions further and highlight the importance of including skeletal evaluations in juvenile and standard toxicology studies and their relevance to humans and clinical trials. In addition, an overview of bone biology and the appropriate techniques for assessment of changes in bone will be provided. The presentations will focus on bone biology, its growth during infancy and childhood, and the regulatory systems involved in the maintenance of bone quality during adulthood; the techniques available for bone evaluations in toxicology studies; why bone has recently been accepted as an endocrine system and what the functions of hormones secreted from bone are; and the complex relationships unfolding between bone and the different biological systems, and the implications in drug development.

#11 1:15 **Skeletal System Endocrinology and Toxicology.** *A. Hoberman.* Charles River Laboratories, Horsham, PA.

1:15 **Introduction.** S. Smith. Charles River Laboratories, Senneville, QC, Canada.

1:25 **Primer on Bone Biology: Cells, Matrix, and Mineral in Skeletal Modeling and Remodeling.** M. D. McKee. McGill University, Montreal, QC, Canada.

Abstract #

2:15 **State of the Art Assessment of Bone Tissue in Preclinical Studies.** A. Varela. Charles River Laboratories, Montreal, QC, Canada.

3:00 **Coffee Break.**

3:30 **Bone As an Underappreciated Endocrine System.** C. Rosen. Maine Medical Center Research Institute, Scarborough, ME.

4:15 **The Cross Talk between Bone and Other Biological Systems.** R. Samadfam. Charles River Laboratories, Montreal, QC, Canada.

Sunday Morning, March 22
1:15 PM to 5:00 PM
CC Room 7

CE

Continuing Education: Strategies in Investigative Toxicology in a Pharmaceutical Setting

PM12 **CE Basic**

Safety Assessment Approaches for Product Development

Chairperson(s): *Damir Simic, Janssen R&D (Johnson & Johnson), Spring House, PA; and Mausumee Guha, Medivation—Toxicology, San Francisco, CA.*

Endorser(s):
Drug Discovery Toxicology Specialty Section
Molecular and Systems Biology Specialty Section
Risk Assessment Specialty Section

Investigative toxicology is a broad discipline encompassing multiple tools and strategies to help generate and test hypotheses as part of target safety assessments and derisking efforts in support of discovery and development programs. In most pharmaceutical and biotechnology companies, investigative toxicology exists as either a stand-alone lab, or the function is embedded within various support groups. Discovery and development programs that call upon investigative toxicology to manage safety liabilities and facilitate understanding of toxicity issues face a number of challenges. These include adequate communication across stakeholders, steep learning curves, identification of clear deliverables that require resource prioritization, and constantly shifting interests. This "best practices" session will highlight steps for how to overcome such challenges by focusing on three key functions: (1) designing a testable hypothesis, (2) communication of the meaningful experimental findings, and (3) proposing rationales and decision processes for the timely resolution of the issue(s). Specifically, best practices will be highlighted in relation to the stage of the program within the R&D pipeline. The presenters will focus on optimal investigative toxicology strategies applicable during target safety evaluation, lead optimization, pre-IND, IND, late stages of the compound development, and life cycle management, with case examples. The utility of tools such as genomics, RNAi, metabolomics, *in vitro* assays and informatics for the integration of supportive data (e.g. clinical chemistry, histopathology, TK, and biomarkers), and application of communication tools such as MindMaps will be discussed. Finally, a regulatory perspective on the utility, impact, and practical considerations of submitting investigative toxicology studies to regulatory authorities to assess clinical risk will be presented.

#12 1:15 **Strategies in Investigative Toxicology in a Pharmaceutical Setting.** *D. Simic.* Janssen R&D (Johnson & Johnson), Spring House, PA.

1:15 **A Roadmap to Effective Investigative Toxicology Safety Assessment, De-Risking, and Communication.** D. Simic. Janssen R&D (Johnson & Johnson), Spring House, PA.

1:40 **Integrating Investigative Toxicology in the Early-Drug Discovery Space.** D. U. Lee. Genentech Inc., South San Francisco, CA.

Continuing Education (Continued)

Abstract #

2:20 **Optimizing Compound Safety during the Lead Development to FIH Stage.** B. Jessen. Pfizer, Inc., San Diego, CA.

3:00 **Coffee Break.**

3:30 **Investigating Mechanisms of Toxicity of Pharmaceuticals during Late Stage Development and Life-Cycle Management.** M. Guha. Medivation—Toxicology, San Francisco, CA.

4:15 **A Regulatory Perspective on Investigative Toxicology.** J. A. Lansita. ToxStrategies, Inc., Baltimore, MD.

Sunday Morning, March 22
1:15 PM to 5:00 PM
CC Ballroom 6F

CE

Continuing Education: Toxicogenomics Meets Regulatory Decision-Making: How to Get Past Heat Maps, Network/ Pathway Diagrams, and "Favorite" Genes

PM13 **CE Advanced**

Also Presented As Live Webcast—Webcast Registration Required.

Strategies for Exposure and Risk Assessments

Chairperson(s): *Ivan Rusyn, Texas A&M University, College Station, TX; and Russell S. Thomas, US EPA, Research Triangle Park, NC.*

Endorser(s):
Biological Modeling Specialty Section
Molecular and Systems Biology Specialty Section
Risk Assessment Specialty Section

Toxicogenomics is a mature field which provides invaluable information on the molecular events preceding or accompanying toxicity; however, most traditional use of gene expression and other 'omic data in toxicology is largely the same as it was ten years ago: the mode-of-action analysis, classification/prediction, and biomarker discovery. As the technological advances keep driving costs down and information content and reproducibility up, the toxicogenomics data has begun to be used more widely in the human health assessments of chemicals, and will likely be one of the crucial information sources for next-generation of risk assessment decisions. Given the general familiarity of the toxicologists with high-dimensional transcriptional profiling data and major traditional ways in which such data are analyzed, presented, and interpreted, this course is designed to demonstrate how the toxicogenomics data can become a key element in hazard identification, dose-response analysis and selection of scientifically-justifiable uncertainty factors. By superimposing the opportunities that are now afforded by both traditional and high-throughput genomics data onto the human health assessment paradigm, this course will be informative to the risk assessment practitioners and the toxicology research community, and increase the scientific impact of the fundamental toxicology studies.

#13 1:15 **Toxicogenomics Meets Regulatory Decision-Making: How to Get Past Heat Maps, Network/ Pathway Diagrams, and "Favorite" Genes.** *I. Rusyn*. Texas A&M University, College Station, TX.

1:15 **Human Health Risk Assessment: Where Do Toxicogenomics Data Fit?** J. Zhao. US EPA, Cincinnati, OH.

1:30 **Gene Expression Profiling for Regulatory Decision-Making: Many Genes or Many Samples?** D. Gerhold. NIH, Bethesda, MD.

2:15 **Hazard Identification and Toxicogenomic Data: Read-Across Using High-Dimensional Biological Data.** I. Rusyn. Texas A&M University, College Station, TX.

3:00 **Coffee Break.**

3:30 **Quantitative Dose-Response Analysis with Toxicogenomics Data.** R. S. Thomas. US EPA, Research Triangle Park, NC.

4:15 **Gene Expression and Genetic Variability.** F. A. Wright. North Carolina State University, Raleigh, NC.

CE

Thank You, Speakers

On behalf of the SOT Council and the entire membership of the Society of Toxicology, thank you to all of the speakers who graciously agreed to come to San Diego, California, to participate in the 2015 Annual Meeting. SOT's Annual Meeting is the largest international forum to highlight novel discoveries and emerging fields and how they apply to toxicology. You played an important role in helping SOT showcase this year's achievements in research and education, and your time, efforts, and expertise are truly appreciated.

Contribute to Continuing Education in 2016!
Submit a CE proposal by April 30, 2015

The SOT Continuing Education (CE) program at the Annual Meeting is composed of scientists from all over the world. The SOT CE Committee encourages you to continue the development of a 2016, or later year, CE course with your peers at the Annual Meeting in San Diego. Every year, CE courses presented on Sunday pave the way for a successful Annual Meeting.

SOT invites you to share your expertise with your peers!

Some New Orleans photos are courtesy of New Orleans Convention & Visitors Bureau. Some photos by Pat Garin.

Deadline for Proposals for SOT 2016 Annual Meeting Sessions: April 30, 2015

Why Submit a Proposal?

1. To present new developments in toxicology
2. To provide attendees with an opportunity to learn about state-of-the-art technology and how it applies to toxicological research
3. To provide attendees with an opportunity to learn about the emerging fields and how they apply to toxicology

Session Types

Continuing Education—Emphasis on quality presentations of generally accepted, established knowledge in toxicology
Note: CE courses will be held on Sunday.

Symposia—Cutting-edge science, new areas, concepts, or data

Workshops—State-of-the-art knowledge in toxicology

Roundtables—Controversial subjects

Continuing Medical Education—Emphasis on state-of-the-art knowledge to assist medical doctors, health professionals, and researchers in lifelong learning for providing high-quality health care
Note: Any session type may be considered for CME.

Historical Highlights—Review of a historical body of science that has impacted toxicology

Informational Sessions—Scientific planning or membership development

Education-Career Development Sessions—Sessions that provide the tools and resources to toxicologists that will enhance their professional and scientific development

Regional Interest—Central topics of relevance that describe public health and/or ecological problems of a particular region

Submit your proposal online at www.toxicology.org

Poisoning of kids from liquid nicotine exposure spiking as e-cigarettes become more prevalent.

This is just one of the many topics and headlines discussed daily by SOT on Facebook and Twitter.

Join the conversation today by liking us on Facebook (www.facebook.com/societyoftoxicology) or following us on Twitter (@SOToxicology).

SOT FDA Colloquia on Emerging Toxicological Science Challenges in Food and Ingredient Safety

Upcoming Events and Live Webcasts • FDA, College Park, Maryland

Special Topics in Toxicological Endpoints: Immunotoxicity Endpoint Case Studies
Dori Germolec, Chair, *NIEHS, Research Triangle Park, NC*
April 14, 2015

Risk Assessment
Suzanne Compton Fitzpatrick, Chair, *US FDA, College Park, MD*
May or Early June 2015

Access Event Materials

Recordings, Presentation Slides, Captioning Record

Complexities in Evaluating Human Clinical and Observational Data for Ingredient Safety Assessment: Partially Hydrogenated Oils As a Case Study
Martin Ronis, Chair,
University of Arkansas Children's Nutrition Center, Little Rock, AR
November 7, 2014

Application of ADME/PK Studies to Improve Safety Assessments for Foods and Cosmetics
Harvey Clewell, Chair,
Hamner Institutes for Health Sciences, Research Triangle Park, NC
February 23, 2015

Find materials on the event webpage (www.toxicology.org/fda), which is reached from the Events and Meetings button on the Member page.

SOT | Society of Toxicology

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Thank You

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Scientific Session Index

All sessions will be held at the San Diego Convention Center.

General Scientific Sessions

(Listed by type, then date and time)

- EC Education-Career Development Sessions
- FS Featured Sessions
- IS Informational Sessions
- PL Platform Sessions
- PS Poster Sessions
- RI Regional Interest Session
- R Roundtable Sessions
- S Symposium Sessions
- Thematic Sessions
- W Workshop Sessions

Exhibitor-Hosted Sessions are informative sessions developed by an exhibiting company or SOT supporter. The Exhibitor-Hosted Session Index is located on pages 39–41.

Monday

FEATURED SESSION FS

Date/Time	Topic/Abstract #	Room	Page
Monday 8:00 AM	Plenary Opening Lecture: Life at the Speed of Light	Hall D	134

SYMPOSIUM SESSIONS S

Date/Time	Topic/Abstract #	Room	Page
Monday 9:15 AM	New and Emerging Tobacco Products—Biomarkers of Exposure and Injury #14–19	Ballroom 6A	135
Monday 9:15 AM	The Role of Connexin-Based Channels in Toxicity #20–24	Room 1	135

WORKSHOP SESSIONS W

Date/Time	Topic/Abstract #	Room	Page
Monday 9:15 AM	Environmental Exposures and Alzheimer's Disease: Epidemiology, Mechanisms, and Future Strategies #25–29	Ballroom 6B	136
Monday 9:15 AM	Friend or Foe—Challenges and Perspectives for Nonclinical Development of Antibody-Drug Conjugates #30–35	Room 7	136
Monday 9:15 AM	Linking Early-Life Stages: The First Step toward Lifecourse Risk Assessment #36–41	Ballroom 6F	137
Monday 9:15 AM	The US Tox21 Collaboration: Advances Made and Lessons Learned #42–47	Ballroom 6E	137
Monday 9:15 AM	Toxicological Epigenomics: The Interface between the Environment and Human Health #48–53	Ballroom 6D	138
Monday 9:15 AM	Transporters As Gatekeepers for Chemical Exposure in Reproductive Tissues #54–59	Ballroom 6C	138

PLATFORM SESSION PL

Date/Time	Topic/Abstract #	Room	Page
Monday 9:15 AM	Disposition and Pharmacokinetics #60–67	Room 8	139

POSTER SESSIONS PS

**Author-attended 9:30 am–11:00 am; otherwise author-attended 11:00 am–12:30 pm. Poster Board Surface Maps are on pages 122–123.*

Date/Time		Topic/Abstract #	Room	Page
Monday 9:30 AM	*	Biotransformation and Cytochrome P450 #68–89 Poster Boards 101–122	Exhibit Hall	140
Monday 9:30 AM		Pharmacogenomics and Genetic Polymorphisms #90–98 Poster Boards 124–132	Exhibit Hall	142
Monday 9:30 AM	*	Liver #99–136 Poster Boards 135–172	Exhibit Hall	142
Monday 9:30 AM		Inflammation in Disease #137–150 Poster Boards 201–214	Exhibit Hall	145
Monday 9:30 AM	*	Inflammation: Methods and Mechanisms #151–174 Poster Boards 215–238	Exhibit Hall	146
Monday 9:30 AM		Nonpharmaceutical Safety Assessment #175–195 Poster Boards 239–259	Exhibit Hall	148
Monday 9:30 AM	*	Risk Assessment I #196–234 Poster Boards 301–345	Exhibit Hall	149
Monday 9:30 AM		Alternatives to Mammalian Models I—Cardio, Neuro, Developmental #235–262 Poster Boards 401–428	Exhibit Hall	152
Monday 9:30 AM	*	Developmental Neurotoxicology—Nonmammalian Models #263–273 Poster Boards 431–441	Exhibit Hall	153
Monday 9:30 AM		Developmental Neurotoxicology—*In Vitro* Screening #274–283 Poster Boards 445–454	Exhibit Hall	154
Monday 9:30 AM	*	Nanotoxicology, General, Environmental, Metals #284–316 Poster Boards 501–533	Exhibit Hall	172
Monday 9:30 AM		Metals #317–353 Poster Boards 536–572	Exhibit Hall	157
Monday 9:30 AM	*	Ecotoxicology #354–380 Poster Boards 601–627	Exhibit Hall	160
Monday 9:30 AM		Persistent Organic Pollutants #381–397 Poster Boards 631–647	Exhibit Hall	162
Monday 9:30 AM	*	Stem Cell Biology in Toxicology Research #398–409 Poster Boards 653–664	Exhibit Hall	163

Scientific Session Index (Continued)

ROUNDTABLE SESSIONS R

Date/Time	Topic/Abstract #	Room	Page
Monday 12:10 PM	Addressing Potential Age-Related Sensitivity to Neurotoxicity of Pyrethroids #410	Ballroom 6F	166
Monday 12:10 PM	Confronting and Overcoming the Barriers to Sharing Toxicological Research Data for Risk Assessment in the 21st Century #411	Ballroom 6E	167

INFORMATIONAL SESSION IS

Date/Time	Topic/Abstract #	Room	Page
Monday 12:10 PM	Toxicological Application of Studies Funded by California Stem Cell Research and Cures Act (Prop 71) #412	Room 1	167

EDUCATION-CAREER DEVELOPMENT SESSION EC

Date/Time	Topic/Abstract #	Room	Page
Monday 12:10 PM	Adaptive Leadership: Anticipating, Initiating, and Responding to Change #413	Room 7	168

FEATURED SESSION FS

Date/Time	Topic/Abstract #	Room	Page
Monday 12:30 PM	Merit Award Lecture: Chronicles of Particles: From Micro- to Nano-Particles	Ballroom 6B	169

POSTER SESSIONS PS

**Author-attended 1:00 pm–2:45 pm; otherwise author-attended 2:45 pm–4:30 pm. Poster Board Surface Maps are on pages 122–123.*

Date/Time		Topic/Abstract #	Room	Page
Monday 1:00 PM	*	Alternatives to Mammalian Models II—Skin, Eye, Liver #414–451 Poster Boards 101–138	Exhibit Hall	169
Monday 1:00 PM		Ocular Toxicology #452–460 Poster Boards 139–147	Exhibit Hall	172
Monday 1:00 PM	*	Natural Products #461–483 Poster Boards 149–171	Exhibit Hall	172
Monday 1:00 PM		Biomonitoring and Exposure Assessment #484–520 Poster Boards 201–237	Exhibit Hall	174
Monday 1:00 PM	*	Genetic Toxicology I #521–549 Poster Boards 239–267	Exhibit Hall	176
Monday 1:00 PM		Cell Death and Apoptosis #550–572 Poster Boards 301–323	Exhibit Hall	178
Monday 1:00 PM	*	Risk Assessment II #573–595 Poster Boards 326–348	Exhibit Hall	180
Monday 1:00 PM		Pharmaceutical Safety: Large Molecule Case Studies #596–609 Poster Boards 401–414	Exhibit Hall	182
Monday 1:00 PM	*	Pharmaceutical Safety: Small Molecule Case Studies #610–635 Poster Boards 415–440	Exhibit Hall	183
Monday 1:00 PM		Developmental Neurotoxicology—Stem Cells #636–648 Poster Boards 443–455	Exhibit Hall	185
Monday 1:00 PM	*	Autoimmunity/Hypersensitivity #649–682 Poster Boards 501–534	Exhibit Hall	185
Monday 1:00 PM		Liver and Models #683–718 Poster Boards 537–572	Exhibit Hall	188
Monday 1:00 PM	*	Biological Modeling #719–759 Poster Boards 601–641	Exhibit Hall	190
Monday 1:00 PM		Epidemiology #760–778 Poster Boards 645–663	Exhibit Hall	193

FEATURED SESSION FS

Date/Time	Topic/Abstract #	Room	Page
Monday 1:30 PM	Meet the Directors: A Conversation with Linda Birnbaum and Jim Jones	Ballroom 6A	194

SYMPOSIUM SESSIONS S

Date/Time	Topic/Abstract #	Room	Page
Monday 2:00 PM	Cardio-Oncology Concerns Encourage Novel Approaches to Pharmaceutical Risk Assessment #779–784	Ballroom 6C	195
Monday 2:00 PM	Immunostimulant Cancer Treatments: Toxicology Programs with an Autoimmmune "Twist" #785–790	Ballroom 6F	196
Monday 2:00 PM	Nrf2 Signaling Pathways in Model Systems: A Master Regulator of Neurotoxicity and a Potential Therapeutic Target #791–796	Room 1	196

WORKSHOP SESSIONS W

Date/Time	Topic/Abstract #	Room	Page
Monday 2:00 PM	Evaluating and Quantifying Stress for Inclusion in Cumulative Risk Assessment #797–802	Ballroom 6E	197
Monday 2:00 PM	Infant Formula Nutrition: Regulatory and Safety Evaluation of Ingredients #803–807	Ballroom 6B	197
Monday 2:00 PM	Pulmonary Toxicity of Graphene Nanomaterials: An Emerging Concern in Manufacturing and Applications? #808–813	Ballroom 6D	198

EDUCATION-CAREER DEVELOPMENT SESSION EC

Date/Time	Topic/Abstract #	Room	Page
Monday 2:00 PM	Challenges in the Life Cycle of a Toxicologist #814–819	Room 7	198

Scientific Session Index (Continued)

PLATFORM SESSION PL

Date/Time	Topic/Abstract #	Room	Page
Monday 2:00 PM	21st Century DART: Advances, Challenges, and Promises #820–827	Room 8	199

FEATURED SESSION FS

Date/Time	Topic/Abstract #	Room	Page
Monday 4:45 PM	SOT/EUROTOX Debate: *In Vitro* Alternatives Are Ready to Be Implemented and Relied Upon for Human Safety Testing	Ballroom 6A	200

Tuesday

FEATURED SESSION FS

Date/Time	Topic/Abstract #	Room	Page
Tuesday 8:00 AM	Translational Impact Award Lecture: How to Make a (Translational) Impact	Ballroom 6B	203
Tuesday 9:00 AM	Frontiers for Toxicology Session: Bugs to Drugs: The Microbiome in Human Health, Disease, and Therapeutics #828–832	Ballroom 6A	204

SYMPOSIUM SESSIONS S

Date/Time	Topic/Abstract #	Room	Page
Tuesday 9:00 AM	Alternative Models to Study Classical Toxicants: A Mechanistic View #833–839	Ballroom 6D	205
Tuesday 9:00 AM	Immune Responses to Different Classes of Inhaled Particulates: Unique vs. Shared Responses and Mechanisms #840–845	Ballroom 6B	205
Tuesday 9:00 AM	Local and Systemic Toxicity from Cobalt and Chromium-Containing Hip Prostheses #846–851	Ballroom 6C	206

WORKSHOP SESSIONS W

Date/Time	Topic/Abstract #	Room	Page
Tuesday 9:00 AM	Considering Pharmacokinetics As the Mechanistic Basis to Link Chemical Exposures to Adverse Outcome Pathways #852–857	Room 7	206
Tuesday 9:00 AM	Regulatory Neurodevelopmental Testing: New Guiding Principles for Harmonization of Data Collection and Analysis #858–864	Ballroom 6F	207
Tuesday 9:00 AM	The EDSP Screening Battery: A Work in Progress for Prioritizing Compounds for Quantitative Risk Assessment #865–870	Room 1	208
Tuesday 9:00 AM	Understanding and Communicating Uncertainty in Hazard Assessment and Dose Response #871–877	Ballroom 6E	208

POSTER SESSIONS PS

**Author-attended 9:00 am–11:00 am; otherwise author-attended 11:00 am–12:30 pm. Poster Board Surface Maps are on pages 124–125.*

Date/Time		Topic/Abstract #	Room	Page
Tuesday 9:00 AM	*	Pharmaceutical Safety: Models and Methods #878–903 Poster Boards 101–126	Exhibit Hall	209
Tuesday 9:00 AM		Systems Biology and Toxicology #904–923 Poster Boards 129–148	Exhibit Hall	211
Tuesday 9:00 AM	*	Food Safety, *In Vitro* #924–945 Poster Boards 151–172	Exhibit Hall	212
Tuesday 9:00 AM		Neurotoxicology, Metals—Mercury #946–961 Poster Boards 201–216	Exhibit Hall	214
Tuesday 9:00 AM	*	Neurotoxicology, Metals—Manganese #962–971 Poster Boards 217–226	Exhibit Hall	215
Tuesday 9:00 AM		Neurotoxicology, Metals—Lead and Others #972–983 Poster Boards 227–238	Exhibit Hall	216
Tuesday 9:00 AM	*	Carcinogenesis I #984–1012 Poster Boards 239–267	Exhibit Hall	217
Tuesday 9:00 AM		Oxidative Injury and Redox Biology #1013–1044 Poster Boards 301–332	Exhibit Hall	219
Tuesday 9:00 AM	*	Juvenile Toxicity #1045–1054 Poster Boards 337–346	Exhibit Hall	221
Tuesday 9:00 AM		Genetic Toxicology II #1055–1082 Poster Boards 401–428	Exhibit Hall	221
Tuesday 9:00 AM	*	Gene Regulation and Signal Transduction #1083–1107 Poster Boards 431–455	Exhibit Hall	223
Tuesday 9:00 AM		Educational Activities and Outreach #1108–1131 Poster Boards 501–524	Exhibit Hall	225
Tuesday 9:00 AM	*	Immunotoxicity I #1132–1157 Poster Boards 529–554	Exhibit Hall	226
Tuesday 9:00 AM		*In Vitro* Cardiovascular Safety #1158–1169 Poster Boards 559–570	Exhibit Hall	228
Tuesday 9:00 AM	*	Alternatives to Mammalian Models III #1170–1201 Poster Boards 601–632	Exhibit Hall	229
Tuesday 9:00 AM		Biomarkers #1202–1233 Poster Boards 633–664	Exhibit Hall	231

Scientific Session Index (Continued)

POSTER SESSIONS PS

**Author-attended 1:00 pm–2:45 pm; otherwise author-attended 2:45 pm–4:30 pm. Poster Board Surface Maps are on pages 124–125.*

Date/Time		Topic/Abstract #	Room	Page
Tuesday 1:00 PM	*	Nanotoxicology, Carbon-Based Nanomaterials #1234–1259 Poster Boards 101–126	Exhibit Hall	236
Tuesday 1:00 PM		Skin #1260–1284 Poster Boards 128–152	Exhibit Hall	238
Tuesday 1:00 PM	*	Clinical and Translational Toxicology #1285–1303 Poster Boards 153–171	Exhibit Hall	239
Tuesday 1:00 PM		Computational Toxicology and Data Integration I #1304–1340 Poster Boards 201–237	Exhibit Hall	241
Tuesday 1:00 PM	*	Immunotoxicity II #1341–1367 Poster Boards 239–265	Exhibit Hall	243
Tuesday 1:00 PM		Toxicity of Chemical Mixtures #1368–1391 Poster Boards 301–324	Exhibit Hall	245
Tuesday 1:00 PM	*	Food Safety, *In Vivo* #1392–1414 Poster Boards 325–347	Exhibit Hall	247
Tuesday 1:00 PM		Reproductive Toxicology I #1415–1439 Poster Boards 401–425	Exhibit Hall	248
Tuesday 1:00 PM	*	Reproductive Toxicology II #1440–1466 Poster Boards 428–454	Exhibit Hall	250
Tuesday 1:00 PM		Endocrine Toxicology #1467–1495 Poster Boards 501–529	Exhibit Hall	252
Tuesday 1:00 PM	*	Neurotoxicology, Neurodegenerative Disease—Alzheimer's Disease and Others #1496–1509 Poster Boards 531–544	Exhibit Hall	254
Tuesday 1:00 PM		Neurotoxicology, Neurodegenerative Disease—Parkinson's Disease #1510–1536 Poster Boards 545–571	Exhibit Hall	255
Tuesday 1:00 PM	*	Cigarettes, E-Cigarettes, and Hookah #1537–1549 Poster Boards 601–613	Exhibit Hall	256
Tuesday 1:00 PM		Inhalants and Cardiopulmonary #1550–1578 Poster Boards 616–644	Exhibit Hall	257
Tuesday 1:00 PM	*	Particulate Matter #1579–1596 Poster Boards 647–664	Exhibit Hall	260

SYMPOSIUM SESSIONS S

Date/Time	Topic/Abstract #	Room	Page
Tuesday 1:30 PM	New Developments in the Management of Nerve Agent Poisoning #1597–1602	Ballroom 6D	262
Tuesday 1:30 PM	Incorporating *In Vitro* Pharmacokinetic Data and Tools into Toxicity Testing and Risk Assessments: State of the Science #1603–1608	Ballroom 6B	262
Tuesday 1:30 PM	Where the Metal Meets the Bone... #1609–1614	Ballroom 6E	263

WORKSHOP SESSIONS W

Date/Time	Topic/Abstract #	Room	Page
Tuesday 1:30 PM	An Ounce of Prevention Is Worth a Pound of Cure: How 21st Century Toxicology Can Transform Product Safety Assessments and Design of Lower Toxicity Products #1615–1620	Room 7	263
Tuesday 1:30 PM	Current Understanding of Immune-Mediated Adverse Drug Reactions #1621–1626	Ballroom 6F	264
Tuesday 1:30 PM	*In Vitro* Microphysiological Systems—Developing Confidence in Predictive Ability #1627–1632	Ballroom 6C	264

PLATFORM SESSIONS PL

Date/Time	Topic/Abstract #	Room	Page
Tuesday 1:30 PM	Investigating Mode of Action in Chemical Carcinogenesis #1633–1639	Room 8	265
Tuesday 1:30 PM	Prudent Animal Usage in Pharmaceutical Safety Testing #1640–1646	Room 1	266

Scientific Session Index (Continued)

Wednesday

FEATURED SESSION FS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 8:00 AM	Keynote Medical Research Council (MRC) Lecture: Environmental Influences on the Immune System via the Aryl Hydrocarbon Receptor	Ballroom 6A	269

SYMPOSIUM SESSION S

Date/Time	Topic/Abstract #	Room	Page
Wednesday 9:00 AM	Role of the Gut Microbiome in the Host Response to Xenobiotics #1647–1652	Ballroom 6B	269

WORKSHOP SESSIONS W

Date/Time	Topic/Abstract #	Room	Page
Wednesday 9:00 AM	An Experiment in Collective Wisdom Utilizing Real-Time Audience Input: Weight-of-Evidence Assessment for Chemical-Specific Modes of Action Utilizing Two Case Studies #1653–1659	Ballroom 6F	270
Wednesday 9:00 AM	Application of High-Throughput *In Vitro* Assays in Assessing Small Molecule Safety #1660–1665	Room 7	270
Wednesday 9:00 AM	Deciphering Clinical and Experimental Retinal Toxicology: An Eye on the Present and Future #1666–1671	Ballroom 6E	271
Wednesday 9:00 AM	Evaluating Similarity across Related Complex Mixtures: The Challenge of Herbal Supplements #1672–1677	Ballroom 6C	271

REGIONAL INTEREST SESSION RI

Date/Time	Topic/Abstract #	Room	Page
Wednesday 9:00 AM	Some Like It Hot: Impacts of Wildfires on Human Health #1678–1683	Ballroom 6D	272

PLATFORM SESSIONS PL

Date/Time	Topic/Abstract #	Room	Page
Wednesday 9:00 AM	Applications of ToxCast/Tox21 Data: Confidence and Predictivity #1684–1690	Room 1	272
Wednesday 9:00 AM	Emerging Concepts in Genotoxicity Assessment #1691–1698	Room 8	273

POSTER SESSIONS PS

**Author-attended 9:00 am–11:00 am; otherwise author-attended 11:00 am–12:30 pm. Poster Board Surface Maps are on pages 126–127.*

Date/Time		Topic/Abstract #	Room	Page
Wednesday 9:00 AM	*	Fetal Basis of Adult Disease #1699–1709 Poster Boards 101–111	Exhibit Hall	273
Wednesday 9:00 AM		Developmental Toxicology I #1710–1737 Poster Boards 113–140	Exhibit Hall	274
Wednesday 9:00 AM	*	Developmental Toxicology II #1738–1766 Poster Boards 143–171	Exhibit Hall	276
Wednesday 9:00 AM		Developmental Neurotoxicology #1767–1776 Poster Boards 201–210	Exhibit Hall	278
Wednesday 9:00 AM	*	General and Developmental Neurotoxicology of Therapeutic Agents and Drugs of Abuse #1777–1794 Poster Boards 219–236	Exhibit Hall	279
Wednesday 9:00 AM		Cardiovascular Toxicity and Hemodynamics #1795–1821 Poster Boards 239–265	Exhibit Hall	280
Wednesday 9:00 AM	*	Animal Models of Disease #1822–1835 Poster Boards 301–314	Exhibit Hall	282
Wednesday 9:00 AM		Animal Models: Measurements, Validations, and Historical Data #1836–1847 Poster Boards 319–330	Exhibit Hall	283
Wednesday 9:00 AM	*	Animal Models: Methods #1848–1859 Poster Boards 335–346	Exhibit Hall	284
Wednesday 9:00 AM		Risk Assessment III #1860–1900 Poster Boards 401–453	Exhibit Hall	285
Wednesday 9:00 AM	*	Regulation/Policy #1901–1927 Poster Boards 501–527	Exhibit Hall	287
Wednesday 9:00 AM		Nanotoxicology, *In Vitro* #1928–1963 Poster Boards 535–570	Exhibit Hall	289
Wednesday 9:00 AM	*	Metals—As, Cd, Hg #1964–2003 Poster Boards 601–640	Exhibit Hall	292
Wednesday 9:00 AM		Medical Devices: Risk Assessment and Test Methods #2004–2022 Poster Boards 645–663	Exhibit Hall	294

ROUNDTABLE SESSIONS R

Date/Time	Topic/Abstract #	Room	Page
Wednesday 12:00 Noon	Should Respiratory Sensitizers Be Listed As Substances of Very High Concern (SVHC) under REACH? #2023	Ballroom 6E	297
Wednesday 12:00 Noon	Will Generally Recognized As Safe (GRAS) Become an Endangered Species? #2024	Ballroom 6F	298

INFORMATIONAL SESSION IS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 12:00 Noon	Risk Communication and Management in the Era of Social Media and the Internet: Serving Society's Needs with Accurate Information #2025	Room 1	298

Scientific Session Index (Continued)

EDUCATION-CAREER DEVELOPMENT SESSION EC

Date/Time	Topic/Abstract #	Room	Page
Wednesday 12:00 Noon	What Toxicologist Do You Wanna Be? The Role of Toxicologists across Diverse Organizations #2026	Room 7	299

FEATURED SESSION FS

Date/Time	Topic/Abstract #	Room	Page
Wednesday 12:30 PM	Distinguished Toxicology Scholar Award Lecture: Allergic Sensitization: Defining Molecular Mechanisms and Characterising Hazard and Risk	Ballroom 6B	296

POSTER SESSIONS PS

**Author-attended 1:00 pm–2:45 pm; otherwise author-attended 2:45 pm–4:30 pm. Poster Board Surface Maps are on pages 126–127.*

Date/Time		Topic/Abstract #	Room	Page
Wednesday 1:00 PM	*	RNA-Based Biomarkers #2027–2038 Poster Boards 101–112	Exhibit Hall	300
Wednesday 1:00 PM		Carcinogenesis II #2039–2065 Poster Boards 115–141	Exhibit Hall	301
Wednesday 1:00 PM	*	Chemical and Biological Weapons #2066–2090 Poster Boards 145–169	Exhibit Hall	303
Wednesday 1:00 PM		Disposition and Pharmacokinetics: Drugs, Chemicals, and Transporters #2091–2105 Poster Boards 201–215	Exhibit Hall	305
Wednesday 1:00 PM	*	Neurotoxicology, General #2106–2123 Poster Boards 219–236	Exhibit Hall	306
Wednesday 1:00 PM		Neurotoxicology, Pesticides #2124–2146 Poster Boards 239–261	Exhibit Hall	307
Wednesday 1:00 PM	*	Pesticides #2147–2185 Poster Boards 301–345	Exhibit Hall	309
Wednesday 1:00 PM		Bioinformatics #2186–2205 Poster Boards 401–420	Exhibit Hall	311
Wednesday 1:00 PM	*	Computational Toxicology and Data Integration II #2206–2237 Poster Boards 423–454	Exhibit Hall	312
Wednesday 1:00 PM		Epigenetics #2238–2274 Poster Boards 501–537	Exhibit Hall	314
Wednesday 1:00 PM	*	Kidney #2275–2306 Poster Boards 539–570	Exhibit Hall	317
Wednesday 1:00 PM		Receptors #2307–2342 Poster Boards 601–636	Exhibit Hall	319
Wednesday 1:00 PM	*	Nanotoxicology, *In Vivo* #2343–2366 Poster Boards 641–664	Exhibit Hall	322

SYMPOSIUM SESSIONS S

Date/Time	Topic/Abstract #	Room	Page
Wednesday 1:30 PM	Adult Neurogenesis in Chemical-Induced Neurotoxicities: A New Frontier in Toxicological Mechanistic Investigations, Biomarker Research, and Therapeutic Targeting #2367–2372	Ballroom 6B	324
Wednesday 1:30 PM	Advanced Approaches for Quantitative Risk Assessment Using Human Data with Applications across Disciplines #2373–2378	Ballroom 6A	324

WORKSHOP SESSIONS W

Date/Time	Topic/Abstract #	Room	Page
Wednesday 1:30 PM	Genomics of Nonrodent Mammalian Species and Impacts on Nonclinical Safety Evaluation of Pharmaceuticals and Clinical Translation #2379–2384	Ballroom 6D	325
Wednesday 1:30 PM	Increasing Interest and Engagement in Toxicology and STEM Disciplines: The Multiple Modalities and Impact of Research and Internship Opportunities for High School and Undergraduate Students #2385–2390	Room 7	325
Wednesday 1:30 PM	Integrating Gene Expression Profiling into High-Throughput Toxicity Testing #2391–2396	Ballroom 6C	326
Wednesday 1:30 PM	Strengths and Weaknesses of Mouse Models in Studies of Immunological Effects of Drugs and Chemicals #2397–2402	Ballroom 6E	326
Wednesday 1:30 PM	The Carcinogenicity of Outdoor Air Pollution: A Review of the IARC Evaluation of Outdoor Air Pollution and Particulate Matter in Polluted Air As Group 1 (Known) Human Lung Carcinogens and Possible Bladder Carcinogens #2403–2408	Room 1	327
Wednesday 1:30 PM	Windfall or Pitfall: Is There a Need for Modification of Developmental and Reproductive Toxicology Studies When Endocrine Disruption Is the Mode of Action? #2409–2415	Ballroom 6F	328

PLATFORM SESSION PL

Date/Time	Topic/Abstract #	Room	Page
Wednesday 1:30 PM	Inflammation in Disease Due to Environmental Exposures #2416–2423	Room 8	328

Scientific Session Index (Continued)

ROUNDTABLE SESSIONS R

Date/Time	Topic/Abstract #	Room	Page
Wednesday 4:30 PM	Epigenetics and Chemical Safety Assessment: Are We Ready? #2424	Ballroom 6D	329
Wednesday 4:30 PM	The Future of Carcinogenicity Testing #2425	Ballroom 6E	330

EDUCATION-CAREER DEVELOPMENT SESSION EC

Date/Time	Topic/Abstract #	Room	Page
Wednesday 4:30 PM	Crafting High-Impact Manuscripts: The Process from Hypothesis through Review and Publication #2426	Room 7	330

Thursday

POSTER SESSION PS

**Author-attended 8:30 am–12:00 noon. Poster Board Surface Maps are on page 128. View abstracts via Mobile Event App, Online Planner, or downloadable PDF.*

Date/Time		Topic/Abstract #	Room	Page
Thursday 8:30 AM	*	Late-Breaking Poster Session	Sails Pavilion	332

SYMPOSIUM SESSIONS S

Date/Time	Topic/Abstract #	Room	Page
Thursday 9:00 AM	Chromatin Structure, Genomics, and Transcriptional Responses to Environmental Insults #2427–2432	Room 1	332
Thursday 9:00 AM	Comprehensive Analysis of Nano Silver Toxicity Profiles: Known, Unknown, and Surprises! #2433–2438	Ballroom 6E	332
Thursday 9:00 AM	Epigenetics, Developmental Programming, and Immune Function: Where Do We Go from Here? #2439–2443	Ballroom 6C	333
Thursday 9:00 AM	Exposure Assessment in the 21st Century: Needs and Challenges Facing High-Throughput Exposure Modeling #2444–2449	Ballroom 6D	334

WORKSHOP SESSIONS W

Date/Time	Topic/Abstract #	Room	Page
Thursday 9:00 AM	Microphysiological Models of the Developing Nervous System: Biologically Driven Assembly Inspired by Embryology and Translated to Human Developmental Toxicology #2450–2454	Ballroom 6F	334
Thursday 9:00 AM	Painting the Future of Repeat-Dose Systemic Toxicity Testing: Progress from the European SEURAT-1 Project #2455–2460	Room 7	335

PLATFORM SESSION PL

Date/Time	Topic/Abstract #	Room	Page
Thursday 9:00 AM	POPs—*In Vitro*, *In Vivo*, and Computational Modeling Studies #2461–2468	Room 8	335

Late-Breaking Abstracts Scheduled for Thursday

In December, we invited our colleagues to submit an abstract during the late-breaking abstract submission phase. We are pleased with the number of abstracts received for consideration and that an overwhelming number were accepted for the Annual Meeting. These abstracts will be presented on Thursday, March 26, along with several dynamic symposium and workshop sessions already scheduled. You can find the poster sessions in the Sails Pavilion. A PDF supplement of these additional abstracts will be available to download via the SOT website in early March. The abstracts are not available in the final *Program* but are fully searchable through the SOT Mobile Event App and Online Planner.

Notes

Poster Session Schedule and Board Surface Maps

Monday, March 23 to Wednesday, March 25—Exhibit Hall—Ground Level *(See map below)*

MONDAY

Morning, March 23—9:30 AM to 12:30 PM
Poster Set Up—7:30 AM to 9:30 AM

Afternoon, March 23—1:00 PM to 4:30 PM
Poster Set Up—12:30 PM to 1:00 PM

TUESDAY

Morning, March 24—9:00 AM to 12:30 PM
Poster Set Up—7:30 AM to 9:00 AM

Afternoon, March 24—1:00 PM to 4:30 PM
Poster Set Up—12:30 PM to 1:00 PM

WEDNESDAY

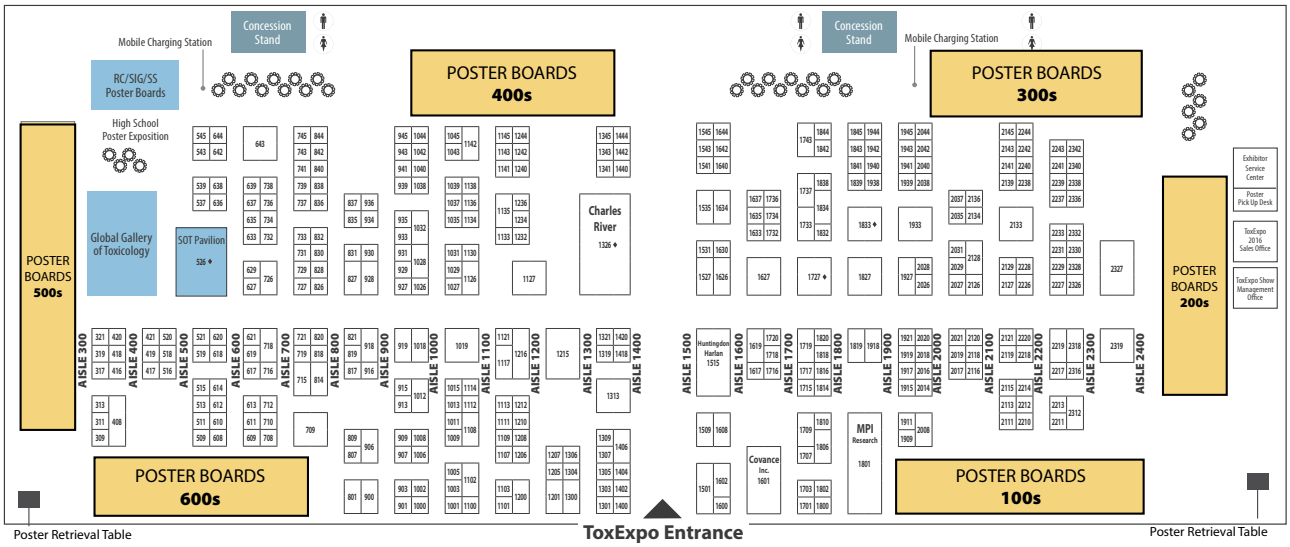
Morning, March 25—9:00 AM to 12:30 PM
Poster Set Up—7:30 AM to 9:00 AM

Afternoon, March 25—1:00 PM to 4:30 PM
Poster Set Up—12:30 PM to 1:00 PM

Thursday, March 26—Sails Pavilion—Upper Level *(See map on page 128)*

THURSDAY

Morning, March 26—8:30 AM to 12:00 Noon
Poster Set Up—7:00 AM to 8:30 AM



ePosters—A Convenient Way to View Posters

Did you miss the opportunity to view a poster of interest? In addition to attending Poster Sessions, you can view some posters through the SOT Mobile Event App. More information can be found on page 2.

If you do not remove your poster at the end of your session, you will find it on the "Poster Retrieval Tables" located at the front of the Exhibit Hall between poster sections 100 and 200; and between 500 and 600. Any posters left behind at 4:30 pm on Wednesday will be taken to SOT Headquarters Office, Room 15A, Thursday morning, March 26. All posters not claimed by 1:00 pm on Thursday, March 26, will be recycled.

Photography in the ToxExpo and all Poster Sessions is prohibited without the consent of exhibitors or poster presenter(s)/author(s). Please respect your colleagues' right to privacy.

The numbers listed refer to the poster location that does not change throughout the week. Presenters should display posters ONLY on the date and time communicated in their acceptance notice. A list of Poster Session dates and times with abstract numbers can be found on pages 121–128. The full map of the Exhibit Hall can be found on pages 34–35 to assist you in finding Poster Sessions.

Poster Session Schedule and Board Surface Maps (Continued)

Monday Morning, March 23—9:30 AM to 12:30 PM—Exhibit Hall
Poster Set Up—7:30 AM to 9:30 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Biotransformation and Cytochrome P450	68–89	101–122
Pharmacogenomics and Genetic Polymorphisms	90–98	124–132
Liver	99–136	135–172
Inflammation in Disease	137–150	201–214
Inflammation: Methods and Mechanisms	151–174	215–238
Nonpharmaceutical Safety Assessment	175–195	239–259
Risk Assessment I	196–234	301–345
Alternatives to Mammalian Models I—Cardio, Neuro, Developmental	235–262	401–428
Developmental Neurotoxicology—Nonmammalian Models	263–273	431–441
Developmental Neurotoxicology—*In Vitro* Screening	274–283	445–454
Nanotoxicology, General, Environmental, Metals	284–316	501–533
Metals	317–353	536–572
Ecotoxicology	354–380	601–627
Persistent Organic Pollutants	381–397	631–647
Stem Cell Biology in Toxicology Research	398–409	653–664

Monday Afternoon, March 23—1:00 PM to 4:30 PM—Exhibit Hall
Poster Set Up—12:30 PM to 1:00 PM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Alternatives to Mammalian Models II—Skin, Eye, Liver	414–451	101–138
Ocular Toxicology	452–460	139–147
Natural Products	461–483	149–171
Biomonitoring and Exposure Assessment	484–520	201–237
Genetic Toxicology I	521–549	239–267
Cell Death and Apoptosis	550–572	301–323
Risk Assessment II	573–595	326–348
Pharmaceutical Safety: Large Molecule Case Studies	596–609	401–414
Pharmaceutical Safety: Small Molecule Case Studies	610–635	415–440
Developmental Neurotoxicology—Stem Cells	636–648	443–455
Autoimmunity/Hypersensitivity	649–682	501–534
Liver and Models	683–718	537–572
Biological Modeling	719–759	601–641
Epidemiology	760–778	645–663

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Poster Session Schedule and Board Surface Maps (Continued)

400s

456	449	448	441	440	433	432	425	424	417	416	409	408	401
455	450	447	442	439	434	431	426	423	418	415	410	407	402
454	451	446	443	438	435	430	427	422	419	414	411	406	403
453	452	445	444	437	436	429	428	421	420	413	412	405	404

300s

348	341	340	333	332	325	324	317	316	309	308	301		
347	342	339	334	331	326	323	318	315	310	307	302		
346	343	338	335	330	327	322	319	314	311	306	303		
345	344	337	336	329	328	321	320	313	312	305	304		

500s

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200s

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600s

604	605	612	613	620	621	628	629	636	637	644	645	652	653	660	661
603	606	611	614	619	622	627	630	635	638	643	646	651	654	659	662
602	607	610	615	618	623	626	631	634	639	642	647	650	655	658	663
601	608	609	616	617	624	625	632	633	640	641	648	649	656	657	664

100s

104	105	112	113	120	121	128	129	136	137	144	145	152	153	160	161	168	169
103	106	111	114	119	122	127	130	135	138	143	146	151	154	159	162	167	170
102	107	110	115	118	123	126	131	134	139	142	147	150	155	158	163	166	171
101	108	109	116	117	124	125	132	133	140	141	148	149	156	157	164	165	172

Entrance

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Poster Session Schedule and Board Surface Maps (Continued)

Tuesday Morning, March 24—9:00 AM to 12:30 PM—Exhibit Hall
Poster Set Up—7:30 AM to 9:00 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Pharmaceutical Safety: Models and Methods	878–903	101–126
Systems Biology and Toxicology	904–923	129–148
Food Safety, *In Vitro*	924–945	151–172
Neurotoxicology, Metals—Mercury	946–961	201–216
Neurotoxicology, Metals—Manganese	962–971	217–226
Neurotoxicology, Metals—Lead and Others	972–983	227–238
Carcinogenesis I	984–1012	239–267
Oxidative Injury and Redox Biology	1013–1044	301–332
Juvenile Toxicity	1045–1054	337–346
Genetic Toxicology II	1055–1082	401–428
Gene Regulation and Signal Transduction	1083–1107	429–453
Educational Activities and Outreach	1108–1131	501–524
Immunotoxicity I	1132–1157	529–554
In Vitro Cardiovascular Safety	1158–1169	559–570
Alternatives to Mammalian Models III	1170–1201	601–632
Biomarkers	1202–1233	633–664

Tuesday Afternoon, March 24—1:00 PM to 4:30 PM—Exhibit Hall
Poster Set Up—12:30 PM to 1:00 PM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Nanotoxicology, Carbon–Based Nanomaterials	1234–1259	101–126
Skin	1260–1284	128–152
Clinical and Translational Toxicology	1285–1303	153–171
Computational Toxicology and Data Integration I	1304–1340	201–237
Immunotoxicity II	1341–1367	239–265
Toxicity of Chemical Mixtures	1368–1391	301–324
Food Safety, *In Vivo*	1392–1414	325–347
Reproductive Toxicology I	1415–1439	401–425
Reproductive Toxicology II	1440–1466	428–454
Endocrine Toxicology	1467–1495	501–529
Neurotoxicology, Neurodegenerative Disease—Alzheimer's Disease and Others	1496–1509	531–544
Neurotoxicology, Neurodegenerative Disease—Parkinson's Disease	1510–1536	545–571
Cigarettes, E–Cigarettes, and Hookah	1537–1549	601–613
Inhalants and Cardiopulmonary	1550–1578	616–644
Particulate Matter	1579–1596	647–664

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Poster Session Schedule and Board Surface Maps (Continued)

400s

456	449	448	441	440	433	432	425	424	417	416	409	408	401
455	450	447	442	439	434	431	426	423	418	415	410	407	402
454	451	446	443	438	435	430	427	422	419	414	411	406	403
453	452	445	444	437	436	429	428	421	420	413	412	405	404

300s

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600s

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601	608	609	616	617	624	625	632	633	640	641	648	649	656	657	664

100s

104	105	112	113	120	121	128	129	136	137	144	145	152	153	160	161	168	169
103	106	111	114	119	122	127	130	135	138	143	146	151	154	159	162	167	170
102	107	110	115	118	123	126	131	134	139	142	147	150	155	158	163	166	171
101	108	109	116	117	124	125	132	133	140	141	148	149	156	157	164	165	172

Entrance

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Poster Session Schedule and Board Surface Maps (Continued)

Wednesday Morning, March 25—9:00 AM to 12:30 PM—Exhibit Hall
Poster Set Up—7:30 AM to 9:00 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Fetal Basis of Adult Disease	1699–1709	101–111
Developmental Toxicology I	1710–1737	113–140
Developmental Toxicology II	1738–1766	143–169
Developmental Neurotoxicology	1767–1776	201–210
General and Developmental Neurotoxicology of Therapeutic Agents and Drugs of Abuse	1777–1794	219–236
Cardiovascular Toxicity and Hemodynamics	1795–1821	239–265
Animal Models of Disease	1822–1835	301–314
Animal Models: Measurements, Validations, and Historical Data	1836–1847	319–330
Animal Models: Methods	1848–1859	335–346
Risk Assessment III	1860–1900	401–453
Regulation/Policy	1901–1927	501–527
Nanotoxicology, *In Vitro*	1928–1963	535–570
Metals—As, Cd, Hg	1964–2003	601–640
Medical Devices: Risk Assessment and Test Methods	2004–2022	645–663

Wednesday Afternoon, March 25—1:00 PM to 4:30 PM—Exhibit Hall
Poster Set Up—12:30 PM to 1:00 PM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
RNA-Based Biomarkers	2027–2038	101–112
Carcinogenesis II	2039–2065	115–141
Chemical and Biological Weapons	2066–2090	145–169
Disposition and Pharmacokinetics: Drugs, Chemicals, and Transporters	2091–2105	201–215
Neurotoxicology, General	2106–2123	219–236
Neurotoxicology, Pesticides	2124–2146	239–261
Pesticides	2147–2185	301–345
Bioinformatics	2186–2205	401–420
Computational Toxicology and Data Integration II	2206–2237	423–454
Epigenetics	2238–2274	501–537
Kidney	2275–2306	539–570
Receptors	2307–2342	601–636
Nanotoxicology, *In Vivo*	2343–2366	641–664

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Poster Session Schedule and Board Surface Maps (Continued)

400s

456	449	448	441	440	433	432	425	424	417	416	409	408	401
455	450	447	442	439	434	431	426	423	418	415	410	407	402
454	451	446	443	438	435	430	427	422	419	414	411	406	403
453	452	445	444	437	436	429	428	421	420	413	412	405	404

300s

348	341	340	333	332	325	324	317	316	309	308	301		
347	342	339	334	331	326	323	318	315	310	307	302		
346	343	338	335	330	327	322	319	314	311	306	303		
345	344	337	336	329	328	321	320	313	312	305	304		

500s

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200s

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	265	264	263
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	211	210	209
205	206	207	208
204	203	202	201

600s

604	605	612	613	620	621	628	629	636	637	644	645	652	653	660	661
603	606	611	614	619	622	627	630	635	638	643	646	651	654	659	662
602	607	610	615	618	623	626	631	634	639	642	647	650	655	658	663
601	608	609	616	617	624	625	632	633	640	641	648	649	656	657	664

100s

104	105	112	113	120	121	128	129	136	137	144	145	152	153	160	161	168	169
103	106	111	114	119	122	127	130	135	138	143	146	151	154	159	162	167	170
102	107	110	115	118	123	126	131	134	139	142	147	150	155	158	163	166	171
101	108	109	116	117	124	125	132	133	140	141	148	149	156	157	164	165	172

Entrance

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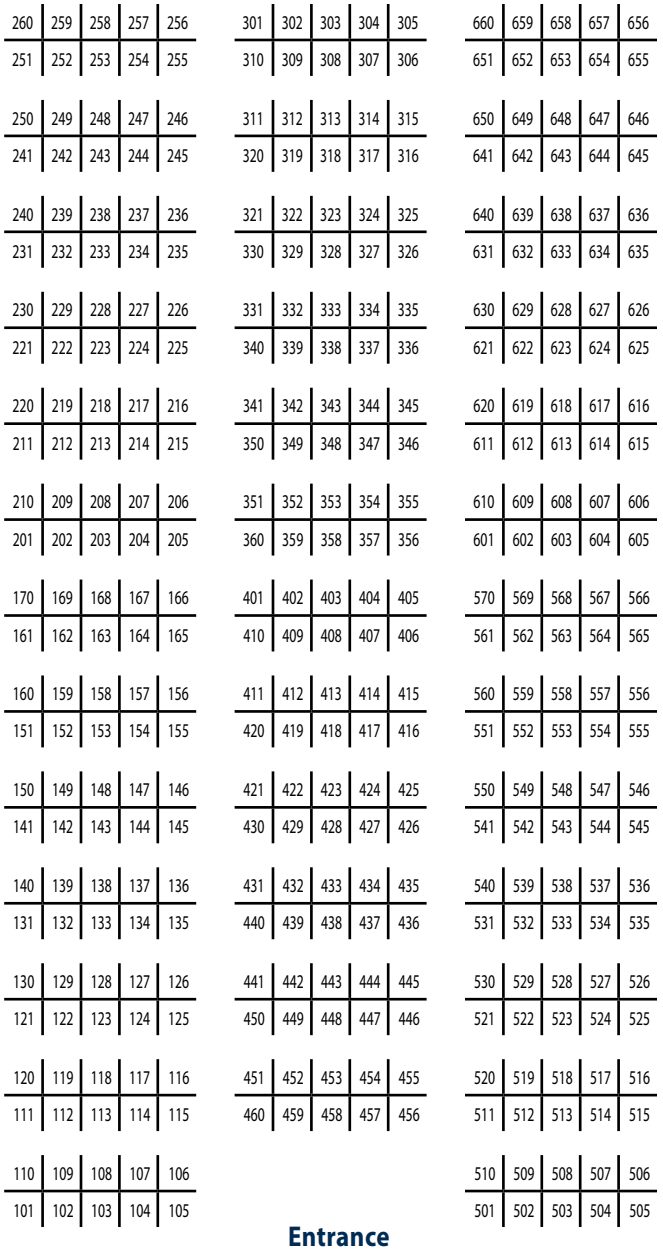
The numbers listed on the map refer to the poster surface location that does not change throughout the week. Please display your poster only on the date and time assigned to you. The full map of the Exhibit Hall can be found on pages 34–35 to assist you in finding Poster Sessions.

Poster Session Schedule and Board Surface Maps (Continued)

Thursday Morning, March 26—8:30 AM to 12:00 Noon—Sails Pavilion
Poster Set Up—7:00 AM to 8:30 AM

SESSION TITLE	ABSTRACT NUMBERS	POSTER BOARD NUMBERS
Late-Breaking Abstracts	TBA	101–600



ALL late–breaking abstracts will be presented on Thursday in the Sails Pavilion. Please check the Mobile Event App and Online Planner for details. A PDF supplement of these additional abstracts will be available to download via the SOT website in early March. These abstracts were not printed in the final *Program*. Poster layout is subject to change based on the final number of accepted late–breaking submissions.

Photography in the ToxExpo and all Poster Sessions is prohibited without the consent of exhibitors or poster presenter(s)/author(s). Please respect your colleagues' right to privacy.

The numbers listed on the map refer to the poster surface location that does not change throughout the week. Please display your poster only on the date and time assigned to you. The full map of the Exhibit Hall can be found on pages 34–35 to assist you in finding Poster Sessions.

Explore Research Funding Opportunities and Strategies with Funding Agency Experts

All meeting attendees invited. New investigators are encouraged to attend.

Meet with Agency Review Administrators and Program Officers

Research Funding Luncheon: Multiple Perspectives on the Grant Process

Monday, March 23, 12:00 Noon–1:30 PM, Room 5B

Hosted by: Career Resource and Development Committee

Grant writing is a challenging endeavor. One must effectively communicate the significance, innovation, and approach of their research project in a clear but concise manner, with appropriate grammar. While there are some aspects of grant writing that apply regardless of the grant application phase, such as a clearly stated hypothesis and specific aims, the style and required elements of the various phases of the grant writing process can differ significantly. Thus, the goals of this session are to discuss the various phases of the grant writing process, including preparing a new application versus a competitive renewal, composing the rebuttal and revised grant application, how best to create a "new" proposal if a grant has not been funded after two review cycles, and an overview of the review process and choosing the best scientific review group. Four experts will cover these topics and participate in a panel discussion at the end of the session.

Essentials in Grantsmanship from a Program Officer's Perspective
Annette Kirshner, NIEHS, Research Triangle Park, NC.

Annette Kirshner is a Program Administrator in the Genes, Environment and Health Branch in the Division of Extramural Research and Training. She is the lead representative for neurodevelopmental toxicology other than autism, and neurodegeneration including Amyotropic Lateral Sclerosis and Alzheimer's Disease, and was responsible for the development of the Parkinson's (PD) program, which culminated in the establishment of specialized centers in PD. She brings substantial insight and experience in the grant process from a program officer's perspective.

The NIH Application Review Process from a SRO's Perspective
Janice Allen, NIEHS Scientific Review Branch, Research Triangle Park, NC.

The grant review process will be described by a scientific review officer, from what you need to know before starting to write your application, to preparing your application for submission, and then receiving your summary statement.

Taking a Look Behind the Curtain: What REALLY Happens at Study Section?
Cheryl Walker, Texas A&M Institute of Biosciences and Technology, Houston, TX.

Dr. Walker puts you in the reviewer's shoes by discussing the peer-review system from the vantage point of a study section member. Is it like you imagined? Find out from an SOT member with over 25 years experience serving on study sections for the National Institutes of Health, the American Cancer Association, foreign governments, not-for-profit foundations, and advocacy groups.

Science to Achieve Results (STAR), US EPA's Competitive Extramural Grants Program: Process and Opportunities
Mitch Lasat, US EPA, Washington, DC.

Through STAR, the agency funds scientifically meritorious research proposals that have the highest programmatic relevance to US EPA research programs, including Air Climate and Energy, Chemical Safety for Sustainability, Human Health Risk Assessment, Homeland Security, Safe and Sustainable Water Resources, and Sustainable and Healthy Communities. Recent STAR funding announcements on environmental toxicology research will be presented and the award selection process detailed. The presentation will conclude with an open discussion on US EPA's funding process and opportunities.

Roundtable Discussion and Questions

This is an excellent opportunity for new investigators to ask those questions about grant submissions they may have hesitated to ask in the past.

Research Funding Information Room

Tuesday, March 24 and Wednesday, March 25
9:30 AM–4:30 PM, Room 11A

Hosted by: Career Resource and Development Committee

SOT places a strong emphasis on the development of opportunities for research support and funding. As a service to its members and new investigators, SOT offers the Research Funding Information Room so that members and attendees may network and learn more about the various opportunities available to them. Program and review staff from federal agencies that fund research, including NIH, US FDA, NIEHS, CDC, and US EPA will be available in the Research Funding Information Room for individual conversations. Attendees may check the posted schedule for specific times agency staff members will be available during the week to answer questions about the scientific review process and various grant opportunities. The schedule will be available in the Registration area, the Research Funding Information Room, and during the *Research Funding Luncheon: Multiple Perspectives on the Grant Process* on Monday.

Notes

Program Schedule

The Program Schedule layout is ordered by date and start time. All scientific sessions and special events will be held in the San Diego Convention Center unless otherwise noted.

SOT general events and functions are displayed with a yellow background.

SATURDAY MORNING

Saturday Morning and Afternoon, March 21
10:00 AM to 5:00 PM
Petco Park, Downtown San Diego

San Diego Festival of Science and Engineering EXPO Day Toxicology Exhibit

Chairperson(s): *Virunya Bhat, NSF International, San Diego, CA*

Hosted by:
Southern California Regional Chapter

Endorser(s):
Education Committee
K–12 Subcommittee

The Southern California Regional Chapter will host a booth at the free and largest annual Southern California festival of science, technology, engineering, and math (STEM) education. What's all the buzz about caffeine? Stop by "ToxTown" to test your caffeine trivia knowledge about beverages, food, and consumer products with added caffeine. Come play Tic-Tac-Tox, watch a specially-coordinated new "Risk Bites" YouTube episode, Chat with Andrew Maynard, creator of "Risk Bites" and recipient of the 2015 SOT Public Communications Award. Engage with toxicologists in other hands-on activities designed to foster an appreciation of the science and profession of toxicology. Bring your family to participate or volunteer to help build for the future of toxicology!

SATURDAY EVENING

Saturday Evening, March 21
5:15 PM to 7:30 PM
CC Room 33B
(By Invitation Only)

Undergraduate Education Program Opening Event

Chairperson(s): *Kristini Miles, Kimberly-Clark Corporation, Roswell, GA.*

Hosted by:
Committee for Diversity Initiatives

Open to CDI Travel Awardees in the Undergraduate Education Program and SOT program volunteers assisting with the Undergraduate Program. Full program details are found on pages 96–97.

Saturday Evening, March 21
7:30 PM to 8:30 PM
CC Room 31C

Committee on Diversity Initiatives Reunion

Hosted by:
Committee on Diversity Initiatives

Please connect with the Committee on Diversity Initiatives (CDI) as we celebrate the Undergraduate Education Program and the people who make it successful. The CDI Reunion will provide a great opportunity for former students, organizers of the program, and volunteers to gather and celebrate 26 years of success in encouraging the next generation of scientists. Please welcome and network with this year's undergraduate student participants and Gehring Diversity Student Travel Awardee. Dessert, coffee, and tea will be served, so mark your calendars and start the 54th Annual Meeting with a fun and interactive evening at the CDI Reunion.

Attention Undergraduates!!!!!

Join the Scavenger Hunt

Monday, March 23, and Tuesday, March 25

Have fun! ***Meet new contacts!*** ***Win prizes!!!***

Pick up cards at:
• Registration • SOT Headquarters Office •
• Printed from the Annual Meeting Website •

Turn in cards by 5:00 pm Tuesday at:
• Registration • SOT Headquarters Office •
• Undergraduate Student Meeting •
Prizes for the first 100 completed cards submitted.

Undergraduate students must find individuals who match the descriptions on the card. Meeting attendees, if asked, please sign the description which best fits you.

Program Schedule (Continued)

SUNDAY MORNING

Sunday Morning, March 22
7:00 AM to 7:45 AM
CC Ballroom 6B
(Ticket Required)

Continuing Education Sunrise Mini-Course

Full Continuing Education Course details may be found on page 102.

Sunday Morning and Afternoon, March 22
8:00 AM to 3:00 PM
CC Room 31C
(Registration Required; See Mobile Event App or pages 96–97 for Room Information)

Undergraduate Education Program

Chairperson(s): *Kristini Miles, Kimberly-Clark Corporation, Roswell, GA.*

Hosted by:
Committee for Diversity Initiatives

The Sunday program is open to all undergraduate students who register for this event using the Annual Meeting Registration Form, the undergraduate students and advisors receiving CDI travel funding, and SOT program volunteers. Full program details are found on pages 96–97.

Sunday Morning, March 22
8:15 AM to 12:00 Noon
CC Upper Level
(Ticket Required; See Mobile Event App or Signage at CE Booth for Room Location)

Continuing Education Morning Courses

Full Continuing Education Course details may be found on pages 102–105.

SUNDAY AFTERNOON

Sunday Afternoon, March 22
1:15 PM to 5:00 PM
CC Upper Level
(Ticket Required; See Mobile Event App or Signage at CE Booth for Room Location)

Continuing Education Afternoon Courses

Full Continuing Education Course details may be found on pages 105–108.

Sunday Afternoon, March 22
3:00 PM to 5:00 PM
CC Room 31C
(Registration Required)

Undergraduate Education Program: Open Time with Academic Program Directors and Internship Sponsors

Chairperson(s): *Kristini Miles, Kimberly-Clark Corporation, Roswell, GA.*

Hosted by:
Committee for Diversity Initiatives

This event is open to undergraduate students who register for this event using the Annual Meeting Registration Form, the undergraduate students and advisors receiving CDI travel funding, and SOT program volunteers. Academic program directors, internship hosts, undergraduate students, and faculty advisors meet informally to discuss research and graduate study opportunities. Full program details are found on pages 96–97.

Program Schedule (Continued)

SUNDAY EVENING

Sunday Afternoon, March 22
4:45 PM to 6:30 PM
CC Ballroom 6A
(All Attendees Welcome)

Awards Ceremony

Pre-Ceremony Musical Performance

4:45 PM to 5:15 PM

Amy Lynn Kanner will perform for SOT Annual Meeting attendees prior to the SOT Awards Ceremony. Amy's passion is playing the harp. She is also a composer and recording artist—her CD, "Garden of Delights," features performances on multiple instruments.

Amy is also a physician and a graduate of the International Harp Therapy program—utilizing the unique resonance of the harp to create an atmosphere of relaxation and respite for both patients and health care staff. Find additional event details on the SOT 2015 Annual Meeting website at **www.toxicology.org/ai/meet/am2015/socialevents.asp**.

Awards Ceremony

5:15 PM to 6:30 PM

SOT will honor our 2015 Honorary Member, SOT award recipients, and our supported award recipients at the SOT Awards Ceremony (pages 65–78) following the pre-ceremony musical performance.

Presentation of plaques will be made to:

- Honorary Member
- Global Senior Scholar Exchange Program
- Supported Awards:
  - Colgate-Palmolive Award for Student Research Training in Alternative Methods
  - Colgate-Palmolive Grants for Alternative Research
  - Colgate-Palmolive Postdoctoral Fellowship Award in *In Vitro* Toxicology
  - Syngenta Fellowship Award in Human Health Applications of New Technologies
- SOT Awards:
  - Achievement Award
  - Arnold J. Lehman Award
  - Board of Publications Best Paper in *Toxicological Sciences*
  - Distinguished Toxicology Scholar Award
  - Education Award
  - Merit Award
  - Public Communications Award
  - Translational Impact Award
  - Undergraduate Educator Award*

**Supported by the SOT Endowment Fund*

In addition, recipients of the Pfizer SOT Undergraduate Student Travel Awards, SOT Undergraduate Intern Travel Awards, and SOT/AstraZeneca/SOT Endowment Fund/IUTOX Travel Awards will be recognized.

Sunday Evening, March 22
6:30 PM to 7:30 PM
CC West Terrace
(All Attendees Welcome)

Welcome Reception

Continue the celebration by attending the Welcome Reception following the Awards Ceremony. The Welcome Reception is a great opportunity to renew old friendships and to make new acquaintances. Please join the Society in this kick-off of the Annual Meeting.

Sunday Evening, March 22
7:00 PM to 8:00 PM
CC Room 5

25-Year (Or More) Member Reception

If you have been a member of the Society of Toxicology for 25 years or more, please join your colleagues to celebrate and recognize the scientists who established the Society. Be sure to wear your anniversary pin.

Sunday Evening, March 22
7:30 PM to 9:00 PM
CC Ballroom 20D
(Ticket Required)

Student/Postdoctoral Scholar Mixer

Hosted by:
Graduate Student Leadership Committee

The Graduate Student Leadership Committee hosts this opportunity for students and postdoctoral scholars to gather, to meet new colleagues, and to re-establish relationships in an informal atmosphere at the beginning of the meeting. Tickets are obtained at no cost by registering for this event on the Annual Meeting Registration Form and are required. Complimentary refreshments and a cash bar will be available.

Program Schedule (Continued)

MONDAY MORNING

Monday Morning, March 23
6:00 AM to 7:30 AM
CC Room 31B

Toxicologic and Exploratory Pathology Specialty Section Officers

Monday Morning, March 23
6:30 AM to 7:30 AM
Richard Walker's Pancake House

Mixtures Specialty Section Officers Meeting

Monday Morning, March 23
6:15 AM to 7:45 AM
CC Room 5B
(Registration Required)

SOT Mentoring Breakfast

Endorser(s):
Career Resource and Development Committee
Graduate Student Leadership Committee
Postdoctoral Assembly

The Society of Toxicology recognizes the importance of mentoring in the scientific and professional development of its members. As such, the Career Resource and Development Committee, in conjunction with the Postdoctoral Assembly and Graduate Student Leadership Committee, is pleased to host the fourth annual Mentoring Breakfast.

The Mentoring Breakfast is for SOT members at any career stage—from graduate students to postdoctoral fellows to senior scientists—who are seeking a mentor. A brief introduction will be followed by small group discussions led by trained facilitators. Facilitators will work to match participants with compatible mentors following the Annual Meeting.

Monday Morning, March 23
6:30 AM to 8:00 AM
CC Room 30A

Inhalation and Respiratory Specialty Section Technical Meeting

Monday Morning, March 23
6:30 AM to 8:00 AM
CC Room 25

Specialty Section Officers Meetings: Carcinogenesis; Clinical and Translational Toxicology; Dermal Toxicology; Food Safety; Immunotoxicology; *In Vitro* and Alternative Methods; Mechanisms; Molecular and Systems Biology; Neurotoxicology; Regulatory and Safety Evaluation; Risk Assessment

Monday Morning, March 23
6:45 AM to 8:00 AM
Marriott Marquis Marina Kitchen

Hispanic Organization of Toxicologists Special Interest Group Officers Meeting

Monday Morning, March 23
7:00 AM to 8:00 AM
Marriott Gaslamp Soleil @K Restaurant

Central States Regional Chapter Meeting/Breakfast

Monday Morning, March 23
7:00 AM to 8:30 AM
CC Room 30D

Reproductive and Developmental Toxicology Specialty Section Officers Meeting

Monday Morning, March 23
8:00 AM to 9:00 AM
CC Hall D

FS

Plenary Opening Lecture: Life at the Speed of Light

Lecturer: *J. Craig Venter, J. Craig Venter Institute, San Diego, CA.*

J. Craig Venter is a biologist renowned for his contributions in sequencing the first draft human genome in 2001, the first complete diploid human genome in 2007 and construction of the first synthetic bacterial cell in 2010. He is founder, chairman, and CEO of the J. Craig Venter Institute (JCVI), founder and CEO of the company, Synthetic Genomics Inc (SGI), and a co-founder and CEO of Human Longevity Inc (HLI). He and his teams are focused on a variety of projects and programs, including synthetic genomic research and the application of these advances to develop new biofuels, vaccines, and food and nutritional products; continued analysis of the human genome including the human microbiome; and discovering and understanding genetic diversity in the world's oceans. Dr. Venter is a recipient of the 2008 National Medal of Science and is a member of the National Academy of Sciences. He is the author of *Life at the Speed of Light: From the Double Helix to the Dawn of Digital Life* (Viking, 2013) and *A Life Decoded: My Genome: My Life* (Viking, 2007).

Monday Morning, March 23
8:00 AM to 12:00 Noon
(See pages 96–97 for room information)

Undergraduate Education Program

Chairperson(s): *Kristini Miles, Kimberly-Clark Corporation, Roswell, GA.*

Hosted by:
Committee for Diversity Initiatives

Monday morning activities are for CDI Travel Award Recipients and Mentors. Full program details are found on pages 96–97.

Program Schedule (Continued)

Abstract #

Monday Morning, March 23
9:15 AM to 12:00 Noon
CC Ballroom 6A

S

Symposium Session: New and Emerging Tobacco Products—Biomarkers of Exposure and Injury

Advancing Clinical and Translational Toxicology

Chairperson(s): *Daniel J. Conklin, University of Louisville, Louisville, KY; and Judith T. Zelikoff, Environmental Medicine, New York University School of Medicine, Tuxedo, NY.*

Endorser(s):
Cardiovascular Toxicology Specialty Section
Inhalation and Respiratory Specialty Section

On June 22, 2009, the Family Smoking Prevention and Tobacco Control Act was signed into law, giving the US FDA the authority to regulate new and emerging tobacco-derived products. Subsequently, there is an obvious need to provide scientific data in order to inform US FDA's decision-making regarding these products. Thus, biomarkers of exposure, biomarkers of injury, and controlled, acute, and chronic, as well as longitudinal exposure studies, are being conducted to better define what exactly new and emerging tobacco-derived products do in a variety of preclinical and clinical settings. New and emerging tobacco- and nicotine-derived products come in a dizzying array of products including electronic cigarettes, smokeless tobacco (including snus, snuff, and gutkha), shisha for hookah/water pipes, dissolvable lozenges, and nicotine gels that contain, deliver, and/or generate a varied number of harmful or potentially harmful constituents (HPHCs), making it challenging to predict the biological effects of exposures based solely on traditional cigarette exposure studies. This symposium will provide a broad overview of ongoing studies attempting to identify biomarkers of exposure, biomarkers of injury, and acute and chronic effects in the cardiovascular, pulmonary, and reproductive organ systems resulting from exposures to new and emerging tobacco products and/or their HPHCs.

#14	9:15	**New and Emerging Tobacco Products—Biomarkers of Exposure and Injury.** *D. J. Conklin*[1], and *J. T. Zelikoff*[2]. [1]Department of Cardiovascular Medicine, University of Louisville, Louisville, KY; and [2]Department of Environmental Medicine, New York University, Tuxedo, NY.
	9:15	**Introduction.** D. J. Conklin. University of Louisville, Louisville, KY.
#15	9:20	**Biomarkers of Exposure to Tobacco Smoke and Emerging Tobacco Products.** N. Benowitz. Department of Medicine, University of California San Francisco, San Francisco, CA. Sponsor: *D. Conklin*.
#16	9:52	**Pulmonary Effects of Exposure to Tobacco Smoke and New Tobacco Products.** *I. Jaspers*. Department of Pediatrics, University of North Carolina at Chapel Hill, Chapel Hill, NC.
#17	10:24	**Reproductive/Developmental Effects of Exposure to New and Emerging Tobacco Products and to Nicotine Delivery Devices in a Mouse Model.** *J. T. Zelikoff*. Department of Environmental Medicine, New York University, Tuxedo, NY.
#18	10:56	**Cardiovascular Effects of Exposure to Harmful and Potentially Harmful Constituents (HPHCs) of Tobacco Products.** *D. J. Conklin*[1,3], *L. Chen*[2,3], and *S. Srivastava*[1,3]. [1]Department of Cardiovascular Medicine, University of Louisville, Louisville, KY; [2]Department of Environmental Medicine, New York University, Tuxedo, NY; and [3]Tobacco Regulation and Addiction Center, American Heart Association, Dallas, TX.

Abstract #

#19	11:28	**Cardiovascular Effects of Tobacco Products, Nicotine Delivery Products, and Secondhand Smoke: Exponential Effects in Humans.** S. Schick. Department of Medicine, University of California San Francisco, San Francisco, CA. Sponsor: *D. J. Conklin*.

Monday Morning, March 23
9:15 AM to 12:00 Noon
CC Room 1

S

Symposium Session: The Role of Connexin-Based Channels in Toxicity

Chairperson(s): *Brad L. Upham, Pediatrics & Human Development, Michigan State University, East Lansing, MI; and Mathieu Vinken, Toxicology, Free University Brussels, Brussels, Belgium.*

Endorser(s):
Mechanisms Specialty Section
Molecular and Systems Biology Specialty Section

Connexins and their channels control tissue homeostasis at three levels, all which involve separate mechanisms. First, they form gap junctions, composed of two hemichannels of neighbouring cells, of which each hemichannel is composed of six connexin proteins. As such, these gap junctions mediate the traffic of small, hydrophilic molecules between cells, a flux called gap junctional intercellular communication (GJIC) that controls gene expression and physiological functions. Secondly, hemichannels can form a separate pathway for communication, between the intracellular compartment and the extracellular environment. Thirdly, connexin proteins can affect the homeostatic balance independent of their channel-forming activities by directly interfering with gene expression. Dysfunction of connexin channels have been implicated in many diseases including cancer, reproductive dysfunction, peripheral neuropathies, liver disease, cataracts, deafness, teratogenesis, cardiac arrhythmias, and skin diseases. In the first presentation, general features of connexin-based channels will be discussed, as well as their mechanistic involvement in liver disease and toxicity. In the second presentation, the critical role of gap junction in redox signalling will be addressed. In the third presentation, toxicant-induced disruption of gap junctional intercellular communication in uterine muscle, with implications for parturition, will be outlined. The fourth presentation will focus on the use of gap junction function as a biomarker for elucidating toxicant-induced mechanisms of tissue dysfunction using advanced genomic strategies. Overall, this symposium will address significant advances and recent novel concepts in connexin biology and their application to toxicology.

#20	9:15	**The Role of Connexin-Based Channels in Toxicity.** *M. Vinken*[1], and *B. L. Upham*[2]. [1]Toxicology, Vrije Universiteit Brussel, Brussels, Belgium; and [2]Department of Pediatrics & Human Development, and Center for Integrative Toxicology, Michigan State University, East Lansing, MI.
	9:15	**Introduction.** M. Vinken. Vrije Universiteit Brussel, Brussels, Belgium.
#21	9:20	**Integrative Role of Gap Junctions in Redox Signaling.** *B. L. Upham*[1], and P. Babica[2]. [1]Pediatrics & Human Development, Michigan State University, East Lansing, MI; and [2]RECETOX - Research Centre for Toxic Compounds in the Environment, Masaryk University, Brno, Czech Republic.
#22	9:56	**Connexin Signaling in Liver Toxicity and Disease.** *M. Vinken*. Toxicology, Free University Brussels, Brussels, Belgium.
#23	10:32	**Uterine Muscle Gap Junctions As Toxicant Targets.** *R. Loch-Caruso*. Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#24 11:08 **Gap Junction Function: A Biomarker for Elucidating Toxicant-Induced Mechanisms of Tissue Dysfunction.** P. Babica[1,2], and *B. L. Upham*[2]. [1]RECETOX - Research Centre for Toxic Compounds in the Environment, Masaryk University, Brno, Czech Republic; and [2]Pediatrics & Human Development, Michigan State University, East Lansing, MI.

11:44 **Panel Discussion/Q&A.**

Monday Morning, March 23
9:15 AM to 12:00 Noon
CC Ballroom 6B

Workshop Session: Environmental Exposures and Alzheimer's Disease: Epidemiology, Mechanisms, and Future Strategies

Advancing Clinical and Translational Toxicology

Jointly Provided by: *University of Arkansas for Medical Sciences College of Medicine and SOT Approved for AMA PRA Category 1 Credit™—See Mobile Event App for details.*

Chairperson(s): *Jason R. Richardson, Environmental and Occupational Medicine, Robert Wood Johnson Medical School, Piscataway, NJ; and Anumantha Kanthasamy, Biomedical Sciences, Iowa State University, Ames, IA.*

Endorser(s):
Neurotoxicology Specialty Section

Alzheimer's disease (AD) is the most common neurodegenerative disease worldwide and is expected to increase three-fold over the next 40 years. To date, a massive amount of effort has focused on identifying genetic contributors to AD. Although there is a growing list of susceptibility genes that collectively contribute to AD, the largest GWAS study published on AD (>74,000 individuals) identified only 1 out of 19 loci as an individual strong contributor to AD. This finding has led to calls for studies to examine the potential influence of environmental and lifestyle factors on risk for AD. Given the wide-spread prevalence of AD and an ever-aging population, the role of environmental exposures in AD is a grossly understudied arena. This workshop brings together experts in the field of toxicology, neuroscience, and epidemiology to highlight the potential mechanisms by which environmental exposures contribute to AD. Experimental design and cutting-edge technologies relevant to discerning environmental influences on AD will also be discussed. The workshop contains presentations and a roundtable discussion that will address five primary questions: (1) What epidemiological strategies are likely to provide the most robust information on the association between AD and environmental exposures?; (2) What information can we apply to AD from experiences studying the role of environmental exposures in other neurodegenerative diseases?; (3) What is the role of environmental exposures in the etiology of AD?; (4) Do epigenetic alterations represent a mechanism by which environmental exposures contribute to AD?; (5) Does regulation of protein aggregation and transport of pathogenic proteins by environmental exposures contribute to the progression of AD?

#25 9:15 **Environmental Exposures and Alzheimer's Disease: Epidemiology, Mechanisms, and Future Strategies.** *J. R. Richardson*[1], and *A. Kanthasamy*[2]. [1]Environmental and Occupational Medicine, Robert Wood Johnson Medical School, Piscataway, NJ; and [2]Iowa State University, Ames, IA.

9:15 **Introduction.** J. R. Richardson. Robert Wood Johnson Medical School, Piscataway, NJ.

#26 9:25 **Environmental Exposures and AD: Developmental Origins and Role of Epigenetics.** *N. H. Zawia*. University of Rhode Island, Kingston, RI.

Abstract #

#27 9:55 **Role of the Divalent Metal Manganese in Protein Misfolding and Cell-to-Cell Transmission of Protein Aggregates via Exosomes in Cell Culture and Animal Models of Neurodegenerative Diseases.** *A. Kanthasamy*. Iowa State University, Ames, IA.

#28 10:25 **Pesticide Exposure As a Risk Factor for AD: Evidence in Mice and Man.** *J. R. Richardson*. Environmental and Occupational Medicine, Robert Wood Johnson Medical School, Piscataway, NJ.

#29 10:55 **Epidemiologic Investigation of Environmental Risk Factors for Alzheimer's Disease: Progress and Pitfalls.** M. Weisskopf. Harvard School of Public Health, Boston, MA. Sponsor: *J. Richardson*.

11:25 **Panel Discussion/Q&A.**

Monday Morning, March 23
9:15 AM to 12:00 Noon
CC Room 7

Workshop Session: Friend or Foe—Challenges and Perspectives for Nonclinical Development of Antibody-Drug Conjugates

Safety Assessment Approaches for Product Development

Chairperson(s): *Mary Jane Hinrichs, MedImmune, Gaithersburg, MD; and Joerg Bluemel, Safety Assessment, Genentech, Inc., South San Francisco, CA.*

Endorser(s):
Biotechnology Specialty Section
Regulatory and Safety Evaluation Specialty Section

The development of antibody-drug conjugates (ADCs) has gained considerable momentum in recent years following the successful market introduction of two novel ADC molecules, T-DM1 (Kadcyla®) and brentuximab vedotin (Adcetris®). These molecules represent an exciting new class of oncology agents that combine highly potent cytotoxic small molecules (warhead) with targeted therapeutic proteins such as monoclonal antibodies. Due to the complexity of these molecules, ADCs present unique challenges that encompass all aspects of nonclinical drug development, from the discovery process to translational issues such as patient selection. Despite the use of targeted delivery systems to deliver potent warheads, clinical development of ADCs continues to be limited by toxicity. The purpose of this workshop is to bring together experts to discuss recent progress and challenges in the design and development of more efficacious ADCs with improved tolerability. Specifically, recent data has shown that various aspects of ADC design play a major role in both the pharmacokinetic and toxicity profile of these molecules. The workshop will seek to explore how these factors can be used to engineer second-generation ADCs with improved therapeutic indices.

#30 9:15 **Friend or Foe—Challenges and Perspectives for Nonclinical Development of Antibody-Drug Conjugates.** *M. Hinrichs*[1], and *J. Bluemel*[2]. [1]Biologics Safety Assessment, MedImmune, Gaithersburg, MD; and [2]Safety Assessment, Genentech, Inc., South San Francisco, CA.

#31 9:15 **Development of Antibody-Drug Conjugates: Many Hopes But Also a Journey with Obstacles.** *J. Bluemel*. Safety Assessment, Genentech, Inc., South San Francisco, CA.

#32 9:40 **Chemical Aspects of Warhead and Payload Selection—Is There an Ideal Payload?** P. Howard. Spirogen, London, United Kingdom. Sponsor: *M. Hinrichs*.

#33 10:10 **Analytical Challenges and Novel Techniques for Exposure Assessment of Antibody-Drug Conjugates.** O. Saad. Genentech, South San Francisco, CA. Sponsor: *M. Hinrichs*.

Program Schedule (Continued)

Abstract #

#34 10:40 **Nonclinical Safety Assessment of ADCs: Challenges and Opportunities.** *N. Stagg*[2], and S. Chivers[1]. [1]ADC Therapeutics, London, United Kingdom; and [2]Safety Assessment, Genentech, Inc., South San Francisco, CA.

#35 11:10 **Regulatory Perspective for Nonclinical Development and Safety Assessment of Antibody-Drug Conjugates.** S. Ricci. Division of Hematology Products, Office of Hematology and Oncology Products, US FDA, CDER, Silver Spring, MD. Sponsor: *M. Hinrichs*.

11:40 **Panel Discussion/Q&A.**

Monday Morning, March 23
9:15 AM to 12:00 Noon
CC Ballroom 6F

Workshop Session: Linking Early-Life Stages: The First Step toward Lifecourse Risk Assessment

Approaches for Protecting Vulnerable Populations

Chairperson(s): *Sally P. Darney, ORD, US EPA, Research Triangle Park, NC; and Harvey J. Clewell, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.*

Endorser(s):
Reproductive and Developmental Toxicology Specialty Section
Risk Assessment Specialty Section
Scientific Liaison Coalition

Adverse health effects associated with chemical exposures are often greatest during periods of growth, differentiation, and development in embryonic, fetal, infant, and/or childhood life stages. Historically, risk assessment has considered the most critical and sensitive developmental window of exposure for each individual contaminant. However, a pregnant woman experiences exposures to a complex array of environmental contaminants and may transfer them to her fetus across the placenta and/or to her newborn through breast milk. Furthermore, mother and child will experience similar environmental exposures and modifying factors in their homes, schools, and communities, all of which may impact subsequent physiology, disease susceptibility, and lifelong health. To begin to address this complexity, we need ways to link exposures as they accrue and health outcomes as they emerge across time and life stages. This workshop will introduce lifecourse theory as applied to early-life stages, specifically to maternal and child health. Then experts in exposure and physiologically-based pharmacokinetic (PBPK) modeling will provide innovative approaches for predicting fetal and neonatal exposures based on the transfer of chemicals from pregnant women to their fetuses across the placenta and to their infants through breast milk, and for predicting biological effects of those exposures across life stages to adulthood. Drawing from a variety of data sources (human biomonitoring, longitudinal children's health studies, exposure modeling, and biomarker discovery) case studies will demonstrate applications of lifecourse PBPK models to selected chemical classes. The workshop will conclude with an integrative panel discussion on how to apply lifecourse models in risk assessment. (DISCLAIMER: The views expressed in this abstract do not necessarily reflect US EPA policy).

#36 9:15 **Linking Early-Life Stages: The First Step toward Lifecourse Risk Assessment.** *S. P. Darney*. Office of Research and Development, US EPA, Research Triangle Park, NC.

9:15 **Introduction.** S. P. Darney. US EPA, Research Triangle Park, NC.

#37 9:20 **The Lifecourse Health Development Perspective on Chemical Exposures.** N. Halfon. UCLA Center for Healthier Children, Families, and Communities, Los Angeles, CA. Sponsor: *S. Darney*.

Abstract #

#38 9:49 **PBPK Models for Human Pregnancy and Lactation Life Stages: A Case Study with PFOA and PFOS.** *H. J. Clewell*[1], and *A. Loccisano*[2]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [2]R.J. Reynolds Tobacco Co, Winston Salem, NC.

#39 10:18 **Improving Infant Exposure and Health Risk Estimates: Using Serum Data to Predict Polybrominated Diphenyl Ether Concentrations in Breast Milk.** *S. Marchitti*[1], *J. S. LaKind*[2], D. Q. Naiman[3], C. M. Berlin[4], *E. P. Hines*[5], *S. E. Fenton*[6], and *J. F. Kenneke*[1]. [1]NERL, US EPA, Athens, GA; [2]LaKind Associates, LLC, Catonsville, MD; [3]Johns Hopkins University, Baltimore, MD; [4]Penn State College of Medicine, Hershey, PA; [5]US EPA, Research Triangle Park, NC; and [6]NIEHS, Research Triangle Park, NC.

#40 10:47 **Pharmacokinetic Modeling of Lactational Exposure to Lipophilic Persistent Organic Pollutants (POPs): Applications in Epidemiology and Risk Assessment.** *M. Verner*. Department of Environmental Health, Harvard School of Public Health, Boston, MA.

#41 11:16 **Lifestage Physiological-Based Pharmacokinetic (PBPK) Modeling of Metabolically Activated Compounds.** *J. N. Smith*, N. Sadler, D. Mehinagic, *S. R. Crowell*, A. Wright, *C. Timchalk*, and *R. A. Corley*. Biological Monitoring & Modeling, Battelle Memorial Institute, Pacific Northwest Division, Richland, WA.

11:45 **Panel Discussion/Q&A.**

Monday Morning, March 23
9:15 AM to 12:00 Noon
CC Ballroom 6E

Workshop Session: The US Tox21 Collaboration: Advances Made and Lessons Learned

Chairperson(s): *Linda S. Birnbaum, NIEHS, Research Triangle Park, NC; and Robert Kavlock, US EPA/ORD, Washington. DC.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Molecular and Systems Biology Specialty Section
Regulatory and Safety Evaluation Specialty Section

Launched in 2007, Tox21 is a multiagency collaborative effort among the National Institutes of Health's National Institute of Environmental Health Sciences/National Toxicology Program and the National Center for Advancing Translational Sciences, the US Environmental Protection Agency's National Center for Computational Toxicology, and the US Food and Drug Administration. The objective of this partnership is to shift the assessment of chemical hazards from traditional experimental animal toxicology studies to one based on target-specific, mechanism-based, biological observations largely obtained using *in vitro* assays, with the ultimate aim of improving risk assessment for humans and the environment. More specific goals are to identify patterns of compound-induced biological response to characterize toxicity/disease pathways, prioritize compounds for more extensive toxicological evaluation, and develop models predictive of adverse health effects in humans. By 2014, ~1800 compounds have been screened across ~700 assays in the ToxCast program, while a 10,000-compound library (which includes all ToxCast chemicals) was screened across a smaller, more focused set of nuclear receptor and stress response pathway assays. Tox21 is committed to full public accessibility and transparency and is releasing data through PubChem and other outlets. This workshop will summarize the progress and lessons learned from these studies; present an example prioritization scheme/prediction model; detail ongoing efforts to increase chemical characterization, biological coverage, and public outreach; and present the perspective of an end user of the data generated by Tox21 and similar efforts.

Program Schedule (Continued)

Abstract #		
#42	9:15	**The US Tox21 Collaboration: Advances Made and Lessons Learned.** *L. S. Birnbaum*[1], and *R. Kavlock*[2]. [1]NIEHS, Research Triangle Park, NC; and [2]US EPA/ORD, Washington, DC.
	9:15	**Introduction.** L. S. Birnbaum[1], and R. Kavlock[2]. [1]NIEHS, Research Triangle Park, NC; and [2]US EPA/ORD, Washington, DC.
#43	9:25	**The US EPA ToxCast Program: Moving from Data Generation to Application.** *R. S. Thomas*. National Center for Computational Toxicology, US EPA, Research Triangle Park, NC.
#44	9:50	**Tox21 Phase II: Testing the 10K Library in Quantitative High-Throughput Screening Assays.** A. Simeonov. Division of Preclinical Innovation, National Center for Advancing Translational Sciences, Rockville, MD. Sponsor: *R. Tice*.
#45	10:15	**Tox21 Phase III: Improving on Biological Coverage, Relevance, and Public Outreach.** *R. S. Paules*. NIEHS/NTP, Research Triangle Park, NC.
#46	10:40	**Prioritization and Predictive Toxicology: Estrogen Receptor Active Compounds.** *W. Casey*. NIEHS, Durham, NC.
#47	11:05	**From Data to Decisions—An End User's Perspective.** *T. Bahadori*. Chemical Safety for Sustainability Research Program, US EPA, ORD, Washington, DC.
	11:30	**Panel Discussion/Q&A.**

Monday Morning, March 23
9:15 AM to 12:00 Noon
CC Ballroom 6D

Workshop Session: Toxicological Epigenomics: The Interface between the Environment and Human Health

Epigenomic Influences in Toxicological Responses

Jointly Provided by: *University of Arkansas for Medical Sciences College of Medicine and SOT Approved for AMA PRA Category 1 Credit™—See mobile app for details*

Chairperson(s): *Shaun D. McCullough, Clinical Research Branch, US EPA, Chapel Hill, NC; and Dana Dolinoy, University of Michigan, Ann Arbor, MI.*

Endorser(s):
Mechanisms Specialty Section
Molecular and Systems Biology Specialty Section
Women in Toxicology Special Interest Group

An individual's genetic makeup plays an important role in his or her response to toxicant exposure; however, polymorphisms in genes leading to susceptibility occur at a relatively low frequency. In addition to genetic makeup, epigenetic regulators, such as chromatin modifications, DNA methylation, and noncoding RNAs, function as critical and dynamic mediators of gene expression that shape the way that cells, tissues, and organisms respond to toxicant exposure. Toxicological epigenomics examines the role of these nongenetic mechanisms in the regulation of genes associated with toxicant response across the entire genome. By studying epigenetic mechanisms we will gain a better understanding of the molecular events underlying adverse health effects of toxicant exposure and improve our ability to predict susceptible populations. Further, the pliable nature of the epigenome allows for the use of epigenomics data to identify modifiable risk factors and develop models that will be used to limit the effects of toxicant exposure, thus promoting human health. This workshop will examine epigenomic mechanisms that are associated with exposures and outcomes by bringing experts together to discuss the interplay of epigenomics and toxicant exposure in the context of environmental health. We will explore questions such as: (1) How can animal models be utilized in toxicoepigenomics research?; (2) How can human cross-sectional, longitudinal, and clinical approaches best evaluate environmental effects on the epigenome and identify susceptible populations?; (3) How can epigenomic data be applied in risk assessment?; (4) How can toxicological epigenomics be applied to predict and mitigate the effects of toxicant exposure? Following this workshop, attendees will have a better understanding of how the epigenome influences the outcomes of toxicant exposure, how epigenomic studies can inform risk modification, and how epigenomics can be integrated into studies across many different aspects of toxicology.

Abstract #		
#48	9:15	**Toxicological Epigenomics: The Interface between the Environment and Human Health.** *S. D. McCullough*[1], and *D. Dolinoy*[2]. [1]Clinical Research Branch, US EPA, Chapel Hill, NC; and [2]Department of Environmental Health Sciences, University of Michigan, Ann Arbor, MI.
	9:15	**Introduction.** S. D. McCullough, Clinical Research Branch, US EPA, Chapel Hill, NC.
#49	9:20	**Epigenomic Changes: A Major Mechanism Whereby the Environment Speaks to the Genome.** *R. N. Hines*. National Health and Environmental Effects Research Laboratory, US EPA, Research Triangle Park, NC.
#50	9:49	**Lifecourse Exposures and the Epigenome: Linking Epigenetic Alterations to Phenotypic Effects.** *D. Dolinoy*. Department of Environmental Health Sciences, University of Michigan, Ann Arbor, MI.
#51	10:18	**Genes, Genomes, and Genotoxicity: *In Vivo* Epigenetic Toxicology of 1,3-Butadiene.** *I. Rusyn*. Department of Veterinary Integrative Biosciences, Texas A&M University, College Station, TX.
#52	10:47	**The Study of Impaired Systemic Immunity and Linked Epigenetic Modifications during Exposure to Polycyclic Aromatic Hydrocarbons in Ambient Air Pollution.** K. Nadeau. Division of Allergy, Immunology, and Rheumatology, Stanford University School of Medicine, Stanford, CA. Sponsor: *S. McCullough*.
#53	11:16	**Early-Life Environmental Influences on Epigenomics.** C. Breton. Division of Environmental Health, University of Southern California, Los Angeles, CA. Sponsor: *S. McCullough*.
	11:45	**Panel Discussion/Q&A.**

Monday Morning, March 23
9:15 AM to 12:00 Noon
CC Ballroom 6C

Workshop Session: Transporters As Gatekeepers for Chemical Exposure in Reproductive Tissues

Approaches for Protecting Vulnerable Populations

Chairperson(s): *Lauren M. Aleksunes, Pharmacology and Toxicology, Rutgers University, Piscataway, NJ; and Nathan J. Cherrington, University of Arizona, Tucson, AZ.*

Endorser(s):
Mechanisms Specialty Section
Molecular and Systems Biology Specialty Section
Reproductive and Developmental Toxicology Specialty Section

The passage of chemicals across the placenta and into the testes and ovaries is regulated by a number of physicochemical properties, as well as interactions with uptake and efflux transporters. In order to assess the risk for reproductive and developmental toxicities, it is critical to understand the mechanisms that restrict or enable entry to sensitive tissues. This workshop highlights the most recent knowledge of the interactions of drugs and

Program Schedule (Continued)

Abstract #

chemicals with transport proteins in the placenta, ovaries, and testes. In the placenta, these proteins are found in syncytiotrophoblasts, extraembryonic membranes, and fetal endothelial capillaries. Recent work also demonstrates the basal and inducible expression of drug transporters in the ovaries. In the testes, drug transporters are expressed in Sertoli and germ cells in the seminiferous epithelium. Emerging research from a number of laboratories demonstrates that transporters regulate the disposition of toxicants within the placenta, ovaries, and testes. Moreover, perturbations in the function of these proteins may alter drug responses and susceptibility to adverse events. The purpose of this workshop is to bring together experts in the fields of toxicology and reproduction to highlight the regulatory mechanisms that control chemical disposition in sensitive tissues. The workshop contains presentations and a roundtable discussion that will address the following questions: Which cell types are responsible for chemical transfer or extrusion in reproductive tissues? What physical and chemical properties of small molecules and biologics determine their disposition in the placenta, ovaries, and testes? What role do transporters play in the toxic responses of protected tissues? What are the advantages and disadvantages of preclinical animal models to recapitulate human chemical transfer? Do environmentally relevant concentrations of chemicals alter placental, ovarian, and testes barrier integrity?

#54	9:15	**Transporters As Gatekeepers for Chemical Exposure in Reproductive Tissues.** *L. M. Aleksunes*[1], and *N. J. Cherrington*[2]. [1]Pharmacology and Toxicology, Rutgers University, Piscataway, NJ; and [2]Pharmacology and Toxicology, University of Arizona, Tucson, AZ.
#55	9:15	**The Placenta, Ovaries, and Testes: Hosts of Transporters, Home of the Next Generation.** *R. E. Chapin*. Developmental and Reproductive Toxicology Center of Expertise, Pfizer Global R&D, Groton, CT.
#56	9:30	**Gestational Age-Dependent Fetal Exposure to Xenobiotics: The Role of Placental Transporters.** J. D. Unadkat. Pharmaceutics, University of Washington, Seattle, WA. Sponsor: *L. Aleksunes*.
#57	10:00	**Mechanisms That Reduce Transporter Function at the Blood-Placental Barrier.** *L. M. Aleksunes*[1], *K. M. Bircsak*[1], L. Francois[2], Y. Lin[1], J. Xiao[1], *X. Wen*[1], and N. Memon[3]. [1]Pharmacology and Toxicology, Rutgers University, Piscataway, NJ; [2]Maternal-Fetal Medicine, Rutgers University, New Brunswick, NJ; and [3]Pediatrics, Rutgers University, New Brunswick, NJ.
#58	10:30	**Impact of Phosphoramide Mustard Exposure on Ovarian Drug Transporter Expression.** *A. Keating*. Animal Science, Iowa State University, Ames, IA.
#59	11:00	**Uptake and Efflux Transporters at the Blood-Testis Barrier.** *D. M. Klein*, and *N. J. Cherrington*. Pharmacology and Toxicology, University of Arizona, Tucson, AZ.
	11:30	**Panel Discussion/Q&A.**

Abstract #

Monday Morning, March 23
9:15 AM to 12:00 Noon
CC Room 8

PL

Platform Session: Disposition and Pharmacokinetics

Chairperson(s): *Matthew W. Himmelstein, Investigative Sciences, DuPont Haskell Global Centers for Human Health and Environmental Sciences, Newark, DE; and Amy Roe, Procter & Gamble Co., Williamstown, KY.*

#60	9:15	**Preliminary Toxicokinetic Evaluation of Hydroxyurea in Hsd:Sprague-Dawley (SD) Rat Dams and Their Offspring for Designing Toxicokinetic and Toxicity Studies.** *T. Fennell*[1], S. Black[1], M. A. Silinski[1], R. A. Fernando[1], *B. McIntyre*[2], *V. G. Robinson*[2], and *S. Waidyanatha*[2]. [1]RTI International, Research Triangle Park, NC; and [2]Division of the National Toxicology Program, NIEHS, Research Triangle Park, NC.
#61	9:35	**Perchlorate Concentrations in Human Breast Milk vs. Urinary Excretion: Comparison to PBPK Predictions and Re-Estimation of Model Parameters and Predictions for the Lactating Mother and Breast-Fed Infant.** *P. M. Schlosser*[1], and A. B. Kirk[2]. [1]NCEA, US EPA, Washington, DC; and [2]University of North Texas Health Sciences Center, Fort Worth, TX.
#62	9:55	**Physiologically Based Pharmacokinetic Modelling of Darunavir/Ritonavir during Pregnancy.** *R. Greupink*[1], A. Colbers[2], C. Litjens[1,2], L. Swarts[1], D. Burger[2], and *F. Russel*[1]. [1]Pharmacology and Toxicology, Radboud University Medical Center, Nijmegen, Netherlands; and [2]Pharmacy, Radboud University Medical Center, Nijmegen, Netherlands.
#63	10:15	**Iron-Deficient Toxic Milk Leads to the "Mask" Phenotype in Hephaestin Knockout Mice.** *K. E. Page*[1], A. Sobh[1], E. Lachenauer[1], J. Luong[1], L. Han[1], H. Irimagawa[1], Y. He[1], D. W. Killilea[2], D. M. Frazer[3], G. J. Anderson[3], B. K. Fuqua[1,3], and *C. Vulpe*[1]. [1]Nutritional Sciences and Toxicology, UC Berkeley, Berkeley, CA; [2]Children's Hospital Oakland Research Institute, Oakland, CA; and [3]QIMR Berghofer Medical Research Institute, Brisbane, QLD, Australia.
#64	10:35	**Calorie Restriction Significantly Decreases the Intestinal Absorption of Digoxin in Mice.** *I. L. Csanaky*, H. J. Renaud, and *C. D. Klaassen*. University of Kansas Medical Center, Kansas City, KS.
#65	10:55	**Extrahepatic Metabolism May Complicate the IVIVC in Rats.** *P. Singh*, and M. Fonsi. Drug Metabolism and Pharmacokinetic, CiToxLAB, Evreux, France.
#66	11:15	**High-Throughput Pharmacokinetic Modeling Using Computationally Predicted Parameter Values: Dissociation Constants.** C. L. Strope[1], K. Mansouri[3], J. Kancherla[3], C. Stevens[4], and *J. F. Wambaugh*[2]. [1]The Hamner Institutes of Health Sciences, Research Triangle Park, NC; [2]National Center for Computational Toxicology, US Environmental Protection Agency, Research Triangle Park, NC; [3]ORISE Fellow at the National Center for Computational Toxicology, US Environmental Protection Agency, Research Triangle Park, NC; and [4]Ecosystems Research Division, US Environmental Protection Agency, Athens, GA.
#67	11:35	**Application of a Rat PBPK Model to Elucidate Kidney Effects Induced by ETBE and Tert-Butanol.** *K. D. Salazar*[1], C. J. Brinkerhoff[2], *J. S. Lee*[1], and W. A. Chiu[1]. [1]NCEA, US EPA, Washington, DC; and [2]OPPT, US EPA, Washington, DC.

MONDAY

Program Schedule (Continued)

Monday Morning, March 23,
9:15 AM to 10:15 AM
CC Room 24C

E

Exhibitor-Hosted Session: 3D Microtissue Cultures: Use in Long-Term Hepatocyte ADME-Tox Studies

Presented by:
BioreclamationIVT and InSphero Inc.

InSphero and BioreclamationIVT present the latest data on the characterization of 3D human liver microtissues and their application to toxicity testing, drug metabolism studies, and disease modelling. In addition, the attendees will learn about donor-to-donor differences and the use of liver non-parenchymal cells for 3D liver cultures.

Monday Morning, March 23,
9:15 AM to 10:15 AM
CC Room 22

E

Exhibitor-Hosted Session: Considerations for Nonclinical Safety Testing of Biologics, Biosimilars, and Biobetters

Presented by:
Toxikon Corporation

New biologics are submitted through an IND process similar to small molecules and require a full battery of safety testing. Biosimilars follow a specific pathway, designed based on an innovator, and often have an abbreviated safety testing program. We will use case studies to illustrate the differences between the programs.

Monday Morning, March 23,
9:15 AM to 10:15 AM
CC Room 24B

E

Exhibitor-Hosted Session: From Candidate Drug to Clinical POC: Managing the Continuum

Presented by:
Covance

Experts in safety, pharmacology, DMPK, regulatory, and clinical strategy discuss approaches to successfully develop a molecule from candidate selection through POC. We'll focus on drug safety strategy as part of the overall drug development plan, and provide insights on the importance of scientific and operational continuity to achieve regulatory milestones.

Monday Morning, March 23,
9:15 AM to 10:15 AM
CC Room 24A

E

Exhibitor-Hosted Session: Safety Biomarkers in Preclinical Studies: A Clinical Pathology Perspective

Presented by:
MPI Research

This session will provide an overview of the current principles involved in the application of safety biomarkers in preclinical research studies focusing on study design strategies, organ system evaluation, and validation principles. Additionally, integration of biomarker data with other study endpoints (e.g., traditional clinical pathology and pathology) will be discussed.

Abstract #

Monday Morning, March 23
9:30 AM to 11:30 AM
CC Room 4

Global Collaboration Coffee

The Society of Toxicology invites all Global Gallery poster presenters and representatives of societies from around the world to the Global Collaboration Coffee. Invitees also include SOT Special Interest Group leaders, IUTOX Executive Committee members, SOT Councilors, 2015 Global Senior Scholars and their hosts, and the 2015 recipients of the SOT/AstraZeneca/SOT Endowment Fund/IUTOX Travel Awards. This event offers an opportunity for scientific leaders to meet and make plans for future collaborations. Following the coffee, attendees will adjourn together to the Global Gallery, where presenters will share their posters in "Representative Attended" poster time from 11:45 am to 12:15 pm. See page 165 for more information about the Global Gallery of Toxicology.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Biotransformation and Cytochrome P450

Chairperson(s): *Patrick Iversen, Oregon State University, Corvallis, OR.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *9:30 AM–11:00 AM*

#68 **Poster Board Number 101**
AhR-Active Tryptophan Metabolites Exhibit Gene-Specific AhR Agonist and Antagonist Activities in Young Adult Mouse Colon Cells. *Y. Cheng, U. Jin,* and *S. H. Safe*. Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX.

#69 **Poster Board Number 102**
Prediction of Hepatic Clearance of Slowly Metalized Compounds Using 3D Human Liver Microtissues. R. Tolando[3], *P. Gunness*[1], J. M. Kelm[1], D. Müller[2], R. Class[2], and *S. Messner*[1]. [1]InSphero AG, Schlieren, Switzerland; [2]Pharmacelsus GmbH, Saarbrücken, Germany; and [3]BioreclamationIVT, Brussels, Belgium.

#70 **Poster Board Number 103**
Metabolic Redirection of Cytochrome P450 3A2 *In Vivo* Induced by Translation Arrest. *P. L. Iversen*, A. Annalora, and *C. Marcus*. Environmental & Molecular Toxicology, Oregon State University, Corvallis, OR.

#71 **Poster Board Number 104**
Exon Skipping of Cytochrome P450 3A2: New Ways to Dissect Protein Function *In Vivo.* *P. L. Iversen*, A. Annalora, and *C. Marcus*. Environmental & Molecular Toxicology, Oregon State University, Corvallis, OR.

#72 **Poster Board Number 105**
Acyl Glucuronide Formation in Human and Humanized UDP-Glucuronosyltransferase (UGT) 1 Mice. *R. Fujiwara*[1], Y. Kutsuno[1], T. Itoh[1], and *R. H. Tukey*[2]. [1]School of Pharmacy, Kitasato University, Tokyo; and [2]University of California, San Diego, La Jolla, CA.

Program Schedule (Continued)

Abstract #

#73 **Poster Board Number 106**
Role of CYP2B in Phenobarbital-Induced Hepatocyte Proliferation in Mice. *L. Li*[1], X. Bao[2], *M. Negishi*[3], and *X. Ding*[1]. [1]College of Nanoscale Science and Engineering, SUNY Polytechnic Institute, Albany, NY; [2]Wadsworth Center, New York State Department of Health, Albany, NY; and [3]National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC.

#74 **Poster Board Number 107**
Impact of Hepatic P450-Mediated Biotransformation on the Disposition and Respiratory Tract Toxicity of Inhaled Naphthalene. N. Kovalchuk[1,4], *L. Li*[3], *P. Edwards*[2], *Q. Zhang*[1,4], *L. S. Van Winkle*[2], and *X. Ding*[3]. [1]Wadsworth Center, New York State Department of Health, Albany, NY; [2]UC Davis, Davis, CA; [3]College of Nanoscale Science and Engineering, SUNY Polytechnic Institute, Albany, NY; and [4]School of Public Health, State University of New York at Albany, Albany, NY.

#75 **Poster Board Number 108**
Effect of PCB136 Exposure on Drug Transporters and PPARα-Signaling in Mouse Liver. *Y. Li*[1], *L. Cheng*[1], *I. Kania-Korwel*[2], *H. Lehmler*[2], and *J. Cui*[1]. [1]University of Washington, Seattle, WA; and [2]University of Iowa, Iowa City, IA.

#76 **Poster Board Number 109**
CYP1B1 Enhances Cell Proliferation and Metastasis through Induction of EMT and Activation of Wnt/β-catenin Signaling via Promotion of Sp1 Expression. *Y. Kwon*[1], *K. Lim*[2], *D. Kim*[3], and *Y. Chun*[1]. [1]College of Pharmacy, Chung-Ang University, Seoul, Republic of Korea; [2]College of Pharmacy, Ewha Womans University, Seoul, Republic of Korea; and [3]Department of Biological Sciences, Konkuk University, Seoul, Republic of Korea.

#77 **Poster Board Number 110**
(3H-pyrrolizin-7-yl)Methanol: A New Reactive Metabolite of Pyrrolizidine Alkaloids. M. M. Fashe[1], R. O. Juvonen[1], A. Petsalo[2], M. Rahnasto-Rilla[1], S. Auriola[2], P. Soininen[2], J. Vepsäläinen[2], and M. Pasanen[1]. [1]Pharmacology and Toxicology, University of Eastern Finland, Kuopio, Finland; and [2]Pharmaceutical Chemistry, University of Eastern Finland, Kuopio, Finland. Sponsor: *R. Coulombe*.

#78 **Poster Board Number 111**
Prandial Effect on the Systemic Exposure to Amisulpride. M. R. Nepal[1], K. Noh[1], K. Jeong[1], M. Kang[1], H. Seo[2], Y. Jung[2], H. Jeong[2], E. Kim[2], W. Kang[2], and *T. Jeong*[1,2]. [1]College of Pharmacy, Yeungnam University, Gyeongsan, Republic of Korea; and [2]College of Pharmacy, Chung-Ang University, Seoul, Republic of Korea.

#79 **Poster Board Number 112**
Phase I and II Xenobiotic Biotransformation Responses in Tilapia Species from Lagos Lagoon, Nigeria. *A. O. Adeogun*[1], *O. R. Ibor*[1], T. O. Omobowale[2], and A. Arukwe[3]. [1]Department of Zoology, University of Ibadan, Ibadan, Nigeria; [2]Department of Veterinary Medicine, University of Ibadan, Ibadan, Nigeria; and [3]Department of Biology, Norwegian University of Science and Technology, Trondheim, Norway.

Abstract #

#80 **Poster Board Number 113**
Biotransformation of Benzo[c]fluorene by Human and Rat Liver Subcellular Fractions and Bactosomes. E. Perdu[1], S. Bruel[1], M. Chopard-Lallier[1,2], L. Debrauwer[1], and J. Cravedi[1]. [1]Toxalim Research Center, INRA, Toulouse, France; and [2]Modèles pour l'Ecotoxicologie et la Toxicologie, INERIS, Verneuil-en-Halatte, France. Sponsor: *D. Zalko*.

#81 **Poster Board Number 114**
LC Tandem MS-Based Assessment of Acetaminophen Bioactivation in Human Liver and Kidney: NAPQI Formation and CYP Activities. E. Arzuk[1], B. Turna[2], M. Sozbilen[3], and H. Orhan[1]. [1]Department of Pharmaceutical Toxicology, Ege University, Faculty of Pharmacy, Bornova-Izmir, Turkey; [2]Urology, Ege University, Faculty of Medicine, Izmir, Turkey; and [3]General Surgery, Ege University, Faculty of Medicine, Izmir, Turkey. Sponsor: *A. Karakaya*.

#82 **Poster Board Number 115**
Attenuation of Hyperoxic Lung Injury in Cyp1b1-/- Mice. A. C. Veith[1,2], B. Bou Aram[2], W. Jiang[2], L. Wang[2], C. Chu[2], *X. Couroucli*[2], and *B. Moorthy*[1,2]. [1]Interdepartmental Program in Translational Biology and Molecular Medicine, Baylor College of Medicine, Houston, TX; and [2]Pediatrics-Newborn, Baylor College of Medicine, Houston, TX.

#83 **Poster Board Number 116**
Celecoxib Regulates Liver CYP and Alters Testosterone Homeostasis in a Rat Hepatocarcinogenesis Model. M. E. Salcido-Neyoy[2], *A. Sierra-Santoyo*[1], M. L. Lopez-Gonzalez[1], *D. C. Escobar-Wilches*[1], and S. Villa-Treviño[2]. [1]Toxicology, CINVESTAV-IPN, Mexico City, Mexico; and [2]Cell Biology, CINVESTAV-IPN, Mexico City, Mexico.

#84 **Poster Board Number 117**
Cytochrome P450 (*Cyp*)1a1-Null, (*Cyp1a2*)-Null, and (*Cyp1a1/1a2*)-Double Null Mice Display Differential Susceptibilities to Hyperoxic Lung Injury *In Vivo*: Role of Oxidative Stress. *B. Moorthy*[1,2], L. Wang[1], *X. Couroucli*[1], K. Lingappan[1], *G. Zhou*[2], and *W. Jiang*[1]. [1]Pediatrics, Baylor College of Medicine, Houston, TX; and [2]Institute of Biotechnology, Texas A&M University, Houston, TX.

#85 **Poster Board Number 118**
Metabolome-Wide Association Study of Acetaminophen Overdose. K. H. Liu[1,2], *M. R. McGill*[3], S. C. Curry[4], *D. I. Walker*[2], *K. Uppal*[2], O. Obiyanyo[2], *J. D. Chandler*[2], S. Banton[2], *S. Li*[2], *H. Jaeschke*[3], and *D. P. Jones*[2]. [1]Molecular and Systems Pharmacology Program, Emory University, Atlanta, GA; [2]Clinical Biomarkers Laboratory, Emory University School of Medicine, Atlanta, GA; [3]Dept. of Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS; and [4]Banner Good Samaritan Medical Center, University of Arizona, Phoenix, AZ.

#86 **Poster Board Number 119**
Mechanisms of Regulation of Hepatic and Pulmonary Cytochrome P4501A Enzymes by 3-Methylcholanthrene in Mice *In Vivo*. P. Maturu, W. Jiang, L. Wang, C. Chu, and *B. Moorthy*. Pediatrics, Baylor College of Medicine, Houston, TX.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#87 **Poster Board Number 120**
Cytochrome P450 20A1: Diversity and Potential Functions of a Major Orphan P450. B. Lemaire[1], *J. V. Goldstone*[1], D. Lamb[2], A. Kubota[1], D. Nelson[3], and *J. J. Stegeman*[1]. [1]Biology, WHOI, Woods Hole, MA; [2]University of Swansea, Swansea, United Kingdom; and [3]University of Tennessee, Memphis, TN.

#88 **Poster Board Number 121**
***In Vivo* Evaluation of Cytochrome P450 Activity in Diabetic Nonalcoholic Steatohepatitis Mice.** *H. Li*, *J. Clarke*, *A. L. Dzierlenga*, and *N. J. Cherrington*. Pharmacology & Toxicology, University of Arizona, Tucson, AZ.

#89 **Poster Board Number 122**
Elucidation of the Roles of P450 CYP3A and Uptake Transporters in Species Differences in Drug Toxicity Using Cryopreserved Knockout and Humanized Transgenic Mouse Hepatocytes. *U. Doshi*[1], K. Amaral[1], N. Scheer[2], and *A. P. Li*[1]. [1]In Vitro ADMET Laboratories, Advanced Pharmaceutical Sciences, Columbia, MD; and [2]Taconic Biosciences, Hudson, NY.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Pharmacogenomics and Genetic Polymorphisms

Chairperson(s): *Rui Xiong, University of Colorado Denver, Aurora, CO.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#90 **Poster Board Number 124**
Interrogating the Mechanism of microRNA HSA-miR-29A-3P-Mediated Inhibition of CYP2C19 in Human Liver Cells. D. Yu, *W. H. Tolleson*, *B. Green*, *J. C. Fuscoe*, *I. Pogribny*, and *B. Ning*. National Center for Toxicological Research, Jefferson, AR.

#91 **Poster Board Number 125**
Activity of the MRP2/ABCC2 Efflux Transporter: Comparison of Wild-Type MRP2 and Polymorphic Variants. *X. Wen*[1], *M. S. Joy*[2], and *L. M. Aleksunes*[1]. [1]Pharmacology and Toxicology, Rutgers University, Piscataway, NJ; and [2]Pharmaceutical Sciences, University of Colorado, Aurora, CO.

#92 **Poster Board Number 126**
RNAi- and Small Molecule-Induced Inhibition of Arylamine N-Acetyltransferase 1 Reduce Anchorage Independent Growth in Breast Cancer Cell Line MDA-MB-231. M. A. Doll, *M. W. Stepp*, *J. C. States*, and *D. W. Hein*. Pharmacology and Toxicology, University of Louisville, Louisville, KY.

#93 **Poster Board Number 127**
More Frequent Breast Tumors in Rapid Compared to Slow Rat Nat2 Congenic Fischer 344 Rats Administered Methylnitrosourea. *M. W. Stepp*[1,2], M. A. Doll[1,2], *J. C. States*[1,2], and *D. W. Hein*[1,2]. [1]Pharmacology and Toxicology, University of Louisville, Louisville, KY; and [2]James Graham Brown Cancer Center, University of Louisville, Louisville, KY.

Abstract #

#94 **Poster Board Number 128**
Contribution of Gene Polymorphisms in the Folate Metabolic Pathway to Pancreatic Cancer. *S. Chittiboyina*, *L. M. Kamendulis*, and *B. A. Hocevar*. Environmental Health, Indiana University School of Public Health, Bloomington, IN.

#95 **Poster Board Number 129**
Identification of *ABCB1* Promoter Haplotypes and Their Effects on Placental P-gp Levels. *J. T. Speidel*[1], *C. E. Cross*[2], *M. Xu*[2], and *S. Abdel-Rahman*[2]. [1]Biochemistry and Molecular Biology, University of Texas Medical Branch, Galveston, TX; and [2]Obstetrics and Gynecology, University of Texas Medical Branch, Galveston, TX.

#96 **Poster Board Number 130**
***MGMT* P/E Haplotypes Alter Transcription Factors' Binding and *MGMT* Promoter Activity.** *M. Xu*, I. Nekhayeva, *C. E. Cross*, J. T. Speidel, and *S. Abdel-Rahman*. Obstetrics and Gynecology, UTMB, Galveston, TX.

#97 **Poster Board Number 131**
Genetic Polymorphisms and Metabolic Activities of CYP1A2, CYP2A6, XO, and NAT2 in Agricultural Communities in Eastern Washington. *J. Park*[1], *Y. Lin*[2], B. Phillips[3], *E. M. Vigoren*[3], *B. Thompson*[4], and *E. M. Faustman*[1,3]. [1]Environmental & Occupational Health Sciences, University of Washington, Seattle, WA; [2]Pharmaceutics, University of Washington, Seattle, WA; [3]Institute for Risk Analysis and Risk Communication, University of Washington, Seattle, WA; and [4]Fred Hutchinson Cancer Research Center, Seattle, WA.

#98 **Poster Board Number 132**
Distinct Metabolomic Profiles in Inbred Mouse Strains. R. Zeidan[1], D. Medina-Cleghorn[1], *K. E. Page*[1], S. McLachlan[1], E. Eskin[2,3], D. K. Nomura[1], and *C. Vulpe*[1]. [1]Nutritional Sciences and Toxicology, University of California-Berkeley, Berkeley, CA; [2]Human Genetics, University of California - Los Angeles, Los Angeles, CA; and [3]Computer Science, University of California - Los Angeles, Los Angeles, CA.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Liver

Chairperson(s): *Martin J. Ronis, University of Arkansas for Medical Sciences, Little Rock, AR.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *9:30 AM–11:00 AM*

#99 **Poster Board Number 135**
Liver Microarray Analysis by Estrous Cycle Staging after 90-Day Tetrabromobisphenol A (TBBPA) Exposure. *B. Merrick*, K. R. Shockley, *D. L. Morgan*, K. Gerrish, S. Elmore, *J. P. Stanko*, *A. R. Pandiri*, T. Ton, and *J. K. Dunnick*. DNTP, NIEHS, Research Triangle Park, NC.

Program Schedule (Continued)

Abstract #

#100 **Poster Board Number 136**
Whole Genome Transcriptome Profiling of Livers from Rats Treated with the Chemopreventive Agent Oltipraz. *M. J. Liguori*, T. Sharapova, and E. A. Blomme. Cellular, Molecular, & Exploratory Toxicology, AbbVie, North Chicago, IL.

#101 **Poster Board Number 137**
Withaferin A Is a Potent Inducer of the Nrf2-Mediated Environmental Stress Response. D. L. Palliyaguru[1], D. V. Chartoumpekis[2], N. Wakabayashi[2], S. V. Singh[2], and *T. Kensler*[2,1]. [1]Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA; and [2]Pharmacology and Chemical Biology, University of Pittsburgh, Pittsburgh, PA.

#102 **Poster Board Number 138**
Safety Assessment of Pet Food Ingredients Using Cryopreserved Canine Hepatocytes-Based *In Vitro* Assays. *K. Choi*[1], B. Jeffery[2], *J. E. Riviere*[1], and *N. A. Monteiro-Riviere*[1]. [1]Anatomy and Physiology College of Veterinary Medicine, Kansas State University, Manhattan, KS; and [2]Mars Inc., Global Quality and Food Safety, McLean, VA.

#103 **Poster Board Number 139**
Exploring Phenobarbital's Mechanism of Action in the Rat. *M. Osborne*[1], *R. Currie*[2], *J. Wright*[2], and *N. J. Gooderham*[1]. [1]Imperial College London, London, United Kingdom; and [2]Syngenta, Bracknell, United Kingdom.

#104 **Poster Board Number 140**
Differences of Metabolic Functions and Sensitivity to Chemical Compounds between Human Fetal and Adult Hepatocytes. S. Ishida[1], S. Kim[1], T. Kubo[1], Y. Kuroda[1], T. Ishii[3], A. Miyajima-Tabata[2], T. Matsushita[3], and Y. Sekino[1]. [1]Pharmacology, National Institute of Health Sciences, Tokyo, Japan; [2]Medical Devices, National Institute of Health Sciences, Tokyo, Japan; and [3]Sojo University, Kumamoto, Japan. Sponsor: *A. Nishikawa*.

#105 **Poster Board Number 141**
Cytotoxic Synergy between Cytokines and NSAIDs Associated with Idiosyncratic Hepatotoxicity Is Driven by Mitogen-Activated Protein Kinases. *A. Maiuri*[1,2], L. Gora[1], A. B. Breier[1], J. Turkus[1], *P. E. Ganey*[1,2], and *R. A. Roth*[1,2]. [1]Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI; and [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#106 **Poster Board Number 142**
Berberine Alters Bile-Acid Homeostasis in Mouse Liver and Hepatocytes. *Y. Le*[1], P. Bu[1], *Y. Zhang*[2], *C. D. Klaassen*[2], and *X. Cheng*[1]. [1]Pharmaceutical Sciences, St. John's University, Queens, NY; and [2]Pharmacology and Toxicology, University of Kansas Medical Center, Kansas City, KS.

Abstract #

#107 **Poster Board Number 143**
Fibrin(ogen) Engagement of $\alpha_M\beta_2$-Integrin Limits Chronic Liver Fibrosis Induced by a Bile Duct Toxicant in Mice. *N. Joshi*[1,3], *A. K. Kopec*[2], K. L. Towery[2], H. Cline[2], M. J. Flick[4], and *J. P. Luyendyk*[2,3]. [1]Pharmacology & Toxicology, Michigan State University, East Lansing, MI; [2]Pathobiology & Diagnostic Investigation, Michigan State University, East Lansing, MI; [3]Center for Integrative Toxicology, Michigan State University, East Lansing, MI; and [4]Div. of Experimental Hematology and Cancer Biology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH.

#108 **Poster Board Number 144**
Hepatotoxic Effects of Lambda-Cyhalothrin in Rats. *O. S. El-Tawil*[1], Y. Abd-Elhakim[2], *A. A. Abou-Hadeed*[2], N. El-Sharkawy[2], and *O. S. El-Tawil*[1,2]. [1]Toxicology Department, Cairo University, Faculty of Veterinary Medicine, Cairo, Egypt; and [2]Forensic Medicine and Toxicology, Zagazig University, Faculty of Veterinary Medicine, Zagazig, Egypt.

#109 **Poster Board Number 145**
Kupffer Cell-Mediated Exacerbation of Methimazole-Induced Acute Liver Injury in Rats. S. Akai[1], Y. Uematsu[1], K. Tsuneyama[2], A. Nakajima[1], *S. Oda*[1], and *T. Yokoi*[1]. [1]Department of Drug Safety Sciences, Nagoya University Graduate School of Medicine, Nagoya, Japan; and [2]Department of Diagnostic Pathology, Graduate School of Medicine and Pharmaceutical Science for Research, University of Toyama, Toyama, Japan.

#110 **Poster Board Number 146**
A 3D HepG2 Spheroid Toxicity Pathway Reporter Platform to Assess DILI Liability. S. Hiemstra[1], S. Ramaiahgari[1], S. Wink[1], L. Price[2], K. van den Nieuwendijk[1], and *B. van de Water*[1]. [1]Toxicology, LACDR, Leiden, Netherlands; and [2]OcellO B.V., Leiden, Netherlands.

#111 **Poster Board Number 147**
Alterations of microRNA and Gene Expression in Rats Exposed to the Flame Retardant 1,2-Dibromo-4-(1,2-dibromoethyl)-cyclohexane (TBECH). I. Curran, A. M. Gannon, D. Pinke, V. Liston, D. Caldwell, A. Nunnikhoven, and *G. Bondy*. Bureau of Chemical Safety, Health Canada, Ottawa, ON, Canada.

#112 **Poster Board Number 148**
Acetaminophen Increases Hepatocyte Tissue Factor Procoagulant Activity *In Vitro*. A. Wojcicki[1], *A. K. Kopec*[1], *N. Joshi*[2,3], H. Cline[1], and *J. P. Luyendyk*[1,3]. [1]Pathobiology & Diagnostic Investigation, Michigan State University, East Lansing, MI; [2]Pharmacology & Toxicology, Michigan State University, East Lansing, MI; and [3]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#113 **Poster Board Number 149**
Involvement of the Thrombin Receptor Protease-Activated Receptor-1 (PAR-1) in TCDD-Elicited Steatohepatitis. *J. P. Luyendyk*[1], *R. Nault*[2], *A. K. Kopec*[1], *K. A. Fader*[2], and *T. R. Zacharewski*[2]. [1]Pathobiology and Diagnostic Investigation, Michigan State University, East Lansing, MI; and [2]Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#114 **Poster Board Number 150**
Role of Fibrin(ogen) in Hepatocyte Proliferation after Acetaminophen Overdose. *A. K. Kopec*[1], *N. Joshi*[2,3], K. L. Towery[1], H. Cline[1], M. J. Flick[4], and *J. P. Luyendyk*[1,3]. [1]Pathobiology & Diagnostic Investigation, Michigan State University, East Lansing, MI; [2]Pharmacology & Toxicology, Michigan State University, East Lansing, MI; [3]Center for Integrative Toxicology, Michigan State University, East Lansing, MI; and [4]Division of Experimental Hematology & Cancer Biology, Cincinnati Children's Hospital, Cincinnati, OH.

#115 **Poster Board Number 151**
Integration of Liver Gene Expression and Clinical Pathology Data Provides Insight into Bilirubin Alterations. *C. M. Karbowski*, S. Taylor, R. Tyler, *M. Ameri*, *M. J. Horner*, *H. Hamadeh*, *C. Afshari*, and P. Nioi. Comparative Biology & Safety Sciences, Amgen Inc, Thousand Oaks, CA.

#116 **Poster Board Number 152**
Induction of Mitochondrial Biogenesis in Acetaminophen Hepatotoxicity and Possible Role in Liver Regeneration. *K. Du*[1], *M. R. McGill*[1], A. Mansouri[2], *Y. Xie*[1], and *H. Jaeschke*[1]. [1]Pharmacology, Toxicology & Therapeuticals, University of Kansas Medical Center, Kansas City, KS; and [2]Centre de Recherche Biomédicale, Bichat Beaujon CRB3, University Paris, Paris, France.

#117 **Poster Board Number 153**
RNA Sequencing Analysis of Primary Human Hepatocytes Exposed to PFOA or PFOS. *K. Beggs*[1], *S. McGreal*[1], S. Gunewardena[2], and *U. Apte*[1]. [1]Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center, Kansas City, KS; and [2]Molecular and Integrative Physiology, University of Kansas Medical Center, Kansas City, KS.

#118 **Poster Board Number 154**
Delayed DNA Repair Induces Cell Cycle Checkpoints and Delays Liver Regeneration after Acetaminophen Overdose. *P. Borude*, *B. Bhushan*, M. Manely, and *U. Apte*. Pharmacology, Toxicology and Therapeutics, KUMC, Kansas City, KS.

#119 **Poster Board Number 155**
Role of Annexin A1 and Calpastatin in Heteroprotection by Thioacetamide against a Lethal Dose of Acetaminophen in Mice. *V. P. Dadhania*[1], *L. Muskhelishvili*[2], *J. R. Latendresse*[2], and *H. M. Mehendale*[1]. [1]Toxicology, University of Louisiana at Monroe, Monroe, LA; and [2]Toxicologic Pathology Associates, National Center for Toxicological Research, Jefferson, AR.

#120 **Poster Board Number 156**
Mechanistic Basis of Altered Morphine Disposition in Nonalcoholic Steatohepatitis. *A. L. Dzierlenga*[1], *J. Clarke*[1], *T. L. Hargraves*[1], *G. R. Ainslie*[4], T. Vanderah[2], *M. Paine*[3,4], and *N. J. Cherrington*[1]. [1]Pharmacology & Toxicology, University of Arizona, Tucson, AZ; [2]Pharmacology, University of Arizona, Tucson, AZ; [3]Experimental & Systems Pharmacology, Washington State University, Pullman, WA; and [4]Toxicology, University of North Carolina, Chapel Hill, NC.

Abstract #

#121 **Poster Board Number 157**
MiR21-Facilitated Cyclin D1 Protein Surge Is Crucial for Leptin-Mediated Fibrogenesis in Disinfection Byproduct (DBP)-Induced Hepatotoxicity. S. Pourhoseini[1], *R. K. Seth*[1], D. Dattaroy[1], *S. Das*[1], *M. Nagarkatti*[2], *S. Chatterjee*[1], F. Alhasson[1], *G. Michelotti*[3], and *A. Diehl*[3]. [1]Environmental Health Sciences, University of South Carolina, Columbia, SC; [2]Dept. of Pathology, Microbiology and Immunology, University of South Carolina, School of Medicine, Columbia, SC; and [3]Division of Gastroenterology, Duke University, Durham, NC.

#122 **Poster Board Number 158**
Mechanism of Environmental Toxin-Induced Fibrogenesis in Fatty Liver Disease. D. Dattaroy[1], S. Pourhoseini[1], *S. Das*[1], F. Alhasson[1], *R. K. Seth*[1], *M. Nagarkatti*[2], *G. Michelotti*[3], *A. Diehl*[3], and *S. Chatterjee*[1]. [1]Environmental Health Sciences, University of South Carolina, Columbia, SC; [2]Dept. of Pathology, Microbiology and Immunology, School of Medicine, University of South Carolina, Columbia, SC; and [3]Division of Gastroenterology, Duke University, Durham, SC.

#123 **Poster Board Number 159**
Effect of Nonalcoholic Steatohepatitis on Renal Filtration and Secretion of Adefovir. T. Laho[2], *J. Clarke*[1], H. Li[1], *A. L. Dzierlenga*[1], and *N. J. Cherrington*[1]. [1]Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ; and [2]Department of Pharmacology, Charles University, Hradec Kralove, Czech Republic.

#124 **Poster Board Number 160**
Alteration of the Rho-Kinase Pathway Activity Disorganizes Bile Canaliculi Dynamics and Perturbs Bile Acid Clearance in Drug-Induced Cholestasis. A. Sharanek[1], A. Burban[1], M. Burbank[1], R. Le Guevel[1,2], C. Chesne[3], A. Guillouzo[1], and C. Guguen-Guillouzo[1,3]. [1]INSERM 991, Rennes University, Rennes, France; [2]ImpaCcell, Rennes, France; and [3]Biopredic International, Saint-Grégoire, France. Sponsor: *M. Pallardy*.

#125 **Poster Board Number 161**
Mechanistic Insight into Vinyl Chloride-Induced Liver Injury. A. M. Bushau, L. Anders, A. Lang, L. G. Poole, K. C. Falkner, *G. E. Arteel*, *M. Cave*, *C. McClain*, and *J. Beier*. University of Louisville, Louisville, KY.

#126 **Poster Board Number 162**
Interpreting Elevations in Serum Cytokeratin 18 and Alanine Aminotransferase with DILIsym®, a Mechanistic Model of DILI. J. L. Woodhead, L. Shoda, D. Longo, *P. B. Watkins*, S. Q. Siler, and B. A. Howell. The Hamner-UNC Institute for Drug Safety Sciences, Research Triangle Park, NC.

#127 **Poster Board Number 163**
Gene Expression Patterns Associated with Histopathology in Toxic Liver Injury. D. L. Ippolito[1], M. AbdulHameed[2], G. Tawa[2], C. E. Baer[3], B. S. Snowden[4], A. Wallqvist[2], and J. D. Stallings[1]. [1]Environmental Health, US Army Center for Environmental Health Research, Fort Detrick, MD; [2]Department of Defense, Biotechnology High Performance Computing Software Applications Institute, Fort Detrick, MD; [3]Excet, Inc., Frederick, MD; and [4]Maryland Institute for Applied Environmental Health, University of Maryland, College Park, MD. Sponsor: *D. Jackson*.

Program Schedule (Continued)

Abstract #

#128 **Poster Board Number 164**
Cytotoxicity of 3-(3,5-Dichlorophenyl)-2,4-thiazolidinedione (DCPT) and Its Metabolites in Different Cell Lines. S. Aljubran, R. Tchao, and *P. J. Harvison*. Dept. of Pharmaceutical Sciences, University of the Sciences in Philadelphia, Philadelphia, PA.

#129 **Poster Board Number 165**
Exposure to Vinyl Chloride Metabolites Exacerbates Liver Injury Caused by High-Fat Diet in Mice. L. Anders, A. Douglas, A. M. Bushau, A. Lang, K. C. Falkner, *G. E. Arteel*, *M. Cave*, *C. McClain*, and *J. Beier*. University of Louisville, Louisville, KY.

#130 **Poster Board Number 166**
Hepatotoxicity and Metabolism of Vinclozolin during Pregnancy. *F. G. Garcia-Montes de Oca*[1], M. L. Lopez-Gonzalez[1], M. G. Moreno[2], P. Muriel[2], S. Galindo-Gomez[3], M. Shibayama[3], V. Tsutsumi[3], and *A. Sierra-Santoyo*[1]. [1]Toxicology, CINVESTAV-IPN, Mexico City, Mexico; [2]Pharmacology, CINVESTAV-IPN, Mexico City, Mexico; and [3]Infectomics and Molecular Pathogenesis, CINVESTAV-IPN, Mexico City, Mexico.

#131 **Poster Board Number 167**
Resveratrol Protects against Acetaminophen Hepatotoxicity by Inducing Stress Genes and Inhibiting Release of Apoptosis-Inducing Factor (AIF) from Mitochondria. *M. R. McGill*, *K. Du*, *Y. Xie*, M. Bajt, and *H. Jaeschke*. Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#132 **Poster Board Number 168**
***In Vitro* Assessment of Primary Hepatocyte-Derived Exosomes and Their Role in Drug-Induced Liver Injury.** *N. S. Holman*[1,2], *M. Mosedale*[2], *E. LeCluyse*[1,2], and *P. B. Watkins*[1,2]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; and [2]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#133 **Poster Board Number 169**
Establishment and Characterization of HepaRG Cell Line Over-Expressing Human Flavin-Containing Monooxygenase-3 (FMO3). *S. Rudraiah*, W. Krueger, *T. P. Rasmussen*, and *J. E. Manautou*. Univ. of Connecticut, Storrs, CT.

#134 **Poster Board Number 170**
Role of Integrin-Linked Kinase (ILK) in Liver Injury and Regeneration after Acetaminophen Overdose. *B. Bhushan*, G. Edwards, and *U. Apte*. Department of Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS.

#135 **Poster Board Number 171**
Liver Kupffer Cells Contribute to Early Circulating Chemokine Production after Proinflammatory Antisense Oligonucleotide Administration in Mouse. T. Machemer, J. Hsiao, P. Cauntey, S. Paz, T. Yun, A. Soriano, M. Katz, D. Gao, F. Bennett, *S. Henry*, and *S. Burel*. ISIS Pharmaceuticals, Inc., Carlsbad, CA.

Abstract #

#136 **Poster Board Number 172**
HGF Induces a Protective Effect in Rifampicin- and Isoniazid-Induced Liver Injury. O. Bello Monroy[1], B. Ramos Robles[2], J. Barrios Payan[2], C. Enriquez Cortina[1], R. U. Miranda[1], L. Bucio[1], V. Souza[1], R. Hernandez Pando[2], L. Gomez-Quiroz[1], and *M. C. Gutierrez Ruiz*[1]. [1]Health Science, Universidad Autonoma Metropolitana-Iztapalapa, Mexico City, Mexico; and [2]Experimental Pathology, Instituto Nacional de Ciencias Medicas y Nutricion Salvador Zubiran, Mexico City, Mexico.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Inflammation in Disease

Advancing Clinical and Translational Toxicology

Chairperson(s): *Andrij Holian, CEHS, University of Montana, Missoula, MT.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#137 **Poster Board Number 201**
Temporal Dynamics of Classical and Alternative Activation of Cyanobacterium *Oscillatoria* sp. Lipopolysaccharide (LPS)-Treated Rat Brain Microglia. I. Baseer[1], M. E. Luce[1], M. L. Hall[1], P. Williams[2], and *A. M. Mayer*[1]. [1]Pharmacology, Midwestern University, Downers Grove, IL; and [2]Chemistry and Biochemistry, University of Hawaii at Manoa, Honolulu, HI.

#138 **Poster Board Number 202**
Autophagy Regulates NLRP3 Inflammasome Activity following Silica Exposure. *F. Jessop*, E. Cole, and *A. Holian*. Center for Environmental Health Sciences, University of Montana, Missoula, MT.

#139 **Poster Board Number 203**
Epigenetic Regulation of Proinflammatory Cytokines in Peripheral Blood Mononuclear Cells from Patients with Post-Traumatic Stress Disorder. M. Bam[1], X. Yang[1], J. Zhou[2,1], *P. S. Nagarkatti*[1], and *M. Nagarkatti*[1]. [1]PMI, USC SOM, Columbia, SC; and [2]WJB Dorn VA Medical Center, Columbia, SC.

#140 **Poster Board Number 204**
GLP-1 Mimetics/DPP-4 Inhibitors: A New Role in Obesity-Associated Inflammation and Cholesterol Homeostasis. A. M. Mostafa[1,2], N. M. Hamdy[2], H. O. El-Mesallamy[2], and *S. Abdel-Rahman*[1]. [1]OB/GYN, University of Texas Medical Branch (UTMB), Galveston, TX; and [2]Biochemistry, Faculty of Pharmacy, Ain-Shams University, Cairo, Egypt.

#141 **Poster Board Number 205**
Mice Lacking MALT-1 Protease Activity Exhibit Widespread Multiorgan Pathology and Differential Activation of Adaptive and Innate Immune System. *A. Roy*[1], G. H. Cantor[1], *B. Gemzik*[1], J. Dinchuck[2], J. Burke[2], J. Carman[2], and *L. D. Lehman-McKeeman*[1]. [1]Discovery Toxicology, Bristol-Myers Squibb Co., Princeton, NJ; and [2]Immunoscience Discovery Biology, Bristol-Myers Squibb Co., Princeton, NJ.

MONDAY

Program Schedule (Continued)

Abstract #

#142 **Poster Board Number 206**
Upregulated Interleukin-6 Expression Contributes to Erlotinib Resistance in Head and Neck Squamous Cell Carcinoma. *A. Stanam*[1,2], L. Love-Homan[2], T. S. Joseph[3], and *A. L. Simons*[1,2,4]. [1]Interdisciplinary Human Toxicology Program, The University of Iowa, Iowa City, IA; [2]Pathology, The University of Iowa, Iowa City, IA; [3]Lincoln University of the Commonwealth of Pennsylvania, Lincoln, PA; and [4]Roy J. and Lucille A. Carver College of Medicine, The University of Iowa, Iowa City, IA.

#143 **Poster Board Number 207**
Activating Transcription Factor 3-Mediated Chemo-Intervention with Proinflammatory Signals in Colon Cancer Cells under Mucosal ER Stress. S. Park, and *Y. Moon*. Laboratory of Mucosal Exposome and Biomodulation, Department of Biomedical Sciences, Immunoregulatory Therapeutics Group in Brain Busan 21 Project, Pusan National University School of Medicine and Medical Research Institute, Yangsan, Republic of Korea.

#144 **Poster Board Number 208**
Resveratrol Protects Mice from Experimental Multiple Sclerosis via Regulation of the miR-124/Sphingosine Kinase 1 (SK1) Axis in Encephalitogenic T Cells. *K. Gandy*[1], *M. Nagarkatti*[1,2], and *P. S. Nagarkatti*[1]. [1]Path, Micro & Immuno, USC School of Med, Columbia, SC; and [2]WJB Dorn VA Medical Center, Columbia, SC.

#145 **Poster Board Number 209**
Characterization of AhR+ T Cell Responses during Experimental Autoimmune Encephalomyelitis (EAE) Development in the Absence of Pertussis Toxin. E. Yang, J. Stokes, and *B. L. Kaplan*. Department of Basic Sciences, Center for Environmental Health Sciences, Mississippi State University, Mississippi State, MS.

#146 **Poster Board Number 210**
Accelerating Inflammation Resolution to Counteract Chemical Cutaneous and Pulmonary Injury. *S. Achanta*[1], *S. Balakrishna*[2], *N. Chintagari*[3], A. I. Caceres[1], Y. Zhihong[4], S. Doran[4], S. Matalon[4], and *S. E. Jordt*[1,2]. [1]Anesthesiology, Duke University School of Medicine, Durham, NC; [2]Yale University, New Haven, CT; [3]US Food and Drug Administration, Bethesda, MD; and [4]University of Alabama, Birmingham, AL.

#147 **Poster Board Number 211**
M1 Polarization Bias and Subsequent Toxicity-Induced NASH Progression Is Attenuated by Nitric Oxide Donor DETA NONOate. *R. K. Seth*[1], *S. Das*[1], S. Pourhoseini[1], D. Dattaroy[1], S. Igwe[2], J. Basu Ray[2], D. Fan[3], *G. Michelotti*[4], *A. Diehl*[4], and *S. Chatterjee*[1]. [1]ENHS, University of South Carolina, Columbia, SC; [2]STEM, Dillard University, New Orleans, LA; [3]CBA, University of South Carolina School of Medicine, Columbia, SC; and [4]Division of Gastroenterology, Duke University, Durham, NC.

#148 **Poster Board Number 212**
Redox Signaling-Induced TLR4 Activation Is Crucial for Disinfection Byproduct (DBP)-Mediated NASH Progression. *S. Das*[1], *R. K. Seth*[1], S. Pourhoseini[1], D. Dattaroy[1], F. Alhasson[1], *M. Nagarkatti*[2], G. Michelotti[3], A. Diehl[3], and S. Chatterjee[1]. [1]ENHS, USC, Columbia, SC; [2]PMI, USC, Columbia, SC; and [3]Duke University, Durham, NC.

Abstract #

#149 **Poster Board Number 213**
The Anti-Inflammatory Activity of Novel Peptides: Effect on Experimental Autoimmune Encephalitis. *U. Wormser*[1], B. Brodsky[1], Y. Finkelstein[2], E. Proscura[1], and E. Shapira[1]. [1]The Hebrew University, Jerusalem, Israel; and [2]Shaare Zedek Medical Center, Jerusalem, Israel.

#150 **Poster Board Number 214**
Blocking CB1 Cannabinoid Receptors Induces Unique microRNA Profile Leading to Suppression of Inflammation in Adipose Tissue and Weight Loss in Diet-Induced Obesity. *P. Mehrpouya*[1], *P. S. Nagarkatti*[1], and *M. Nagarkatti*[1,2]. [1]Department of Pathology, Microbiology, and Immunology, University of South Carolina School of Medicine, Columbia, SC; and [2]WJB Dorn VA Medical Center, Columbia, SC.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Inflammation: Methods and Mechanisms

Advancing Clinical and Translational Toxicology

Chairperson(s): *Barbara L. Kaplan, Department of Basic Sciences, Center for Environmental Health Sciences, Mississippi State University, Mississippi State, MS.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *9:30 AM–11:00 AM*

#151 **Poster Board Number 215**
LPS Suppresses Spleen Serine Hydrolase Activity and 2-Arachidonylglycerol (2-AG) Hydrolysis: A Possible Mechanism to Regulate Inflammation. *B. L. Kaplan*, B. Szafran, S. Borzajani, J. Lee, and *M. K. Ross*. Department of Basic Sciences, Center for Environmental Health Sciences, Mississippi State University, Mississippi State, MS.

#152 **Poster Board Number 216**
DHA-Mediated Increases in ARE Transcription Are Not Associated with Nrf-2 Activation in Lung Epithelial Cells. *L. Rogers*, K. M. Heyob, C. Hill, and N. Jindal. The Research Institute at Nationwide Children's Hospital, Columbus, OH.

#153 **Poster Board Number 217**
NF-κB in Airway Epithelia Protects against Hyperoxia-Induced Inflammatory Lung Injury. M. Zur[1], T. Entezarizaher[2], Y. Janssen-Heininger[3], M. Javdan[1,2], D. M. Morrow[3], A. Brown[3], M. E. Poynter[1], J. F. Alcorn[2], S. Gangisetti[1,2], H. Wang[1,2], and *L. Mantell*[1,2]. [1]PHS, St. John's University, Queens, NY; [2]Feinstein Institute for Medical Research, North Shore-LIJ, Manhasset, NY; and [3]Dept. of Pathology, University of Vermont, Burlington, VT.

#154 **Poster Board Number 218**
Loss of TNF Signaling Confers Neuroprotection in Knockout Mice following Soman-Induced Seizure. E. A. Johnson[1], J. F. Irwin[1], M. Guignet[1], K. Laitipaya[1], T. M. Ferrara-Bowens[1], M. Wegner[2], and *J. H. McDonough*[1]. [1]Research, USAMRICD, Aberdeen Proving Ground, MD; and [2]Research Support, USAMRICD, Aberdeen Proving Ground, MD.

Program Schedule (Continued)

Abstract #

#155 **Poster Board Number 219**
IL-1 Signaling Exacerbates Brain Injury following Seizurogenic Exposure to the Nerve Agent Soman (GD) in Mice. T. M. Ferrara-Bowens[1], M. Guignet[1], J. F. Irwin[1], K. Laitipaya[1], J. Chandler[1], E. A. Johnson[1], and M. Wegner[2]. [1]Army, USAMRICD Research Division, Gunpowder, MD; and [2]Army, USAMRICD Research Support Division, Gunpowder, MD. Sponsor: *J. McDonough*.

#156 **Poster Board Number 220**
Assessing the Inflammatory Properties As Well As Tolerability and Potency of Gal-NAc Conjugated ASOs in Mice. J. Hsiao, N. Allen, *A. Soriano*, P. Cauntey, T. Machemer, S. Paz, *T. P. Prakash*, P. Seth, *S. Henry*, and S. Burel. ISIS Pharmaceuticals, Inc., Carlsbad, CA.

#157 **Poster Board Number 221**
***In Vivo* and *In Vitro* Comparison of Mild to Moderate Proinflammatory ASOs:TLR9-Dependent and -Independent Classification of Non-CpG Oligos.** S. Paz, J. Hsiao, L. Bai, P. Cauntay, T. Machemer, F. Bennett, *S. P. Henry*, *S. Burel*, and T. Yun. Isis Pharmaceuticals, Carlsbad, CA.

#158 **Poster Board Number 222**
Advanced Prediction of Sensitization Potency of Chemicals: THP-1 in Coculture with HaCaT Keratinocytes. *J. Hennen*, and *B. M. Blomeke*. Department of Environmental Toxicology, Trier University, Trier, Germany.

#159 **Poster Board Number 223**
Optimization of the THP-1 Actviation Assay to Detect Pharmaceuticals with Potential to Cause Immune-Mediated Drug Reactions. D. Corti, V. Galbiati, M. Marinovich, *C. L. Galli*, and *E. Corsini*. DiSFeB, Università degli Studi di Milano, Milan, Italy.

#160 **Poster Board Number 224**
Untargeted Metabolomic Study by LC-QTOF/MS for the Evaluation of Effects of 12-Diindolymethane on RAW 264.7 Murine Macrophages. *J. Berkbigler*, *W. Hanneman*, and G. Dooley. Colorado State University, Fort Collins, CO.

#161 **Poster Board Number 225**
Regulation of Ozone-Induced Lung Inflammation by Galectin-3, a β-Galactoside-Binding Lectin. V. R. Sunil[1], *M. Francis*[1], K. Vayas[1], J. A. Cervelli[1], H. Choi[1], *J. D. Laskin*[2], and *D. L. Laskin*[1]. [1]Rutgers University, Piscataway, NJ; and [2]Robert Wood Johnson Medical School, Piscataway, NJ.

#162 **Poster Board Number 226**
TNF Receptor 2 Deficiency Disrupts CD4 T Cell Differentiation in an Experimental Adoptive Transfer of CD4+ CD45Rbhigh T Cell Model of Colitis. B. J. Barron, and *S. C. McKarns*. Center for Cellular and Molecular Immunology, Departments of Surgery and Molecular Microbiology and Immunology, University of Missouri School of Medicine, Columbia, MO.

#163 **Poster Board Number 227**
Membrane-Bound, but Not Soluble, TNF Regulates Interleukin-2 Promoter Activity in a CD4 T Cell Autonomous Manner. Z. L. Durham, and *S. C. McKarns*. Center for Cellular and Molecular Immunology, Departments of Surgery and Molecular Microbiology and Immunology, University of Missouri School of Medicine, Columbia, MO.

Abstract #

#164 **Poster Board Number 228**
Immunization Study of Keyhole Limpet Hemocyanin or Tetanus Toxoid in Cynomolgus Monkeys for *Ex Vivo* T-Lymphocyte Stimulation. R. A. Young[1], *L. A. Iciek*[2], S. Scott[2], M. Reed[2], D. E. Wilkins[1], *J. N. Tichenor*[1], *J. K. Meyer*[1], and *C. M. Satterwhite*[1]. [1]Laboratory Sciences, Charles River Laboratories, Preclinical Services, Reno, NV; and [2]Toxicology, Medimmune, Gaithersburg, MD.

#165 **Poster Board Number 229**
A Comparison of Capillary Microsampling and Traditional Blood Sampling for the Evaluation of Bioanalysis and Immunogenicity of Humira® in Sprague-Dawley Rats. K. Colletti[1], K. Malone[1], A. Kuhn[1], K. York[1], T. Sangster[3], *V. Vexler*[2], and *C. M. Satterwhite*[1]. [1]Laboratory Sciences, Charles River Laboratories, Preclinical Services, Reno, NV; [2]Coherus Biosciences, Inc., Redwood, CA; and [3]Laboratory Sciences, Charles River Preclinical Services, Tranent, Edinburgh, United Kingdom.

#166 **Poster Board Number 230**
Rodent TDAR: Comparison of *In Vivo* T Cell-Dependent Antibody Responses to KLH between Strains (Mice and Rats). C. Dumont[1], T. Arulanandam[2], T. Ragavan[1], and M. Christin-Piché[1]. [1]Immunlogy, Charles River Laboratories, Senneville, QC, Canada; and [2]Regeneron Pharmaceuticals, Tarrytown, NY. Sponsor: *M. Vezina*.

#167 **Poster Board Number 231**
Assessment of Keyhole Limpet Hemocyanin-Specific T Cell-Dependent Antibody Responses in Beagle Dogs. B. Wang[1], M. P. Bernard[1], A. Wei[3], C. Gleason[2], *H. G. Haggerty*[1], and *W. J. Freebern*[1]. [1]Immunotoxicology, Bristol-Myers Squibb, New Brunswick, NJ; [2]Global Biometric Sciences, Bristol-Myers Squibb, Syracuse, NY; and [3]Rutgers University, New Brunswick, NJ.

#168 **Poster Board Number 232**
***In Vitro* Whole Blood Assay in Preclinical Safety: Correlation with IRR in Clinics.** C. Ploix, A. Iglesias, *T. Weiser*, and *T. Singer*. Roche Pharma Research and Early Development, Pharmaceutical Sciences, Roche Innovation Center, Basel, Switzerland.

#169 **Poster Board Number 233**
Macrophage Fusion into Multinucleated Giant Cells *In Vitro*. *K. L. Trout*, *C. T. Migliaccio*, and *A. Holian*. Center for Environmental Health Sciences, University of Montana, Missoula, MT.

#170 **Poster Board Number 234**
A Comparison of Cell-Counting Methods in Rodent Pulmonary Inhalation Toxicity Studies. *P. C. Zeidler-Erdely*, *A. Erdely*, T. G. Meighan, S. Young, T. Hulderman, and *J. M. Antonini*. HELD, NIOSH, Morgantown, WV.

#171 **Poster Board Number 235**
Development of a Flow Cytometry-Based Method to Measure Neutrophil Activation in the Cynomolgus Monkey. K. Troth, A. Head, C. Cooper, A. Iqbal, and *S. A. Kirk*. Covance Laboratories Ltd, Harrogate, United Kingdom.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#172 **Poster Board Number 236**
Comparing the Sensitivity of the T-Dependent Antibody Response (TDAR) to Cyclosporin A (CsA). *H. Hu*[1], G. Ferency[1], J. Puchalski[1], J. Olsen[1], *R. Caldwell*[2], and *M. P. Holsapple*[1]. [1]Safety Assessment, Covance, Madison, WI; and [2]Abbvie, North Chicago, IL.

#173 **Poster Board Number 237**
Optimization of an *In Vitro* Method for Stimulation of Cynomolgus Monkey T Cells Using Anti-CD3 and Anti-CD28 Antibodies. G. Ferency, J. Puchalski, P. Sims, P. Brewer, and *H. Hu*. Covance Laboratories Inc., Madison, WI.

#174 **Poster Board Number 238**
Fatty Acid Amide Hydrolase (FAAH) Blockade Ameliorates Experimental Colitis by Mediating microRNAs and Attenuating T Cell Activation. U. P. Singh[1,2], H. Shamran[1], *N. P. Singh*[1], R. L. Price[1], *M. Nagarkatti*[1], and *P. S. Nagarkatti*[1]. [1]Pathology, Microbiology and Immunology, University of South Carolina, Columbia, SC; and [2]Cell Biology and Anatomy, University of South Carolina, Columbia, SC.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Nonpharmaceutical Safety Assessment

Chairperson(s): *John H. Lauterbach, Lauterbach & Associates, LLC, Macon, GA; and Binu K. Philip, Drug Safety Evaluation, Bristol-Myers Squibb, Mt. Vernon, IN.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#175 **Poster Board Number 239**
Estimation of Sibutramine and Phenolphthalein in Slimming Products Available in UAE. E. Alabdooli[1], A. K. Agarwal[2], V. Chandrasekaran[3], and P. J. Shetty[4]. [1]Dubai Police Head Quarter Criminal Laboratory, Dubai, United Arab Emirates; [2]Pharmacology, Gulf Medical University, Ajman , United Arab Emirates; [3]Toxicology, Gulf Medical University, Ajman, United Arab Emirates; and [4]Cytogenetics, Gulf Medical University, Ajman, United Arab Emirates. Sponsor: *S. Devi*.

#176 **Poster Board Number 240**
Differential Cytotoxicity of Freeze-Dried *Thalassia testudinum* in Normal and Transformed Human Cells. E. Estrada-Muñiz[1], I. Leyva Bahena[1], I. Rodeiro[2], and *L. Vega*[1]. [1]Toxicology, CINVESTAV, Mexico City, Mexico; and [2]Biomedical Research, Center of Chemical Pharmacy, La Habana, Cuba.

#177 **Poster Board Number 241**
Analytical and Hazard Characterization of a Gasoline-Range Hydrocarbon Fuel Manufactured from Plant-Based Sugars. F. A. Reitman[1], C. Eadsforth[1], P. Blommel[2], and L. Rice-Jackson[1]. [1]Health, Royal Dutch Shell, Houston, TX; and [2]Technology Development, Virent, Madison, WI. Sponsor: *D. Steup*.

Abstract #

#178 **Poster Board Number 242**
Exploring Tissue Distribution of GABAA Receptors to Support Understanding of Safety. *S. M. Plummer*[1], M. Beltran[1], M. Millar[2], *R. Currie*[3], and J. Wright[1]. [1]Micromatrices Associates Ltd, Dundee, United Kingdom; [2]MRC Centre for Reproductive Health, Edinburgh, United Kingdom; and [3]Syngenta Ltd, Bracknell, United Kingdom.

#179 **Poster Board Number 243**
Repeated Oral Toxicity of Butyl Methoxydibenzoylmethane (Avobenzone), a UV filter for 4 Weeks in Rats. *K. Kim*, Y. Lee, S. Ryu, J. Choi, and H. Jang. Pharmacy, Inje University, Gimhae, Republic of Korea.

#180 **Poster Board Number 244**
Safety Evaluation of a Whey Protein Fraction Containing a Concentrated Amount of Naturally Occurring TGF-β2. *R. Forster*[1], M. Bourtourault[2], Y. Chung[3], J. Silvano[1], G. Sire[1], F. Spezia[1], C. Puel[2], *J. G. Descotes*[4], and T. Mikogami[2]. [1]CiToxLAB, Evreux, France; [2]Armor Protéines, Saint-Brice-en-Coglès, France; [3]Nestlé Research Center, Lausanne, Switzerland; and [4]Lyon Poison Center, Lyon, France.

#181 **Poster Board Number 245**
A Standardized Approach for *In Vivo* Photosafety Testing. T. van Huygevoort, J. Latour, K. Scase, and *H. Emmen*. Toxicology, WIL Research Europe B.V., Den Bosch, Netherlands.

#182 **Poster Board Number 246**
Adaptation versus Adverse Cell Responses in Oxidative Stress: Role of Nrf2 and NF-kB. N. Mandyam[1], N. Rajeswara[1], *K. Subramanian*[1], *G. Jain*[2], *A. White*[3], and *P. L. Carmichael*[3]. [1]Strand Life Sciences, Bangalore, India; [2]SEAC, Unilever, Bangalore, India; and [3]SEAC, Unilever, Colworth, United Kingdom.

#183 **Poster Board Number 247**
Provisional Advisory Level (PAL) Development for Fentanyl Derivatives. *C. S. Wood*[1], *E. E. McConnell*[2], *D. C. Dorman*[3], and *F. Adeshina*[4]. [1]Oak Ridge National Laboratory, Oak Ridge, TN; [2]ToxPath, Inc., Raleigh, NC; [3]North Carolina State University, Raleigh, NC; and [4]US Environmental Protection Agency, Washington, DC.

#184 **Poster Board Number 248**
Detection of QTc Interval Prolongation Using Jacketed External Telemetry in Cynomolgus Monkeys: Influence of Animal Housing Conditions. J. Lu[1], G. Xing[1], M. Hu[1], *M. Skinner*[2], *H. Yu*[1], S. Wang[1], L. Zhao[1], W. Zheng[1], L. Gong[1], M. Li[1], and *J. Ren*[1]. [1]Center for Drug Safety Evaluation and Research, Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai, China; and [2]AstraZeneca R&D Alderley Park, Macclesfield, United Kingdom.

#185 **Poster Board Number 249**
Derivation and Comparison of Occupational Exposure Limits (OELs) for Hydrocarbon Vapor Mixtures Emitted from Bakken and Non-Bakken Crude Oil. *J. A. Harrill*, *S. Wnek*, *D. R. Cawthon*, *P. A. Nony*, and *J. A. Kind*. Toxicology and Occupational Medicine, Center for Toxicology and Environmental Health (CTEH), North Little Rock, AR.

Program Schedule (Continued)

Abstract #

#186 **Poster Board Number 250**
Estimation and Risk Assessment of Phthalate Esters in Commonly Available Perfumes in UAE. M. M. Atiq[1], R. Kuppusamy[2], and V. Chandrasekaran[1]. [1]Toxicology, College of Graduate Studies, Gulf Medical University, Ajman; and [2]College of Pharmacy, Gulf Medical University, Ajman, United Arab Emirates. Sponsor: *S. Devi*.

#187 **Poster Board Number 251**
Inhibition of Various Human Phosphatases by Different Microcystin Congeners. S. Altaner[1], J. Nitschke[1], G. Giménez-Papiol[3,5], I. Zemskov[2], V. Wittmann[2], M. Fontanillo[4], M. Köhn[4], and *D. R. Dietrich*[1]. [1]Human & Environmental Toxicology, University of Konstanz, Konstanz, Germany; [2]Department of Chemistry, University of Konstanz, Konstanz, Germany; [3]Cawthron Institute, Nelson, New Zealand; [4]European Molecular Biology Laboratory, Heidelberg, Germany; and [5]Centre de Tecnologia Ambiental Alimentària i Toxicològica, Universitat Rovira i Virgili, Tarragona, Spain.

#188 **Poster Board Number 252**
Generation of Acetaldehyde and Other Carbonyl Compounds during Vaporization of Glycerol and Propylene Glycol during Puffing of a Popular Style of E-Cigarette. *J. H. Lauterbach*[1], and A. Spencer[2]. [1]Lauterbach & Associates, LLC, Macon, GA; and [2]Global Laboratory Services, Inc., Wilson, NC.

#189 **Poster Board Number 253**
Assessing ToxCast Phase II for Mitochondrial Liabilities Using a High-Throughput Respirometric Assay and Cheminformatics. L. P. Wills[1], G. C. Beeson[1,2], D. B. Hoover[2], *R. Schnellmann*[2], and C. Beeson[1,2]. [1]MitoHealth Inc, Charleston, SC; and [2]Department of Drug Discovery and Biomedical Sciences, MUSC, Charleston, SC.

#190 **Poster Board Number 254**
Distribution Spectrum of Paraoxonase (PON1) in Plasma and Lipoproteins of Rats Administered Hexane Extract of Marijuana. *O. Ademuyiwa*[1], R. N. Ugbaja[1], T. F. Akinhanmi[2], D. O. Babayemi[1], *O. A. Dosumu*[1], O. B. Onunkwor[1], *A. D. Wusu*[3], *O. O. Ogunrinola*[3], *O. K. Afolabi*[4], *S. O. Rotimi*[5], and *E. O. Abam*[6]. [1]Biochemistry, Federal University of Agriculture, Abeokuta, Nigeria; [2]Chemistry, Federal University of Agriculture, Abeokuta, Nigeria; [3]Biochemistry, Lagos State University, Lagos, Nigeria; [4]Biochemistry, Ladoke Akintola University of Technology, Ogbomosho, Nigeria; [5]Biological Sciences, Covenant University, Ota, Nigeria; and [6]Chemical Sciences, Bells University of Technology, Ota, Nigeria.

#191 **Poster Board Number 255**
E-Cigarette Liquid Flavorings alter Airway Epithelial Cell Structure and Function. *C. Sherwood*[1,2,3], *R. Lantz*[2,3,5], and *S. Boitano*[1,3,4]. [1]Arizona Respiratory Center, Arizona Health Sciences Center, Tucson, AZ; [2]Southwest Environmental Health Sciences Center, University of Arizona, Tucson, AZ; [3]Bio 5 Institute, University of Arizona, Tucson, AZ; [4]Physiology, Arizona Health Sciences Center, Tucson, AZ; and [5]Cellular and Molecular Medicine, Arizona Health Sciences Center, Tucson, AZ.

Abstract #

#192 **Poster Board Number 256**
Initial Risk Assessment of β-Bromostyrene. A. Ono[1], K. Kobayashi[1], M. Matsumoto[1], M. Ema[2], T. Nishimura[3], M. Hirata-Koizumi[1], and *A. Hirose*[1]. [1]National Institute of Health Sciences, Tokyo, Japan; [2]National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan; and [3]Teikyo Heisei University, Tokyo, Japan.

#193 **Poster Board Number 257**
Western Diet Accentuates Cellular Damage in Benzo(a)pyrene [B(a)P]-Induced Colon Cancer. *K. Harris*[1], S. R. Pulliam[1], M. S. Niaz[1], E. Okoro[2], Z. Guo[2], M. K. Washington[3], S. E. Adunyah[1], and *A. Ramesh*[1]. [1]Biochemistry & Cancer Biology, Meharry Medical College, Nashville, TN; [2]Physiology, Meharry Medical College, Nashville, TN; and [3]Pathology, Vanderbilt University, Nashville, TN.

#194 **Poster Board Number 258**
***In Vitro* Interactions of Jet Fuel Components with Red Blood Cells and Hemoglobin.** J. Jacobsen[1], R. R. Chapleau[2], J. Frey[2], *J. M. Gearhart*[2], and C. A. Mauzy[3]. [1]48 MDSS/SGSL, RAF Lakenheath, United Kingdom; [2]Henry M. Jackson Foundation, Wright-Patterson Air Force Base, OH; and [3]RHDJ, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH.

#195 **Poster Board Number 259**
Nasal Effects in a 28-Day Gavage Study Likely Attributable to the Gavage Technique. *Z. Yin*[1], *R. Frame*[2], and *R. Valentine*[2]. [1]Haskell Global Centers, DuPont, Shanghai, China; and [2]DuPont Haskell Global Centers, Newark, DE.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Risk Assessment I

Strategies for Exposure and Risk Assessments

Chairperson(s): *Jacqueline Patterson, Toxicology Excellence for Risk Assessment, Cincinnati, OH.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *9:30 AM–11:00 AM*

#196 **Poster Board Number 301**
Development of Oregon's Drinking Water Guideline Values for Four Cyanotoxins for Use during Harmful Algae Blooms. *D. G. Farrer*. Public Health Division, Oregon Health Authority, Portland, OR.

#197 **Poster Board Number 302**
Derivation of a Provisional Tolerable Intake for Intravenous Exposure to Silver Nanoparticles. *R. Vinas*[1], *A. Nagy*[1], *P. Pradeep*[2], *S. J. Merrill*[2], *R. P. Brown*[1], and *P. L. Goering*[1]. [1]Center for Devices and Radiological Health, US FDA, Silver Spring, MD; and [2]Dept. of Mathematics, Statistics, and Computer Science, Marquette Univ, Milwaukee, WI.

#198 **Poster Board Number 303**
Uncertainties in Selecting the Critical Effect for Toxicity Assessment of Tungstate. K. Salinas[1], *P. McClure*[1], *K. Zaccaria*[1], M. Odin[1], J. Kaiser[2], *J. Zhao*[2], and S. C. Wesselkamper[2]. [1]SRC, Inc., East Syracuse, NY; and [2]National Center for Environmental Assessment, US Environmental Protection Agency, Cincinnati, OH.

Program Schedule (Continued)

Abstract #

#199 **Poster Board Number 304**
A State of the Science Copper Reference Dose for Soil Remediation. *J. D. Urban*[1], *C. M. Thompson*[2], *L. M. Plunkett*[3], *C. S. Perry*[1], and *L. C. Haws*[1]. [1]ToxStrategies, Inc., Austin, TX; [2]ToxStrategies, Inc., Houston, TX; and [3]Integrated Biostrategies, LLC, Houston, TX.

#200 **Poster Board Number 305**
Inhalation Cancer Risk Assessment of Titanium Dioxide. *D. Proctor*[1], *M. Suh*[1], *C. M. Thompson*[2], and G. Hixon[3]. [1]ToxStrategies, Inc., Orange County, CA; [2]ToxStrategies, Inc, Katy, TX; and [3]ToxStrategies, Inc., Austin, TX.

#201 **Poster Board Number 306**
Threshold of Toxicological Concern (TTC) for Anticancer Compounds. B. Stanard[1,2], *J. P. Bercu*[3], *W. Hanneman*[1], and *M. E. Legare*[1]. [1]Environmental and Radiological Health Sciences, Colorado State University, Ft. Collins, CO; [2]MedImmune, Gaithersburg, MD; and [3]Amgen, Inc., Thousand Oaks, CA.

#202 **Poster Board Number 307**
Use of Categorical Regression Modelling in the Health Assessment of Guanidine Compounds. *D. Petersen*. DAAP, University of Cincinnati, Cincinnati, OH.

#203 **Poster Board Number 310**
Provisional Advisory Levels (PALs) for Agent BZ and EA3167. *S. Milanez*[1], *C. Baird*[2], *L. D. Koller*[3], and *F. Adeshina*[4]. [1]Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN; [2]US Army, Aberdeen Proving Ground, MD; [3]Environmental Health and Toxicology, Corvallis, OR; and [4]US EPA, Washington, DC.

#204 **Poster Board Number 311**
Provisional Advisory Level (PAL) Development for Chloroacetone. *C. Bast*[1], *P. McGinnis*[2], M. McClanahan[3], and *F. Adeshina*[4]. [1]Oak Ridge National Laboratory, Oak Ridge, TN; [2]R.G. York & Associates, Syracuse, NY; [3]US Centers for Disease Control & Prevention, retired, Lilburn, GA; and [4]US EPA, Washington, DC.

#205 **Poster Board Number 312**
Reference Exposure Levels for Benzene. *J. Collins*, D. Dodge, *A. Salmon*, D. Siegel, and *M. A. Marty*. OEHHA, CalEPA, Sacramento, CA.

#206 **Poster Board Number 313**
Evaluation of the Inhalation Minimal Risk Levels (MRLs) for Toluene. *P. McClure*[1], *K. Zaccaria*[1], and R. L. Williams[2]. [1]SRC, Inc., North Syracuse, NY; and [2]Agency for Toxic Substances and Disease Registry, Atlanta, GA.

#207 **Poster Board Number 314**
Oral Risk Assessment of m- and p-Cresols in Drinking Water. *B. Wang*[1], *K. Licko*[2], and *M. H. Whittaker*[1]. [1]ToxServices, Washington, DC; and [2]Water Quality Association, Lisle, IL.

#208 **Poster Board Number 315**
No Significant Risk Level (NSRL) Derivation for Pulegone. *E. Golden*[1], *B. Wang*[1], *B. R. Stern*[2], and *M. H. Whittaker*[1]. [1]ToxServices LLC, Washington, DC; and [2]BRStern and Associates, Annandale, VA.

Abstract #

#209 **Poster Board Number 316**
REACH Registrants Fail to Use Available Dermal Uptake Data in Their Derivation of Dermal DNELs. *L. Schenk*[1,2], O. Brenner[1], M. Rauma[1], and *G. Johanson*[1]. [1]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden; and [2]Department of Philosophy and History, KTH - Royal Institute of Technology, Stockholm, Sweden.

#210 **Poster Board Number 317**
Examination of Multiple Dose-Response Analysis Methods for Estimating Dermal Cancer Risks for PAH Mixtures. *D. B. Mayfield*[1], *L. R. Rhomberg*[2], and *M. A. Nascarella*[2]. [1]Gradient, Seattle, WA; and [2]Gradient, Cambridge, MA.

#211 **Poster Board Number 318**
Carcinogenic Risk from Dermal Exposure to Benzo[a]pyrene. *K. M. Newhouse*, K. Hogan, L. Phillips, J. B. Strong, P. White, and V. J. Cogliano. National Center for Environmental Assessment, Office of Research and Development, US Environmental Protection Agency, Washington, DC.

#212 **Poster Board Number 319**
Testing the Validity of US EPA's Proposed Dermal Slope Factor for Benzo[a]pyrene: Genetic Alteration Signatures in Common Skin Cancers. *B. H. Magee*, and N. Forsberg. Risk Assessment, ARCADIS, Chelmsford, MA.

#213 **Poster Board Number 320**
Oral Risk Assessment and Acceptable Drinking Water Levels for the Commonly Used Polyvinyl Chloride Plasticizer Acetyl Tributyl Citrate. *J. C. English*, and *K. D. Cox*. NSF International, Ann Arbor, MI.

#214 **Poster Board Number 321**
Developmental Immunotoxicity and Oral Risk Assessment of 2,4-Dichlorophenol. *K. D. Cox*, *V. S. Bhat*, and *J. C. English*. NSF International, Ann Arbor, MI.

#215 **Poster Board Number 322**
Transcriptomic Dose- and Time-Course Indicators of Early Key Events in a Cytotoxicity-Mediated Mode of Action for Rodent Urinary Bladder Tumorigenesis. *V. S. Bhat*[1,2], *S. D. Hester*[3], C. E. Wood[3], M. L. C.S. de Oliveira[4], *J. V. Camargo*[4], and *D. A. Eastmond*[1]. [1]Graduate Program in Environmental Toxicology, Univ of California, Riverside, CA; [2]Toxicology Services, NSF International, Ann Arbor, MI; [3]ISTD/NHEERL, US EPA, Research Triangle Park, NC; and [4]TOXICAM, Botucatu Medical School UNESP, Univ Estadual Paulista, Botucatu, Brazil.

#216 **Poster Board Number 323**
Molecular Thresholds for Early Key Events in Liver Tumorigenesis: Phthalate Case Study. *A. Lake*[1,2], *C. E. Wood*[2], *V. S. Bhat*[3], G. Carswell[2], B. N. Chorley[2], *J. Simmons*[2], *M. F. Hughes*[2], *C. A. McQueen*[2], and *S. D. Hester*[2]. [1]Oakridge Institute for Science and Education, US EPA, Research Triangle Park, NC; [2]National Health and Environmental Effects Research Laboratory, US EPA, Durham, NC; and [3]NSF International, Ann Arbor, MI.

Program Schedule (Continued)

Abstract #

#217 **Poster Board Number 326**
Benchmark Dose Modeling for Development of an Oral Cancer Slope Factor for Diisonyl Phthalate (DINP) and Derivation of Oral and Dermal No Significant Risk Levels. *N. V. Soucy*, and *R. Roy*. Medical Department, 3M Company, St Paul, MN.

#218 **Poster Board Number 327**
Health Canada's Estimation of a Provisional Tolerable Daily Intake for Diethyl Phthalate. G. Barrett[1], L. Berndt-Weis[2], M. Patel[2], C. Sutton[1], P. Pelletier[1], V. Bergeron[2], H. Ryan[1], and J. D. Field[1]. [1]Consumer Product Safety Directorate, Health Canada, Ottawa, ON, Canada; and [2]Safe Environments Directorate, Health Canada, Ottawa, ON, Canada. Sponsor: *M. Khan*.

#219 **Poster Board Number 328**
MCHM Spill in the Elk River—Toxicology and Risk Assessment. *J. Patterson*[1], *M. L. Dourson*[1], J. Rosen[2], and A. Whelton[3]. [1]Toxicology Excellence for Risk Assessment, Cincinnati, OH; [2]Corona Environmental Consulting, Boston, MA; and [3]Purdue University, West Lafayette, IN.

#220 **Poster Board Number 329**
Bayesian Evidence Integration of Quantitative High-Throughput Screening Data. *I. L. Druwe*[1], K. L. Painter[1], E. E. Yost[1], and *L. D. Burgoon*[2]. [1]Oak Ridge Institute for Science and Education, Research Triangle Park, NC; and [2]US Environmental Protection Agency, Research Triangle Park, NC.

#221 **Poster Board Number 330**
A State's Perspective: US EPA's Tetrachloroethylene (PCE) Inhalation Unit Risk (UR). *S. J. Baird*, C. Smith, and C. Rowan West. Office of Research and Standards, Massachusetts Department of Environmental Protection, Boston, MA.

#222 **Poster Board Number 331**
Risk Assessment and Public Health Goal for Trichloroethylene in Drinking Water. *P. W. Wong*, and *E. M. Khan*. Office of Environmental Health Hazard Assessment, California Environmental Protection Agency, Sacramento, CA.

#223 **Poster Board Number 332**
Derivation of Draft Noncancer Reference Exposure Levels for Ethylene Glycol Mono-N-Butyl Ether. *J. Yang*, D. Dodge, *M. A. Marty*, and D. Siegel. Office of Environmental Health Hazard Assessment, Cal/EPA, Oakland, CA.

#224 **Poster Board Number 333**
Mode of Action of the Effect of Trans Fatty Acids (TFAs) on LDL-Cholesterol and Implication for Dose Response. *L. T. Haber*[1], *J. F. Reichard*[1], M. J. Vincent[1], B. C. Allen[2], and *M. L. Dourson*[1]. [1]Toxicology Excellence for Risk Assessment, Cincinnati, OH; and [2]BCA Associates, Chapel Hill, NC.

#225 **Poster Board Number 334**
Derivation of Inhalation Reference Values for Hexamethylenediamine Using an Exposure Model Based on the Dihydrochloride Salt. *J. L. Myers*, and *R. L. Grant*. Toxicology Division, Texas Commission on Environmental Quality, Austin, TX.

Abstract #

#226 **Poster Board Number 335**
Adequacy of Available Data to Derive a Provisional Inhalation Toxicity Value for Carbonyl Sulfide. *K. Zaccaria*[1], *P. McClure*[1], M. Odin[1], *J. C. Lipscomb*[2], *J. Zhao*[2], and S. C. Wesselkamper[2]. [1]SRC, Inc., East Syracuse, NY; and [2]National Center for Environmental Assessment, US Environmental Protection Agency, Cincinnati, OH.

#227 **Poster Board Number 336**
Derivation of a No-Significant-Risk-Level (NSRL) for *N,N*-Dimethyl-*p*-Toluidine (DMPT). *S. M. Ciotti*[1], and *M. H. Whittaker*[2]. [1]ToxServices, LLC, Ann Arbor, MI; and [2]ToxServices, LLC, Washington, DC.

#228 **Poster Board Number 337**
Identification of Critical Effects for Derivation of Oral Minimal Risk Levels (MRLS) for Polybrominated Diphenyl Ethers (PBDE). M. Odin[1], *K. Zaccaria*[1], and H. Pohl[2]. [1]SRC, Inc., North Syracuse, NY; and [2]ATSDR, Atlanta, GA.

#229 **Poster Board Number 338**
An Approach to Deriving Oral Minimal Risk Levels (MRLs) for PFOA and PFOS. L. Ingerman[1], *G. L. Diamond*[1], S. Chou[2], D. Jones[2], and P. Ruiz[2]. [1]SRC, Inc., North Syracuse, NY; and [2]ATSDR, Atlanta, GA.

#230 **Poster Board Number 339**
Impacts of Updated Exposure Factor Handbook Values to Regional Screening Level (RSL) Website and Calculator. F. Dolislager[1], L. Galloway[1], D. J. Stewart[1], K. Tucker[3], W. McGinn[2], and M. Burgess[4]. [1]The University of Tennessee, Knoxville, Knoxville, TN; [2]Oak Ridge National Laboratory, Oak Ridge, TN; [3]Ingenium Professional Services, Inc, Oak Ridge, TN; and [4]US Environmental Protection Agency, Washington, DC. Sponsor: *C. Wood*.

#231 **Poster Board Number 342**
Fall 2014 Review and Update of Drinking Water Standards and Health Advisories (DWSHA) Tables. D. J. Stewart[1], *C. Bast*[2], *C. S. Wood*[2], and *S. S. Kueberuwa*[3]. [1]University of Tennessee, Knoxville, TN; [2]Oak Ridge National Laboratory, Oak Ridge, TN; and [3]US Environmental Protection Agency, Washington, DC.

#232 **Poster Board Number 343**
Evaluating Epidemiological Data for Quantitative Risk Assessment. K. Mundt[1], *R. Gentry*[1], L. D. Dell[1], and *H. J. Clewell*[1,2]. [1]ENVIRON, Amherst, MA; and [2]The Hamner Institute for Health Sciences, Research Triangle Park, NC.

#233 **Poster Board Number 344**
A Hierarchical Framework for the Selection and Development of Toxicity Criteria for the Evaluation of Potential Drinking Water Risks from Hydraulic Fracturing Fluids. *A. Lewis*, *M. Seeley*, D. M. Pizzurro, M. Sharma, and S. Flewelling. Gradient, Cambridge, MA.

#234 **Poster Board Number 345**
Concentration-Time Relationships for Short-Term Inhalation Exposures to Hazardous Chemicals. J. S. Snyder[1,2], A. Prussia[1], and E. Demchuk[1]. [1]Division of Toxicology and Human Health Sciences, Agency for Toxic Substances and Disease Registry, Atlanta, GA; and [2]Rollins School of Public Health, Emory University, Atlanta, GA. Sponsor: *J. Wheeler*.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Alternatives to Mammalian Models I—Cardio, Neuro, Developmental

Chairperson(s): *Xuefei Cao, DGMT, FDA/NCTR, Jefferson, AR; and Tamara L. Tal, Integrated Systems Toxicology Division, US EPA, Research Triangle Park, NC.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#235 **Poster Board Number 401**
Novel Analysis Approach Based on Quantitative Evaluation for Drug-Induced Disruption of hERG Membrane Trafficking. N. Nishio, J. Deguchi, Y. Honda, and H. Funabashi. Preclinical Research Laboratories, Sumitomo Dainippon Pharma Co., Ltd., Osaka, Japan. Sponsor: *T. Yamada*.

#236 **Poster Board Number 402**
Identification of Chemical Vascular Disruptors during Development Using an Integrative Predictive Toxicity Model, Zebrafish, and *In Vitro* Functional Angiogenesis Assays. *T. L. Tal*[1], C. Kilty[2], *N. Kleinstreuer*[4], *T. Toimela*[3], *R. Sarkanen*[3], *T. B. Knudsen*[5], B. Kennedy[2], and S. Padilla[1]. [1]ISTD, US EPA, Research Triangle Park, NC; [2]University College Dublin, Dublin, Ireland; [3]FICAM, University of Tampere, Tampere, Finland; [4]ILS, Inc./NICEATM, Research Triangle Park, NC; and [5]NCCT, US EPA, Research Triangle Park, NC.

#237 **Poster Board Number 403**
Synthetic Hydrogel Arrays for Screening Vascular Disrupting Compounds. D. Belair[1], M. P. Schwartz[1], E. H. Nguyen[1], W. Daly[1], and W. L. Murphy[1,2,3]. [1]Biomedical Engineering, University of Wisconsin-Madison, Madison, WI; [2]Department of Orthopedics & Rehabilitation, University of Wisconsin-Madison, Madison, WI; and [3]Materials Science Program, University of Wisconsin-Madison, Madison, WI. Sponsor: *T. Knudsen*.

#238 **Poster Board Number 404**
Acute Inhalation Toxicity of Volatile Organic Compounds—Application of an Improved Cell-Based *In Vitro* Procedure. D. Ritter, E. Krakor, and J. Knebel. Fraunhofer ITEM, Hannover, Germany. Sponsor: *C. Dasenbrock*.

#239 **Poster Board Number 405**
Characterization of Aerosolized Zinc Oxide Exposures to Lung Epithelial-Macrophage Cocultures at the Air-Liquid Interface (ALI) Using the NACIVT System. *S. P. Ng, D. B. Warheit*, T. A. Kegelman, and J. Yao. DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE.

#240 **Poster Board Number 406**
Targeted 'Omics Analyses and Metabolic Enzyme Activity Assays Demonstrate Maintenance of Key Mucociliary Characteristics in Mucilair Cells Cultured for 6 Months. A. Baxter[1], S. Thain[2], L. E. Haswell[1], A. Banerjee[1], and E. F. Minet[1]. [1]Bioassessment, British American Tobacco, Southampton, United Kingdom; and [2]British American Tobacco, Cambridge, United Kingdom. Sponsor: *M. Clive*.

Abstract #

#241 **Poster Board Number 407**
Prediction of Chemical Respiratory Sensitizers Using GARD, a Novel *In Vitro* Assay Based on a Genomic Biomarker Signature. A. Forreryd, *H. Johansson*, A. Albrekt, C. Borrebaeck, and M. Lindstedt. Department of Immunotechnology, Immunotechnology, Lund, Sweden.

#242 **Poster Board Number 408**
Airway Epithelial Injury, Fibroblast Changes, and Cytokine/Chemokine Profiles Induced by Exposure of Human EpiAirway-FT Tissues to Diacetyl Vapors. *W. M. Gwinn*[1], G. Flake[1], R. W. Bousquet[2], and *D. L. Morgan*[1]. [1]NTP Laboratory, NIEHS, Research Triangle Park, NC; and [2]Alion Science and Technology Corp, Research Triangle Park, NC.

#243 **Poster Board Number 409**
Differentiating between the Toxicities Produced by Two Cigarette Whole-Smoke Solutions in a Human Airway Tissue Model. *H. Lin*[1], L. Muskhelishvili[2], J. R. Latendresse[2], *P. Richter*[4,3], R. H. Heflich[1], and *X. Cao*[1]. [1]DGMT, FDA/NCTR, Jefferson, AR; [2]TPA, Jefferson, AR; [3]CTP, Silver Spring, MD; and [4]CDC, Atlanta, GA.

#244 **Poster Board Number 410**
Abamectin Induces Rapid and Reversible Hypoactivity within Early Zebrafish Embryos. *T. Raftery*, and *D. Volz*. Environmental Health Sciences, University of South Carolina, Columbia, SC.

#245 **Poster Board Number 411**
A Novel *In Vitro* Fluorescence-Based Assay for Sensitive Screening of Marine Neurotoxins in Seafood. J. Nicolas[1,2], P. Hendriksen[2], T. Bovee[2], and *I. Rietjens*[1]. [1]Division of Toxicology, Wageningen UR, Wageningen, Netherlands; and [2]RIKILT Institute of Food Safety, Wageningen, Netherlands.

#246 **Poster Board Number 412**
Cytotoxicity Induced by Fipronil and Its Sulfone Metabolite in SH-SY5Y Cells. M. R. Martínez-Larrañaga, *A. Anadon*, M. A. Martínez, I. Ares, E. Ramos, V. Castellano, M. Martínez, and A. Romero. Department of Toxicology and Pharmacology, Faculty of Veterinary Medicine, Complutense University, Madrid, Spain.

#247 **Poster Board Number 413**
Neurobehavioral and Biochemical Alterations in Lobster Cockroach *Nauphoeta cinerea* Exposed to Methylmercury. *I. A. Adedara*[1,2,3], D. B. Rosemberg[1], D. O. Souza[2], J. P. Kamdem[1], *E. O. Farombi*[3], *M. Aschner*[4], and J. B. Rocha[1]. [1]Departamento de Bioquímica e Biologia Molecular, CCNE, Universidade Federal de Santa Maria, Santa Maria, Brazil; [2]Departamento de Bioquímica, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil; [3]Drug Metabolism and Toxicology Research Laboratories, Department of Biochemistry, University of Ibadan, Ibadan, Nigeria; and [4]Department of Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY.

#248 **Poster Board Number 414**
Defeating the Animal: Alternative Systems for Neurotoxicity Testing. J. Sisnaiske[1], V. Hausherr[1], A. K. Krug[2], D. Fluri[3], *M. Leist*[2], and *C. van Thriel*[1]. [1]IfADo, Dortmund, Germany; [2]University of Konstanz, Konstanz, Germany; and [3]InSphero AG, Schlieren, Switzerland.

MONDAY

Program Schedule (Continued)

Abstract #

#249 **Poster Board Number 415**
Bisphenol A Effects on *In Vitro* Human Neural Development Was Window of Susceptibility Dependent. *X. Wu*[1,2], A. Majumder[3], and *S. Stice*[1,2,3]. [1]Interdisciplinary Toxicology Program, University of Georgia, Athens, GA; [2]Regenerative Bioscience Center, University of Georgia, Athens, GA; and [3]ArunA Biomedical, Inc, Athens, GA.

#250 **Poster Board Number 416**
Thirdhand Smoke Stresses Mitochondria in Mouse Neural Stem Cells: An Indicator of Possible Impairment of Brain Development in Response to THS Exposure. *V. Bahl*[1], K. Johnson[1], J. Hartzell[1], S. Schick[2], and *P. Talbot*[1]. [1]Cell Biology and Neuroscience, University of California, Riverside, CA; and [2]Department of Medicine, University of California, San Francisco, CA.

#251 **Poster Board Number 417**
Screening of New Compounds That Alter Sleep-Wake State Alteration in Zebrafish. *A. Muriana*, A. Alzualde, and O. Holgado. BBD BioPhenix S.L., San Sebastian, Spain.

#252 **Poster Board Number 418**
Triphenyl Phosphate-Induced Developmental Toxicity in Zebrafish: Potential Role of the Retinoic Acid Receptor. G. M. Isales, R. Hipszer, T. Raftery, and *D. Volz*. University of South Carolina, Columbia, SC.

#253 **Poster Board Number 419**
The Comparative Study of Zebrafish Embryonic Toxicity Test and Mouse Embryonic Stem Cell Test to Screen Developmental Toxicity of Human Pharmaceutical Drugs. A. Inoue[1], Y. Nishimura[2], *N. Matsumoto*[1], N. Umemoto[2], Y. Shimada[2], T. Maruyama[1], K. Kayasuga[1], M. Morihara[1], J. Katagi[1], T. Shiroya[1], Y. Hirota[1], S. Kim[1], and T. Tanaka[2]. [1]ONO Pharmaceutical, Co, LTD., Osaka, Japan; and [2]Department of Molecular and Cellular Pharmacology, Pharmacogenomics, and Pharmacoinformatics, Mie University Graduate School of Medicine, Mie, Japan.

#254 **Poster Board Number 420**
Organophosphate Flame Retardants Affect Development and Neurotoxicity in Alternative Models. *M. Behl*[1], *J. Hsieh*[1], *T. J. Shafer*[2], *W. Mundy*[2], *W. A. Boyd*[1], *J. H. Freedman*[1], *S. Hunter*[2], *K. A. Jarema*[2], *S. Padilla*[2], and *R. R. Tice*[1]. [1]Toxicology, NIH, Research Triangle Park, NC; and [2]NHEERL, EPA, Research Triangle Park, NC.

#255 **Poster Board Number 421**
Using the *Drosophila melanogaster* Genetic Reference Panel to Identify Toxicity Pathways for Toluene. *P. J. Bushnell*[1], T. Morozova[2], *R. Judson*[3], *S. D. Hester*[1], W. M. Oshiro[1], J. M. McKee[1], M. A. Higuchi[1], *K. R. Tatum-Gibbs*[1], *W. K. Boyes*[1], *D. M. Reif*[2], and T. F. Mackay[2]. [1]NHEERL/ORD, US EPA, Research Triangle Park, NC; [2]Biological Sciences, NC State University, Raleigh, NC; and [3]NCCT/ORD, US EPA, Research Triangle Park, NC.

#256 **Poster Board Number 422**
Developmental Toxicity of Phase I and II ToxCast™ Chemicals to *Caenorhabditis elegans.* *W. A. Boyd*[1], M. Smith[2], C. A. Co[2], J. Pirone[2], J. R. Rice[1], and *J. H. Freedman*[1]. [1]NIEHS, Research Triangle Park, NC; and [2]Social & Scientific Systems, Durham, NC.

Abstract #

#257 **Poster Board Number 423**
Comparative Effects of Brominated and Organophosphate Flame Retardants on *Caenorhabditis elegans* Feeding, Reproduction, and Growth. J. R. Rice[1], *M. Behl*[1], C. A. Co[2], M. Smith[2], *J. H. Freedman*[1], and *W. A. Boyd*[1]. [1]NIEHS, Research Triangle Park, NC; and [2]Social & Scientific Systems, Durham, NC.

#258 **Poster Board Number 424**
Planarians As a New Platform for Developmental Neurotoxicology. *D. N. Hagstrom*[1], O. Cochet-Escartin[2], and E. S. Collins[1,2]. [1]Biology, University of California, San Diego, La Jolla, CA; and [2]Physics, University of California, San Diego, La Jolla, CA.

#259 **Poster Board Number 425**
The Importance of Internal Exposure and Biodistribution for Interpretation of Effects in Zebrafish Embryos and Larvae. A. Wolterbeek, C. Snel, E. Verheij, S. Bosgra, A. Menke, and C. Krul. TNO, Zeist, Netherlands. Sponsor: *R. Woutersen*.

#260 **Poster Board Number 426**
The Cannabinoid Agonist WIN 55,212-2 Inhibits Cephalic Regeneration in *Girardia tigrina.* *R. Sneed*[1], and E. Chen[2]. [1]Sciences and Mathematics, University of the District of Columbia, Washington, DC; and [2]Biological Sciences, University of Maryland, Baltimore County, Baltimore, MD.

#261 **Poster Board Number 427**
Identification of Environmental Chemicals That Induce Yolk Malabsorption in Zebrafish Using Automated Image Segmentation. S. Kalasekar[1], E. Zacharia[2], N. Kessler[2], N. Ducharme[1], J. Gustafsson[1,3], I. A. Kakadiaris[2], and M. Bondesson[1]. [1]Center for Nuclear Receptors and Cell Signaling, Department of Biology and Biochemistry, University of Houston, Houston, TX; [2]Department of Computer Science, University of Houston, Houston, TX; and [3]Department of Biosciences and Nutrition, Karolinska Institutet, Huddinge, Sweden. Sponsor: *D. Zalko*.

#262 **Poster Board Number 428**
Phenotype Anchoring in Zebrafish Reveals an MMP-Dependent Mechanism for Tamoxifen-Induced Cell Death. *S. M. Bugel*, *L. Wehmas*, J. K. Ladu, and *R. L. Tanguay*. Environmental & Molecular Toxicology, Oregon State University, Corvallis, OR.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Developmental Neurotoxicology—Nonmammalian Models

Chairperson(s): *Edward D. Levin, Psychiatry, Duke University Medical Center, Durham, NC.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *9:30 AM–11:00 AM*

#263 **Poster Board Number 431**
Using the Larval Zebrafish Locomotor Assay in Functional Neurotoxicity Screening: Light Brightness and the Order of Stimulus Presentation Affect the Outcome. K. A. Jarema, D. L. Hunter, and S. Padilla. NHEERL, US EPA, Research Triangle Park, NC. Sponsor: *C. Gordon*.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#264 **Poster Board Number 432**
The Effects of Developmental Deltamethrin Exposure on Aggression in Adult Zebrafish. *T. S. Kung*[1], K. R. Cooper[1], *J. R. Richardson*[2], and *L. A. White*[1]. [1]Biochemistry and Microbiology, Rutgers University, New Brunswick, NJ; and [2]EOHSI, Piscataway, NJ.

#265 **Poster Board Number 433**
Development of a Zebrafish Model to Identify Adverse Outcome Pathways Linking Thyroid Hormone Disruption to Developmental Neurotoxicity. K. M. Walter[1], *G. W. Miller*[1], Y. Chang[1], *K. A. Hayakawa*[1], B. W. Draper[2], and *P. Lein*[1]. [1]Molecular Biosciences, University of California-Davis School of Veterinary Medicine, Davis, CA; and [2]Molecular and Cellular Biology, University of California-Davis, Davis, CA.

#266 **Poster Board Number 434**
Effects of Bisphenol A (BPA) Exposure on Dopaminergic Gene Expression and Behavior in Zebrafish (*Danio rerio*). E. Isaac, *T. S. Kung*, and *L. A. White*. Biochemistry and Microbiology, Rutgers University, New Brunswick, NJ.

#267 **Poster Board Number 435**
When Zebrafish "Misbehave"—Learning about Delayed Effects of Low-Level Embryonic Contaminant Exposure from Adult Zebrafish Behavior. *L. Glazer*[1,2], *N. Aluru*[1,2], and *M. E. Hahn*[1,2]. [1]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA; and [2]Woods Hole Center for Oceans and Human Health, Woods Hole, MA.

#268 **Poster Board Number 436**
Zebrafish As Biosensors: Advanced Morphological-Behavioral Testing Platform Reveals Neurodevelopmental Defects in Embryos and Larvae Exposed to Comprehensive Suite of Flame Retardant Chemicals. *P. D. Noyes*, *D. E. Haggard*, G. D. Gonnerman, and *R. L. Tanguay*. Environmental & Molecular Toxicology, Oregon State University, Corvallis, OR.

#269 **Poster Board Number 437**
Characterizing the Neurobehavioral Effects of Exposure to the Flame Retardant Mixture Firemaster® 550 in Zebrafish: Subchronic Developmental and Acute Adult Exposures. *J. Bailey*, and *E. D. Levin*. Psychiatry, Duke University, Durham, NC.

#270 **Poster Board Number 438**
Embryonic Exposure to Organophosphate Flame Retardants Causes Behavioral Effects in Zebrafish: A Comparison with Chlorpyrifos. *A. N. Oliveri*[1], and *E. D. Levin*[2]. [1]Pharmacology and Cancer Biology, Duke University School of Medicine, Durham, NC; and [2]Psychiatry and Behavioral Sciences, Duke University School of Medicine, Durham, NC.

#271 **Poster Board Number 439**
Persisting Effects of a Flame Retardant Metabolite, 6-OH-BDE-47, on Larval and Juvenile Zebrafish Swimming Behavior. *L. J. Macaulay*[1], *J. M. Bailey*[2], *E. D. Levin*[2], and H. M. Stapleton[1]. [1]Nicholas School of the Environment, Duke University, Durham, NC; and [2]Department of Psychiatry, Duke University Medical Center, Duke University, Durham, NC.

Abstract #

#272 **Poster Board Number 440**
The Antirheumatic Drug, Leflunomide, Interferes with the Dopamine Synthesis Pathway. *E. Cook*, *A. Planchart*, and *C. J. Mattingly*. Biological Sciences, NC State University, Raleigh, NC.

#273 **Poster Board Number 441**
Developmental Neurotoxicity of Polybrominated Diphenyl Ether-47 in *Caenorhabditis elegans*. *C. A. Dodd*, E. J. Simon, and T. S. Johnson. Biology, Fort Valley State University, Fort Valley, GA.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Developmental Neurotoxicology—*In Vitro* Screening

Chairperson(s): *Timothy J. Shafer, Integrated Systems Toxicology, US Environmental Protection Agency, Research Triangle Park, NC.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#274 **Poster Board Number 445**
Expression of Cytochrome P450 Isozymes in Primary Cortical Cultures from Rat Frontal Cortex. *T. J. Shafer*, E. Winkfield, G. Nelson, S. Simmons, *B. N. Chorley*, and *W. Mundy*. Integrated Systems Toxicology, US Environmental Protection Agency, Research Triangle Park, NC.

#275 **Poster Board Number 446**
Screening for Developmental Neurotoxicants Using *In Vitro* "Brain on a Chip" Cultures. J. P. Brown, K. A. Wallace, D. Hall, *W. Mundy*, and *T. J. Shafer*. Integrated Systems Toxicology Division, US Environmental Protection Agency, Research Triangle Park, NC.

#276 **Poster Board Number 447**
Novel Quantitative Methods for Characterization of Chemical-Induced Functional Alteration in Developing Neuronal Cultures. D. Hall[1], E. Cotterill[2], K. A. Wallace[1], J. P. Brown[1], S. Eglen[2], *W. Mundy*[1], and *T. J. Shafer*[1]. [1]Integrated Systems Toxicology, US Environmental Protection Agency, Research Triangle Park, NC; and [2]Cambridge University, Cambridge, United Kingdom.

#277 **Poster Board Number 448**
Alteration of Network Activity in Cortical Neurons by Triadimefon. B. S. Lynch[2], C. M. Mack[1], and *T. J. Shafer*[1]. [1]Integrated Systems Toxicology, US Environmental Protection Agency, Research Triangle Park, NC; and [2]North Carolina Central University, Durham, NC.

#278 **Poster Board Number 449**
A Multiplexed Assay for Determination of Neurotoxicant Effects on Spontaneous Network Activity and Cell Viability from Microelectrode Arrays. *J. D. Strickland*[1], K. A. Wallace[2], P. A. Valdivia[1], *W. Mundy*[2], and *T. J. Shafer*[2]. [1]Axion Biosystems, Atlanta, GA; and [2]Integrated Systems Toxicology, US Environmental Protection Agency, Research Triangle Park, NC.

Program Schedule (Continued)

Abstract #

#279 **Poster Board Number 450**
Mouse Pluripotent Stem Cell Motor Neurons Generate Robust Neural Network Activity on Microelectrode Arrays. *S. Stice*[1,2], A. Majumder[1], B. Culp[1], A. M. Nicolini[3], and C. Arrowood[3]. [1]ArunA Biomedical, Inc., Athens, GA; [2]Regenerative Bioscience Center, University of Georgia, Athens, GA; and [3]Axion BioSystems, Atlanta, GA.

#280 **Poster Board Number 451**
A High-Throughput MEA Assay Utilizing Rat Cortical Neurons Can Detect Both Glycine Receptor and GABAA Receptor Seizure Responses in Brucine. J. Bradley, *C. Strock*, and H. Luithardt. Cyprotex US, Watertown, MA.

#281 **Poster Board Number 452**
Acute Insecticide-Induced Changes in Electrical Activity of Primary Cortical Cultures: Multielectrode Array Data Collection and Analysis. *M. M. Dingemans*, F. Wijnolts, R. van Kleef, A. de Groot, and *R. H. Westerink*. Utrecht University, Institute for Risk Assessment Sciences, Utrecht, Netherlands.

#282 **Poster Board Number 453**
Microengineered Peripheral "Nerve-on-a-Chip" toward Preclinical Testing. *J. L. Curley*[1,4], R. M. Huval[1], O. H. Miller[2], Y. Fan[1], M. J. Moore[1,2,4], and B. J. Hall[2,3]. [1]Biomedical Engineering, Tulane University, New Orleans, LA; [2]Neuroscience, Tulane University, New Orleans, LA; [3]Cell and Molecular Biology, Tulane University, New Orleans, LA; and [4]AxoSim Technologies LLC, New Orleans, LA.

#283 **Poster Board Number 454**
High-Throughput Neurite Outgrowth Screening for Developmental Neurotoxic Substances. J. Delp[1,2], S. Gutbier[1,2], and *M. Leist*[1]. [1]Department of Biology, University of Konstanz, Konstanz, Germany; and [2]Research Training Group 1331, University of Konstanz, Konstanz, Germany.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Nanotoxicology, General, Environmental, Metals

Chairperson(s): *Brian Thrall, Pacific Northwest National Laboratory, Richland, WA; and Andrea Haase, German Federal Institute for Risk Assessment, Berlin, Germany.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *9:30 AM–11:00 AM*

#284 **Poster Board Number 501**
Quantitative Structure-Activity Relationships to Predict Biological Effects of Engineered Nanoparticles on Macrophage Innate Immune Function. *B. D. Thrall*[1], *D. Thomas*[1], *V. K. Kodali*[1], *S. J. Skerrett*[2], *C. F. Frevert*[2], *J. G. Pounds*[1], and *J. G. Teeguarden*[1]. [1]Cell Biology & Biochemistry, Pacific Northwest National Lab, Richland, WA; and [2]University of Washington, Seattle, WA.

Abstract #

#285 **Poster Board Number 502**
Immunomodulating Effects of Polyamidoamine Dendrimers Encapsulated Gold Nanodots in Human Macrophages THP-1. Y. Luo[1], Z. Wu[2], H. Tsai[1], S. Lin[2], and *P. Lin*[1,3]. [1]Division of Environmental Health and Occupational Medicine, National Health Research Institutes, Zhunan, Taiwan; [2]Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Zhunan, Taiwan; and [3]National Environmental Health Research Center, National Health Research Institutes, Zhunan, Taiwan.

#286 **Poster Board Number 503**
Comparative *In Vivo*, *Ex Vivo*, and *In Vitro* Toxicity Studies of Engineered Nanomaterials. *Y. Kim*[1], E. H. Boykin[2], T. Stevens[3], K. Lavrich[1], and *I. Gilmour*[2]. [1]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC; [2]NHEERL, US Environmental Protection Agency, Research Triangle Park, NC; and [3]NCEA, US Environmental Protection Agency, Research Triangle Park, NC.

#287 **Poster Board Number 504**
Inhibition of Multixenobiotic Resistance (MXR) Transporters by Silver Nanoparticles and -ions *In Vitro* and *In Vivo*. A. Georgantzopoulou[1], S. Cambier[1], T. Serchi[1], A. Lankoff[2,3], M. Kruszewski[2,3], Y. L. Balachandran[4], P. Grysan[5], J. Audinot[5], J. Ziebel[1], C. Guignard[1], A. C. Gutleb[1], and A. J. Murk[6,7]. [1]EVA, Luxembourg Institute for Science and Technology, Belvaux, Luxembourg; [2]Institute of Nuclear Chemistry and Technology, Centre for Radiobiology and Biological Dosimetry, Warszawa, Poland; [3]Institute of Rural Health, Independent Laboratory of Molecular Biology, Lublin, Poland; [4]Department of Biotechnology, Bharathiar University, Coimbatore, India; [5]SAM, Luxembourg Institute for Science and Technology, Belvaux, Luxembourg; [6]Sub-Department of Environmental Technology, Wageningen University, Wageningen, Netherlands; and [7]Wageningen Institute for Marine Resources & Ecosystem Studies, IMARES, IJmuiden, Netherlands. Sponsor: *B. Bloemeke*.

#288 **Poster Board Number 505**
Performance of a Direct Reading Instrument in Characterizing Nanoparticles. B. T. Chen, D. Schwegler-Berry, A. Cumpston, S. Stone, S. Friend, J. Cumpston, W. McKinney, M. J. Keane, and D. G. Frazer. NIOSH, Morgantown, WV. Sponsor: *J. Antonini*.

#289 **Poster Board Number 506**
Silver Nanoparticles Toxicity and Effect on Gene Expression in Human Cells. K. Vig[1], P. M. Tiwari[1], E. Eroglu[1,2], and S. R. Singh[1]. [1]Center for Nanobiotechnology Research, Alabama State University, Montgomery, AL; and [2]Bioengineering Dept, Celal Bayar Univ, Muradiye, Manisa, Turkey. Sponsor: *N. Singh*.

#290 **Poster Board Number 507**
Potentiating Toxicological Interaction of Single-Walled Carbon Nanotubes with Dissolved Metals. *M. A. Al-Shaeri*[1,2], D. Ahmed[1], F. McCluskey[1], G. Turner[1], L. Paterson[3], E. Dyrynda[1], and *M. Hartl*[1]. [1]School of Life Sciences, Heriot-Watt University, Edinburgh; [2]Department of Biological Sciences, King Abdulaziz University, Jeddah, Saudi Arabia; and [3]School of Engineering and Physical Sciences, Scottish Universities Physics Alliance, Institute of Biological Chemistry, Biophysics and Bioengineering, Heriot-Watt University, Edinburgh, United Kingdom.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#291 **Poster Board Number 508**
Protein Carbonylation As a Marker of Oxidative Stress: Analysis of 25 Inorganic Nanoparticles. M. D. Driessen[1], R. Ossig[2], J. Schnekenburger[2], A. Vennemann[3], M. Wiemann[3], T. Kuhlbusch[4], A. Luch[1], and *A. Haase*[1]. [1]German Federal Institute for Risk Assessment, Berlin, Germany; [2]Biomedical Technology Center, Westfälische Wilhelms-Universität, Münster, Germany; [3]IBE R&D gGmbH, Münster, Germany; and [4]Institute of Energy and Environmental Technology (IUTA) e.V., Duisburg, Germany.

#292 **Poster Board Number 509**
Nanoparticle-Induced Oxidative Stress Alters Phospho-Tyrosine Signalling Pathways in Mammalian Cells. M. D. Driessen[1], R. Ossig[2], J. Schnekenburger[2], A. Vennemann[3], M. Wiemann[3], A. Luch[1], P. Nollau[4], and *A. Haase*[1]. [1]German Federal Institute for Risk Assessment, Berlin, Germany; [2]Biomedical Technology Center, Westfälische Wilhelms-Universität, Münster, Germany; [3]IBE R&D gGmbH, Münster, Germany; and [4]University Medical Center Hamburg–Eppendorf, Hamburg, Germany.

#293 **Poster Board Number 510**
Oxidation Potential of Nanomaterials Determined by Cytochrome C. M. Irfan[1,2], W. Wohlleben[2,1], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany; and [2]Polymer Physics, BASF SE, Ludwigshafen am Rhein, Germany.

#294 **Poster Board Number 511**
Hemotoxicity and Stability of Luminescent Nanoparticles: *In Vitro* and *In Vivo* Evaluation. L. Minjares[1], G. Sandra[1], X. C. Fernandez[1], F. C. Arteaga[1], *T. D. Palacios-Hernandez*[2], M. A. Mendez[1], S. Hernandez[3], G. A. Hirata[4], and *A. Angulo-Molina*[5,6]. [1]Universidad de las Americas Puebla (UDLAP), Puebla, Mexico; [2]Universidad Popular Del Edo de Puebla (UPAEP), Puebla, Mexico; [3]Universidad Panamericana (UP), Mexico City, Mexico; [4]Centro de Nanociencias y Nanotecnologia (CNYN), Ensenada, BC, Mexico; [5]Universidad de Sonora (UNISON), Hermosillo, Mexico; and [6]Centro de Investigacion en Alimentacion y Desarrollo Ciad, Hermosillo, Mexico.

#295 **Poster Board Number 512**
Risk Assessment of Nanomaterials Using Control Banding. *A. B. Santamaria*[1], F. S. Mowat[3], J. B. Hicks[4], and *J. S. Tsuji*[2]. [1]Exponent, Houston, TX; [2]Exponent, Bellevue, WA; [3]Exponent, San Francisco, CA; and [4]Exponent, Oakland, CA.

#296 **Poster Board Number 513**
Silver Nanoparticles Induce Cardiovascular Toxicity in Endothelial Cells and Zebrafish Embryos. W. Pimtong, T. Wutikhun, and *R. Maniratanachote*. National Nanotechnology Center, National Science and Technology Development Agency, Pathum Thani, Thailand.

#297 **Poster Board Number 514**
Silver Nanoparticles Induce Autophagy Dysregulation and Activation of NLRP3 Inflammasome in HepG2 Cells. *A. Mishra*, *Q. Zhang*, J. Zheng, and *P. L. Goering*. FDA Center for Devices and Radiological Health, Silver Spring, MD.

Abstract #

#298 **Poster Board Number 515**
Impact and Implications of Gold Nanoparticle Interactions with Human Serum Proteins and Biocorona Formation. *A. Sasidharan*[1], *J. E. Riviere*[1,2], and *N. A. Monteiro-Riviere*[1]. [1]Nanotoxicology Innovation Center, Kansas State University, Manhattan, KS; and [2]Institute of Computational Comparative Medicine, Kansas State University, Manhattan, KS.

#299 **Poster Board Number 516**
Toxicological Profiling of Differently Coated Silver Nanoparticles Using a Suite of *Saccharomyces cerevisiae* Single-Gene Deletion Mutants. S. Suppi[1,2], A. Kahru[1], and K. Kasemets[1]. [1]Laboratory of Environmental Toxicology, National Institute of Chemical Physics and Biophysics, Tallinn, Estonia; and [2]Faculty of Chemical and Materials Technology, Tallinn University of Technology, Tallinn, Estonia. Sponsor: *K. Savolainen*.

#300 **Poster Board Number 517**
Nickel Nanoparticles Induce Sustained Activation of the STAT6 Transcription Factor in Lung Fibroblasts to Promote Exacerbation of Asthma. *M. Ihrie*, *K. Duke*, *K. A. Shipkowski*, A. Taylor, and *J. C. Bonner*. Department of Biological Sciences, North Carolina State University, Raleigh, NC.

#301 **Poster Board Number 518**
Effects of the Physicochemical Properties of Nano-Scaled Cerium Oxide on Fibrogenesis. *D. C. Davidson*[1], M. Barger[1], R. Derk[1], *T. A. Stueckle*[1], *J. Y. Ma*[1], *P. Demokritou*[2], and *L. Wang*[1]. [1]NIOSH, Morgantown, WV; and [2]Harvard University, Boston, MA.

#302 **Poster Board Number 519**
Alumina Nanoparticles in Cognitive Ability of Mice Model of Alzheimer's Disease-Bearing Susceptible Genes. *Q. Zhang*[1,2], X. Hou[1], T. Moehling[1], B. Zheng[1], R. Kaur[1], *Q. Niu*[2], and J. Wang[1]. [1]Department of Pathology, University of Mississippi Medical Center, Jackson, MS; and [2]Department of Occupational Medicine, Shanxi Medical University, Taiyuan, China.

#303 **Poster Board Number 520**
***In Vivo* Evaluation of the Pulmonary Toxicity of Cellulose Nanocrystals.** *N. Yanamala*[1], M. Farcas[1], E. R. Kisin[1], *C. Geraci*[3], *V. E. Kagan*[4], and *A. A. Shvedova*[1,2]. [1]PPRB, NIOSH, Morgantown, WV; [2]Physiology and Pharmacology, WVU, Morgantown, WV; [3]Education and Information Division, NIOSH, Cincinnati, OH; and [4]Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA.

#304 **Poster Board Number 521**
Green Algae Interacting with Single-Walled Carbon Nanotubes Affect the Feeding Behavior of Mussels, Mitigating Nanotube Toxicity. *M. A. Al-Shaeri*[1,2], L. Paterson[3], M. Stobie[1], P. Cyphus[1], and *M. Hartl*[1]. [1]School of Life Sciences, Heriot-Watt University, Edinburgh, United Kingdom; [2]Department of Biolgical Sciences, King Abdulaziz University, Jeddah, Saudi Arabia; and [3]School of Engineering and Physical Sciences, Scottish Universities Physics Alliance, Institute of Biological Chemistry, Biophysics and Bioengineering, Heriot-Watt University, Edinburgh, United Kingdom.

Program Schedule (Continued)

Abstract #

#305 **Poster Board Number 522**
Prediction and Comparison of Size-Dependent Biodistribution of Polyethylene Glycol-Coated Gold Nanoparticles in Adult Mice: A Physiologically Based Pharmacokinetic Model. *Z. Lin*[1], *N. A. Monteiro-Riviere*[2], and *J. E. Riviere*[1]. [1]Institute of Computational Comparative Medicine, Department of Anatomy and Physiology, Kansas State University, Manhattan, KS; and [2]Nanotechnology Innovation Center of Kansas State, Department of Anatomy and Physiology, Kansas State University, Manhattan, KS.

#306 **Poster Board Number 523**
Realistic Model for Ambient Respiratory Exposure to Nanomaterial Aerosols Using a Deployable *In Vitro* System. *T. B. Tilly*[1], *C. Grabinski*[1], *D. W. Porter*[2], *J. Schlager*[1], and *S. M. Hussain*[1]. [1]Human Effectiveness Directorate, US Air Force, Dayton, OH; and [2]Health Effects Laboratory Division, National Institute for Occupational Safety and Health, Morgantown, WV.

#307 **Poster Board Number 524**
Pulmonary Microdistribution of TiO2 Nanoparticles in Rats following Single or Multiple Intratracheal Administrations Using XRF Microscopy. G. Zhang[1], N. Shinohara[1], H. Kano[2], H. Senoh[2], M. Suzuki[2], T. Sasaki[1], *S. Fukushima*[2], and M. Gamo[1]. [1]National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; and [2]Japan Bioassay Research Center, Hadano, Japan.

#308 **Poster Board Number 525**
Nanoparticle Surface Characterization and Clustering through Concentration-Dependent Surface Adsorption Modeling. R. Chen[1,2], Y. Zhang[1,4], F. D. Sahneh[1,3], C. Scoglio[1,2,3], *W. Wohlleben*[5], *A. Haase*[6], *N. A. Monteiro-Riviere*[2,4], and *J. E. Riviere*[1,4]. [1]Institute of Computational Comparative Medicine, Kansas State University, Manhattan, KS; [2]Nanotechnology Innovation Center of Kansas State, Kansas State University, Manhattan, KS; [3]Department of Electrical and Computer Engineering, Kansas State University, Manhattan, KS; [4]Department of Anatomy and Physiology, Kansas State University, Manhattan, KS; [5]Material Physics GMC, BASF, Ludwigshafen, Germany; and [6]Department Chemicals and Product Safety, German Federal Institute for Risk Assessment (BfR), Berlin, Germany.

#309 **Poster Board Number 526**
Silicon Nanowires: Free Radical Production and Related Damage in Cellular Exposures. S. S. Leonard, A. J. Kenyon, D. Schwegler-Berry, N. R. Fix, and *J. R. Roberts*. NIOSH, Morgantown, WV.

#310 **Poster Board Number 527**
Framework to Evaluate Exposure Relevance and Data Needs for Risk Assessment of Nanomaterials Using *In Vitro* Testing Strategies. *M. Sharma*[1], J. Shatkin[2], C. Cairns[3], *R. Canady*[4], and *A. J. Clippinger*[1]. [1]PETA International Science Consortium, Ltd, London, United Kingdom; [2]Vireo Advisors, LLC, Boston, MA; [3]Independent Consultant, New York City, NY; and [4]Center for Risk Science Innovation and Application, ILSI Research Foundation, Washington, DC.

Abstract #

#311 **Poster Board Number 528**
Nanoparticle Size, Shape, Coat, and Charge Alter the Bioactivity of Nanosilver. *P. R. Hunt*[1], Z. Keltner[1], X. Gao[1], S. J. Oldenburg[2], P. Bushana[1], N. Olejnik[1], and R. Sprando[1]. [1]CFSAN/OARSA/DoT, FDA, Laurel, MD; and [2]nanoComposix, San Diego, CA.

#312 **Poster Board Number 529**
Uterine Intravital Microscopy 24-Hours After Nanosized Titanium Dioxide Exposure. *P. G. Stapleton*, C. R. McBride, *J. Yi*, and *T. R. Nurkiewicz*. Physiology and Pharmacology, West Virginia University, Morgantown, WV.

#313 **Poster Board Number 530**
Inhaled Nanosized Titanium Dioxide Alters Peripheral Sympathetic Neurotransmitter Receptor Balance. *T. L. Knuckles*, J. Yi, and *T. R. Nurkiewicz*. Center for Cardiovascular and Respiratory Sciences, West Virginia University, Morgantown, WV.

#314 **Poster Board Number 531**
Single Intratracheal Instillation of 20 nm Citrate Capped Nanosilver-Elevated Circulating Cytokines and Expanded Cardiac Ischemia/Reperfusion Injury in Male Sprague-Dawley Rats. *N. A. Holland*[1], *D. P. Becak*[1], *J. Shannahan*[2], J. K. Volkan[1], *R. M. Lust*[1], *J. M. Brown*[2], *T. Fennell*[3], and *C. J. Wingard*[1]. [1]Physiology, East Carolina University, Greenville, NC; [2]Department of Pharmaceutical Sciences, University of Colorado - Denver, Aurora, CO; and [3]Research Triangle International, Research Triangle Park, NC.

#315 **Poster Board Number 532**
Abstract Withdrawn

#316 **Poster Board Number 533**
Effect of Silver Nanoparticles (AgNP) on Surface Marker Expression of Human Bone Marrow Stromal Cells (hBMSCs). *G. Kumar*[1], M. Shah[1,2], B. Casey[1], *S. Skoog*[1], C. Donahue[1], and *P. L. Goering*[1]. [1]FDA, Silver Spring, MD; and [2]School of Medicine, University of Missouri, Kansas City, MO.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Metals

Chairperson(s): *Joshua Edwards, Department of Pharmacology, Midwestern University, Downers Grove, IL; and Mindy F. Reynolds, Washington College, Chestertown, MD.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#317 **Poster Board Number 536**
Chronic Exposure to Particulate Hexavalent Chromium Disrupts Sister Chromatid Cohesion in Human Lung Cells. *C. Falank*[1], and *J. P. Wise*[1,2]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME; and [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#318 **Poster Board Number 537**
Assessing the Effects of Hexavalent Chromium in Two Reptilian Species: Implications for Metal Impacts of Global Warming. *S. Wise*[1,2,3], *H. Xie*[1,2,3], T. Fukuda[4], W. D. Thompson[2,3], *L. Guillette*[5], and *J. P. Wise*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME; [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME; [3]Applied Medical Science, University of Southern Maine, Portland, ME; [4]Graduate School of Agricultural Science, Tohoku University, Sendai, Japan; and [5]Department of Obstetrics and Gynecology, Medical University of South Carolina, Charleston, SC.

#319 **Poster Board Number 538**
Cytomodulation of Potassium Dichromate Hepatotoxicty by Ethanolic Extract of *Moringa oleifera* in Swiss Albino Rats. *K. A. Akinwumi*[1,2], *O. A. Odunola*[2], O. O. Osifeso[3], O. O. David[1], R. D. Akinsola[1], D. O. Aralamo[3], and F. A. Adeniyi[1]. [1]Department of Chemical Sciences, Bells University of Technology, Ota, Nigeria; [2]Department of Biochemistry, University of Ibadan, Ota, Nigeria; and [3]Department of Science Laboratory Science, Moshood Abiola Polytechnic, Ota, Nigeria.

#320 **Poster Board Number 539**
Modulation of Cytochrome P450 1 (Cyp1) by Chromium in Hepatic Tissue of C57BL/6 Mice. A. Asiri, *A. El-Kadi*, and G. Abdelhamid. University of Alberta, Edmonton, AB, Canada.

#321 **Poster Board Number 540**
The Inhibition of DNA Repair Protein, RAD51, by Prolonged Exposure to Particulate Chromate. *C. L. Browning*[1,2], *H. Xie*[1,2], D. F. Kelly[3], and *J. P. Wise*[1,2]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME; [2]Graduate School of Biomedical Sciences and Engineering, University of Maine, Orono, ME; and [3]Virginia Tech Carilion Research Institute, Roanoke, VA.

#322 **Poster Board Number 541**
Centriole Defects in Chemical Carcinogenesis: Particulate Cr(VI) Causes Premature Centriole Disengagement through Plk1 and Separase Activation. *J. Martino*[1,2], A. Holmes[1,2,3], *H. Xie*[1,2,3], and *J. P. Wise*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME; [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME; and [3]Department of Applied Medical Sciences, University of Southern Maine, Portland, ME.

#323 **Poster Board Number 542**
PI3K/Akt/DAF-16 Activity Is Protective during Excess Iron Exposure in *C. elegans*. T. K. Tourdot, C. L. Liveringhouse, J. J. Ash, G. W. Goss, and *S. J. Fretham*. Biology, Luther College, Decorah, IA.

#324 **Poster Board Number 543**
Iron Incorporation to MnSOD Leads to the Formation of a Peroxidase: Possible Implications for Nutrition-Dependent Iron Toxicity. D. Ganini da Silva, R. M. Petrovich, L. L. Edwards, and *R. P. Mason*. NIEHS, Research Triangle Park, NC.

Abstract #

#325 **Poster Board Number 544**
An Exposure and Health Risk Assessment of Lead (Pb) in Lipstick. *A. Monnot*[1], *W. V. Christian*[2], M. Abramson[2], and *M. H. Follansbee*[3]. [1]Cardno-ChemRisk, San Francisco, CA; [2]Cardno-ChemRisk, Pittsburgh, PA; and [3]Syracuse Research Corporation, Scarborough, ME.

#326 **Poster Board Number 545**
Blood Lead and Hypertension in an Adult Population in Southern Brazil. A. B. Almeida Lopes[1], *E. K. Silbergeld*[2], *A. Navas-Acien*[2], *R. D. Zamoiski*[2], M. R. Urbano[3], M. H. Carvalho[4], M. L. Buzzo[4], and M. B. Paoliello[1,5]. [1]Graduate Program in Public Health, State University of Londrina, Londrina, Brazil; [2]Department of Environmental Health Sciences, Johns Hopkins University, Baltimore, MD; [3]Department of Statistics, State University of Londrina, Londrina, Brazil; [4]Nucleus of Inorganic Contaminants, Adolf Lutz Institute, Sao Paulo, Brazil; and [5]Department of Clinical and Toxicological Analysis, State University of Londrina, Londrina, Brazil.

#327 **Poster Board Number 546**
Dose-Dependent Effect of Lead (Pb) on Repetitive and Social Behavior in Male and Female Mice. *J. Chang*, C. Kueon, and *J. Kim*. Northeastern University, Boston, MA.

#328 **Poster Board Number 547**
Determinants of Blood Lead Levels among Children in Ulaanbaatar, Mongolia. N. Ganbaatar[1], M. Tsogtbaatar[1], E. Halmambetova[1], E. Malchinkhuu[1], G. Ulziibayar[2], C. Ochir[1], and *P. B. Olkhanud*[1]. [1]School of Medicine, MNUMS, Ulaanbaatar, Mongolia; and [2]NCPH, Ulaanbaatar, Mongolia.

#329 **Poster Board Number 548**
Prior Phosphate Treatment of Ingested Soil Affects Tissue Distribution of Lead in Mice. *D. J. Thomas*[1], P. Alava[2], W. Green[1], H. Hayes[1], J. Misenheimer[2], K. Bradham[2], and K. G. Scheckel[3]. [1]ISTD, NHEERL, US EPA, Research Triangle Park, NC; [2]HEASD, NERL, US EPA, Research Triangle Park, NC; and [3]LRPCD, NRMRL, US EPA, Cincinnati, OH.

#330 **Poster Board Number 549**
Intranasal Manganese (Mn) Exposure Leads to a Significant Accumulation of Mn in Bone. A. J. Jones, *S. L. O'Neal*, and *W. Zheng*. Purdue University, West Lafayette, IN.

#331 **Poster Board Number 550**
Dietary Exposure Assessment of the Trace Elements Se and Mn in Meat Products Consumed in the United States. *J. G. Muniz Ortiz*, *C. R. Santerre*, M. O'Keefe, N. Abdelmajid, A. Domesle, M. Quinn, R. Fields, and P. A. Bennett. Office of Public Health Science, US Department of Agriculture, Food Safety and Inspection Service, Washington, DC.

Program Schedule (Continued)

Abstract #

#332 **Poster Board Number 551**
Polymorphisms in the Solute Carrier SLC30A10 Determine Blood Manganese Concentrations—Evidence from Three Human Populations. K. Wahlberg[1], M. E. Vahter[2], K. Engström[1], *D. Smith*[3], R. Lucchini[4], and K. Broberg[2,1]. [1]Occupational and Environmental Medicine, Lund University, Lund, Sweden; [2]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden; [3]Microbiology and Environmental Toxicology, University of California at Santa Cruz, Santa Cruz, CA; and [4]Department of Environmental and Occupational Medicine, Mount Sinai School of Medicine, New York, NY.

#333 **Poster Board Number 552**
Pharmacokinetic Evaluation of the Equivalency of Oral Routes of Manganese Exposure in F344 Rats. *M. L. Foster*[1], *T. B. Bartnikas*[2], L. C. Johnson[1], *A. M. Keene*[3], *M. Taylor*[4], and *D. C. Dorman*[1]. [1]College of Veterinary Medicine, North Carolina State University, Raleigh, NC; [2]Dept. of Pathology and Laboratory Medicine, Brown University, Providence, RI; [3]Afton Chemical Corporation, Richmond, VA; and [4]Nickel Producers Environmental Research Association (NiPERA), Durham, NC.

#334 **Poster Board Number 553**
Zinc Rescue of DNA Repair Inhibition by Uranium. E. J. Dashner, *K. L. Cooper*, Y. Cho, and *L. G. Hudson*. Pharmaceutical Sciences, University of New Mexico, Albuquerque, NM.

#335 **Poster Board Number 554**
Proximity to Uranium Mine Waste on the Navajo Nation Is Associated with Elevated ANA and IL-17. D. MacKenzie, E. Erdei, J. Ong, C. Miller, and *J. L. Lewis*. Community Environmental Health Program, University of New Mexico College of Pharmacy, Albuquerque, NM.

#336 **Poster Board Number 555**
Depleted Uranium Inhibition of Metal-Induced Metallothionein Expression Profiles. *T. A. Thompson*, *S. Medina*, *K. L. Cooper*, E. Dashner, *D. MacKenzie*, and *L. G. Hudson*. Department of Pharmaceutical Sciences, University of New Mexico, Albuquerque, NM.

#337 **Poster Board Number 556**
Early Evidence of Organ Injury after Acute Oral Exposure to Nickel in Rats. *M. S. Madejczyk*[1], M. Permenter[2], D. Kumsher[2], C. E. Baer[2], J. A. Lewis[3], and J. D. Stallings[3]. [1]ORISE Postdoctoral Fellow, Fort Detrick, MD; [2]Excet, Inc., Fort Detrick, MD; and [3]Environmental Health Program, US Army CEHR, Fort Detrick, MD.

#338 **Poster Board Number 557**
Characterization of Aqueous Formulations of Tetra- and Pentavalent Forms of Vanadium at Various pH to Aid in the Test Article Selection for Toxicology Studies. *E. Mutlu*[1], T. Cristy[2], S. Graves[2], *M. J. Hooth*[1], and *S. Waidyanatha*[1]. [1]Division of the National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC; and [2]Battelle Memorial Institute, Columbus, OH.

Abstract #

#339 **Poster Board Number 558**
Global Assessment of Copper and Zinc Concentrations in Free-Ranging Sperm Whales (*Physeter macrocephalus*). *L. C. Savery*[1,6], *J. Wise*[1], *S. Wise*[1,2,3], *C. Falank*[1,2,3], C. Gianios[1,2,3], W. D. Thompson[2,3], C. Perkins[4], T. Zheng[5], C. Zhu[5], and *J. P. Wise*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, Portland, ME; [2]Maine Center for Toxicology and Environmental Health, Portland, ME; [3]Department of Applied Medical Sciences, University of Southern Maine, Portland, ME; [4]Center for Environmental Sciences and Engineering, University of Connecticut, Storrs, CT; [5]Yale School of Public Health, New Haven, CT; and [6]Exponent, Inc., Alexandria, VA.

#340 **Poster Board Number 559**
Health Risk Assessment of Heavy Metals for Population via Consumption of Seafoods from Ogoniland, Rivers State, Nigeria: A Case Study of Kaa, B-Dere and Bodo City. *K. W. Nkpaa*, and *K. C. Patrick-Iwuanyanwu*. Biochemistry, University of Port Harcourt, Port Harcourt, Nigeria.

#341 **Poster Board Number 560**
Metallothionein Isoform 3 Expression in Human Skin, Related Cancers, and Human Skin-Derived Cell Cultures. *A. Slusser*, Y. Zheng, X. Zhou, *S. Somji*, *D. A. Sens*, M. Sens, and *S. H. Garrett*. Pathology, University of North Dakota, Grand Forks, ND.

#342 **Poster Board Number 561**
Pollution Loads of Effluents of Various Types of Industry in Lagoes Metropolis, Nigeria. *C. T. Onwordi*[1,2], and P. C. Onianwa[2]. [1]Chemistry, Lagos State University, Lagos, Nigeria; and [2]Chemistry, University of Ibadan, Ibadan, Nigeria.

#343 **Poster Board Number 562**
Heavy Metal Levels in Leachates from Two Electronic Waste Dumpsites in South West Nigeria. J. K. Igbo, and O. L. Chukwu. Biological Oceanography, Nigerian Institute for Oceanography and Marine Research, Lagos, Nigeria. Sponsor: *J. Zelikoff*.

#344 **Poster Board Number 563**
Toxic Effects of Water-Soluble Fraction of Nail Metal Dust in Rat. *E. A. Balogun*[1], M. Babatunde[1], *J. O. Adebayo*[1], and F. A. Adekola[1,2]. [1]Biochem, University of Ilorin, Ilorin, Nigeria; and [2]Chem, University of Ilorin, Ilorin, Nigeria.

#345 **Poster Board Number 564**
Mobilization of Metals from Embedded Fragments in a Cohort of US Veterans. J. Gaitens[1], *K. S. Squibb*[1], M. Condon[1], J. Centeno[2], and *M. A. McDiarmid*[1]. [1]Baltimore VA Medical Center (VAMC) and University of Maryland (UMD) School of Medicine, Baltimore, MD; and [2]Joint Pathology Center, Silver Spring, MD.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#346 **Poster Board Number 565**
Association between Ambient Metals and Asthma in Italian Adolescents. M. Rosa[1], C. Benedetti[2], M. Peli[2], F. Donna[2], M. Nazzaro[2], C. Fedrighi[2], S. Zoni[2], G. DePalma[2], A. Marcon[3], R. Andreoli[4], R. Wright[1], and *R. Lucchini*[1,2]. [1]Preventive Medicine, Icahn Schhol of Medicine at Mount Sinai, New York, NY; [2]Department of Medical and Surgical Specialties, Radiological Sciences and Public Health, University of Brescia, Brescia, Italy; [3]Public Health and Community Medicine, University of Verona, Verona, Italy; and [4]Clinical and Experimental Medicine, University of Parma, Parma, Italy.

#347 **Poster Board Number 566**
Human Toenails—A Viable Biomarker for Mixed-Metal Exposure in US Welders. *E. J. Ward*[1], M. Nour[1], S. Snyder[1], F. Rosenthal[1], and *U. Dydak*[1,2]. [1]School of Health Sciences, Purdue, West Lafayette, IN; and [2]Radiology and Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN.

#348 **Poster Board Number 567**
Human Exposure Assessment Down-Wind of an Active Open-Pit Copper and Molybdenum Mine in Butte, MT, USA. *K. Hailer*, M. Calhoun, and S. Miner. Chemistry, Montana Tech, Butte, MT.

#349 **Poster Board Number 568**
Longevity of Dental Amalgam Separators and Associated Acute Toxicity of Dental Wastewater Effluents. Y. Hwang[1], E. Botts[1], S. Johnson-Worrell[1], E. I. Maurer[2], *S. M. Hussain*[2], D. Leal[1], and *A. M. Nagy*[1]. [1]Biomaterials and Environmental Surveillance, Naval Medical Research Unit San Antonio, Fort Sam Houston, TX; and [2]711th Human Performance Wing, Wright-Patterson Air Force Base, Dayton, OH.

#350 **Poster Board Number 569**
The Cytotoxicity and Genotoxicity of Particulate and Soluble Cobalt in Human Urothelial Cells. *R. M. Speer*[1,2,3], T. The[1,2,3], and *J. P. Wise*[1,2,3]. [1]Wise Laboratory of Environmental and Genetic Toxicology, University of Southern Maine, Portland, ME; [2]Maine Center for Toxicology and Environmental Health, University of Southern Maine, Portland, ME; and [3]Department of Applied Medical Sciences, University of Southern Maine, Portland, ME.

#351 **Poster Board Number 570**
Induction of Glutathione Peroxidase (GPx) in Transformed Cells upon Exposure to Diphenyl Ditelluride and Tellurium Tetrachloride. *P. Vij*, and *D. Hardej*. Pharmaceutical Sciences, St. John's University, Queens, NY.

#352 **Poster Board Number 571**
Genetic Variation of Iron Metabolism in Mice. H. Irimagawa[1], Y. He[1], S. McLachlan[1], D. W. Killilea[2], B. Parks[3], S. T. Hui[3], E. Eskin[4,5], A. J. Lusis[3,4], *C. Vulpe*[1], and *K. E. Page*[1]. [1]Nutritional Sciences and Toxicology, UC Berkeley, Berkeley, CA; [2]Children's Hospital Oakland Research Institute, Oakland, CA; [3]Department of Medicine/Division of Cardiology, UCLA, Los Angeles, CA; [4]Department of Human Genetics, UCLA, Los Angeles, CA; and [5]Department of Computer Science, UCLA, Los Angeles, CA.

Abstract #

#353 **Poster Board Number 572**
Navajo Birth Cohort Study (NBCS) Metal Biomonitoring. *J. Ong*[1], E. Erdei[1], E. O'Donald[1], B. Pacheco[1], A. Rondon[2], C. Shuey[3], and *J. L. Lewis*[1]. [1]College of Pharmacy-Community and Environmental Health, University of New Mexico, Albuquerque, NM; [2]Navajo Division of Health, Window Rock, AZ; and [3]Southwest Research and Information Center, Albuquerque, NM.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Ecotoxicology

Chairperson(s): *Evans Afriyie-Gyawu, Environmental Health Sciences, Georgia Southern University, Statesboro, GA; and Marie M. Bourgeois, Environmental and Occupational Health, University of Southern Florida College of Public Health, Tampa, FL.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *9:30 AM–11:00 AM*

#354 **Poster Board Number 601**
Comparative Effects of Polybrominated Diphenylether (DE-71), Ethylene-Bis-Tetrabromophthalimde (EBTBP), and Tetrabromobisphenol A (TBBPA) on Thyroid Hormone-Mediated Anuran Metamorphosis. *D. J. Fort*[1], C. Fort[1], M. Mathis[1], *P. D. Guiney*[2], and *J. A. Weeks*[2]. [1]Fort Environmental Laboratories, Stillwater, OK; and [2]SC Johnson, Racine, WI.

#355 **Poster Board Number 602**
Reducing Fish Use in Bioconcentration Studies for General Chemicals. *N. Burden*[1], S. Creton[1], L. Weltje[2], S. K. Maynard[3], and J. R. Wheeler[4]. [1]NC3Rs, London; [2]BASF SE, Limburgerhof, Germany; [3]Syngenta, Bracknell, United Kingdom; and [4]Dow AgroSciences, Abingdon, United Kingdom.

#356 **Poster Board Number 603**
Copper Pyrithione Induces Abnormal Muscle and Notochord Architecture in Developing Zebrafish Embryos. *K. Almond*, and *L. D. Trombetta*. Pharmaceutical Sciences, St. John's University, Queens, NY.

#357 **Poster Board Number 604**
Tributyltin Chloride Induces Penis and Vas Deferens Development in Females of the Purple Snail (*Plicopurpura pansa*). D. Domínguez[1], A. E. Rojas[2], B. S. Barrón[2], M. L. Robledo[2], J. T. Nieto[1], *B. Quintanilla-Vega*[3], and I. M. Medina[2]. [1]Escuela Nacional de Ingenieria Pesquera, Universidad Autonoma de Nayarit, Tepic, Mexico; [2]Secretaria de Investigacion y Posgrado, Universidad Autonoma de Nayarit, Tepic, Mexico; and [3]Toxicología, CINVESTAV, Mexico City, Mexico.

#358 **Poster Board Number 605**
Chronic Fish Toxicity Data for Identification and Risk Assessment of Endocrine Disruptors. *Z. Dang*, P. van Vlaardingen, and C. Bodar. RIVM, Bilthoven, Netherlands.

Program Schedule (Continued)

Abstract #

#359 **Poster Board Number 606**
Effects of Oxadiazon on Nutrient Utilization and Growth of Catfish (*Clarias gariepinus*). *F. Ajani*[1], A. O. Ajiboye[2], and O. O. Oyelowo[3]. [1]Wildlife and Ecotourism Management, University of Ibadan, Ibadan, Nigeria; [2]Animal Science and Fisheries Management, Bowen University, Iwo, Nigeria; and [3]Department of Animal Science, University of Ibadan, Ibadan, Nigeria.

#360 **Poster Board Number 607**
Movement of Mercury and Selenium from Soil to Earthworms to Zebrafish. *A. C. Nichols*, and D. A. Steffy. Physical and Earth Sciences, Jacksonville State Univ, Jacksonville, AL.

#361 **Poster Board Number 608**
Stress Hormone Response in Frogs after Pesticide Exposure. R. Van Meter, and K. V. Washart. Biology & Environmental Science/Studies, Washington College, Chestertown, MD. Sponsor: *M. Henderson*.

#362 **Poster Board Number 609**
Identification of a Developmental Window of Susceptibility to Selenomethionine and Hypersaline Toxicity in the Japanese Medaka (*Oryzias latipes*). *A. J. Kupsco*[1], and *D. Schlenk*[2]. [1]Environmental Toxicology, University of California-Riverside, Riverside, CA; and [2]Environmental Sciences, University of California-Riverside, Riverside, CA.

#363 **Poster Board Number 610**
Prostacyclin Inhibits Precardiac Edema in Developing Zebrafish Exposed to 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin. *H. Teraoka*, D. Nijoukubo, G. Yin, and T. Kitazawa. Rakuno Gakuen University, Ebetsu, Japan.

#364 **Poster Board Number 611**
Toxicity Evaluation of Industrial Effluents to Zebrafish (*Danio rerio*) Embryo. J. R. Rana[1], D. Patel[1], M. V. Patel[1], N. Khan[1], M. N. Reddy[3], and *V. J. Piccirillo*[2]. [1]Department of Toxicology, Jai Research Foundation, Valvada, India; [2]VJP Consulting, Ashburn, VA; and [3]Department of Biosciences, VNSGU, Surat, India.

#365 **Poster Board Number 612**
Toxicity of the Natural Dye Erythrostominone on the Embryogenic Development of *Danio rerio*. F. R. Abe, and *D. P. Oliveira*. Universidade de São Paulo, Ribeirão Preto, Brazil.

#366 **Poster Board Number 613**
RNA-Seq Analysis of the Mysid Crustacean Transcriptome Treated with Naturally Occurring 1,3,7-Tribromodibenzo-*p*-dioxin. M. Hirano[1], M. Uchida[2], T. Kusano[2], K. Arizono[3], and *H. Iwata*[1]. [1]CMES, Ehime University, Matsuyama, Japan; [2]Mizukibiotech Co., Ltd., Fukuoka, Japan; and [3]Prefectural University of Kumamoto, Kumamoto, Japan.

#367 **Poster Board Number 614**
Oatp1d1, Oatp1f2 and Oatp1f4 Expressed in Liver and Kidney of Zebrafish (*Danio rerio*) Transport Various Microcystin-Congeners. K. Steiner[1], *B. Hagenbuch*[2], and *D. R. Dietrich*[1]. [1]Human & Environmental Toxicology, University of Konstanz, Konstanz, Germany; and [2]University of Kansas Medical Center, Kansas City, KS.

Abstract #

#368 **Poster Board Number 615**
Inhibition of Mitochondrial Electron Transport System Function in Fish from Sites Impacted by Contaminants of Emerging Concern. *A. Yeh*[1], D. J. Marcinek[2], J. P. Meador[3], and *E. P. Gallagher*[1]. [1]Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA; [2]Department of Radiology, University of Washington, Seattle, WA; and [3]Environmental and Fisheries Sciences Division, Northwest Fisheries Science Center, NOAA Fisheries, Seattle, WA.

#369 **Poster Board Number 616**
Occurrence of Microbiological Contaminants in a Watershed Impacted by a Wastewater Treatment Facility. B. Odion, S. Benevente, and A. Aslan. Environmental Health Sciences, Georgia Southern University, Statesboro, GA. Sponsor: *E. Afriyie-Gyawu*.

#370 **Poster Board Number 617**
Screening-Level Ecological Risk Assessment Approach for Quantifying Lead Ammunition Ingestion and Adverse Effects in Upland and Wetland Birds. A. Tsao, M. Zafonte, B. Stanton, *R. Donohoe*, C. Rech, C. Huang, and M. J. Anderson. California Department of Fish and Wildlife, Sacramento, CA.

#371 **Poster Board Number 618**
Impact of Illegal Mining Activities on Water Quality and Cost of Water Treatment in the Central Region of Ghana. *E. Afriyie-Gyawu*, T. Awolusi, J. Awuah, and E. B. Winful. Environmental Health Sciences, Georgia Southern University, Statesboro, GA.

#372 **Poster Board Number 619**
Temperature Effects on *Lithobates pipiens* Chronically Exposed to PCB and PBDE. C. A. Tsai, and W. Karasov. Molecular and Environmental Toxicology Center, University of Wisconsin-Madison, Madison, WI. Sponsor: *C. Bradfield*.

#373 **Poster Board Number 620**
Early-Life Stage Toxicities of Atlantic Killfish Exposed to Treated "Fracking" Water. A. Lapp[1], I. Wirgin[1], L. Maceda[1], and R. C. Chambers[2]. [1]Environmental Medicine, New York University, New York, NY; and [2]Howard Marine Sciences Laboratory, Northeast Fisheries Science Center, NOAA Fisheries Service, Highlands, NJ. Sponsor: *I. Wirgin*.

#374 **Poster Board Number 621**
Investigating the Influence of Environmental Factors on Pesticide Exposure in Amphibians. D. A. Glinski[1], *W. M. Henderson*[2], R. Van Meter[3], and S. T. Purucker[2]. [1]Grantee to US EPA via Oak Ridge Institute of Science and Education, Athens, GA; [2]ORD/NERL/ERD, US EPA, Athens, GA; and [3]Department of Biology, Washington College, Chestertown, MD.

#375 **Poster Board Number 622**
The Effects of Fluoxetine on the Startle Response of Adult Zebrafish (*Danio rerio*). K. Fulda, and M. A. Connaughton. Biology, Washington College, Chestertown, MD. Sponsor: *M. Reynolds*.

#376 **Poster Board Number 623**
Can Coexposure with Ellagic Acid Mitigate the Adverse Effects of Aflatoxin B1 on the Visual System of Developing Zebrafish Larvae? J. Rogers, and M. A. Connaughton. Biology, Washington College, Chestertown, MD. Sponsor: *M. Reynolds*.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#377 **Poster Board Number 624**
Expression and Function of Ryanodine Receptor-Related Pathways in PCB-Tolerant Atlantic Killifish from New Bedford Harbor. *E. B. Fritsch*[1], *J. J. Stegeman*[2], *J. V. Goldstone*[2], D. E. Nacci[3], D. Champlin[3], S. Jayaraman[3], R. E. Connon[4], and *I. N. Pessah*[1]. [1]Molecular Biosciences, University of California Davis, Davis, CA; [2]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA; [3]Atlantic Ecology Division, US EPA, Narragansett, RI; and [4]Anatomy Physiology and Cell Biology, UC Davis, Davis, CA.

#378 **Poster Board Number 625**
Bioactivity of Legacy and Emerging Contaminants in Fish via Feeding Study. V. D. Dang[1], K. J. Kroll[1], S. Supowit[2], R. U. Halden[2], and *N. D. Denslow*[1]. [1]Physiological Sciences, University of Florida, Gainesville, FL; and [2]The Biodesign Institute, Arizona State University, Tempe, AZ.

#379 **Poster Board Number 626**
Oxidative Stress Responses of *Euglena agilis* to Nanoparticles. *J. Lee*[1], S. Chang[1], and S. Yu[2]. [1]Environmental Energy & Systems Engineering, Kyonggi University, Suwon, Republic of Korea; and [2]Korea Atomic Energy Research Institute, Jeongeup, Republic of Korea.

#380 **Poster Board Number 627**
Nematodes As Biosensors of Toxicity from Magdalena River Sediments. *L. Tejeda-Benitez*, and *J. Olivero-Verbel*. Environmental and Computational Chemistry Group, University of Cartagena, Cartagena, Colombia.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Persistent Organic Pollutants

Chairperson(s): *Angela Slitt, University of Rhode Island, Kingston, RI.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#381 **Poster Board Number 631**
Perfluorooctanoic Acid (PFOA)-Induced DNA Damage in Comet Assay by Two Distinct Mechanisms. *S. Tsuda*[1], *N. Saito*[1], N. Shimizu[2], T. Takahashi[3], and Y. F. Sasaki[3]. [1]Iwate Institute of Environmental Sciences, Morioka, Japan; [2]Agilent Technologies Japan Ltd, Application Centre, Tokyo, Japan; and [3]Hachinohe National College of Technology, Hachinohe, Japan.

#382 **Poster Board Number 632**
Low-Dose Exposure to the Environmental Chemical, Perfluorooctanesulfonic Acid (PFOS) Thwarts Beneficial Effects of Caloric Restriction and Metformin. *D. M. Salter, J. Xu, W. Wei, L. Armstrong*, and *A. Slitt*. BPS, University of Rhode Island, Kingston, RI.

#383 **Poster Board Number 633**
PFOS Induction of Adipogenesis and Glucose in Association with Activation of the Nrf2 Signaling Pathway. J. Xu[2,1], *L. Armstrong*[1], *D. M. Salter*[1], *P. C. Shimpi*[1], and *A. Slitt*[1]. [1]Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI; and [2]Northeastern University, Shenyang, China.

Abstract #

#384 **Poster Board Number 634**
Thyroid Hormone-Disrupting Potentials of Bisphenol A and Its Analogues: A Comparison Study. S. Lee, C. Kim, and *K. Choi*. Graduate School of Public Health, Seoul National University, Seoul, Republic of Korea.

#385 **Poster Board Number 635**
A Major Source of Dietary Exposure to Long-Chain Perfluorinated Carboxylic Acids. Y. Fujii[1], T. Sakurada[1], A. Kuga[1], M. Kinoshita[1], K. Harada[2], *A. Koizumi*[2], O. Kimura[3], *T. Endo*[3], and K. Haraguchi[1]. [1]Daiichi University of Pharmacy, Fukuoka, Japan; [2]Kyoto University Graduate School of Medicine, Kyoto, Japan; and [3]Health Sciences University of Hokkaido, Ishikari-Tobetsu, Japan.

#386 **Poster Board Number 636**
Human Exposure to Hydroxylated PBDE: Seaweeds As Dietary Source. M. Takagi[1], Y. Koyanagi[1], A. Moriyama[1], T. Kawano[1], Y. Fujii[1], *T. Endo*[2], and K. Haraguchi[1]. [1]Daiichi College of Pharmaceutical Sciences, Fukuoka, Japan; and [2]Health Sciences University of Hokkaido, Hokkaido, Japan.

#387 **Poster Board Number 637**
The Induction of Autophagy by Rapamycin-Protected HepG2 Cells from the Toxicity of BDE-47. G. C. Bolfarini[1], L. C. Pereira[2], A. O. Souza[1], and *D. J. Dorta*[1]. [1]Departamento de Quimica, Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, Brazil; and [2]Departamento de Analises Clínicas, Toxicológicas e Bromatológicas, Universidade de São Paulo (USP), Faculdade de Ciências Farmacêuticas de Ribeirão Preto (FCFRP), Ribeirão Preto, Brazil.

#388 **Poster Board Number 638**
Analysis of the Serum Perfluoroalkyl Carboxylic Acids (PFCAs) Levels for Repeated-Dose Toxicity Studies Conducted for Long-Chain PFCAs in Rats. *A. Hirose*[1], Y. Kosugi[2], T. Suzuki[2], S. Fujii[3], *M. Ema*[4], T. Nishimura[5], M. Hirata-Koizumi[1], and A. Ono[1]. [1]Division of Risk Assessment, National Institute of Health Sciences, Tokyo, Japan; [2]Tokyo Metropolitan Institute of Public Health, Tokyo, Japan; [3]Safety Research Institute for Chemical Compounds, Sapporo, Japan; [4]National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan; and [5]Teikyo Heisei University, Tokyo, Japan.

#389 **Poster Board Number 639**
Contamination Trends of Hexabromocyclododecanes, Tribromophenol, and Tetrabromobisphenol A in Japanese Breast Milk. K. Haraguchi[1], Y. Fujii[1], and Y. Kato[2]. [1]Daiichi College of Pharmaceutical Sciences, Fukuoka, Japan; and [2]Kagawa School of Pharmaceutical Sciences, Tokushima Bunri University, Kagawa, Japan. Sponsor: *T. Endo*.

#390 **Poster Board Number 640**
Method Development for the Detection of Protein Adducts from 4-Chlorobiphenyl (PCB3). *M. Li*[1], *L. W. Robertson*[1,2], and *G. Ludewig*[1,2]. [1]Human Toxicology Program, The University of Iowa, Iowa City, IA; and [2]Department of Occupational and Environmental Health, The University of Iowa, Iowa City, IA.

Program Schedule (Continued)

Abstract #

#391 **Poster Board Number 641**
PCB126-Mediated Disruption of Hepatic Metal Homeostasis in Mice and the Role of Metallothionein. *W. D. Klaren*[1,2], and *L. W. Robertson*[1,2]. [1]Interdisciplinary Graduate Program in Human Toxicology, University of Iowa, Iowa City, IA; and [2]Occupational and Environmental Health, University of Iowa, Iowa City, IA.

#392 **Poster Board Number 642**
***In Vitro* Toxicological Assessment of Contaminated Sediment Extracts from the Indiana Harbor and Ship Canal.** *S. Flor*[1], M. Salomon Beltran[1], A. Martinez[2], K. C. Hornbuckle[2], and *G. Ludewig*[1]. [1]Occupational and Environmental Health, University of Iowa, Iowa City, IA; and [2]Civil and Environmental Engineering, University of Iowa, Iowa City, IA.

#393 **Poster Board Number 643**
Non-Aroclor PCBs in Human Serum from Populations Living in Northwest Indiana and Rural Iowa. W. Koh[1], *P. S. Thorne*[1,2], and K. C. Hornbuckle[1,3]. [1]Interdisciplinary Graduate Program in Human Toxicology, The University of Iowa, Iowa City, IA; [2]Department of Occupational and Environmental Health, The University of Iowa, Iowa City, IA; and [3]Department of Civil and Environmental Engineering, The University of Iowa, Iowa City, IA.

#394 **Poster Board Number 644**
Relative Effect Potencies of 2,3,7-Tribromodibenzo-*p*-dioxin and 1,2,3,4,7-Pentabromodibenzo-*p*-dioxin in Female Rat after a Single Oral Dose. *K. van Ede*[1], G. Marsh[2], M. Linderberg[2], T. Werner[2], Å. Bergman[2], *M. Van den Berg*[1], and *M. van Duursen*[1]. [1]Toxicology, IRAS, Utrecht University, Utrecht, Netherlands; and [2]Environmental Chemistry Unit, Department of Materials and Environmental Chemistry, Stockholm University, Stockholm, Sweden.

#395 **Poster Board Number 645**
Craniofacial Growth Is Altered by Chronic Adult Exposure to 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (TCDD) in Han/Wistar and Long-Evans Rats with Different Aryl Hydrocarbon Receptor (AhR) Structures. S. Sholts[1], *M. Herlin*[2], *J. Esteban*[3], *M. J. Viluksela*[4], and *H. Hakansson*[2]. [1]Department of Anthropology, National Museum of Natural History, Washington, DC; [2]Institute of Environmental Medicine, Karolinska Institute, Stockholm, Sweden; [3]Institute of Bioengineering, Miguel Hernández University of Elche, Elche, Spain; and [4]Department of Environmental Health, National Institute for Health and Welfare, Kuopio, Finland.

#396 **Poster Board Number 646**
Preparation and Evaluation of Fluorescent Molecularly Imprinted Polymers Capable of Detecting Polyaromatic Hydrocarbons. *C. J. Ifedili*. Molecular Toxicology, Aston University, Benin, Nigeria.

Abstract #

#397 **Poster Board Number 647**
Chronic Exposure to No-Effect Concentration of Diazinon-Induced Histological Lesions in Organs of *Clarias gariepinus*. *A. F. Fagbohun*[1,2,3]. [1]Department of Veterinary Public Health and Preventive Medicine, University of Ibadan, Ibadan, Nigeria; [2]Department of Veterinary Physiology, Biochemistry and Pharmacology, University of Ibadan, Ibadan, Nigeria; and [3]Department of Veterinary Pathology, University of Ibadan, Ibadan, Nigeria.

Monday Morning, March 23
9:30 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Stem Cell Biology in Toxicology Research

Chairperson(s): *Weida Tong, US FDA/NCTR, Jefferson, AR.*

Displayed: *9:30 AM–12:30 PM*

Author-Attended: *9:30 AM–11:00 AM*

#398 **Poster Board Number 653**
Using Human-Induced Pluripotent Stem Cells (iPSC) in High-Content Screening (HCS) to Prioritize Chemicals for Developmental Neurotoxicity Testing. *R. R. Tice*[1], O. Sirenko[2], *F. Parham*[1], E. F. Cromwell[2], *J. Hsieh*[1], S. DeLaura[3], *M. Behl*[1], and *K. Ryan*[1]. [1]NIH, NIEHS/DNTP, Research Triangle Park, NC; [2]Molecular Devices, Sunnyvale, CA; and [3]Cellular Dynamics International, Madison, WI.

#399 **Poster Board Number 654**
Radiation and Senescence: 2-Gy Whole-Body Irradiation Cause-Prolonged Acceleration of Cell-Cycle in Hemopoietic Progenitors (CFU-GM) after Its Numerical Recovery. *Y. Hirabayashi*[1], I. Tsuboi[2], *J. Kanno*[1], Y. Kusunoki[3], and *T. Inoue*[2]. [1]Div. of Cellular and Molecular Toxicology, Center for Biological Safety and Research, Nat'l Inst. of Health Sciences, Tokyo, Japan; [2]Dept. of Functional Morphology, Nihon Univ. School of Medicine, Tokyo, Japan; and [3]Dept. of Radiobiology/Molecular Epidemiology, Radiation Effects Research Foundation, Hiroshima, Japan.

#400 **Poster Board Number 655**
Toxicological Effect of a Pet Food Ingredient on Canine Bone Marrow-Derived Mesenchymal Stem Cells and Enterocyte-Like Cells. M. Ortega[1], B. Jeffery[2], *J. E. Riviere*[1], and *N. A. Monteiro-Riviere*[1]. [1]Anatomy and Physiology, College of Veterinary Medicine, Kansas State University, Manhattan, KS; and [2]Mars Inc., Global Quality and Food Safety, McLean, VA.

#401 **Poster Board Number 656**
A Novel 96-Well Plate Cell Culture Assay for Lineage-Specific Hematopoietic Cell Toxicity Screening. I. Yu[1], *J. E. Damen*[1], B. Wognum[1], C. Farzim[1], S. Rostamirad[1], T. Jeng[1], J. Terc[1], K. Tse[1], M. Huber[1], S. J. Szilvassy[1], T. E. Thomas[1], and A. C. Eaves[1,2]. [1]STEMCELL Technologies Inc, Vancouver, BC, Canada; and [2]Terry Fox Laboratory, BC Cancer Agency, Vancouver, BC, Canada.

#402 **Poster Board Number 657**
An *Ex Vivo* Megakaryocyte Platform to Evaluate the Effects of Compounds on Different Stages of Platelet Development. G. dos Santos, J. Rosser, and *E. Clarke*. ReachBio LLC, Seattle, WA.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#403 **Poster Board Number 658**
Effect of Acetaminophen and Aflatoxin B1 on Human Pluripotent Stem Cell-Induced Hepatic Differentiation. *H. Kang*, H. Lee, S. Kang, Y. Park, and B. So. Vet. Drugs and Biologics, Animal and Plant Quarantine Agency, Anyang, Republic of Korea.

#404 **Poster Board Number 659**
Cadmium Alters Gene Expression Patterns of Stem Cell Transcription Factors Essential for Embryonic Development and Differentiation in Mouse Embryonic Stem Cells. *A. Aliberti*, and *F. A. Barile*. Department of Pharmaceutical Sciences, St. John's University, Queens, NY.

#405 **Poster Board Number 660**
Cumulative Toxicity of Low-Dose Cadmium Exposure in Mouse Embryonic Stem Cells Is Characterized by Slowed Mitotic Progression. *D. O'Brien*, and *F. A. Barile*. St. John's University, Queens, NY.

#406 **Poster Board Number 661**
Dose-Dependent Effects from Inorganic Arsenic Exposure on Tumor Microenvironment-Induced TGF-β Signaling. *J. J. Shearer*, E. A. Wold, C. L. Nilsson, and *M. L. Figueiredo*. Pharmacology & Toxicology, University of Texas Medical Branch, Galveston, TX.

#407 **Poster Board Number 662**
Ah Receptor Expression in Mouse Embryonic Stem Cells Triggers Pluripotency Loss and Promotes Abnormal Differentiation. *C. Ko*, Y. Fan, *Q. Wang*, and *A. Puga*. Environmental Health, University of Cincinnati, Cincinnati, OH.

#408 **Poster Board Number 663**
A Genomics Approach for Identifying Gene Networks As Biomarkers of Human Neurodevelopmental Toxicity. *J. F. Robinson*, M. J. Gormley, and S. J. Fisher. Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California, San Francisco, San Francisco, CA.

#409 **Poster Board Number 664**
Using *In Vitro* "Toxicology-in-a-Dish" Stem Cell Model and Video Bioinformatics Tools to Determine the Effects of Cigarette Smoke on Cell Health. *S. C. Lin*, R. Phandthong, and *P. Talbot*. Cell Biology and Neuroscience, University of California, Riverside, Riverside, CA.

Monday Morning, March 23
10:00 AM to 11:00 AM
CC Room 21

(Ticket Required; SOT Student and Postdoctoral Members Only, Limited Seating)

Trainee Discussion with Plenary Lecturer: Dr. Venter

Chairperson(s): *Colleen E. McLoughlin, CDC-NIOSH, Morgantown, WV.*

Lecturer: J. Craig Venter, J. Craig Venter Institute, San Diego, CA.

Graduate students and postdoctoral scholars have the special opportunity of meeting for informal discussion with Dr. Venter after his Plenary Opening Lecture (*see page 134*). The limited tickets for this event could be obtained with your Annual Meeting registration.

Monday Morning, March 23,
10:45 AM to 11:45 AM
CC Room 24A

E

Exhibitor-Hosted Session: Adapting Cell-Based Assays to 3D Culture Models

Presented by:
Promega Corporation

Complex 3D cell culture models stretch the limits of assays designed for measuring cytotoxicity endpoints from monolayers of cells. We will present factors to consider for designing and validating performance of cell-based assays measuring viability (as an endpoint and in real time) and upstream cell stress events leading to cytotoxicity.

Monday Morning, March 23,
10:45 AM to 11:45 AM
CC Room 22

E

Exhibitor-Hosted Session: Computational Approach to Managing Mutagenicity Risk for ICH M7 and Beyond

Presented by:
Lhasa Limited

Lhasa Limited, the world leader for knowledge and data sharing in chemistry and the life sciences, will present their views and expertise in utilizing an integrated *in silico* solution to comply with the ICH M7 guidelines. In addition, they will highlight where *in silico* solutions provide further evidence of drug safety.

Monday Morning, March 23,
10:45 AM to 11:45 AM
CC Room 24C

E

Exhibitor-Hosted Session: The Immunology of Immunogenicity?

Presented by:
Huntingdon Life Sciences/Harlan Laboratories

Immunogenicity is an occasional consequence of treatment with a broad range of biological products. The session will discuss some of the immunological mechanisms that result in immunogenicity and their relevance to clinical use of the therapeutic. The session is aimed at toxicologists keen to learn more about the subject.

Program Schedule (Continued)

Monday Morning, March 23,
10:45 AM to 11:45 AM
CC Room 24B

E

Exhibitor-Hosted Session: Utilization of *In Vitro* Mechanistic and 3D Models to Improve the Prediction of Hepatoxicity and Cardiotoxicity

Presented by:
Cyprotex

This presentation will cover recent developments in the field of *in vitro* prediction of cardiotoxicity and hepatotoxicity. It will focus on the development of 3D cell-based cardiac and hepatic systems and their applicability in mechanistic mitochondrial assays (Seahorse) and 3D high-content imaging.

Monday Morning, March 23
11:45 AM to 12:15 PM
CC Exhibit Hall *(Across from SOT Pavilion, Booth 526)*

Global Gallery of Toxicology Poster Session—Representative Attended

Representatives from toxicology-related scientific societies from around the world will be present to display a poster showcasing their history, key accomplishments, strategic initiatives, current and future activities, and more. The goal of SOT and of all these societies is to increase the reliance of international decision-makers on the science of toxicology to advance human health and disease prevention.

2015 Global Gallery of Toxicology Participants *(as of February 6, 2015)*

- Academy of Toxicological Sciences
- African Society for Toxicological Sciences
- American Academy of Clinical Toxicology
- American Board of Toxicology
- American College of Toxicology
- American Society for Cellular and Computational Toxicology
- ASIATOX
- Association of Government Toxicologists
- Australasian College of Toxicology & Risk Assessment
- Brazilian Society of Toxicology
- British Toxicology Society
- Bulgarian Society of Toxicology
- Chinese Society of Toxicology
- Environmental Mutagenesis and Genomics Society
- Estonian Society of Toxicology
- European Association of Poison Centres and Clinical Toxicologists
- EUROTOX
- Finnish Society of Toxicology
- French Society of Toxicology
- German Society of Toxicology
- International Neurotoxicology Association
- International Society for Regulatory Toxicology and Pharmacology
- International Society for the Study of Xenobiotics
- International Society of Exposure Science
- Israeli Society of Toxicology
- IUTOX
- Japanese Society of Immunotoxicology
- Japanese Society of Toxicology
- Korean Society of Toxicology
- Mexican Society of Toxicology
- Safety Pharmacology Society
- Scientific Liaison Coalition
- Sociedad de Toxicologia de Chile
- Society for Risk Analysis
- Society of Toxicological Pathology
- Society of Toxicology
- Society of Toxicology Canada
- Swedish Society of Toxicology
- Swiss Society of Toxicology
- Teratology Society
- The Toxicology Society of South Africa
- The Turkish Society of Toxicology
- Toxicologists Without Borders

Program Schedule (Continued)

MONDAY AFTERNOON

Monday Afternoon, March 23
12:00 Noon to 1:30 PM
CC Room 27

Drug Discovery Toxicology Specialty Section Lunch with an Expert

Monday Afternoon, March 23
12:00 Noon to 1:20 PM
CC Ballroom 20D
(Ticket Required)

In Vitro Toxicology Lecture and Luncheon for Students: Alternative *In Vitro* Approaches for Predicting the Health Impacts of Nanomaterials

Chairperson(s): *Richard Pollenz, University of South Florida, Tampa, FL, Emily G. Notch, Western New England University, Springfield, MA; and Daniel J. Spade, Brown University, Providence, RI.*

Lecturer: *James C. Bonner, North Carolina State University, Raleigh, NC*

Supported by:
An educational grant from the Colgate-Palmolive Company

Hosted by:
Education Committee

The goal of the *In Vitro* Toxicology Lecture series is to feature important research using *in vitro* and alternative techniques to study basic mechanisms and to illustrate how these test methods benefit animal welfare by refining, reducing, and replacing animal use whenever it is feasible. Undergraduates, graduate students, postdoctoral scholars, and recipients of Colgate-Palmolive awards are among the guests at the *In Vitro* Toxicology Lecture and Luncheon. Students and postdoctoral scholars register for $10 (nonrefundable) via the Annual Meeting registration. Dr. Bonner will present an introduction to the topic, challenge participants to discuss specific questions at their tables, and then participants will report responses.

The format will include electronic audience polling and activities based on the review of data related to the development and validation of *in vitro* models.

Remember to bring your mobile devices to the event. The presentation information can be found on page 94.

Monday Afternoon, March 23
12:00 Noon to 2:00 PM
Roy's Restaurant Big Island Room

Mid-Atlantic Regional Chapter Luncheon

Abstract #

Monday Afternoon, March 23
12:00 Noon to 1:30 PM
CC Room 5B

Research Funding Luncheon: Multiple Perspectives on the Grant Process

Experts from various federal agencies will be on hand for this luncheon meeting to talk about the art of preparing successful grant packages from multiple perspectives. See page 129 for more information.

Monday Afternoon, March 23
12:00 Noon to 1:30 PM
CC Room 14B

Special Interest Group Collaboration Group Meeting

Monday Afternoon, March 23
12:00 Noon to 1:30 PM
CC
See room listing below.

Specialty Section Meeting/Luncheons: Comparative and Veterinary (3); Toxicologic and Exploratory Pathology (2)

Monday Afternoon, March 23
12:10 PM to 1:30 PM
CC Ballroom 6F

R

Roundtable Session: Addressing Potential Age-Related Sensitivity to Neurotoxicity of Pyrethroids

Approaches for Protecting Vulnerable Populations

Chairperson(s): *Thomas G. Osimitz, Science Strategies, Charlottesville, VA; and Anna B. Lowit, Office of Pesticide Programs, US EPA, Washington, DC.*

Endorser(s):
Biological Modeling Specialty Section
Neurotoxicology Specialty Section
Risk Assessment Specialty Section

The sensitivity of infants and children to pesticides has historically been evaluated via a combination of developmental toxicity, reproduction, and developmental neurotoxicity studies conducted in accordance with US EPA and OECD test guidelines. For pyrethroid insecticides, the collective results from these studies indicated no additional sensitivity of young rats and rabbits during development, thus obviating the need for an additional safety factor for infants and children (FQPA). The pyrethroid industry is investigating age-related pharmacodynamic (PD) and pharmacokinetic (PK) differences in sensitivity using model pyrethroids. Designed in accordance with the principles in *Toxicity Testing in the 21st Century: A Vision and a Strategy* (NAS, 2007) and with US EPA input, the research is providing age-related pyrethroid-specific PD and PK parameters for PBPK model development. This significantly enhances both neurotoxicity and children's health risk assessment and provides new understanding of how focused research can be developed for the adverse outcome pathway framework for risk assessment.

#410 12:10 **Addressing Potential Age-Related Sensitivity to Neurotoxicity of Pyrethroids.** *T. G. Osimitz*[1], *A. B. Lowit*[2], and *L. P. Sheets*[3]. [1]Science Strategies, Charlottesville, VA; [2]US EPA, Washington, DC; and [3]Bayer Crop Science, Research Triangle Park, NC.

12:10 **Assessing Age-Related Sensitivity to Pyrethroid Neurotoxicity in the Context of Tox21.** A. B. Lowit. US EPA, Washington, DC.

Program Schedule (Continued)

Abstract #

12:30 **Current State of Knowledge with Respect to Pyrethroid Neurotoxicology—Basis for Concern about Age-Related Sensitivity.** L. P. Sheets. Bayer CropScience, Research Triangle Park, NC.

12:45 **Targeted Evaluation of Age-Related Pharmacodynamics Using Mammalian CNS Neurolemma Preparations.** J. M. Clark. University of Massachusetts, Amherst, MA.

1:00 **Use of Acoustic Startle Responses to Assess Age-Related Pharmacodynamics.** C. V. Vorhees. Cincinnati Children's Research Foundation, Cincinnati, OH.

1:15 **The Role of Pharmacokinetic Differences: Evaluation of Early-Life Sensitivity to Pyrethroids by Physiologically Based Pharmacokinetic (PBPK) Modeling.** M. Yoon. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Monday Afternoon, March 23
12:10 PM to 1:30 PM
CC Ballroom 6E

R

Roundtable Session: Confronting and Overcoming the Barriers to Sharing Toxicological Research Data for Risk Assessment in the 21st Century

Strategies for Exposure and Risk Assessments

Chairperson(s): *George M. Woodall, NCEA, US EPA, Research Triangle Park, NC; and Gary W. Miller, Emory University, Atlanta, GA.*

Endorser(s):
Ethical, Legal, and Social Issues Specialty Section
Inhalation and Respiratory Specialty Section
Risk Assessment Specialty Section

The need for better data-sharing opportunities is a highlight of the NAS document *Toxicity Testing in the 21st Century: A Vision and a Strategy*, which included recommendations to develop the data management infrastructure "to enable broad data-sharing across academic, government, industry, and NGO sectors and institutions." This applies equally to high-throughput assay results, *in vivo* animal studies, and human clinical and epidemiological studies. The need is critical in quantitative analysis, where raw data from individual subjects or groups provides greater power in an analysis than will summarized results. Substantial barriers block access to these toxicological research data. An effective strategy to identify and propose remedies to those barriers has yet to be formulated. The issues are multifaceted: the need to protect personally identifiable information versus protection of public health, intellectual property rights versus public access to data developed using public funds, publication of research findings by the originator of the data versus allowing more powerful analysis using data from multiple studies, and many others. The primary intent of this roundtable discussion is to begin a dialogue to define a proper balance between these competing needs and stakeholder perspectives, while at the same time enhance the science of toxicology, protect public health, and ensure scientific credibility. Panelists have been selected to represent one or more stakeholder group. Open dialogue with the audience will be encouraged to include the perspectives of the larger SOT community. The views expressed here are those of the authors and do not necessarily reflect the views or policies of the US Environmental Protection Agency.

#411 12:10 **Confronting and Overcoming the Barriers to Sharing Toxicological Research Data for Risk Assessment in the 21st Century.** *G. M. Woodall*[1], *G. W. Miller*[2], A. Simeonov[3], *R. A. Becker*[4], A. Pope[5], *P. J. Hakkinen*[6], *P. H. Zigas*[7], and *A. A. Rooney*[8]. [1]US EPA, Research Triangle Park, NC; [2]Emory, Atlanta, GA; [3]NIH, Bethesda, MD; [4]ACC, Washington, DC; [5]BYU, Provo, UT; [6]NLM, Bethesda, MD; [7]ECU, Greenville, NC; and [8]NIEHS, Research Triangle Park, NC.

Abstract #

12:10 **Introduction and Overview.** G. M. Woodall. US EPA, Research Triangle Park, NC.

12:15 **Using Limited-Access Data in Public Health Research.** A. Pope. Brigham Young University, Provo, UT.

12:25 **Perspectives from a Major Collector, Organizer, Preserver, Curator, and Disseminator of Data.** P. J. Hakkinen. NIH, Bethesda, MD.

12:35 **Perspectives from a University Attorney on the Issues of Using Research Data.** P. H. Zigas. East Carolina University, Greenville, NC.

12:45 **Panel Discussion.** Panel Discussion/Q&A

Monday Afternoon, March 23
12:10 PM to 1:30 PM
CC Room 1

IS

Informational Session: Toxicological Application of Studies Funded by California Stem Cell Research and Cures Act (Prop 71)

Chairperson(s): *Kyle L. Kolaja, Cellular Dynamics International, Montclair, NJ; and Arezoo Campbell, Department of Pharmaceutical Sciences, Western University of Health Sciences, Pomona, CA.*

Endorser(s):
Northern California Regional Chapter
Southern California Regional Chapter
Stem Cells Specialty Section

In 2004, Proposition 71 was passed to support stem cell research in California. The California Institute for Regenerative Medicine (CIRM) was created to allocate funds to establish stem cell research in the state. This session highlights research funded through this initiative that is translatable to toxicology. The introduction will provide a brief overview of the goals and implementation of the various California-based stem cell research initiatives funded through CIRM. The ability to create induced pluripotent cells from adult somatic cells has revolutionized cell biology. The first presentation will focus on the quality manufacturing aspects of iPSC and highlight their application in a number of California/CIRM-funded projects that are translatable to toxicological research. The second presentation will feature the function of the Coriell Institute for Medical Research. This institute was funded by CIRM to establish a centralized resource of well-characterized iPSCs. Tissue samples from 3,000 subjects enrolled through seven California-based research groups serve as starting material for deriving iPSCs. Samples are collected from healthy controls and patients with Alzheimer's disease, autism spectrum disorders, liver, cardiovascular, eye, and respiratory diseases. The Coriell-CIRM Biobank, residing at the Buck Institute for Research on Aging, ensures exceptional storage and distribution of high-quality iPSCs, which can provide a useful model for toxicological testing of environmental and pharmaceutical agents. The last presentation will cover the application of stem cells in a toxicology study with emphasis on how live cell imaging in conjunction with video bioinformatics software tools can be used to assess the effects of environmental chemicals on cells that model stages of prenatal development.

#412 12:10 **Toxicological Application of Studies Funded by California Stem Cell Research and Cures Act (Prop 71).** *A. Campbell*[1], *K. L. Kolaja*[2], S. J. Madore[3], J. Panetta[4], and *P. Talbot*[5]. [1]Department of Pharmaceutical Sciences, Western University of Health Sciences, Pomona, CA; [2]Cellular Dynamics International, Montclair, NJ; [3]Coriell Institute for Medical Research, Camden, NJ; [4]Biocom, San Diego, CA; and [5]University of California Riverside, Riverside, CA.

12:10 **Regional Impact of Research Initiatives Funding by the California Stem Cell Research and Cures Act (Prop 71).** J. Panetta. Biocom, San Diego, CA.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

12:15 **The Importance of Quality, Quantity, and Purity in Stem Cell-Derived Tissues and Their Application in Research and Therapeutics.** K. L. Kolaja. Cellular Dynamics International, Montclair, NH.

12:45 **Using Embryonic Stem Cells to Assess Prenatal Toxicity of Environmental Pollutants.** P. Talbot. University of California Riverside, Riverside, CA.

1:15 **Panel Discussion.** Panel Discussion/Q&A

Monday Afternoon, March 23
12:10 PM to 1:30 PM
CC Room 7

EC

Education-Career Development Session: Adaptive Leadership: Anticipating, Initiating, and Responding to Change

Chairperson(s): *Brinda Mahadevan, Abbott Laboratories, Columbus, OH; and Hollie I. Swanson, Molecular and Biomedical Pharmacology, University of Kentucky, Lexington, KY.*

Endorser(s):
Career Resource and Development Committee
Education Committee

The magnitude of change in organizations has grown tremendously over the past two decades. A hallmark of successful organizations and individuals is their ability to anticipate and respond to change or even initiate change to meet the demand of the moment. Our current workplace environment must address changes in organizational structure, economic factors, and increase in global competitiveness. As individuals, we encounter changes in family structures, personal expectations, career pathways, and trajectories to dynamically sense and respond with actions that are focused, fast, and flexible. A successful leader, team, or organization will evolve through purposeful strategies that influence and respond effectively to unpredictable and shifting demands and world events. This session will be composed of four presentations that will focus on the changes currently facing the industry, government, contract research organization, and academic sectors. Within each presentation, organizational changes, leadership challenges, and the impact on the individual will be addressed. Each speaker will emphasize their sector-specific changes and unique adaptations to change. The speakers will thus provide practical advice and concrete examples on adaptive leadership that demonstrate a leader's ability at all levels to effectively accomplish the initiatives every day.

#413 12:10 **Adaptive Leadership: Anticipating, Initiating, and Responding to Change.** *B. Mahadevan*[1], H. I. Swanson[2], *M. A. Philbert*[3], *L. D. Lehman-McKeeman*[4], *W. Slikker*[5], and *S. Heidel*[6]. [1]Regulatory Affairs, Abbott Nutrition, Abbott Laboratories, Columbus, OH; [2]Molecular and Biomedical Pharmacology, University of Kentucky, Lexington, KY; [3]Department of Public Health, University of Michigan, Ann Arbor, MI; [4]Discovery Toxicology, Bristol-Myers Squibb Company, Princeton, NJ; [5]National Center for Toxicological Research, US FDA, Jefferson, AR; and [6]Toxicology, Covance Inc, Greenfield, IN.

12:10 **Introduction.** B. Mahadevan. Abbott Laboratories, Columbus, OH.

12:20 **Undertaking a Range of Activities and Adapting to Changes for the Future in Academia As a Thought Leader, a Communicator, and Teacher.** H. I. Swanson. University of Kentucky, Lexington, KY.

12:30 **The Lesson of the Oak Tree and the Reed: Adapting to Change in a Corporate Research Environment.** L. D. Lehman-McKeeman. Bristol-Myers Squibb Company, Princeton, NJ.

12:40 **The Impact of Change in the Government (FDA) and Its Global Influence on Regulatory Science and Career Development.** W. Slikker. US FDA-NCTR, Jefferson, AR.

12:50 **Fostering Change in Developing a Strong Interdependent Relationship between CROs and Pharmaceutical Companies.** S. Heidel. Covance Inc., Greenfield, IN.

1:00 **Panel Discussion.** Panel Discussion/Q&A

Monday Afternoon, March 23,
12:15 PM to 1:15 PM
CC Room 24B

E

Exhibitor-Hosted Session: Alternative Methods in Inhalation Toxicology

Presented by:
Fraunhofer ITEM

The session will focus on different alternative methods in inhalation toxicology: P.R.I.T. Expo Cube: an innovative *in vitro* exposure system, Precision Cut Lung Slices and Isolated Perfused Lung model as *ex vivo* techniques. Regulatory acceptance of these methods as well as *in silico* approaches will be critically discussed.

Monday Afternoon, March 23,
12:15 PM to 1:15 PM
CC Room 22

E

Exhibitor-Hosted Session: Impact of Electronic Standards on Drug Development Landscape

Presented by:
PDS Preclinical Lifesciences Inc and
Integrated Nonclinical Development Solutions (INDS) Inc

With issuance of the final US FDA guidance on electronic formats for regulatory submissions, SEND will become mandatory starting in December of 2016. We will present SEND in a scientific context to illustrate how it can improve preclinical drug development.

Monday Afternoon, March 23,
12:15 PM to 1:15 PM
CC Room 24A

E

Exhibitor-Hosted Session: Overview of Cutaneous Safety and Efficacy Assessment with Reconstructed Human Epidermis (RHE)

Presented by:
EPISKIN Academy

Releasing products to the market is a costly and long process for industry. According to some surveys (Olson 2000, Greaves 2004), classical approaches based on animal studies exhibit weaknesses to predict some human toxicity. Skin shows the poorest concordance (36%) between animal and human.

Program Schedule (Continued)

Monday Afternoon, March 23,
12:15 PM to 1:15 PM
CC Room 24C

E

Exhibitor-Hosted Session: The Göttingen Minipig As Experimental Model for Anti-Neoplastic Drug Toxicity

Presented by:
RTC and Ellegaard Göttingen Minipigs

After a general overview of the comparative biology of minipigs, results of a case study are presented, which highlight the relevance of minipigs as experimental models for toxicity studies with anti-neoplastic drugs. Minipigs showed signs comparable to humans and a greater tolerance for the effects of Doxorubicin compared to dogs.

Monday Afternoon, March 23
12:30 PM to 1:20 PM
CC Ballroom 6B

FS

Merit Award Lecture: Chronicles of Particles: From Micro- to Nano-Particles

Lecturer: *Günter Oberdörster, University of Rochester Medical Center, Rochester, NY.*

Humans, all along their history, have been exposed to naturally occurring airborne particles from diverse sources and, additionally, to increased levels of anthropogenic airborne particles. The recognition of harmful effects of particles of dusty trades on the respiratory tract emerged in ancient times, substantiated in the Middle Ages by Paracelsus. Awareness of particle size and chemistry as important properties and determinants of toxicity came from more recent epidemiological and toxicological findings of adverse effects, not only in the respiratory tract, but also affecting secondary organs such as the cardiovascular and central nervous systems. Besides larger micro-sized particles which contribute most of the mass, particles up to ~100 nm in diameter, ultrafine particles, became a major research focus, further bolstered by the introduction and rise of nanotechnology and the related introduction of very diverse engineered nanoparticles (< 100 nm), with inhalation as the major route of human exposure. Exponentially increasing numbers of publications have reported about the seemingly unique toxicological properties of nanoparticles, including propensity to cross cell membranes, and enter cells, causing oxidative stress and significant toxicity, suggesting that all nanoparticles are toxic. However, an understanding of appropriate dosemetrics, as well as establishing realistic exposure-dose-response relationships, are necessary for a meaningful interpretation of results.

Abstract #

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Alternatives to Mammalian Models II—Skin, Eye, Liver

Chairperson(s): *Seyoum Ayehunie, MatTek Corporation, Ashland, MA; and Andreas G. Schepky, Toxicology* In Vitro, *Beiersdorf AG, Hamburg, Germany.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#414 **Poster Board Number 101**
Development of an *In Vitro* Washing Protocol in Reconstructed Human Epidermal Tissue to Evaluate the Efficacy of Skin Cleaning Methods. *L. M. Milchak*, and *D. H. Brandwein*. Medical Department, 3M, St. Paul, MN.

#415 **Poster Board Number 102**
Evaluation of the CADRE-SS™ *In Silico* Model for Predicting Dermal Sensitization Potential. *J. Hillegass*[1], *C. Villano*[1], M. Bultman[1], *J. Graham*[1], J. Crison[1], *Q. Wang*[1], J. Kostal[2], and *J. Gould*[1]. [1]Bristol-Myers Squibb, New Brunswick, NJ; and [2]Designing Out Toxicity Consulting, Alexandria, VA.

#416 **Poster Board Number 103**
Differences on Protocols for Skin Penetration and Stratum Corneum Diffusion/Partition Coefficients. *A. G. Schepky*[1], N. Hewitt[2], R. Cubberley[3], H. Duplan[4], J. Eilstein[5], D. Gerstel[1], S. Grégoire[5], C. Jacques-Jamin[4], and H. Rothe[6]. [1]Beiersdorf AG, Hamburg, Germany; [2]Cosmetics Europe, Brussels, Belgium; [3]Unilever, Sharnbrook, United Kingdom; [4]Pierre Fabre Dermo-Cosmétique, Toulouse, France; [5]L'Oréal, Aulnay-Sous-Bois, France; and [6]Procter & Gamble, Schwalbach, Germany.

#417 **Poster Board Number 104**
A Tiered *In Vitro* Irritation/Corrosion Testing Strategy for GHS Classification of Pharmaceutical Compounds. N. Wilt[1], *J. C. Gould*[2], *C. Villano*[2], J. Bader[1], L. Krawiec[1], E. Sly[1], and *G. Costin*[1]. [1]Institute for In Vitro Sciences, Gaithersburg, MD; and [2]Bristol-Myers Squibb Co., New Brunswick, NJ.

#418 **Poster Board Number 105**
A Human Keratinocyte Tissue Model Differentiates between Phototoxicity and Direct Skin Toxicity. *L. Mueller*, and A. Herrmann. Hoffmann La Roche Inc, Basel, Switzerland.

#419 **Poster Board Number 106**
Intra- and Interlaboratory Validation of LuSens: A Reporter Gene-Cell Line to Detect Keratinocyte Activation by Skin Sensitizers. T. Ramirez[1], A. Aumann[1], N. Stein[1], T. Woehrle[3], M. Fehr[3], *A. Edwards*[4], *F. G. Burleson*[4], *K. Norman*[5], *L. Foertsch*[6], *C. Ryan*[6], *X. Wang*[6], *A. Mehling*[2], *B. van Ravenzwaay*[1], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany; [2]BASF Personal Care and Nutrition GmbH, Düsseldorf, Germany; [3]Product Safety, DSM Nutritional Products, Human Nutrition & Health, Kaiseraugust, Switzerland; [4]BRT-Burleson Research Technologies, Morrisville, NC; [5]IIVS, Institute for In Vitro Sciences, Gaithersburg, MD; and [6]The Procter and Gamble Company, Mason, OH.

MONDAY

Program Schedule (Continued)

Abstract #

#420 **Poster Board Number 107**
Partition Coefficient Determinations for Benzoic Acid, Resorcinol, and Methyl Paraben in Isolated Human Skin Layers for *In Silico* Dermal Pen Modeling. J. Manwaring, and C. Obringer. Global Product Stewardship, Procter & Gamble, Mason, OH. Sponsor: *G. Daston*.

#421 **Poster Board Number 108**
ICCVAM Integrated Decision Strategy for Skin Sensitization. *J. M. Matheson*[1], *Q. Zang*[2], *J. Strickland*[2], *N. Kleinstreuer*[2], *D. G. Allen*[2], *A. B. Lowit*[3], *A. Jacobs*[4], and *W. Casey*[5]. [1]CPSC, Rockville, MD; [2]ILS/NICEATM, Research Triangle Park, NC; [3]EPA/OPP, Washington, DC; [4]FDA/CDER, Silver Spring, MD; and [5]NTP/NICEATM, Research Triangle Park, NC.

#422 **Poster Board Number 109**
***In Silico* Predictions of Skin Sensitization Using OECD QSAR Toolbox.** *J. Strickland*[1], *N. Y. Choksi*[1], *D. G. Allen*[1], and *W. Casey*[2]. [1]ILSNICEATM, Research Triangle Park, NC; and [2]NTP/NICEATM, Research Triangle Park, NC.

#423 **Poster Board Number 110**
The GARD Assay for Potency Assessment of Skin Sensitizing Chemicals. K. S. Zeller[1], A. Forreryd[1], *H. Johansson*[1], *J. Kühnl*[2], *A. G. Schepky*[2], A. Albrekt[1], C. A. Borrebaeck[1], and M. Lindstedt[1]. [1]Department of Immunotechnology, Lund University, Lund, Sweden; and [2]Department of Toxicology, Beiersdorf AG, Hamburg, Germany.

#424 **Poster Board Number 111**
Predicting Skin-Sensitizing Potency Based on *In Vitro* Data from KeratinoSens™ and Kinetic Peptide Binding: Global vs. Domain-Based Assessment. *G. Adamson*[2], G. Ellis[3], R. Emter[1], T. Haupt[1], and A. Natsch[1,2,3]. [1]Givaudan Schweiz AG, Duebendorf, Switzerland; [2]Givaudan US, East Hannover, NJ; and [3]Givaudan International SA, Vernier, Switzerland.

#425 **Poster Board Number 112**
Evaluation of Two Methods of Skin Integrity Check in an *In Vitro* Dermal Absorption Study with Benzoic Acid Using Rat Split-Thickness Skin. R. M. Nagane[1], S. S. Gaikwad[1], N. N. Patel[1], K. E. Tendulkar[1], R. S.[1], M. V. Patel[1], and *V. J. Piccirillo*[2]. [1]Department of Toxicology, Jai Research Foundation, Valvada, India; and [2]VJP Consulting, Ashburn, VA.

#426 **Poster Board Number 113**
Functionalized Electrospun Nanofibers for the Development of a Three-Dimensional Skin Model. A. F. Rossi[1,2], J. Groll[3], and H. Walles[1,2]. [1]Department for Tissue Engineering and Regenerative Medicine, University Hospital Wuerzburg, Wuerzburg; [2]Regenerative Technologies in Oncology, Fraunhofer Project Group Wuerzburg, Wuerzburg, Germany; and [3]Department of Functional Materials in Medicine and Dentistry, University Hospital Wuerzburg, Wuerzburg, Germany. Sponsor: *B. De Wever*.

#427 **Poster Board Number 114**
Investigation of Novel *In Vitro* Methods for Predicting the Dermal Sensitization Potential of Synthetic Process Intermediates. U. S. Bruen[1], K. Norman[2], and *B. D. Naumann*[1]. [1]Product Stewardship and Science, Toxicology, Merck & Co, Whitehouse Station, NJ; and [2]Institute for In Vitro Sciences, Gaithersburg, MD.

Abstract #

#428 **Poster Board Number 115**
Skin Sensitization Assessment of Various Cosmetic Ingredients towards Ultimate Replacement of Animal Testing. M. Miyazawa, T. Nishijo, K. Saito, and H. Sakaguchi. Kao Corporation, Tochigi, Japan. Sponsor: *J. Avalos*.

#429 **Poster Board Number 116**
Potency Ranking of Dermal Sensitizing Chemicals Using the IVSA and epiCS® Skin Tissues. L. F. Pratt[1], *M. Troese*[1], D. Weisensee[2], O. Engelking[2], and *G. L. DeGeorge*[1]. [1]MB Research Laboratories, Spinnerstown, PA; and [2]CellSystems® Biotechnologie Vertrieb GmbH, Troisdorf, Germany.

#430 **Poster Board Number 117**
Potency Classifications for Contact Dermal Sensitization As Determined by the h-CLAT Assay. *G. L. DeGeorge*. MB Research Laboratories, Spinnerstown, PA.

#431 **Poster Board Number 118**
A Novel Assay for Evaluating Wound Healing in a Full-Thickness *In Vitro* Human Skin Model. J. Oldach, A. Armento, M. A. Bachelor, G. Stolper, M. Li, *P. J. Hayden*, and M. Klausner. MatTek Corporation, Ashland, MA.

#432 **Poster Board Number 119**
Establishment of a Novel *In Vitro* Assay Based on Retinal Pigment Epithelial Cells to Assess Safety of Ophthalmic Drugs. S. Kustermann, C. Elsaesser, K. Dernick, T. Heckel, M. Ullah, and *A. B. Roth*. F. Hoffmann-La Roche Ltd, Basel, Switzerland.

#433 **Poster Board Number 120**
C24:1-Ceramide May Be a Novel Lipid Biomarker for Eye Irritation in 3D Human Corneal Epithelial Model, MCTT HCE™ *M. Lee*[1], S. Choi[1], K. Joo[3], Y. Chun[2], and K. Lim[1]. [1]Ewha Womans University, Seoul, Republic of Korea; [2]Chung-Ang University, Seoul, Republic of Korea; and [3]AmorePacific R&D Center, YongIn, Republic of Korea.

#434 **Poster Board Number 121**
Using the Novel NociOcular Assay to Predict the Eye Sting Potential of Shampoos and Sunscreen Products. K. Norman[1], L. Krawiec[1], E. Sly[1], V. Diersen[1], and A. Forsby[2]. [1]Institute for In Vitro Sciences, Gaithersburg, MD; and [2]Neurochemistry, Arrhenius Laboratories for Natural Science, Stockholm University, Stockholm, Sweden. Sponsor: *H. Raabe*.

#435 **Poster Board Number 122**
An *In Vitro* Reconstructed Normal Human Corneal Tissue Model for Corneal Drug Delivery Studies of Ophthalmic Formulations. Y. Kaluzhny, M. Kinuthia, L. d'Argembeau-Thornton, V. Karetsky, *P. J. Hayden*, and M. Klausner. MatTek Corporation, Ashland, MA.

#436 **Poster Board Number 123**
Use of Ultrasonic Pachymetry in an Initial In-House Proficiency Assessment of the Isolated Chicken Eye Test. R. L. Guest, G. Henzell, N. Warren, and A. Pooles. Alternative & Genetic Toxicology, Harlan Laboratories LTD., Derby, United Kingdom. Sponsor: *C. Auletta*.

Program Schedule (Continued)

Abstract #

#437 **Poster Board Number 124**
Optimization of an Eye Irritation Assay for Hazard Identification and Labelling of Materials to Address the EU Cosmetic Directive and REACH Legislation. Y. Kaluzhny[1], *H. Kandarova*[2], L. d'Argembeau-Thornton[1], J. DeLuca[1], *P. J. Hayden*[1], A. Hunter[1], T. Truong[1], and M. Klausner[1]. [1]MatTek Corporation, Ashland, MA; and [2]MatTek In Vitro Life Science Laboratories, Bratislava, Slovakia.

#438 **Poster Board Number 125**
Effect of Long-Term Shipping on an Eye Irritation Test for Hazard Identification and Labelling of Materials. Y. Kaluzhny[1], Y. Handa[2], *H. Kandarova*[3], T. Truong[1], A. Hunter[1], L. d'Argembeau-Thornton[1], and M. Klausner[1]. [1]MatTek Corporation, Ashland, MA; [2]Bio-Medical Department, Kurabo Industries LTD, Neyagawa City, Japan; and [3]MatTek In Vitro Life Science Laboratories, Bratislava, Slovakia.

#439 **Poster Board Number 126**
Protocol Considerations for Testing Surfactants and Surfactant-Based Formulations in the Bovine Corneal Opacity and Permeability Assay. *H. A. Raabe*, V. Diersen, and K. Norman. Institute for In Vitro Sciences, Inc., Gaithersburg, MD.

#440 **Poster Board Number 127**
Dichloroacetate- and Trichloroacetate-Induced Toxicity and Oxidative Stress in AML 12 Cells. *E. Hassoun*, and C. Mettling. Pharmacology, University of Toledo, Toledo, OH.

#441 **Poster Board Number 128**
Role of Chemical Structure in the Genotoxic Potential of Alkoxy-Substituted Allylbenzenes. *T. Kobets*, J. Duan, K. D. Brunnemann, M. J. Iatropoulos, and *G. M. Williams*. Pathology, New York Medical College, Valhalla, NY.

#442 **Poster Board Number 129**
Histopathological Changes Induced by 2-Acetylaminofluorene and Diethylnitrosamine in Fetal Chicken Livers. *T. Kobets*[1], M. J. Iatropoulos[1], J. Duan[1], K. D. Brunnemann[1], E. H. Vock[2], U. Deschl[2], and *G. M. Williams*[1]. [1]Pathology, New York Medical College, Valhalla, NY; and [2]Boehringer Ingelheim Pharma GmbH&Co. KG, Bierach an der Riss, Germany.

#443 **Poster Board Number 130**
Establishment of a Multi-Celltype Long-Term *In Vitro* Model of Human Liver Fibrosis and Its Application to Drug Testing. R. M. Kostadinova, C. Ullmer, and *A. B. Roth*. Hoffmann-La Roche Ltd, Basel, Switzerland.

#444 **Poster Board Number 131**
Substance Exposure to Organotypic Human Liver and Small Intestine Cocultures in a Multi-Organ-Chip. I. Wagner[1], M. Lindner[1], *P. J. Hayden*[2], A. Lorenz[1], R. Horland[1], A. Jaenicke[1], N. Sambo[1], S. Ayehunie[2], and U. Marx[1]. [1]TissUse, Berlin, Germany; and [2]Research & Development, MatTek Corporation, Ashland, MA.

Abstract #

#445 **Poster Board Number 132**
Analysis of Gene Expression Changes of HepG2, HepaRG, and iCell Hepatocytes Elicited By Chemical Exposure. *J. M. Naciff*[1], Y. Shan[1], X. Wang[1], *K. N. De Abrew*[1], *B. A. Wetmore*[2], *R. S. Thomas*[3], *R. S. Settivari*[4], *E. W. Carney*[4], R. Adams[1], J. P. Tiesman[1], and *G. P. Daston*[1]. [1]Procter and Gamble, Cincinnati, OH; [2]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; [3]US Environmental Protection Agency, Research Triangle Park, NC; and [4]Dow Chemical Company, Midland, MI.

#446 **Poster Board Number 133**
MicroRNA Responses to Human Liver Carcinogens: Development and Evaluation of an *In Vitro* Screening Model System. A. K. Marrone, F. A. Beland, and *I. Pogribny*. Biochemical Toxicology, National Center for Toxicological Research, Little Rock, AR.

#447 **Poster Board Number 134**
3D *In Vitro* Model of HepG2 Cell Spheroids for Long-Term Exposure Studies and Toxicogenomics-Based Prediction of Drug-Induced Liver Injury. *S. Ramaiahgari*[1,2], S. Wink[1], M. Coonen[3], *J. Kleinjans*[3], *L. Price*[1,4], and *B. van de Water*[1]. [1]Leiden University, Maastricht, Netherlands; [2]NTP/BSB, Research Triangle Park, NC; [3]Maastricht University, Maastricht, Netherlands; and [4]OCellO, Leiden, Netherlands.

#448 **Poster Board Number 135**
A Valuable Cellular Model for Biotransformation and Metabolomic Studies: The HepaRG Cell Line. N. Cabaton[1,3], M. Meireles[1,3], C. Canlet[2,3], M. Tremblay-Franco[2,3], E. Jamin[2,3], L. Dolo[1,3], A. Hillenweck[1,3], and *D. Zalko*[1,3]. [1]TOXALIM-MEX, INRA UMR1331, Toulouse, France; [2]TOXALIM-AXIOM, INRA UMR1331, Toulouse, France; and [3]INRA UMR1331, Toulouse University, Toulouse, France.

#449 **Poster Board Number 136**
Prodrug Activation in a Dynamic Microfluidic Systems Interconnecting Liver and Tumor Microtissues. K. Jinyoung[3], D. Fluri[1], *R. Marchan*[2], K. Boonen[4], S. K. Hammad[2], B. Landuyt[4], J. G. Hengstler[2], *S. Messner*[1], J. M. Kelm[1], A. Hierlemann[3], and O. Frey[3]. [1]InSphero AG, Schlieren, Switzerland; [2]Ifado, Dortmund, Switzerland; [3]BSSE, ETH Zürich, Basel, Switzerland; and [4]KU Leuven, Leuven, Belgium.

#450 **Poster Board Number 137**
Inhibition of Liver Mitochondrial β-Oxidation: An *In Vitro-In Vivo* Correlation *In Vitro-In Vivo*. *P. Sagelsdorff*[1], F. Bernard[2], M. Gassen[2], and J. Schreitmüller[1]. [1]Bioanalytics & Mechanistic Toxicology, Harlan Laboratories, Itingen, Switzerland; and [2]Animal Metabolism, Harlan Laboratories, Itingen, Switzerland.

#451 **Poster Board Number 138**
Liver Bioreactor As an *In Vitro* Metabolism System for Quantitative *In Vitro*-to-*In Vivo* Extrapolation. *J. M. Pedersen*[1], J. Shim[1], *E. LeCluyse*[1], J. M. Macdonald[2,1], *M. E. Andersen*[1], *H. J. Clewell*[1], and *M. Yoon*[1]. [1]The Hamner Institutes of Health Sciences, Research Triangle Park, NC; and [2]University of North Carolina, Chapel Hill, NC.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Ocular Toxicology

Safety Assessment Approaches for Product Development

Chairperson(s): *Neera Tewari-Singh, Pharmaceutical Sciences, University of Colorado Denver, Aurora, CO.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#452 **Poster Board Number 139**
Retinal Function and Morphology in Monkeys Treated with *N*-Methyl-*N*-nitrosourea (MNU). J. Kinoshita, N. Iwata, T. Maejima, T. Kimotsuki, M. Yasuda, and *W. Takasaki*. Medicinal Safety Research Laboratories, Daiichi Sankyo Co., Ltd., Edogawa-ku, Japan.

#453 **Poster Board Number 140**
Investigation of the Effect of UVC Radiation on the Toxicity of Benzalkonium Chloride. M. Xu[1], D. J. McCanna[2], and J. G. Sivak[1]. [1]Optometry and Vision Science, University of Waterloo, Waterloo, ON, Canada; and [2]Centre for Contact Lens Research, Optometry and Vision Science, University of Waterloo, Waterloo, ON, Canada. Sponsor: *V. Bantseev*.

#454 **Poster Board Number 141**
Corneal Wound Healing Is Delayed by Diclofenac in a Human *Ex Vivo* Front-of-the-Eye Model with a Comparison to Rabbit. *A. Vickers*[1], J. Herrmann[1], J. Gao[1], and *R. Fisher*[2]. [1]Allergan Inc, Irvine, CA; and [2]Vitron Inc, Tucson, AZ.

#455 **Poster Board Number 142**
Müller Glial Cell (MGC) Alterations Induced by the Inhalation of Vanadium Pentoxide. S. Cervantes-Yépez, S. L. López-Zepeda, and *T. I. Fortoul*. Biologia Celular y Tisular, UNAM, Mexico City, Mexico.

#456 **Poster Board Number 143**
Circulating miRNA Biomarker of Retinal Toxicity. *Q. Peng*[1], W. W. Collette[1], A. Giddabasappa[2], J. David[2], D. Kalabat[1], M. Twamley[1], *S. Aguirre*[1], and *W. Huang*[1]. [1]DSRD, Pfizer, San Diego, CA; and [2]Comparative Medicine, Pfizer, San Diego, CA.

#457 **Poster Board Number 144**
Ocular Toxicity and Efficacy of rAAV2tYF-PR1.7-hCNGB3 Vector following Subretinal Injection in Mouse Model of Achromatopsia. *B. Christian*[1], E. Budzynski[1], P. J. Sonnentag[1], T. M. Nork[2,3], P. E. Miller[2,3], J. N. Ver Hoeve[2,3], C. B. Kim[2,3], J. Pang[4], G. Ye[5], and J. D. Chulay[5]. [1]Covance Laboratories Inc, Madison, WI; [2]University of Wisconsin, Madison, WI; [3]OSOD, LLC, Madison, WI; [4]University of Florida, Gainesville, FL; and [5]AGTC, Alachua, WI.

#458 **Poster Board Number 145**
Clinical Progression of Ocular Injuries from Arsenical Vesicant Lewisite Exposure. *N. Tewari-Singh*[1], D. G. Goswami[1], A. Nagvekar[1], W. A. Sosna[2], E. Peters[2], R. S. Tuttle[2], T. Culley[2], *C. R. Croutch*[2], *R. P. Casillas*[2], and *R. Agarwal*[1]. [1]Pharmaceutical Sciences, University of Colorado Denver, Aurora, CO; and [2]MRIGlobal, Kansas City, MO.

Abstract #

#459 **Poster Board Number 146**
Ocular Tolerability of rAAV2tYF-CB-hRS1 Vector following Intravitreal Administration to Cynomolgus Monkeys. P. J. Sonnentag[1], P. E. Miller[2,4], E. Budzynski[1], *B. Christian*[1], D. Dunn[1], T. M. Nork[2,4], J. N. Ver Hoeve[2,4], C. B. Kim[2,4], G. Ye[3], and J. D. Chulay[3]. [1]Covance Laboratories, Inc., Madison, WI; [2]OSOD, LCC., Madison, WI; [3]AGTC, Alachua, FL; and [4]University of Wisconsin, Madison, WI.

#460 **Poster Board Number 147**
Multicentric Study of Reconstructed Human Corneal SkinEthic HCE Test Method for Serious Eye Damage/Eye Irritation Testing. V. Leblanc[1], E. Adriaens[2], M. Grandidier[1], K. Hollanders[3], A. Jacobs[3], M. Meloni[4], L. Nardelli[1], C. Roper[5], E. Santirocco[4], F. Toner[5], A. R. Van Rompay[3], J. Vinall[5], J. Cotovio[1], and N. Alépée[1]. [1]L'Oréal, Aulnay sous Bois, France; [2]Adriaens Consulting, Aalter, Belgium; [3]VITO, Mol, Belgium; [4]Vitroscreen, Milano, Italy; and [5]Charles River, Edinburgh, United Kingdom. Sponsor: *E. Dufour*.

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Natural Products

Chairperson(s): *Amy Roe, Procter & Gamble Co., Williamstown, KY.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#461 **Poster Board Number 149**
Assessing Potential Herb-Drug Interactions: Need for a Common Framework Approach. *A. L. Roe*[1], *J. C. Griffiths*[2], B. Gurley[3], *R. Kingston*[4], H. Oketch-R[5], and M. Paine[6]. [1]The Procter & Gamble Company, Cincinnati, OH; [2]CRN, Washington, DC; [3]UAMS, Little Rock, AR; [4]SafetyCall International, Bloomington, MN; [5]USP, Rockville, MD; and [6]Washington State Univ, Spokane, WA.

#462 **Poster Board Number 150**
***In Vitro* Evaluation of *Boswellia serrata* Extract (BSE) As an Inhibitor of CYP450 Using Cryopreserved and Fresh Human Hepatocytes and Human Liver Microsomes.** *A. L. Roe*[1], *C. Black*[2], K. R. Brouwer[2], and J. Jackson[2]. [1]The Procter & Gamble Company, Cincinnati, OH; and [2]Qualyst Transporter Solutions, Durham, NC.

#463 **Poster Board Number 151**
***In Vitro* Evaluation of Schisandra Extracts (SE) As Inhibitors of CYP450 and P-glycoprotein (P-gP) Utilizing B-CLEAR® Sandwich-Culture Human Hepatocytes (SCHH).** J. Jackson[2], *C. Black*[2], K. R. Brouwer[2], and *A. L. Roe*[1]. [1]The Procter & Gamble Company, Cincinnati, OH; and [2]Qualyst Transporter Solutions, Durham, NC.

#464 **Poster Board Number 152**
Safety Evaluation of Fractions Derived from *Peltophorum africanum*, a Medicinal Plant Used to Treat Inflammatory Pain in Southern Africa. *S. A. Adebayo*[2,1], J. L. Shai[1], and K. A. Eloff[2]. [1]Biomedical Sciences, Tshwane University of Technology, Pretoria, South Africa; and [2]Paraclinical Sciences, University of Pretoria, Pretoria, South Africa.

MONDAY

Program Schedule (Continued)

Abstract #

#465 **Poster Board Number 153**
Epigallocatechin-3-Gallate (EGCG) Enhances the Therapeutic Effects of Leptomycin B on Human Lung Cancer Cells. *M. Cromie*, and *W. Gao*. Texas Tech University, Lubbock, TX.

#466 **Poster Board Number 154**
Kahweol Suppresses Phorbol 12-Myristate 13-Acetate-Induced MMP-9 Expressions via Akt/ MAPK/ NF-kB and AP-1 Signaling Pathway. H. Kim, E. Lee, and *H. Jeong*. Pharmacy, Chungnam National University, Daejeon, Republic of Korea.

#467 **Poster Board Number 155**
Inhibitory Effects of Saponins Isolated from the Root of *Platycodon grandiflorum* on High-Fat Diet-Induced Nonalcoholic Steatohepatitis via Attenuation of Oxidative Stress, Inflammation, and Fibrosis in Rats. J. Choi[1], Y. Chung[2], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea; and [2]Department of Food and Medicine, International University of Korea, Jinju, Republic of Korea.

#468 **Poster Board Number 156**
Inhibitory Effects of Saponins, Especially Platyconic Acid A, from *Platycodon grandiflorum* on Ovalbumin-Induced Mice and PMA-Exposed A549 Cells. *H. Jeong*[1], J. Choi[1], and Y. Chung[2]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea; and [2]Food and Medicine, International University of Korea, Jinju, Republic of Korea.

#469 **Poster Board Number 157**
Inhibitory Effects of Saponins Isolated from the Root of *Platycodon grandiflorum* on Ovariectomy-Induced Bone Loss in Mice via Osteoblast Differentiation Stimulation and Osteoclast Suppression. Y. Chung[2], J. Choi[1], K. Lee[3], H. Jeong[3], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea; [2]Food and Medicine, International University of Korea, Jinju, Republic of Korea; and [3]College of Pharmacy, Chonnam National University, Gwangju, Republic of Korea.

#470 **Poster Board Number 158**
Effect of Impressic Acid Isolated from *Acanthopanax koreanum* on Endothelial Nitric Oxide Synthase Activation in Endothelial Cells. S. Jin, Y. Kim, and *H. Jeong*. Pharmacy, Chungnam National University, Daejeon, Republic of Korea.

#471 **Poster Board Number 159**
Protective Effect of Rutaecarpine on Tert-Butyl Hydroperoxide-Induced Apoptosis by Upregulation of Nrf2-Mediated HO-1 Expression via Akt Pathway in HepG2. S. Won[1], J. Choi[1], Y. Hwang[2], and *H. Jeong*[1]. [1]Pharmacy, Chungnam National University, Daejeon, Republic of Korea; and [2]Pharmaceutical Engineering, International University of Korea, Jinju, Republic of Korea.

Abstract #

#472 **Poster Board Number 160**
Any Anti-Lipidemic Effects of *Acer tegmentosum* Maxim Extract Are Mediated by AMPK Activation. B. Lee[1], C. Choi[2], H. Kim[1], *H. Jeong*[3], and *Y. Hwang*[1]. [1]Pharmaceutical Engineering, International University of Korea, Jinju, Republic of Korea; [2]Jeollanamdo Institute of Natural Resources Research, Jeollanamdo, Republic of Korea; and [3]Department of Toxicology, College of Pharmacy, Chungnam National University, Daejeon, Republic of Korea.

#473 **Poster Board Number 161**
Safety Evaluations of the Aqueous Extract of the Leaves of *Moringa oleifera* in Rats. *A. A. Adedapo*[2,1], O. M. Mogbojuri[2,1], and B. O. Emikpe[1,2]. [1]Veterinary Physiology, Biochemistry and Pharmacology, University of Ibadan, Ibadan, Nigeria; and [2]Veterinary Pathology, University of Ibadan, Ibadan, Nigeria.

#474 **Poster Board Number 162**
Use of Innocuous Natural Products to Modulate Membrane-Cytoskeletal-Dependent Ras Signaling. *N. R. Fuentes*[1,2], R. Barhoumi[2], I. Levental[3], and R. Chapkin[1]. [1]Department of Nutrition and Food Science, Texas A&M, College Station, TX; [2]Department of Veterinary Physiology & Pharmacology, Texas A&M, College Station, TX; and [3]Department of Integrative Biology and Pharmacology, University of Texas Medical School at Houston, Houston, TX.

#475 **Poster Board Number 163**
A Comprehensive Toxicological Safety Assessment of an Aqueous Extract of *Polypodium leucotomos* (Fernblock®). *T. Murbach*[1], I. Pasics Szakonyine[2], E. Beres[2], A. Vertesi[2], R. Glavitis[2], *A. Clewell*[1], G. Hirka[2], and *J. R. Endres*[1]. [1]AIBMR Life Sciences, Inc., Puyallup, WA; and [2]Toxi-Coop, Zrt., Budapest, Hungary.

#476 **Poster Board Number 164**
Safety Investigation of Herb Extracts: Protective Effects of Phikud Navakot against Oxidative Stress in HepG2 Cells. *R. Maniratanachote*[1], A. Chiangsom[1,2], K. Kulthong[1], R. Luechapudiporn[2], D. Meksuriyen[3], and S. T. Lawanprasert[1]. [1]NANOTEC, National Science and Technology Development Agency (NSTDA), Khlong Luang, Thailand; [2]Pharmacology and Physiology, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Pathumwan, Thailand; and [3]Biochemistry and Microbiology, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Pathumwan, Thailand.

#477 **Poster Board Number 165**
Mining Maple for *In Vitro* Anti-Inflammatory and Antihyperglycemic Properties. *P. P. Nahar*, L. Li, N. P. Seeram, and *A. Slitt*. Biomedical and Pharmaceutical Sciences, University of Rhode Island, Kingston, RI.

#478 **Poster Board Number 166**
Potential Effects of Dietary Novasil Clay on Selected Tissues of Sprague-Dawley Rats. *E. Afriyie-Gyawu*[1], S. McNeal[1], K. Boafo[1], T. Hill[1], and *T. D. Phillips*[2]. [1]Environmental Health Sciences, Georgia Southern University, Statesboro, GA; and [2]Veterinary Integrative Biosciences, Texas A&M University, College Station, TX.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#479 **Poster Board Number 167**
Studies on the Teratogenicity of Anabasine in a Rat Model. *K. Welch*, S. T. Lee, K. E. Panter, D. R. Gardner, E. L. Knoppel, B. T. Green, C. K. Hammond, Z. J. Hammond, and J. A. Pfister. Poisonous Plant Research Laboratory, USDA-ARS, Logan, UT.

#480 **Poster Board Number 168**
***In Vitro* Filaricidal Activity, Cytotoxicity, and Phytochemical Analysis of Crude Extracts of *Daniellia oliveri* and *Psorospermum febrifugum*.** *M. Abongwa*[1], F. Cho-Ngwa[2], G. A. Ayimele[3], M. Samje[2], S. B. Babiaka[3], *R. J. Martin*[1], and A. P. Robertson[1]. [1]Department of Biomedical Sciences, Iowa State University, Ames, IA; [2]Department of Biochemistry and Molecular Biology, University of Buea, Buea, Cameroon; and [3]Department of Chemistry, University of Buea, Buea, Cameroon.

#481 **Poster Board Number 169**
Inhibition of Intestinal Cell Proliferation Activity Induced by *Jatropha* Phorbol Ester May Cause Weight Loss and Death *In Vivo*. *Y. Ishihara*, and M. Nakao. Public Health, Kurume University, Kurume, Japan.

#482 **Poster Board Number 170**
Chronic Toxicity of Phorbol Ester, Crude Oil, and Biodiesel Fuel from *Jatropha curcas*. M. Nakao, S. Kinoshita, and *Y. Ishihara*. Public Health, Kurume University, Kurume, Japan.

#483 **Poster Board Number 171**
Modulation of Multidrug Resistance by Phytochemicals in Breast Cancer. *S. R. Kondraganti*, and *B. Moorthy*. Baylor College of Medicine, Houston, TX.

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Biomonitoring and Exposure Assessment

Chairperson(s): *Janis Hulla, SPK-ED-EC, USACE, Sacramento, CA.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#484 **Poster Board Number 201**
Exposure Measurement Error and the Impact of Nutrition in Studies of Inorganic Arsenic and Cardiovascular Endpoints. *H. N. Lynch*, M. W. Tumpney, and *B. D. Beck*. Gradient, Cambridge, MA.

#485 **Poster Board Number 202**
Arsenic Concentration in Nail and Drinking Water Samples from a Brazilian Population Exposed Due to Mining Activity. M. C. Faria[1,3], M. S. Santos[1], T. G. Andrade[1], I. Alves[1], R. Cassuci[2], C. A. Bomfeti[1], F. Barbosa[3], and J. L. Rodrigues[1]. [1]ICET, Universidade Federal dos Vales do Jequitinhonha e Mucuri, Teofilo Otoni, Brazil; [2]Faculdade Tecsoma, Paracatu, Brazil; and [3]Faculdade de Ciências Farmacêuticas de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, Brazil. Sponsor: *D. Oliveira*.

#486 **Poster Board Number 203**
Arsenic Relative Bioavailability and Exposure from Diet and Other Media. *J. Yager*[1,2], *T. Greene*[1], *R. Gentry*[1], and *R. Schoof*[1]. [1]ENVIRON International Corporation, Monroe, LA; and [2]University of New Mexico, Albuquerque, NM.

Abstract #

#487 **Poster Board Number 204**
Estimating Children's Soil and Dust Ingestion Rates Using Blood Lead Biomonitoring at the Bunker Hill Superfund Site in the Silver Valley of Idaho. I. von Lindern[3], S. Spalinger[3], *M. L. Stifelman*[2], and *L. W. Stanek*[1]. [1]National Center for Environmental Assessment, US EPA, Research Triangle Park, NC; [2]Region 10, US EPA, Seattle, WA; and [3]TerraGraphics Environmental Engineering, Moscow, ID.

#488 **Poster Board Number 205**
Lead Exposure in São Paulo, Brazil: Blood Levels and Risk Factors Associated. *K. P. Olympio*[1], F. Barbosa[3], A. S. Silva[2], and M. A. Cardoso[1]. [1]Faculdade de Saúde Pública, São Paulo, Brazil; [2]PAHO-WHO, Washington, DC; and [3]Faculdade de Ciências Farmacêuticas de Ribeirão Preto - USP, Ribeirão Preto, Brazil.

#489 **Poster Board Number 206**
Evaluation of Hepatic Function Biomarkers and Bone Alkaline Phosphatase in a Population Chronically Exposed to Fluoride through Drinking Water. C. González-Horta[1], E. E. Villarreal-Vega[1], M. I. Jiménez-Córdova[2], I. A. Domínguez-Guerrero[1], A. Barrera-Hernández[2], B. E. Sánchez Ramírez[1], R. Infante-Ramírez[1], and *L. M. Del Razo*[2]. [1]Ciencias Quimicas, Universidad Autónoma de Chihuahua, Chihuahua, Mexico; and [2]Toxicologia, Cinvestav-IPN, Mexico D.F., Mexico.

#490 **Poster Board Number 207**
Exposure Factors Interactive Resource for Scenarios Tool (ExpoFIRST): A New Tool for Estimating Exposure Using the 2011 Exposure Factors Handbook. M. Cawley[1], R. Overton[1], P. Hartman[1], A. Turley[1], L. Phillips[2], and J. Moya[2]. [1]ICF International, Durham, NC; and [2]Office of Research and Development, US EPA, Washington, DC. Sponsor: *M. Selgrade*.

#491 **Poster Board Number 208**
Formulation Development and Validation of an Analytical Method for a Combination-Dose Formulation of Emtricitabine, Tenofovir Disoproxil Fumarate, and Efavirenz in Support of Rodent Toxicology Studies. J. C. Blake[1], J. Gilliam[1], D. Coleman[1], R. A. Fernando[1], *V. G. Robinson*[2], *B. McIntyre*[2], and *S. Waidyanatha*[2]. [1]RTI International, Research Triangle Park, NC; and [2]Division of National Toxicology Program, NIEHS, Research Triangle Park, NC.

#492 **Poster Board Number 209**
Comparative Study of Indoor Air Databases and the Veracity of "Background". R. DeHate[2,1], B. Skelly[2], *G. T. Johnson*[1], and *R. D. Harbison*[1]. [1]College of Public Health, University of South Florida, Tampa, FL; and [2]GEI Consultants, Inc, Valrico, FL.

#493 **Poster Board Number 210**
An Upper Bound for Population Exposure Variability. W. Setzer[1], R. Pearce[3], *B. A. Wetmore*[2], and *J. F. Wambaugh*[1]. [1]National Center for Computational Toxicology, US EPA, Research Triangle Park, NC; [2]The Hamner Institute, Research Triangle Park, NC; and [3]Student Services Contractor, Research Triangle Park, NC.

MONDAY

Program Schedule (Continued)

Abstract #

#494 **Poster Board Number 211**
An Analysis of Varskin 5.0 Radiation Dosimetry Software. L. Pryor[1], *C. A. Dodd*[1], and R. Tadesse[2]. [1]Biology, Fort Valley State University, Fort Valley, GA; and [2]Division of Systems Analysis, Radiation Protection Branch, Nuclear Regulatory Commission, Rockville, MD.

#495 **Poster Board Number 212**
Temporal Trends in Phthalate Exposures in the US Population: A Quantile Regression Approach. M. Chen, and *J. E. Foreman*. ExxonMobil Biomedical Sciences, Inc., Annandale, NJ.

#496 **Poster Board Number 213**
High-Throughput Exposure Modeling of Semi-Volatile Chemicals in Articles of Commerce. *C. I. Nicolas*[1,3], *M. R. Goldsmith*[2], *R. Pearce*[1], *W. Setzer*[1], and *J. F. Wambaugh*[1]. [1]ORD/NCCT, US EPA, Research Triangle Park, NC; [2]ORD/NERL, US EPA, Research Triangle Park, NC; and [3]ORISE, Oak Ridge, TN.

#497 **Poster Board Number 214**
A High-Throughput Exposure Estimation Tool Incorporating ADME Processes. H. Hubbard[1], C. Henning[1], T. Hong[1], D. Vallero[2], and P. Egeghy[2]. [1]ICF International, Durham, NC; and [2]Office of Research and Development, US EPA, Durham, NC. Sponsor: *J. Wignall*.

#498 **Poster Board Number 215**
Development of a Computational Model Describing and Extrapolating Salivary Acinar Cell *In Vitro* Pesticide Transport. *C. Timchalk*, *T. J. Weber*, and *J. N. Smith*. Pacific Northwest National Laboratory, Richland, WA.

#499 **Poster Board Number 216**
Development of an *In Vitro* Screening Assay for Noninvasive Biomonitoring. *T. J. Weber*, *J. N. Smith*, and *C. Timchalk*. Health Impacts and Exposure Science, Pacific Northwest National Laboratory, Richland, WA.

#500 **Poster Board Number 217**
8-Isoprostane: A Strategy to Assess the Link between Environmental Stressors and Community Health. J. M. Santos[1], J. Labond[2], N. Salvati[2], A. Rilett[2], M. Jurban[3], and *H. Kim*[2]. [1]Federal University of Goias, Jatai, Brazil; [2]Detroit R&D, Inc, Detroit, MI; and [3]Detroit Water and Sewerage Department, Detroit, MI.

#501 **Poster Board Number 218**
Monitoring *Fusarium* Mycotoxins by GC-MS/MS in European Beers. Y. Rodríguez-Carrasco, M. Ruiz, *G. Font*, and H. Berrada. Toxicology, University of Valencia, Burjassot, Spain.

Abstract #

#502 **Poster Board Number 219**
Multi-Mycotoxin Dietary Exposure Monitoring in Cameroon Using Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS). *W. A. Abia*[1,2,3], B. Warth[2], M. Sulyok[2], R. Krska[2], P. Turner[4], C. Kouanfack[5], M. Eyongetah[6], A. Tchana[1], *P. B. Njobeh*[3], M. Dutton[7], and P. F. Moundipa[1]. [1]Biochemistry, University of Yaounde I, Yaounde, Cameroon; [2]Agrobiotechnology, University of Natural Resources and Life Sciences, Vienna, Austria; [3]Biotechnology and Food Technology, University of Johannesburg, Johannesburg, South Africa; [4]School of Public Health, MIAEH, University of Maryland, College Park, MD; [5]Day Care Hospital, Central Hospital, Yaounde, Cameroon; [6]Day Care Hospital, Regional Hospital Bamenda, Bamenda, Cameroon; and [7]Food, Environment and Health Research Group, University of Johannesburg, Johannesburg, South Africa.

#503 **Poster Board Number 220**
Exposure Assessment of Lotion, Stick, and Spray Sunscreen Application. *G. L. Anderson*[1], *R. M. Novick*[1], *E. Miller*[1], D. Allgeier[1], and *K. Unice*[2]. [1]Cardno ChemRisk, San Francisco, CA; and [2]Cardno ChemRisk, Pittsburgh, PA.

#504 **Poster Board Number 221**
Risk of Dermal Sensitization to Methylisothiazolinone from Lotion Sunscreen. *R. M. Novick*[1], *G. L. Anderson*[1], *E. Miller*[1], D. Allgeier[1], and K. Unice[2]. [1]Cardno ChemRisk, San Francisco, CA; and [2]Cardno ChemRisk, Pittsburgh, PA.

#505 **Poster Board Number 222**
Exposure Factor Considerations for Risk Assessment of Modern Disposable Diapers. S. Dey[1], M. Purdon[1], T. Kirsch[2], K. Kerr[1], H. Helbich[2], and S. Zhou[1]. [1]The Procter & Gamble Company, Cincinnati, OH; and [2]Procter & Gamble Service GmDH, Schwalbach, Germany. Sponsor: *S. Felter*.

#506 **Poster Board Number 223**
Determination of Polybrominated Diphenyl Ethers and Polychlorinated Biphenyls in Bovine Milk. *Y. Lin*, X. Chen, K. Dang, and *B. Puschner*. VM: Molecular Biosciences, University of California, Davis, Davis, CA.

#507 **Poster Board Number 224**
Bisphenol A Metabolites Levels in Pooled Urine Specimens from Pregnant Women in Rio de Janeiro, Brazil. A. P. Ferreira. Sergio Arouca National School of Public Health, Rio de Janeiro, Brazil. Sponsor: *H. Castro*.

#508 **Poster Board Number 225**
24-Hour Human Urine and Serum Profiles of Bisphenol: Evidence against Significant Sublingual Absorption of BPA following Oral Exposure in Soup. *J. G. Teeguarden*[1,2], D. R. Doerge[3], M. I. Churchwell[3], and N. C. Twaddle[3]. [1]Health Effects and Exposure Science, Pacific Northwest National Laboratory, Richland, WA; [2]Molecular and Environmental Toxicology, Oregon State University, Corvallis, OR; and [3]National Center for Toxicological Research, US FDA, Jefferson, AR.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#509 **Poster Board Number 226**
Serum Pesticide and PCB Levels Are Associated with Peripheral Blood Leukocyte Populations in Great Lakes Anglers. *F. D. Stephen*[1], L. Georger[1], M. R. Bonner[3], *P. J. Kostyniak*[2,3], *J. R. Olson*[2,3], M. S. Bloom[4], and J. E. Vena[5]. [1]Department of Math and Natural Sciences, D'Youville College, Buffalo, NY; [2]Department of Pharmacology and Toxicology, SUNY, Buffalo, NY; [3]Department of Epidemiology and Environmental Health, SUNY, Buffalo, NY; [4]Department of Environmental Health Sciences, SUNY, Albany, NY; and [5]Department of Epidemiology and Biostatistics, University of Georgia, Athens, GA.

#510 **Poster Board Number 227**
PAH Bioavailability from Incidentally Ingested Soil: Influence of Thermodynamics and Metal Coexposure. K. J. James[1,2], *R. E. Peters*[1,2], and *S. D. Siciliano*[1,2]. [1]Toxicology, University of Saskatchewan, Saskatoon, SK, Canada; and [2]Soil Science, University of Saskatchewan, Saskatoon, SK, Canada.

#511 **Poster Board Number 228**
Non-Hodgkin's Lymphomas in Humans and Dogs in the City of São Paulo, Brazil: Spatial Distribution As a Clue to a Potential Etiologic Role for Environmental Pollution. K. Kimura, and *M. L. Dagli*. Department of Pathology, University of Sao Paulo, Sao Paulo, Brazil.

#512 **Poster Board Number 229**
A Comparison of Ambient Air BTEX Concentrations between Two Counties with Active Petroleum Wells. *A. LeBeau*. CRA, Dallas, TX.

#513 **Poster Board Number 230**
Assessment of Public Health Risks Associated with Petrochemical Emissions Surrounding an Oil Refine. E. Pulster[1,2], *G. T. Johnson*[2], J. D. McCluskey[2], and *R. D. Harbison*[2]. [1]Mote Marine Laboratory, Sarasota, FL; and [2]College of Public Health, University of South Florida, Tampa, FL.

#514 **Poster Board Number 231**
Benzene Concentrations in Working Environment of Workers at Gasoline Stations. *S. Chaiklieng*[1], C. Pimpasaeng[2], and P. Suggaravetsiri[3]. [1]Environmental Health Science, Faculty of Public Health, Khon Kaen University, Khon Kaen, Thailand; [2]Faculty of Public Health, Khon Kaen University, Khon Kaen, Thailand; and [3]Epidemiology, Faculty of Public Health, Khon Kaen University, Khon Kaen, Thailand.

#515 **Poster Board Number 232**
The Naphthalene Dosimeter—Vanguard Technology for Improved Health Protection. *J. Hulla*[1], S. Proctor[2], and *J. E. Snawder*[3]. [1]SPK-ED-E, US Army Corps of Engineers, Sacramento, CA; [2]Military Performance Division, US Army Research Institute of Environmental Medicine, Natick, MA; and [3]Biomonitoring Team, National Institute for Occupational Safety and Health, Cincinnati, OH.

Abstract #

#516 **Poster Board Number 233**
Volatile Organic Compounds Released from Spreading Ground Coffee during a Simulated Industrial Task. *A. Urban*[1], S. H. Gaffney[1], L. McCarthy[1], D. M. Hollins[1], A. Abelmann[2], K. Unice[3], M. Liong[1], *B. L. Finley*[4], and J. L. Henshaw[5]. [1]Cardno ChemRisk, San Francisco, CA; [2]Cardno ChemRisk, Chicago, IL; [3]Cardno ChemRisk, Pittsburgh, PA; [4]Cardno ChemRisk, Brooklyn, NY; and [5]Cardno ChemRisk, Sanibel, FL.

#517 **Poster Board Number 234**
Inverse Correlation of Urinary Phenol with Key Micronutrients of the Haem Pathway in Nigerian Gasoline Dispensers: Potentiation of Myelotoxicity and Myelodysplasia. *J. I. Anetor*[1], T. Adigun[1], E. Bolajoko[1], G. O. Anetor[2], B. Orimadegun[1], K. Ademola-Aremu[1], and G. Igharo[1]. [1]Department of Chemical Pathology, University of Ibadan, Ibadan, Nigeria; and [2]Community Health, National Open University, Lagos, Nigeria.

#518 **Poster Board Number 235**
Monitoring Agricultural Workers Exposed to ChE-Inhibiting Pesticides. *O. Laribi*, B. Malig, R. Broadwin, W. Wieland, *R. Woods*, *K. Sutherland-Ashley*, *C. Salocks*, *D. Ting*, and *L. Zeise*. Office of Environmental Health Hazard Assessment, Cal EPA, Oakland/Sacramento, CA.

#519 **Poster Board Number 236**
Time Courses and Variability of Biomarkers of Exposure to Pyrethroids in a Group of Agricultural Workers. M. Ratelle, J. Côté, and *M. Bouchard*. Department of Environmental & Occupational Health, University of Montreal, Montreal, QC, Canada.

#520 **Poster Board Number 237**
Detailed Time Profiles of Biomarkers of Exposure in Workers Exposed to Permethrin in a Corn Production Farm in Quebec, Canada. S. Ferland, J. Côté, and *M. Bouchard*. Department of Environmental & Occupational Health, University of Montreal, Montreal, QC, Canada.

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Genetic Toxicology I

Chairperson(s): *Virunya S. Bhat, NSF International, Encinitas, CA; and Barbara Parsons, National Center for Toxicological Research, Jefferson, AR.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#521 **Poster Board Number 239**
Evaluation of *cII* Mutations in Lungs of Male Big Blue Mice Exposed to Vanadium Pentoxide by Inhalation for Up to 8 Weeks. *M. G. Manjanatha*[1], S. D. Shelton[1], *L. T. Haber*[2], *B. Gollapudi*[3], and *M. M. Moore*[1,4]. [1]Genetic and Molecular Toxicology, FDA/NCTR, Jefferson, AR; [2]Toxicology Excellence for Risk Assessment, Cincinnati, OH; [3]Center for Toxicology and Mechanistic Biology, Exponent Inc., Midland, MI; and [4]ENVIRON International Corporation, Little Rock, AR.

Program Schedule (Continued)

Abstract #

#522 **Poster Board Number 240**
Quantification of *Kras* Codon 12 Mutations in Lung DNA of B6C3F1 Mice following Inhalation of Aerosolized Particulate Vanadium Pentoxide. *M. Banda*[1], K. L. McKim[1], *L. T. Haber*[2], *J. A. MacGregor*[3], *B. Gollapudi*[4], and *B. L. Parsons*[1]. [1]Division of Genetic and Molecular Toxicology, National Center for Toxicological Research, US FDA, Jefferson, AR; [2]Toxicology Excellence for Risk Assessment, Cincinnati, OH; [3]Toxicology Consulting Services, Arnold, MD; and [4]Exponent, Chicago, IL.

#523 **Poster Board Number 241**
Effect of Age on Kras Codon 12 GAT and GTT Mutant Fractions in Lungs of Mice 4 to 85 Weeks Old. P. B. McKinzie, M. G. Pearce, and K. L. McKim. Division of Genetic and Molecular Toxicology, National Center for Toxicological Research, Jefferson, AR. Sponsor: *M. Manjanatha*.

#524 **Poster Board Number 242**
Optimization of Methods and Proof of Principle for Assessing Mutagenicity in the Oral Cavity of Transgenic Big Blue® Rats. R. R. Young, H. Dinesdurage, and R. Elbekai. BioReliance, Rockville, MD. Sponsor: *M. McKeon*.

#525 **Poster Board Number 243**
Hexavalent Chromium Does Not Induce Mutations in the Oral Mucosa of Transgenic Big Blue® Rats following Drinking Water Exposures at a Carcinogenic Dose. *C. M. Thompson*[1], R. R. Young[2], *M. Suh*[3], H. Dinesdurage[2], R. Elbekai[2], M. A. Harris[1], *A. C. Rohr*[4], and *D. Proctor*[3]. [1]ToxStrategies, Katy, TX; [2]BioReliance, Rockville, MD; [3]ToxStrategies, Mission Viejo, CA; and [4]Electric Power Research Institute, Palo Alto, CA.

#526 **Poster Board Number 244**
Detection of ENU-Induced Mutations in the Germ Cells of the Transgenic Muta™Mouse. C. Beevers, G. Pearce, T. Downend, L. Foster, and R. Mortimer. Covance Laboratories Ltd, Harrogate, United Kingdom. Sponsor: *J. Bhalli*.

#527 **Poster Board Number 245**
Impact of Dexrazoxane on Epirubicin-Induced DNA Damage and Apoptosis in Nontumor Cells. S. M. Attia[1], *S. A. Albakheet*[1], S. Ahmad[1], and Q. Saquib[2]. [1]Department of Pharmacology, College of Pharmacy, King Saud University, Riyadh, Saudi Arabia; and [2]Department of Zoology, College of Science, King Saud University, Riyadh, Saudi Arabia.

#528 **Poster Board Number 246**
Dihydroxyacetone Induces Cytotoxicity and DNA Damage in a Dose- and Time-Dependent Manner in an *In Vitro* Primary Human Skin Cell Culture Model. A. DePina, R. L. Jones, and *J. Yourick*. Division of Toxicology (DT), US FDA, Center for Food Safety and Applied Nutrition (CFSAN), Office of Applied Research and Safety Assessment (OARSA), Laurel, MD.

#529 **Poster Board Number 247**
Mechanistic Study of *Ginkgo biloba* Leaf Extract-Induced DNA Damage in Human Hepatic Cells. Z. Zhang[1], *S. Chen*[2], *J. Xuan*[2], *X. Guo*[1], *L. Couch*[2], *L. Guo*[2], and *N. Mei*[1]. [1]Division of Genetic and Molecular Toxicology, National Center for Toxicological Research, Jefferson, AR; and [2]Division of Biochemical Toxicology, National Center for Toxicological Research, Jefferson, AR.

Abstract #

#530 **Poster Board Number 248**
DNA Damage Response Analysis of Cyclophosphamide Using DT40 Mutants in the Presence of Rat Liver S9 Fraction. K. Hashimoto[1,2], *J. A. Swenberg*[1], and J. Nakamura[1]. [1]Environmental Sciences and Engineering, The University of North Carolina, Chapel Hill, NC; and [2]Drug Safety Research Laboratories, Takeda Pharmaceutical, Fujisawa, Japan.

#531 **Poster Board Number 249**
Miniaturized Flow Cytometry-Based Homogeneous DNA-Damage Response Assay Discriminates Clastogens, Aneugens, and Cytotoxicants. S. Bryce[1], *J. Bemis*[1], R. Spellman[2], M. Engel[2], M. Schuler[2], and *S. Dertinger*[1]. [1]Litron Labs, Rochester, NY; and [2]Pfizer Worldwide Research & Development, Genetic Toxicology, Groton, CT.

#532 **Poster Board Number 250**
Developmental Mitochondrial DNA Damage Results in Altered Mitochondrial Function Later in Life in *C. elegans*. *J. Rooney*, *A. Luz*, I. T. Ryde, *A. S. Bess*, and *J. N. Meyer*. Nicholas School of the Environment, Duke University, Durham, NC.

#533 **Poster Board Number 251**
Genotoxic Effect of 1,2-Dichloropropane in ALDH2-Deficient Mice. R. Wang, T. Suzuki, Y. Yanagiba, and M. Suda. Japan National Institute of Occupational Safety and Health, Kawasaki, Japan. Sponsor: *N. Mei*.

#534 **Poster Board Number 252**
Role of Helicases in Removal of Zidovudine (AZT)-Induced Genotoxicity in DNA-Repair Deficient Human Cultured Fibroblasts. *D. Momot*, M. C. Poirier, and *O. Olivero*. National Cancer Institute, Bethesda, MD.

#535 **Poster Board Number 253**
Cytokinesis-Block Micronucleus following Telomere Centromere Staining. N. Zaguia[3], F. Finot[1], L. Morat[3], O. Cariou[1], F. Paillard[1], L. Heidingfelder[4], M. Ricoul[3], W. Hemplel[3], J. Clements[2], L. Sabatier[3], and R. Mkacher[3]. [1]Safety Assessment, Covance, Porcheville, France; [2]Safety Assessment, Covance, Harrogate, United Kingdom; [3]Radiobiology and Oncology Laboratory, CEA, Fontenay-aux-Roses, France; and [4]MetaSystems, MetaSystems GmbH, Altlussheim, Germany. Sponsor: *A. Romeike*.

#536 **Poster Board Number 254**
Telomere Instability in *In Vitro* Genotoxicity Assessment of Ethyl 4-Hydroxybenzoate. F. Finot[1], R. Mkacher[3], I. Mouche[1], D. Souverville[1], S. Négrault[1], O. Cariou[1], A. Essahli[1], N. Prigent[1], J. Saul[2], F. Paillard[1], P. Lafouge[1], L. Sabatier[3], and J. Clements[2]. [1]Safety Assessment, Covance, Porcheville, France; [2]Safety Assessment, Covance, Harrogate, United Kingdom; and [3]Radiology and Oncology Laboratory, CEA, Fontenay-aux Roses, France. Sponsor: *A. Romeike*.

#537 **Poster Board Number 255**
The Food Processing Contaminant 2,5-Dimethylfuran Shows Genotoxic and Tumorigenic Potential in V79-Cells and Apc(Min/+) Mice. A. H. Sæther[1], M. P. Huffman[1], C. Svendsen[1], H. Glatt[2], G. Brunborg[1], J. Alexander[1], and T. Husøy[1]. [1]Norwegian Institute of Public Health, Oslo, Norway; and [2]German Institute of Human Nutrition, Potsdam-Rehbrücke, Germany. Sponsor: *U. Nygaard*.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#538 **Poster Board Number 256**
Lack of Genotoxicity/Carcinogenicity of Methylisoeugenol (MIE) Compared to Methyleugenol (ME). S. Kercher, M. Gerlach, A. T. Cartus, and *D. Schrenk*. Food Chemistry and Toxicology, University of Kaiserslautern, Kaiserslautern, Germany.

#539 **Poster Board Number 257**
Dose-Response Relationships for DNA-Adducts Formed by Mono-, Di- and Tri-Chlorobiphenyls: Do Common Indoor and Outdoor PCB Vapor Exposures Pose a Significant Cancer Risk? P. Scott[1], *A. J. Bernal*[2], T. Cheng[2], *E. DeGandiaga*[2], and *B. D. Kerger*[2]. [1]Cardno ChemRisk, Pittsburgh, PA; and [2]Cardno ChemRisk, Aliso Viejo, CA.

#540 **Poster Board Number 258**
Analysis of Duodenal Crypt Health following Exposure to Cr(VI) in Drinking Water. M. A. Harris[1], *C. M. Thompson*[1], *D. Proctor*[2], *M. Suh*[2], J. Wolf[3], J. Seiter[4], M. Chappell[4], and *L. C. Haws*[5]. [1]ToxStrategies, Katy, TX; [2]ToxStrategies, Mission Viejo, CA; [3]EPL, Sterling, VA; [4]US Army ERDC, Vicksburg, MS; and [5]ToxStrategies, Austin, TX.

#541 **Poster Board Number 259**
Building Models of Bacterial Mutagenicity from Biased Training Data. *C. Barber*[1], T. Hanser[1], *N. L. Kruhlak*[2], *L. Stavitskaya*[2], J. Vessey[1], and S. Werner[1]. [1]Lhasa Limited, Leeds, United Kingdom; and [2]Center for Drug Evaluation and Research (CDER), FDA, Silver Spring, MD.

#542 **Poster Board Number 260**
Using Computational Toxicology and Functional Toxicogenomic Approaches to Elucidate Structural Features of Furan Biofuel Candidate Compounds Contributing to Genotoxicity. D. Faulkner[1], B. Ford[1], C. Hill[2], J. Hartwig[2], M. J. Mulvihill[2], *D. E. Johnson*[1], *M. Fasullo*[3], and *C. Vulpe*[1]. [1]Nutritional Sciences and Toxicology, University of California, Berkeley, Berkeley, CA; [2]Chemistry, University of California, Berkeley, Berkeley, CA; and [3]Nanobiosciences, State University of New York, Albany, NY.

#543 **Poster Board Number 261**
Genotoxicity Is Not a Key Event in 1,3-Dichloropropene-Induced Mouse Lung Tumorigenicity. R. Sura[1], *S. C. Gehen*[2], *Z. Yan*[2], and *M. J. LeBaron*[1]. [1]The Dow Chemical Company, Midland, MI; and [2]Dow AgroSciences, Indianapolis, IN.

#544 **Poster Board Number 262**
Investigating the Effect of Hexavalent Chromium on an Error-Prone Repair Pathway, Nonhomologous End Joining. *K. N. Thompson, Q. Qin, H. Xie*, and *J. P. Wise*. University of Southern Maine, Portland, ME.

#545 **Poster Board Number 263**
Formation of Endogenous and Exogenous DNA-Protein Crosslinks in Nonhuman Primates and Rats following Inhalation Exposure to [13CD2]-Formaldehyde. *Y. Lai*, W. Bodnar, H. Hartwell, and *J. A. Swenberg*. Department of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC.

Abstract #

#546 **Poster Board Number 264**
Role of Inflammatory Cytokine IL-6 in Regulating the Genotoxicity of BaP and PhIP in the Breast Cancer Cell Lines. *D. S. Malik, R. David*, and *N. J. Gooderham*. Surgery and Cancer, Imperial College, London, United Kingdom.

#547 **Poster Board Number 265**
Formation of Pyrrolizidine Alkaloid-Derived DNA Adducts from Rat Liver Microsomal Metabolism of Hepatotumorigenic Pyrrolizidine Alkaloids in the Presence of Calf Thymus DNA. P. Fu[1], Q. Xia[1], X. Jiang[1,2], L. Cai[3], and X. Sun[2]. [1]Biochemical Toxicology, NCTR, FDA, Jefferson, AR; [2]National Institute of Occupational Health and Poison Control, Chinese Center for Disease Control and Prevention, Beijing, China; and [3]Biotranex LLC, Monmouth Junction, NJ. Sponsor: *G. Lei*.

#548 **Poster Board Number 266**
Endogenous Aldehydes Are Ubiquitous Sources of Widespread DNA Damage in Mice with DNA Repair Deficiencies. *R. Yu*[1], L. B. Pontel[2], K. J. Patel[2], and *J. A. Swenberg*[1]. [1]Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC; and [2]MRC Laboratory of Molecular Biology, University of Cambridge, Cambridge, United Kingdom.

#549 **Poster Board Number 267**
Understanding the Molecular Mechanism of Formaldehyde-Induced DNA-Protein Crosslink Repair. *S. V. Vulimiri*, N. Keshava, *J. M. Fritz*, and B. R. Sonawane. ORD/NCEA, US EPA, Washington, DC.

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Cell Death and Apoptosis

Chairperson(s): *Sidhartha D. Ray, Pharmaceutical Sciences, Manchester University College Pharmacy, Fort Wayne, IN.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#550 **Poster Board Number 301**
Aryl Hydrocarbon Receptor Activation by Cinnabarinic Acid Is Required for Stanniocalcin-2-Mediated Protection against Alcohol-Induced Hepatic Injury. *D. Carter*[1], *A. D. Joshi*[1], *T. Harper*[2], and *C. Elferink*[1]. [1]Pharmacology, UTMB, Houston, TX; and [2]Linus Pauling Institute, OSU, Corvallis, OR.

#551 **Poster Board Number 302**
Inhibition of Serum-Deprived Autophagy by Chloroquine Increases Nitric Oxide Production and Promotes Endothelium-Dependent Vasorrelaxation. C. R. Pestana[1,2], J. C. Oishi[2], H. S. Salistre-Araujo[2], and G. J. Rodrigues[2]. [1]Instituto Latino-Americano de Ciências da Vida e da Natureza, Universidade Federal da Integração Latino-Americana, Foz do Iguaçu, Brazil; and [2]Departamento de Ciências Fisiológicas, Universidade Federal de Sao Carlos, Sao Carlos, Brazil. Sponsor: *D. Dorta*.

Program Schedule (Continued)

Abstract #

#552 **Poster Board Number 303**
Impact of Dosing Volume and Seeding Density on the Cell Death Triggered by Lysosomotropism. T. Sung, *B. A. Jessen*, and *S. Lu*. Pfizer Inc, San Diego, CA.

#553 **Poster Board Number 304**
Cytotoxicity Studies and Mechanism of Cell Death Mediated by Phenolic Antioxidants on Cells of Melanocytic Origin. S. Kerr[1], M. Alanazi[1], and J. DeMasi[2]. [1]Pharmaceutical Sciences, MCPHS University, Boston, MA; and [2]Arts & Sciences, MCPHS University, Boston, MA. Sponsor: *R. Sarangarajan*.

#554 **Poster Board Number 305**
Mechanisms of Tolvaptan-Associated Hepatocellular Toxicity in HepG2 Cells. *J. Fang*, *Y. Wu*, *S. Chen*, *F. Liu*, and F. A. Beland. DBT, NCTR, Jefferson, AR.

#555 **Poster Board Number 306**
ROS and c-Jun N-terminal Kinases (JNK) Contribute to TEMPO-Induced Apoptosis in L5178Y Cells. *X. Guo*[1], *S. Chen*[2], *V. N. Dobrovolsky*[1], *L. Guo*[2], and *N. Mei*[1]. [1]DGMT, NCTR, Jefferson, AR; and [2]DBT, NCTR, Jefferson, AR.

#556 **Poster Board Number 307**
Subchronic Coexistence of Aflatoxicosis and Protein Malnutrition Induces Cell Death in the Liver of Weanling Rats. *O. A. Rotimi*[1,2], *S. O. Rotimi*[1], *O. Ademuyiwa*[2], F. Oluwafemi[3], and *E. A. Balogun*[2]. [1]Biological Sciences, Covenant University, Ota, Nigeria; [2]Biochemistry, Federal University of Agriculture, Abeokuta, Nigeria; and [3]Microbiology, Federal University of Agriculture, Abeokuta, Nigeria.

#557 **Poster Board Number 308**
Generation of a Novel Genetically Modified Model for Detecting Apoptosis in Zebrafish Using Fluorescence Resonance Energy Transfer (FRET) System. A. Yamashita[1,2], J. Deguchi[1], *T. Yamada*[1], Y. Nishimura[2], H. Funabashi[1], and T. Tanaka[2]. [1]Preclinical Research Laboratories, Dainippon Sumitomo Pharma Co., Ltd., Osaka, Japan; and [2]Department of Molecular and Cellular Pharmacology, Pharmacogenomics and Pharmacoinformatics, Mie University Graduate School of Medicine, Tsu, Japan.

#558 **Poster Board Number 309**
Lipid-Derived Aldehyde, Acrolein, Is a Critical Mediator of Alcohol-Induced Gut-Liver Injury in Alcoholic Liver Disease. *W. Chen*[2], J. Zhang[1], *S. Barve*[1,2], *C. McClain*[1,2,3], and *S. Joshi-Barve*[1,2]. [1]Medicine, University of Louisville, Louisville, KY; [2]Pharmacology & Toxicology, University of Louisville, Louisville, KY; and [3]Robley Rex VAMC, Louisville, KY.

#559 **Poster Board Number 310**
Fumonisin B1 Inhibits Apoptosis in HepG2 Cells by Inducing Birc-8/ILP-2. A. A. Chuturgoon[1], A. A. Phulukdaree[1,2], and D. Moodley[3,2,1]. [1]Medical Biochemistry, University of KwaZulu-Natal, Durban, South Africa; [2]University of KwaZulu-Natal, Durban, South Africa; and [3]Microbiology and Immunology, Harvard, Boston, MA. Sponsor: *G. Shephard*.

Abstract #

#560 **Poster Board Number 311**
Expression and Methylation Analysis of Apoptosis-Related Genes Survivin and Bcl2L13 in Mice Subchronic Exposure to Inhaled Benzene. H. Yan, C. Lin, *H. Wu*, S. Ji, Y. Zhang, and Q. Qin. School of Environmental Science and Public Health, Wenzhou Medical University, Wenzhou, China.

#561 **Poster Board Number 312**
New Therapeutic and Research Tool: Cytoprotective Inhibitors for Apoptotic Endonucleases. D. Jang[1], N. Penthala[1], T. Fite[1], E. O. Apostolov[1], P. A. Crooks[1], and *A. Basnakian*[1,2]. [1]University of Arkansas for Medical Sciences, Little Rock, AR; and [2]Central Arkansas Veterans Healthcare System, Little Rock, AR.

#562 **Poster Board Number 313**
***In Vitro* Analysis of the Role of CFTR in the Induction/Response to Oxidative Stress in NRK-52E Cells Exposed to NaF.** J. Narváez Morales, *O. G. Aztatzi-Aguilar*, R. López-Villaseñor, M. S. Ortega-Romero, and *O. Barbier*. Toxicología, CINVESTAV, Mexico City, Mexico.

#563 **Poster Board Number 314**
Antiproliferative Activity Of Leaf Extract of *Spondias mombin* L.(Anacardiacea) on Human Colon Cancer Cell Lines (CaCo2). *O. E. Ola-Davies*[1], *J. E. Mata*[2], *O. S. Olawuwo*[1], and *O. A. Odunola*[3]. [1]Department of Veterinary Physiology, Biochemistry and Pharmacology, University of Ibadan, Ibadan, Nigeria; [2]Department of Basic Medical Sciences, College of Osteopathic Medicine of the Pacific, Western University of Health Science, Lebanon, OR; and [3]Department of Biochemistry, College of Medicine, Faculty of Basic Medical Sciences, University of Ibadan, Ibadan, Nigeria.

#564 **Poster Board Number 315**
Evaluation of the Cytotoxicity of Electronic Cigarette Refill Fluids by Four *In Vitro* Assays and Three Cell Lines. *Y. Fu*, *H. Chen*, S. Han, T. Liu, C. Ren, H. Hou, and Q. Hu. China National Tobacco Quality Supervision & Test Center, Zhengzhou, China.

#565 **Poster Board Number 316**
Selective Toxicity of Plant-Based Analogues against Resistant Colorectal Cancer. C. Lee[1], K. Chandrabose[2], P. Trivedi[2], and A. K. Tiwari[1,2]. [1]Biomedical Sciences, Tuskegee University, Tuskegee, AL; and [2]School of Pharmaceutical Sciences, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal, India. Sponsor: *N. Singh*.

#566 **Poster Board Number 317**
Mass Spectroscopic *In Vitro* Assay for Screening Different Types of Cytotoxicity. N. Chiu, R. Diaz, P. Wright, and *Z. Jia*. University of North Carolina at Greensboro, Greensboro, NC.

#567 **Poster Board Number 318**
Galactosylated Poly(ethyleneglycol)-Lithocholic Acid Selectively Kills Hepatoma Cells, While Sparing Normal Liver Cells. N. Gankhuyag[1], B. Singh[2], C. Cho[2], and *M. Cho*[1]. [1]Veterinary Medicine, Seoul National University, Seoul, Republic of Korea; and [2]Agricultural Biotechnology and Research Institute for Agriculture and Life Sciences, Seoul National University, Seoul, Republic of Korea.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#568 **Poster Board Number 319**
The Role of Autophagy in Usnic Acid-Induced Toxicity in Hepatic Cells. *S. Chen, V. N. Dobrovolsky, F. Liu, Y. Wu,* Z. Zhang, *N. Mei,* and *L. Guo*. National Center for Toxicological Research, Jefferson, AR.

#569 **Poster Board Number 320**
The Role of ER Stress and Store-Operated Calcium Entry in Usnic Acid-Induced Toxicity in Hepatic Cells. *L. Guo,* Z. Zhang, *Y. Wu,* and *S. Chen*. NCTR, Jefferson, AR.

#570 **Poster Board Number 321**
Pro- and Antiapoptotic Gene Expression Patterns Correlate with Histopathological Changes in the Liver and Kidneys of Mice Exposed to High Doses of Aliphatic Alcohols. A. Patel[1], V. Lawana[2], and *S. D. Ray*[3]. [1]Computational Biol. Labs, Cold Spring Harbor Labs, Cold Spring Harbor, NY; [2]BioScs & Neurotox Labs, Iowa State Univ., Ames, IA; and [3]Pharmaceutical Scs Dept., Manchester University College Pharmacy, Fort Wayne, IN.

#571 **Poster Board Number 322**
Involvement of Regulated Necrosis in the Pathogenesis of Drug-Induced Acute Liver Failure. K. Takemoto[1,2], E. Hatano[2], K. Iwaisako[3], K. Toriguchi[2], K. Tanabe[2], S. Seo[2], K. Taura[2], S. Uemoto[2], and M. Asagiri[1]. [1]Innovation Center for Immunoregulation and Therapeutics, Graduate School of Medicine, Kyoto University, Kyoto, Japan; [2]Division of Hepato-Biliary-Pancreatic Surgery and Transplantation, Department of Surgery, Graduate School of Medicine, Kyoto University, Kyoto, Japan; and [3]Department of Target Therapy Oncology, Graduate School of Medicine, Kyoto University, Kyoto, Japan. Sponsor: *Y. Miyamae*.

#572 **Poster Board Number 323**
The Cytochrome P450 Inhibitor Proadifen (SKF-525A) Disrupts Autophagy in Primary Rat Hepatocytes. *Q. Shi, Y. Luo,* and *X. Yang*. Division of Systems Biology, US FDA, NCTR, Jefferson, AR.

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Risk Assessment II

Strategies for Exposure and Risk Assessments

Chairperson(s): *João P. Teixeira, INSA/ISPUP, Porto, Portugal.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#573 **Poster Board Number 326**
Population Modeling of Modified Risk Tobacco Products. B. Poland[1], I. Rubets[1], and *K. Lee*[2]. [1]Consulting Services, Pharsight, A Certara Company, Sunnyvale, CA; and [2]JT International SA, Geneva, Switzerland.

#574 **Poster Board Number 327**
Extension of the Margin of Exposure (MOE) Approach for the Prioritization of Tobacco Smoke Toxicants. *F. H. Cunningham,* L. Gale, S. A. Fiebelkorn, D. Dillon, and *C. Meredith*. Group Research and Development, British American Tobacco, Southampton, United Kingdom.

Abstract #

#575 **Poster Board Number 328**
Consumer Exposure and Risk Assessment of E-Liquid Ingredients in E-Cigarettes: A Practical Framework for Industry and Regulators. *D. T. Szabo*[1], *A. Loccisano*[1], *S. C. Gad*[2], *D. W. Sullivan*[2], *S. E. Gad-McDonald*[2], *R. J. Potts*[1], and *E. H. Theophilus*[1]. [1]Research and Development/Product Stewardship, RJ Reynolds, Winston-Salem, NC; and [2]Gad Consulting Services, Raleigh, NC.

#576 **Poster Board Number 329**
Outdoor Air Pollution and Health Impact Assessment, a Local Approach. S. Costa[1,2], J. Ferreira[3], C. Costa[1,2], C. Silveira[3], H. Relvas[3], P. Roebeling[3], C. Borrego[3], A. I. Miranda[3], and J. P. Teixeira[1,2]. [1]Environmental Health Department, National Institute of Health, Porto, Portugal; [2]EPIUnit - Institute of Public Health, University of Porto, Porto, Portugal; and [3]Centre for Environmental and Marine Studies & Department of Environment and Planning, University of Aveiro, Aveiro, Portugal. Sponsor: *A. Karakaya*.

#577 **Poster Board Number 330**
Risk from Traffic-Related Air Pollution in Schools: Beyond Distance to Roadway. *N. Moore, C. Y. Chan,* M. Krause, and *B. J. Kelman*. Veritox, Inc., Redmond, WA.

#578 **Poster Board Number 331**
Petroleum Coke Calcining Facility Emissions and Human Health Risk Characterization. D. Singh, *G. T. Johnson,* J. D. McCluskey, and *R. D. Harbison*. College of Public Health, University of South Florida, Tampa, FL.

#579 **Poster Board Number 332**
Refined Assessment of PAH Exposure and Potential Cancer Risk from Biomass Burning through Internal Dosimetry. *D. A. Sarigiannis*[1,2], D. Zikopoulos[2], S. Nikolaki[1,2], M. Kermenidou[1], and S. P. Karakitsios[1,2]. [1]Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece; and [2]Chemical Process and Energy Resources Institute, Centre for Research and Technology Hellas, Thessaloniki, Greece.

#580 **Poster Board Number 333**
Risk-Based Groundwater and Surface Water Investigation to Evaluate Potential Environmental Impact of Coal Ash Management Practices at Coal-Fired Power Plants. *L. J. Bradley*[1], M. Haddock[2], and R. Cipriano[3]. [1]Haley & Aldrich, Northbridge, MA; [2]Golder & Associates, St. Louis, MO; and [3]Schiff Hardin, Chicago, IL.

#581 **Poster Board Number 334**
A Health Impact Assessment of Petroleum Extraction in Ghana. *D. Doke*[1], P. K. Nkegbe[2], and *J. M. Gohlke*[3]. [1]Environment and Resource Studies, University for Development Studies, Wa, Ghana; [2]Economics and Entrepreneurial Devt, University for Development Studies, Wa, Ghana; and [3]Environmental Health Sciences, University of Alabama at Birmingham, Birmingham, AL.

Program Schedule (Continued)

Abstract #

#582 **Poster Board Number 335**
Toxicity, Bioaccumulation, and Human Health Risk Assessment of Lead and Cadmium in a Shrimp—*Palaemonetes africanus*. O. K. Yemitan[1,2,3]. [1]Department of Pharmacology, Toxicology and Therapeutics, Lagos State University College of Medicine, Ikeja, Nigeria; [2]Department of Pharmacology, Toxicology and Therapeutics, College of Medicine of the University of Lagos, Idi-Araba, Nigeria; and [3]Key Centre for Toxicology, RMIT-University Bundoora Campus, Victoria, VIC, Australia. Sponsor: *P. Wright*.

#583 **Poster Board Number 336**
Metal and Polyaromatic Hydrocarbons in Some Commonly Used Spices in Nigeria. *R. N. Asomugha*[1], *E. O. Orisakwe*[2], A. L. Asomugha[3], C. C. Chukwuogor[1], I. V. Ofoma[1], and C. J. Njoku[1]. [1]Pure and Industrial Chemistry, Nnamdi Azikiwe University, Awka, Nigeria; [2]Clinical Pharmacy, University of Port-Harcourt, Port-Harcourt, Nigeria; and [3]Anatomy, Nnamdi Azikiwe University, Nnewi, Nigeria.

#584 **Poster Board Number 337**
Arsenic and Transplacental Carcinogenesis. *A. Lavin Williams*[1], *M. R. Garry*[2], *A. Santamaria*[3], and *J. M. DeSesso*[1]. [1]Exponent, Alexandria, VA; [2]Exponent, Bellevue, WA; and [3]Exponent, Houston, TX.

#585 **Poster Board Number 338**
Quantitative Cancer Criteria for Inorganic Arsenic Exposure via Inhalation: A Nonlinear Approach. *L. A. Beyer*, K. Zu, and *A. Lewis*. Gradient, Cambridge, MA.

#586 **Poster Board Number 339**
Novel Analytical Method to Measure Formaldehyde Release from Heated Hair Straightening Cosmetic Products: Impact on Risk Assessment. *C. L. Galli*[1,2], M. Marinovich[1,2], P. Fidente[1,2], F. Bettin[2,1], P. Metra[2,1], and E. De Dominicis[2,1]. [1]Dept of Pharmacological Sciences, University of Milan, Milan, Italy; and [2]R&D Department Chelab-Silliker, Mérieux NutriSciences Company, Milan, Italy.

#587 **Poster Board Number 340**
Screening-Level Risk Assessment for Biocides in Household Products Using Domestic Exposure Factors. J. Lee, J. Park, and C. Kim. NeoEnBiz Co., Bucheon, Republic of Korea. Sponsor: *K. Park*.

#588 **Poster Board Number 341**
Hypothesis-Based Weight-of-Evidence Evaluation and Risk Assessment for Naphthalene Carcinogenesis. *L. A. Bailey*, *L. E. Kerper*, *M. A. Nascarella*, and *L. R. Rhomberg*. Gradient, Middlebury, VT.

#589 **Poster Board Number 342**
EFSA's Risk Assessments of Bisphenol A Using the Weight-of-Evidence Approach and an Improved Methodology on Uncertainty. T. Husøy[1,2], A. Hart[2], R. Pirow[2], W. C. Mennes[2], D. Wölfle[2], P. A. Fowler[2], U. Gundert-Remy[2], N. Götz[2], R. A. Woutersen[2], D. Arcella[2], A. Theobald[2], C. Croera[2], and A. Castoldi[2]. [1]Division of Environmental Medicine, Norwegian Institute of Public Health, Oslo, Norway; and [2]European Food Safety Authority, Parma, Italy. Sponsor: *H. Dirven*.

Abstract #

#590 **Poster Board Number 343**
Probabilistic Modeling of Phthalate Risk. *K. L. Hentz*[1], M. Edwards[2], R. Reiss[1], and *J. Lamb*[1]. [1]Exponent, Alexandria, VA; and [2]Exponent, Bellevue, WA.

#591 **Poster Board Number 344**
Noncancer Toxicity of Carcinogenic Chemicals As a Risk Driver for Toxic Waste Site Cleanup Decisions. *K. C. Gettmann*, *E. Sciullo*, L. Nakayama, and *M. J. Wade*. Department of Toxic Substances Control, Cal EPA, Sacramento, CA.

#592 **Poster Board Number 345**
Launch of Forward Risk Assessment Calculator for Chemical Contaminants following Superfund Guidance. L. Galloway[1], F. Dolislager[1], D. J. Stewart[1], W. McGinn[2], K. Tucker[4], and M. Burgess[3]. [1]Ecology and Evolutionary Biology, University of Tennessee, Knoxville, Knoxville, TN; [2]Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN; [3]Office of Remediation and Technology Innovation, Environmental Protection Agency (EPA), Washington, DC; and [4]Ingenium Professional Services, Inc, Oak Ridge, TN. Sponsor: *C. Wood*.

#593 **Poster Board Number 346**
SADA: A Free Geospatial Human Health Risk Tool (www.sadaproject.net). R. N. Stewart[1], K. Tucker[1], F. Dolislager[2], and M. Burgess[3]. [1]Oak Ridge National Laboratory, Oak Ridge, TN; [2]University of Tennessee, Knoxville, TN; and [3]US EPA, Washington, DC. Sponsor: *C. Wood*.

#594 **Poster Board Number 347**
The Concept of Human Exposure-Based Toxicity Testing for Agrochemicals. *C. Terry*, R. Billington, and A. Whyte. Dow AgroSciences, Oxfordshire, United Kingdom.

#595 **Poster Board Number 348**
Assuring Safety without Animal Testing Concept (ASAT): Systems Toxicology Supported Data Infrastructure for Human Risk Assessment. K. Weigand[1], R. Greupink[1], S. Bosgra[2], J. Ezendam[3], D. Jennen[4], J. Kleinjans[4], F. Kuper[2], H. van Loveren[3], M. Monshouwer[5], E. van Someren[2], S. Notenboom[6], G. M. Groothuis[6], *F. Russel*[1], and R. H. Stierum[2]. [1]Pharmacology & Toxicology, Radboud University Medical Center, Nijmegen, Netherlands; [2]The Netherlands Organization for Applied Scientific Research, Zeist, Netherlands; [3]National Institute for Public Health and the Environment, Bilthoven, Netherlands; [4]University of Maastricht, Maastricht, Netherlands; [5]Janssen Pharmaceutica NV, Beerse, Belgium; and [6]University of Groningen, Groningen, Netherlands.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Pharmaceutical Safety: Large Molecule Case Studies

Safety Assessment Approaches for Product Development

Chairperson(s): *Robert W. Veneziale, Toxicology, Halozyme Therapeutics, Inc., San Diego, CA.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#596 **Poster Board Number 401**
Nonclinical Safety Assessment of a Monoclonal Antibody against CD47. *B. Mounho-Zamora*[1], I. Weissman[2], R. Majeti[2], S. Prohaska[2], and M. Howard[2]. [1]Biopharmaceutical Practice, ToxStrategies, Bend, OR; and [2]Stem Cell Biology and Regenerative Medicine, Stanford University, Palo Alto, CA.

#597 **Poster Board Number 402**
Safety and Biodistribution Assessment of sc-rAAV2.5IL-1Ra Administered via Intra-Articular Injection in a Mono-Iodoacetate-Induced Osteoarthritis Model in Wistar Rats. *G. Wang*[1], C. H. Evans[2], *J. Benson*[1], J. A. Hutt[1], *J. Seagrave*[1], J. A. Wilder[1], R. J. Samulski[3], and *P. S. Terse*[4]. [1]Lovelace Respiratory Research Institute, Albuquerque, NM; [2]The Mayo Clinic, Rochester, MN; [3]University of North Carolina Gene Therapy Center, Chapel Hill, NC; and [4]National Center for Advancing Translational Sciences/NIH, Bethesda, MD.

#598 **Poster Board Number 403**
Toxicity and Biodistribution of a Conditionally Replicative Adenovirus Vector, CRAd-S-pk7, Administered Intracerebrally to Hamsters. *C. D. Hebert*[1], J. F. Mann[1], and M. S. Lesniak[2]. [1]Toxicology and Pathology Services, Southern Research Institute, Birmingham, AL; and [2]University of Chicago, Chicago, IL.

#599 **Poster Board Number 404**
Toxicity and Toxicokinetics of PEGPH20 in the Monkey and Rat. *R. W. Veneziale*[1], M. A. Printz[2], B. J. Sugarman[2], *N. Lalayeva*[3], G. W. Ruppert[4], K. Polhamus[4], D. C. Maneval[5], and *P. J. Lapinskas*[1]. [1]Toxicology, Halozyme Therapeutics, Inc., San Diego, CA; [2]Translational Technology, Halozyme Therapeutics, Inc., San Diego, CA; [3]SNBL USA Ltd, Everett, WA; [4]MPI, Mattawan, MI; and [5]Pharmacology and Safety Assessment, Halozyme Therapeutics, Inc., San Diego, CA.

#600 **Poster Board Number 405**
Human-Recombinant Bone Morphogenetic Protein 4 (hrBMP4): Safety Profile after 7-Day Continuous Intracerebral (IC) and IV Administration in the Mouse. G. Di Gallo[1], L. Nobili[1], M. Russo[1], E. Binda[2], *C. I. Bernardi*[1], and A. L. Vescovi[2]. [1]ACCELERA SRL, Nerviano - Milano, Italy; and [2]STEMGEN, Milano, Italy.

Abstract #

#601 **Poster Board Number 406**
Pharmacokinetic Profile of RPH-001, a Recombinant Humanized Monoclonal Antibody to Human VEGF following Administration by Intravenous Infusion in the Cynomolgus Monkey. S. Archuadze[1], E. Shipaeva[1], P. Dwivedi[1,3], Y. Lavrovsky[1,2], M. Samsonov[1], and T. Oshodi[1]. [1]R-Pharm, Moscow, Russian Federation; [2]R-Pharm Overseas, San Diego, CA; and [3]Primetrics, Singapore, Singapore. Sponsor: *N. Anyangwe*.

#602 **Poster Board Number 407**
Unexpected Platelet Decreases in Cynomolgus Monkeys Induced by a Therapeutic Monoclonal Antibody. J. Sun[1], Y. Liu[1], H. Jiang[2], X. Wang[1], Q. Qin[1], Z. Li[2], L. Gong[1], and *J. Ren*[1]. [1]Center for Drug Safety Evaluation and Research, Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai, China; and [2]State Key Laboratory of Oncogenes and Related Genes, Renji Hospital, Shanghai Jiaotong University School of Medicine, Shanghai Cancer Institute, Shanghai, China.

#603 **Poster Board Number 408**
Comparative Nonclinical Assessment of the Potential Biosimilar PF-06439535 and Bevacizumab. *M. Peraza*[1], *M. Shiue*[2], S. Phenix[1], K. Rule[1], *G. L. Finch*[3], S. Thibault[2], and M. W. Leach[1]. [1]Pfizer Inc., Andover, MA; [2]Pfizer Inc, La Jolla, CA; and [3]Pfizer Inc, Groton, CT.

#604 **Poster Board Number 409**
Safety of Phosphorodiamidate Morpholino Oligomers (PMOs) for Treatment of Duchenne Muscular Dystrophy (DMD). *M. P. Carver*, J. S. Charleston, J. Zhang, C. Shanks, *T. Magee*, and P. Sazani. Preclinical Development, Sarepta Therapeutics, Cambridge, MA.

#605 **Poster Board Number 410**
Hepatotoxicity of LNA Gapmer Antisense Oligonucleotides Is Mediated by RNase H1 Dependent but Nonspecific Preferential Downregulation of Very Long Pre-mRNA Transcripts. *S. Burel*, C. Hart, P. Cauntey, J. Hsiao, T. Machemer, M. Katz, A. Watt, H. Bui, S. Freier, *H. S. Younis*, T. P. Prakash, W. Lima, S. T. Crooke, E. E. Swayze, and *S. Henry*. ISIS Pharmaceuticals, Inc., Carlsbad, CA.

#606 **Poster Board Number 411**
Pharmacokinetic (PK) Properties of Phosphorodiamidate Morpholino Oligomers (PMOs) for Treatment of Duchenne Muscular Dystrophy (DMD). J. S. Charleston, *M. P. Carver*, J. Zhang, C. Shanks, *T. Magee*, and P. Sazani. Preclinical Development, Sarepta Therapeutics, Cambridge, MA.

#607 **Poster Board Number 412**
Pharmacology and Toxicology Evaluation of a Triantennary N-Acetyl Galactosamine (GalNAc)-Conjugated Antisense Oligonucleotide in Mice and Monkeys. *T. Zanardi*[1], M. Graham[1], E. E. Swayze[1], T. P. Prakash[1], P. Seth[1], *S. N. Kim*[2], *Y. Kim*[2], and *S. Henry*[1]. [1]Isis Pharmaceuticals, Inc., Carlsbad, CA; and [2]Korea Institute of Toxicology, Daejeon, Republic of Korea.

Program Schedule (Continued)

Abstract #

#608 **Poster Board Number 413**
Preclinical Safety Evaluation of 3M-052, a Novel TLR7/8 Agonist. *E. Hope*[1], J. Vasilakos[2], L. Harrison[2], and J. Setser[3]. [1]Medical Department, 3M, Saint Paul, MN; [2]Drug Delivery Systems Division, 3M, Saint Paul, MN; and [3]WIL Research, Ashland, OH.

#609 **Poster Board Number 414**
Anti-Advanced Glycation Endproduct Antibody (AGE) Has the Potential to Inactivate Senescence in Aged CD-1 Mouse. N. Doyle[1], L. Chouinard[1], O. N. Diallo[1], S. Y. Smith[1], and L. S. Gruber[2]. [1]Musculoskeletal Research, Charles River, Montreal, QC, Canada; and [2]SIWA Regenerative Medicine Corporation, Chicago, IL. Sponsor: *M. Vezina*.

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Pharmaceutical Safety: Small Molecule Case Studies

Safety Assessment Approaches for Product Development

Chairperson(s): *Eric B. Harstad, Genentech, South San Francisco, CA.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#610 **Poster Board Number 415**
Bromism and Sodium Bromide-Induced Arterial Lesions in Monkeys. *S. Asakura*[1], Y. Seki[1], Y. Tanaka[1], T. Yoshiba[2], D. Kakiuchi[1], S. Hosokawa[1], and *D. Hutto*[3]. [1]Tsukuba Drug Safety, Eisai Co. Ltd, Tsukuba, Japan; [2]Global Drug Safety, Eisai Inc, Andover, MA; and [3]Analytical Research, Eisai Co.Ltd, Tsukuba, Japan.

#611 **Poster Board Number 416**
Immunomodulatory Effect of 6-Pentadecyl Salicylic Acid in an *In Vivo* Model of Tumorogenesis. J. Gnanaprakasam, E. Estrada Muniz, and *L. Vega*. Toxicology, CINVESTAV-IPN, Mexico City, Mexico.

#612 **Poster Board Number 417**
Encenicline (EVP-6124), a Selective α7 Nicotinic Acetylcholine Receptor Partial Agonist, Does Not Demonstrate Nonclinical Abuse Potential. A. Hansen, *J. S. Moffit*, and G. Loewen. FORUM Pharmaceuticals Inc., Watertown, MA.

#613 **Poster Board Number 418**
Propolis Activity and Toxicity Profile Using Mitochondria Bioenergetics and Behavior. C. Biscarrat, P. Picamal, C. Lefort, and N. A. Compagnone. Predictive Toxicology, ICDD, Gemenos, France. Sponsor: *Y. Will*.

#614 **Poster Board Number 419**
Hematocrit (HCT) and Hemoglobin (HGB) Responses to 3-Month Oral Dosing of AKB-6548, an Inhibitor of Hypoxia-Inducible Factor Prolyl-Hydroxylase (HIFPH), in CD-1 Mice. *B. L. Soldo*[1], *B. Walker*[1], K. Bonnette[2], *J. Allen*[3], and R. Shalwitz[1]. [1]Akebia Therapeutics, Cambridge, MA; [2]Charles River, Spencerville, OH; and [3]Jane Allen Consulting, Raleigh, NC.

Abstract #

#615 **Poster Board Number 420**
Carcinogenicity Assessment of the Pan-caspase Inhibitor, Emricasan, in Tg.rasH2 Mice. R. Elbekai[1], M. G. Paranjpe[1], and P. C. Contreras[2]. [1]BioReliance by SAFC, Rockville, MD; and [2]Conatus Pharmaceuticals, San Diego, CA. Sponsor: *M. Mckeon*.

#616 **Poster Board Number 421**
Chronic Toxicity Assessment of the RANKL Blocker, RPH-203, following Subcutaneous Administration in the Cynomolgus Monkey. T. Oshodi[1], M. Samsonov[1], S. Archuadze[1], and P. Dwivedi[1,2]. [1]R-Pharm, Moscow, Russian Federation; and [2]Primetrics, Singapore, Singapore. Sponsor: *N. Anyangwe*.

#617 **Poster Board Number 422**
Bone Marrow and Lymphoid Toxicity of a Chemokine Receptor-1 (CCR-1) Antagonist Is Associated with Centromeric Disruption during Chromosomal Segregation. *M. Bogdanffy, P. A. Escobar*, E. Musvasva, M. Evertson, and E. Gaillard. Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT.

#618 **Poster Board Number 423**
Characterization of the Renal Toxicity Induced by a Novel Polymyxin Analog. *J. Sasaki*[1], N. Keirstead[1], K. Maratea[1], *N. Johnson*[1], M. Blais[1], C. Brown[1], L. Cheatham[1], R. Goodwin[2], T. Grebe[3], M. Hale[3], H. Hatoum-Mokdad[3], G. Kern[3], N. Marley[3], F. McGrath[1], I. Neveras[1], M. Pietras[1], A. Sathe[3], H. Shankaran[1], D. Snow[1], J. Swales[2], K. Thakur[3], *M. Wagoner*[1], A. Xue[1], and *A. Gupta*[3]. [1]Drug Safety and Metabolism, AstraZeneca, Waltham, MA; [2]Drug Safety and Metabolism, AstraZeneca, Macclesfield, United Kingdom; and [3]Infection Innovative Medicines Unit, AstraZeneca, Waltham, MA.

#619 **Poster Board Number 424**
Nonclinical Safety Assessment of the Gamma Secretase Inhibitor Avagacestat. *G. D. Pilcher*[1], *R. W. Lange*[1], S. Clark[1], *K. Horn*[1], R. White[1], F. Simutis[1], *R. Bunch*[1], M. Peden[1], T. Sanderson[1], and *M. J. Graziano*[2]. [1]Drug Safety Evaluation, Bristol-Myers Squibb, Mt. Vernon, IN; and [2]Drug Safety Evaluation, Bristol-Myers Squibb, Princeton, NJ.

#620 **Poster Board Number 425**
Experimental Study on Toxicity and Toxicokinetics of dl-PHPB. *J. H. Tao*[1], L. Jiang[2], W. Xiaoliang[2], and *W. Aiping*[1]. [1]New Drug Safety Evaluation Centre, Institute of Materia Medica, Chinese Academy of Medical Science and Peking Union Medical College, Beijing, China; and [2]Department of Pharmacology, Institute of Materia Medica, Chinese Academy of Medical Science and Peking Union Medical College, Beijing, China.

#621 **Poster Board Number 426**
Differential Effects of FIAU, FIRU, and DDC on Functional and DNA Content Endpoints in HepatoPac™ and Huh7 Cells. *J. Lebron*[1], L. Liping[1], S. Kulkarni[1], Q. Xu[1], Z. Wang[1], *A. G. Aslamkhan*[1], A. Moore[2], *O. Ukairo*[2], and *F. D. Sistare*[1]. [1]Merck Research Labs, West Point, PA; and [2]Hepregen, Medford, MA.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#622 **Poster Board Number 427**
***In Vitro* Toxicity Assessment of the Nucleoside Analog Fialuridine Using Micropatterned Primary Hepatocyte Cocultures and Discovery of a Nontoxic Isomer.** A. Dankers[1], *O. Ukairo*[2], A. Moore[2], W. Vermeulen[3], and J. Snoeys[1]. [1]Pharmacokinetics, Dynamics and Metabolism, Janssen Pharmaceutical, Beerse, Belgium; [2]Hepregen Corporation, Medford, MA; and [3]Pharmaceutical Development and Manufacturing Sciences, Janssen Pharmaceutical, Beerse, Belgium.

#623 **Poster Board Number 428**
Nonclinical Safety Assessment of BMS-902483, a Novel Alpha-7 Nicotinic Acetylcholine Receptor Partial Agonist. *K. Horn*[1], R. White[1], S. Clark[1], *K. J. Trouba*[1], *R. W. Lange*[1], C. Colleton[1], D. Fletcher[3], *R. Bunch*[1], M. Peden[1], *M. J. Graziano*[2], and T. Sanderson[1]. [1]Drug Safety Evaluation, Bristol-Myers Squibb, Mt. Vernon, IN; [2]Drug Safety Evaluation, Bristol-Myers Squibb, Lawrenceville, NJ; and [3]Drug Safety Evaluation, Bristol-Myers Squibb, New Brunswick, NJ.

#624 **Poster Board Number 429**
Cardiac and Neuronal Toxicity of G Protein-Coupled Receptor 119 (GPR119) Agonists in Monkeys. *R. Peri*, C. Hixson, H. Shen, C. Parrula, *K. Horn*, *R. Mangipudy*, *M. J. Graziano*, and *T. P. Reilly*. Drug Safety Evaluation, R&D, Bristol-Myers Squibb Co, New Brunswick and Princeton, NJ.

#625 **Poster Board Number 430**
Acute Toxicology Assessment of PAC-1, a Novel Anticancer Agent, in Beagle Dogs and in Ames Test. *K. K. Kabirov*[1], T. Tarasow[2], *M. Lindeblad*[1], E. V. Kabirova[1], and *A. V. Lyubimov*[1]. [1]University of Illinois at Chicago, Chicago, IL; and [2]Vanquish Oncology, Inc., Champaign, IL.

#626 **Poster Board Number 431**
Mechanism of Platelet Decreases in Monkeys Induced by a Therapeutic Human Monoclonal Antibody. *B. K. Philip*[1], J. Wheeler[2], S. Clark[1], C. Thompson[2], B. Wang[2], D. A. DeVona[2], *M. P. Bernard*[2], *H. G. Haggerty*[2], M. Peden[1], T. Sanderson[1], *R. Bunch*[1], and *W. J. Freebern*[2]. [1]Drug Safety Evaluation, Bristol-Myers Squibb, Mt. Vernon, IN; and [2]Drug Safety Evaluation, Bristol-Myers Squibb, New Brunswick, NJ.

#627 **Poster Board Number 432**
A Novel Hsp90 Inhibitor Activates Compensatory Heat Shock Protein Responses and Autophagy and Protects against Mutant A53T Alpha-Synuclein Toxicity. *R. Xiong*[1], D. Siegel[1], W. Zhou[2], R. Kitson[3], C. J. Moody[3], and *D. Ross*[1]. [1]Skaggs School of Pharmacy and Pharmaceutical Sciences, University of Colorado Anschutz Medical Campus, Aurora, CO; [2]School of Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO; and [3]School of Chemistry, University of Nottingham, Nottingham, United Kingdom.

#628 **Poster Board Number 433**
Toxicological Investigation of *Aristolochia ringens*, an *Aristolochia* Species Used Medicinally in Nigeria. *F. R. Aigbe*, and O. O. Adeyemi. Pharmacology, Therapeutics, and Toxicology, University of Lagos, Idi-Araba, Surulere, Nigeria.

Abstract #

#629 **Poster Board Number 434**
Preliminary Safety Assessment of a Novel IRE1α-Inhibitor in Rats. *S. Greene*[1], J. Patterson[1], Q. Zeng[1], C. Schweitzer[1], V. Tam[1], D. Joea[1], L. Pan[2], and *J. Reynolds*[3]. [1]MannKind Corp, Valencia, CA; [2]Wuxi AppTec Co., Ltd, Suzhou, China; and [3]Pharma Capital Partners, Palo Alto, CA.

#630 **Poster Board Number 435**
Investigating the Mechanism of Action for a Novel Therapeutic to Mitigate Traumatic Brain Injury (TBI) Using Rat Brain Cells. *P. Yang*, and *E. D. Bruce*. Environmental Science, Baylor University, Waco, TX.

#631 **Poster Board Number 436**
Preclinical Development of Novel Dual Inhibitors of Rho Kinase and MRCK As Anticancer Agents. *V. P. Kale*[1], D. Desai[1], T. E. Fox[2], J. Hengst[1], S. Sung[1], S. Amin[1], and J. Yun[1]. [1]Pharmacology, Penn State College of Medicine, Hershey, PA; and [2]Pharmacology, University of Virginia, Charlottesville, VA.

#632 **Poster Board Number 437**
Bromodomain and ExtraTerminal Domain Inhibitors Induce a Loss of Intestinal Stem Cells and Villous Atrophy. M. Wagoner, J. Kelsall, J. Harris, D. Heathcote, J. Pederson, K. Hickling, R. Chen, M. Hattersley, and *P. Newham*. Safety Assessment, AstraZeneca Pharmaceuticals, Waltham, MA.

#633 **Poster Board Number 438**
Safety Study in Mice of an Agent with Potential As an Anti-Infective. *M. Ehrich*[1], J. Hinckley[1], *B. S. Jortner*[1], K. M. Boes[1], G. Karpin[2], J. O. Falkinham[2], and J. Merola[2]. [1]Virginia-Maryland College of Veterinary Medicine, Virginia Tech, Blacksburg, VA; and [2]Chemistry & Biological Sciences, Virginia Tech, Blacksburg, VA.

#634 **Poster Board Number 439**
Acute and Repeated-Dose Toxicity Studies of Synthetic Derivatives of Triazole-Incorporated Pyridazinone As New Class of Antihypertensive Agent. *R. Mishra*[1,2], A. A. Siddiqui[2], A. Husain[2], M. Rashid[2], S. Bhardwaj[3], and *V. Srinivasan*[4]. [1]School of Pharmacy and Emerging Sciences, Baddi University of Emerging Sciences and Technology, Baddi, India; [2]Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Jamia Hamdard, New Delhi, India; [3]ITMMEC, Indian Institute of Technology, New Delhi, India; and [4]US Safety Evaluation, L'Oreal, Clark, NJ.

#635 **Poster Board Number 440**
Differential Hepatotoxicity of Liver X Receptor Agonist in Male and Female Rat Hepatocytes. *M. Tirmenstein*, *J. Calvano*, *R. Peri*, and *R. Mangipudy*. DSE, Bristol-Myers Squibb, New Brunswick, NJ.

Program Schedule (Continued)

Abstract #

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Developmental Neurotoxicology—Stem Cells

Chairperson(s): *Fang Liu, National Center for Toxicological Research, Jefferson, AR.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#636 **Poster Board Number 443**
***In Vitro* Human Developmental Neurotoxicity Screening Using Multiple Cell Types.** A. Majumder[1], X. Wu[1,2], J. N. Le[1], S. Wallace[1], and *S. Stice*[1,2]. [1]ArunA Biomedical, Inc., Athens, GA; and [2]Regenerative Bioscience Center, Interdisciplinary Toxicology Program, University of Georgia, Athens, GA.

#637 **Poster Board Number 444**
Stem Cell-Derived Human Sensory Neurons for Toxicity Testing of Drugs/Chemicals and for Identifying Countermeasures. *M. Leist*, and L. Hölting. UKN, Konstanz, Germany.

#638 **Poster Board Number 445**
Human iPSC Neurons: An *In Vitro* Model to Predict Clinical Neurotoxicity. *C. A. Snyder*[1,2], T. Ngo[1,2], *D. L. Misner*[1], *N. Stagg*[1], and *K. Staflin*[1]. [1]Safety Assessment/Investigative Toxicology, Genentech, South San Francisco, CA; and [2]Pharmacology and Toxicology, UC-Davis, Davis, CA.

#639 **Poster Board Number 446**
Human iPSC-Derived Neurons: A Suitable Model for Toxicological Assays. B. Bertram[1], R. Kettenhofen[1], G. Luerman[1], and M. Torvinen[2]. [1]Axiogenesis AG, Cologne; and [2]Seahorse Bioscience, North Billerica, MA. Sponsor: *E. Clarke.*

#640 **Poster Board Number 447**
NeuroSafe: A Human Integrated *In Vitro* Neurotoxicity Safety Platform Using hiPS Neurons (Peri.4U Neurons). D. Hess, and E. Guenther. Pharmaservice, NMI TT GmbH, Reutlingen, Germany. Sponsor: *E. Clarke.*

#641 **Poster Board Number 448**
MR Imaging of Human Neural Progenitor Stem Cells: An *In Vivo* Longitudinal Model. *F. T. Goodfellow*[1,3], *S. Stice*[1,3], E. Jordan[3], Q. Zhao[2], and Q. Meng[2]. [1]Interdisciplinary Toxicology Program, The University of Georgia, Athens, GA; [2]BioImaging Research Center, The University of Georgia, Athens, GA; and [3]Regenerative Bioscience Center, The University of Georgia, Athens, GA.

#642 **Poster Board Number 449**
Predicting Neurotoxicity in Human-Derived iPSC 3D Mini-Brains. *D. Pamies*[1], L. Smirnova[1], G. A. Harris[1], J. P. Bressler[2], P. Marina[2], K. M. Christian[3], C. Zhang[3], *T. Hartung*[1], and *H. T. Hogberg*[1]. [1]Center for Alternatives to Animal Testing, Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD; [2]Hugo Moser Institute at the Kennedy Krieger, Johns Hopkins University, Seattle, WA; and [3]Institute for Cell Engineering, Department of Neurology, Johns Hopkins University, Baltimore, MD.

Abstract #

#643 **Poster Board Number 450**
A Functional Phenotypic Screen for Synapse Formation in Human iPS-Derived Neurons. A. Essex, *B. Cai*, J. Sharp, E. Batchelder, S. Feng, N. Prigozhina, J. Evans, P. McDonough, and *J. Price*. Vala Sciences Inc, San Diego, CA.

#644 **Poster Board Number 451**
Developmental Neurotoxicity of Epigallocatechin Gallate (EGCG) Is Triggered by Interference with β1-Integrin Function in Human Neural Progenitor Cells. M. Barenys[1], K. Gassmann[1], S. Heinz[1], C. Baksmeier[1], I. Reverte[2], M. Colomina[2], and *E. Fritsche*[1]. [1]IUF - Leibniz Research Institute for Environmental Medicine, Düsseldorf, Germany; and [2]Universitat Rovira i Virgili, Tarragona, Spain.

#645 **Poster Board Number 452**
Effects of Silver Nanoparticles on Human and Rat Embryonic Neural Stem Cells. *F. Liu*[1], A. S. Biris[2], M. Mahmood[2], Y. Xu[2], *D. K. Hansen*[1], *A. Inselman*[1], *D. A. Casciano*[2], *T. A. Patterson*[1], *M. G. Paule*[1], *W. Slikker*[1], and *C. Wang*[1]. [1]National Center for Toxicological Research, Jefferson, AR; and [2]University of Arkansas at Little Rock, Little Rock, AR.

#646 **Poster Board Number 453**
Identification of AOPs Involving Disruption of Thyroid Hormone Signaling in Neurodevelopmental Processes by Using 3D Neurospheres. S. Giersiefer, K. Dach, H. Heuer, and *E. Fritsche*. IUF - Leibniz Institute for Environmental Medicine, Duesseldorf, Germany.

#647 **Poster Board Number 454**
Morphine Sulfate Concomitantly Alters Neuronal Differentiation and Opioid Receptor Gene Expression in Mouse Stem Cell. *S. L. Dholakiya*, and *F. A. Barile*. Pharmaceutical Sciences, St. John's University College of Pharmacy, Queens, NY.

#648 **Poster Board Number 455**
Increased Susceptibility of Oligodendrocyte Progenitors to Fractionated Radiation. S. Begolly[1], J. A. Olschowka[2], J. P. Williams[1], and M. O'Banion[2]. [1]Environmental Medicine, University of Rochester, Rochester, NY; and [2]Neurobiology & Anatomy, University of Rochester, Rochester, NY. Sponsor: *P. Lawrence.*

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Autoimmunity/Hypersensitivity

Advancing Clinical and Translational Toxicology

Chairperson(s): *Rebecca J. Dearman, Faculty of Life Sciences, Manchester University, Manchester, United Kingdom.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#649 **Poster Board Number 501**
Generation of a Porcine Rheumatoid Arthritis Model: Collagen-Induced Arthritis Micropig. W. Lee, S. Peng, C. J. Kim, and S. L. Park. GLP Research Center, PWG Genetics Pte Ltd, Singapore, Singapore. Sponsor: *W. Koh.*

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#650 **Poster Board Number 502**
Limitations in Testing and Risk Assessment for Dermal Sensitization. *T. P. Kellner*, M. E. Hansen, *N. R. Mehta*, and *P. Leung*. Department of Pesticide Regulation, California Environmental Protection Agency, Sacramento, CA.

#651 **Poster Board Number 503**
Risks of Allergic Contact Dermatitis Elicited by Nickel, Chromium, and (Meth)Acrylates: Modeled Comparisons of Published Patch-Test Data on ~6,000 Sensitive Individuals. *K. T. Bogen*[1], *M. R. Garry*[2], and V. Volberg[1]. [1]Exponent Health Sciences, Oakland, CA; and [2]Exponent Health Sciences, Bellevue, WA.

#652 **Poster Board Number 504**
Particulate Matter Enhances the Pulmonary Allergic Immune Response to House Dust Mite in a BALB/c Mouse Model. A. R. Castaneda[1], K. J. Bein[1,2], *C. F. Vogel*[1,3], and *K. E. Pinkerton*[1,4,5]. [1]Center for Health and the Environment, University of California Davis, Davis, CA; [2]Air Quality Research Center, University of California Davis, Davis, CA; [3]Department of Environmental Toxicology, University of California Davis, Davis, CA; [4]Department of Pediatrics, School of Medicine, University of California Davis, Davis, CA; and [5]Department of Anatomy, Physiology and Cell Biology, School of Veterinary Medicine, University of California Davis, Davis, CA.

#653 **Poster Board Number 505**
Inhalation of the Reactive Aldehyde Acrolein Promotes Antigen Sensitization and Enhances Allergic Responses to Ovalbumin. *E. O'Brien*[1], P. Spiess[1], A. Habibovic[1], M. Hristova[1], R. A. Bauer[1], M. J. Randall[1], M. E. Poynter[2], and A. van der Vliet[1]. [1]Pathology, University of Vermont, Burlington, VT; and [2]Medicine, University of Vermont, Burlington, VT.

#654 **Poster Board Number 506**
The Myeloid U937 Skin Sensitization Test (MUSST) to Address the Activation of Dendritic Cell Event in the Adverse Outcome Pathway for Skin Sensitization. C. Piroird, J. Ovigne, F. Rousset, S. Martinozzi Teissier, C. Gomes, J. Cotovio, and N. Alépée. L'Oréal, Aulnay sous Bois, France. Sponsor: *E. Dufour*.

#655 **Poster Board Number 507**
Multicentric Study of Myeloid U937 Skin Sensitization Test (MUSST) for Skin Sensitization Testing. N. Alépée[1], C. Piroird[1], M. Aujoulat[2], S. Dreyfuss[3], S. Hoffmann[4], A. Hohenstein[5], M. Meloni[6], L. Nardelli[1], N. J. Pearson[7], and J. Cotovio[1]. [1]L'Oréal, Aulnay sous Bois, France; [2]WIL Research Europe, Saint Germain sur l'Arbresle, France; [3]Episkin, Lyon, France; [4]Seh Consulting + Services, Paderborn, Germany; [5]Bioassay GmbH, Heidelberg, Germany; [6]Vitroscreen, Milano, Italy; and [7]CiToxLAB, Evreux, France. Sponsor: *E. Dufour*.

#656 **Poster Board Number 508**
The Role for TAK1 in the TCE-Induced Contact Hypersensitivity Response. Y. Pan[1,2], H. Chu[1,2], X. Wei[1,2], and W. Hao[1,2]. [1]Department of Toxicology, School of Public Health, Peking University, Beijing, China; and [2]Beijing Key Laboratory of Toxicological Research and Risk Assessment for Food Safety, Beijing, China. Sponsor: *S. Lu*.

Abstract #

#657 **Poster Board Number 509**
Silica-Induced Lymphocyte Infiltration and Proinflammatory Cytokine Responses in Lung Correspond to Accelerated Onset of Glomerulonephritis and Autoimmunity in Lupus-Prone Female NZBWF1 Mice. M. Bates, C. Brandenberger, I. Langohr, K. Kumagai, *J. R. Harkema*, *A. Holian*, and *J. J. Pestka*. Michigan State University, East Lansing, MI.

#658 **Poster Board Number 510**
Cytochrome P450 2E1-Deficient Mice Show Attenuation of Trichloroethene-Mediated Autoimmune Response. *G. Wang*, M. Wakamiya, J. Wang, *G. A. Ansari*, and *M. Khan*. Pathology, University of Texas Medical Branch, Galveston, TX.

#659 **Poster Board Number 511**
Graphene Oxide Augments Airway Remodeling and Hyperresponsiveness in a Murine Model of Asthma. *A. A. Shvedova*[1,2], *N. Yanamala*[1], M. Shurin[3], E. R. Kisin[1], J. Reynolds[1], D. W. Gutkin[3], A. Star[4], *B. Fadeel*[6], K. M. Savolainen[7], and *V. E. Kagan*[5]. [1]PPRB, NIOSH, Morgantown, WV; [2]Physiology and Pharmacology, WVU, Morgantown, WV; [3]Pathology, University of Pittsburgh School of Medicine, Pittsburgh, PA; [4]Chemistry, University of Pittsburgh, Pittsburgh, PA; [5]Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA; [6]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden; and [7]Nanosafety Research Center, Finnish Institute of Occupational Health, Helsinki, Finland.

#660 **Poster Board Number 512**
Identification and Frequency of Naïve T Lymphocytes Specific for Penicillin: Implication in Drug-Allergy. M. Azoury[1], N. Scornet[2], S. Delluc[3], S. Delarue-Cochin[2], C. Nhim[1], B. Maillere[4], R. Weaver[5], N. Claude[5], D. Joseph[2], and *M. Pallardy*[1]. [1]UniverSud, INSERM UMR 996, Chatenay Malabry, France; [2]UniverSud, UMR CNRS 8076, Chatenay Malabry, France; [3]Platine Pharma Service, Lyon, France; [4]SIMOPRO, IbiTecS, CEA, Saclay, France; and [5]Institut de Recherches Internationales Servier, Suresnes, France.

#661 **Poster Board Number 513**
Effects of Nickel Sulfate on Interleukin-12 Cytokine Family in Human Monocyte-Derived Dendritic Cells. R. Bechara[1], D. Antonios[2], H. Azouri[2], and *M. Pallardy*[1]. [1]UniverSud, INSERM UMR 996, Châtenay-Malabry, France; and [2]University Saint Joseph, Laboratory of Toxicology, Beirut, Lebanon.

#662 **Poster Board Number 514**
Effect of Protein Aggregates from Therapeutic Proteins on Dendritic Cells Maturation: Implication for Immunogenicity. Y. Gallais[1], N. Szely[1], F. Legrand[2], A. Leroy[3], *M. Pallardy*[1], and I. Turbica[1]. [1]INSERM UMR-S 996, UniverSud, UFR de Pharmacie, Chatenay Malabry, France; [2]CNRS UMR 8612, UniverSud, UFR de Pharmacie, Chatenay Malabry, France; and [3]CNRS, UMR 8525, Université Lille 2, Institut Pasteur de Lille, Lille Cedex, France.

Program Schedule (Continued)

Abstract #

#663 **Poster Board Number 515**
Impact of Contamination with Bacterial Products and Aggregation on Immunogenicity. K. Ratjani[1,2], J. Derrick[1], M. Wadhwa[2], R. Thorpe[2], *I. Kimber*[1], and *R. J. Dearman*[1]. [1]Manchester University, Manchester, United Kingdom; and [2]Institute for Biological Standards and Control, Potters Bar, United Kingdom.

#664 **Poster Board Number 516**
Interleukin (IL)-1β Secretion Is Dependent upon a Calcium-Mediated Interaction with Calmodulin. J. Ainscough[1], *G. Gerberick*[2], *I. Kimber*[1], and *R. J. Dearman*[1]. [1]Faculty of Life Sciences, Manchester University, Manchester, United Kingdom; and [2]The Procter & Gamble Company, Cincinnati, OH.

#665 **Poster Board Number 517**
T Helper 17 Cell Activation: *In Vitro* and *In Vivo* Comparisons. *R. J. Dearman*, M. D. Hayes, and *I. Kimber*. Manchester University, Manchester, United Kingdom.

#666 **Poster Board Number 518**
Constructing an Adverse Outcome Pathway for Sensitization of the Respiratory Tract: Network Thinking Meets Regulatory Utility. *K. Sullivan*[1], S. Cochrane[2], S. J. Enoch[3], J. Ezendam[4], G. Patlewicz[5], *E. L. Roggen*[6], and K. Sewald[7]. [1]Physicians Committee for Responsible Medicine, Washington, DC; [2]SEAC, Unilever, London, United Kingdom; [3]Liverpool John Moores University, Liverpool, United Kingdom; [4]RIVM, Bilthoven, Netherlands; [5]DuPont Haskell Global Centers, Newark, DE; [6]Novozymes, Bagsvaerd, Denmark; and [7]Fraunhofer ITEM, Hannover, Germany.

#667 **Poster Board Number 519**
The Impact of Elevated Endocannabinoid 2-AG in Delayed Type Hypersensitivity. *J. M. Sido*[1], *P. S. Nagarkatti*[1], and *M. Nagarkatti*[1,2]. [1]Path, Micro, & Immuno, University of South Carolina School of Medicine, Columbia, SC; and [2]WJB Dorn Veterans Affairs Medical Center, Columbia, SC.

#668 **Poster Board Number 520**
Investigation of Potential Antidrug Antibody-Mediated Hypersensitivity Reactions in Mice. *W. J. Freebern*[1], *F. G. Burleson*[2], *V. J. Johnson*[2], C. Thompson[1], B. Wang[1], D. A. DeVona[1], S. Clark[3], *M. P. Bernard*[1], *J. Wheeler*[1], *H. G. Haggerty*[1], *R. Bunch*[3], and *B. K. Philip*[3]. [1]Immunotoxicology, Bristol-Myers Squibb, New Brunswick, NJ; [2]Burleson Research Technologies Inc., Morrisville, NC; and [3]Drug Safety Evaluation, Bristol-Myers Squibb, Mount Vernon, IN.

#669 **Poster Board Number 521**
TNFR2 Regulates Commensal Microbiota in Sex-Biased Spontaneous Experimental Autoimmune Encephalomyelitis. P. G. Miller, and *S. C. McKarns*. Center for Cellular and Molecular Immunology, Departments of Surgery and Molecular Microbiology and Immunology, University of Missouri School of Medicine, Columbia, MO.

#670 **Poster Board Number 522**
Aryl Hydrocarbon Receptor Regulates CD4 T Cell Differentiation in a Sex-Biased Manner. J. N. Lanctot, and *S. C. McKarns*. Center for Cellular and Molecular Immunology, Departments of Surgery and Molecular Microbiology and Immunology, University of Missouri School of Medicine, Columbia, MO.

Abstract #

#671 **Poster Board Number 523**
Dermal Exposure to the Antimicrobial Chemical Triclosan Augments Allergic Responses by Inducing Expression of Thymic Stromal Lymphopoietin. *N. B. Marshall*[1,2], E. Lukomska[1], *C. M. Long*[1,2], A. P. Nayak[1], *B. J. Meade*[1], and *S. E. Anderson*[1,2]. [1]CDC/NIOSH, Morgantown, WV; and [2]Microbiology, Immunology, and Cell Biology, West Virginia University, Morgantown, WV.

#672 **Poster Board Number 524**
Interrelationship of TDI- and HDI-Induced Respiratory Tract Irritation and Allergy in Rats. *J. Pauluhn*. Toxicology (retired), Bayer AG, Wuppertal, Germany.

#673 **Poster Board Number 525**
Differential Analysis of Protein Expression in RNA Binding Protein-Transgenic and Parental Rice Seeds Cultivated under Salt Stress and Allergenicity Test of the Rice Extracts. *R. Teshima*[1], R. Adachi[1], T. Shindo[2], A. Yamada[3], *M. Ohsawa*[2], and Y. Ozeki[3]. [1]National Institute of Health Sciences, Setagaya-ku, Tokyo, Japan; [2]Food and Drug Safety Center, Hatano Research Institute, Hatano, Kanagawa, Japan; and [3]Department of Biotechnology, Tokyo University of Agriculture and Technology, Koganei, Tokyo, Japan.

#674 **Poster Board Number 526**
Lung Toxicity and Allergy Responses in Mice Exposed to Nanoparticle Silver. *C. E. McLoughlin*, *S. Anderson*, *J. R. Roberts*, *B. T. Chen*, D. Schwegler-Berry, K. L. Anderson, and K. Roach. NIOSH, Morgantown, WV.

#675 **Poster Board Number 527**
Gene Expression Changes Induced by Skin Sensitizers in THP-1 Cells: Possible Relationship to Protein Binding Domains. *C. Ryan*[1], Y. Shan[1], X. Wang[1], *R. J. Dearman*[2], *I. Kimber*[2], and *G. Gerberick*[1]. [1]The Procter & Gamble Company, Mason, OH; and [2]University of Manchester, Manchester, United Kingdom.

#676 **Poster Board Number 528**
Increased Expression and Immunoregulatory Potential of microRNA 210 in a Murine Model of TDI Sensitization. *C. M. Long*[1,2], *N. B. Marshall*[2], E. Lukomska[2], A. P. Nayak[2], *P. D. Siegel*[2], *B. J. Meade*[2], and *S. E. Anderson*[2]. [1]Immunology and Microbial Pathogenesis Graduate Program, WVU, Morgantown, WV; and [2]CDC-NIOSH, Morgantown, WV.

#677 **Poster Board Number 529**
A Weight-of-Evidence Investigation of Novel Amino Alcohols for Skin Sensitization Potential Using *In Silico*, *In Vitro*, *In Vivo*, and Genomic Approaches. *R. S. Settivari*[1], N. N. Ball[1], N. Visconti[1], *B. J. Hughes*[1], *D. Wilson*[1], *H. M. Hollnagel*[1], R. Hunziker[1], R. M. Golden[1], *M. B. Black*[2], and *D. R. Boverhof*[1]. [1]Predictive Toxicology, The Dow Chemical Company, Midland, MI; and [2]The Hamner Institute for Health Sciences, Research Triangle Park, NC.

#678 **Poster Board Number 530**
An Integrated *In Vivo* Approach to Identify and Characterize Respiratory Sensitizers. *K. K. Greenwood*, N. Quay, K. M. Mahoney, *R. Sura*, *M. R. Woolhiser*, and *J. A. Hotchkiss*. TERC, Dow Chemical Company, Midland, MI.

MONDAY

Program Schedule (Continued)

Abstract #

#679 **Poster Board Number 531**
Asbestos-Induced Pleural Fibrosis Involves Autoantibody-Mediated Protein Tyrosine Phosphorylation Pathway. R. L. Hanson, J. Gilmer, *K. Serve*, and *J. C. Pfau*. Department of Biological Sciences, Idaho State University, Pocatello, ID.

#680 **Poster Board Number 532**
Anti-Mesothelial Cell Autoantibodies Upregulate Transcription Factors Involved in Collagen Pathways. J. Gilmer, and *J. C. Pfau*. Biological Sciences, Idaho State University, Pocatello, ID.

#681 **Poster Board Number 533**
A Retrospective on Drug Allergy in Dogs at a US Veterinary Teaching Hospital. *F. T. Fosset*, J. Schimansky, and *S. N. Lavergne*. Comparative Biosciences, University of Illinois, Urbana, IL.

#682 **Poster Board Number 534**
Selective Deletion of Estrogen Receptor a in FoxP3+ CD4+ T Cells Influences Peripheral T Cell Homeostasis. M. Khan, and *S. C. McKarns*. Center for Cellular and Molecular Immunology, Departments of Surgery and Molecular Microbiology and Immunology, University of Missouri School of Medicine, Columbia, MO.

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Liver and Models

Chairperson(s): *Angela Slitt, University of Rhode Island, Kingston, RI.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#683 **Poster Board Number 537**
Examining the Role for Off-Target MDR3 Inhibition in the Hepatotoxicity of Therapeutics. Y. Chen, *R. E. Morgan*, *R. T. Dunn*, *H. McBride*, and *H. Hamadeh*. Comparative Biology & Safety Sciences, Amgen, Thousand Oaks, CA.

#684 **Poster Board Number 538**
Daily Dose and Formation of Reactive Metabolites Are Associated with the DRESS (Drug Reactions/Rash with Eosinophilia and Systemic Symptoms)-Related Drug-Induced Liver Injury. *M. Chen*[1], M. Stone[2], E. Navarro Almario[2], S. Amur[2], V. Crentsi[2], T. Burgess[3], R. He[2], H. Fang[1], J. Senior[2], and *W. Tong*[1]. [1]FDA's National Center for Toxicological Research, Jefferson, AR; [2]FDA's National Center for Drug Evaluation and Research, Silver Spring, MD; and [3]FDA's Center for Veterinary Medicine, Silver Spring, MD.

#685 **Poster Board Number 539**
A High-Content Analysis Assay to Predict Human Hepatotoxicity in HepaRG and HepG2 Cells. J. Saito, A. Okamura, K. Takeuchi, K. Hanioka, *A. Okada*, and T. Ohata. Drug Safety Research Labs., Astellas Pharma Inc., Osaka, Japan.

#686 **Poster Board Number 540**
Human Liver Response to Clinical Doses of Compounds That Can Cause Liver Injury. *R. Fisher*[1], A. Perlina[3], J. Herrmann[2], A. Ulyanov[2], and *A. Vickers*[2]. [1]Vitron Inc, Tucson, AZ; [2]Allergan Inc, Irvine, CA; and [3]Sanford-Burnham Medical Research Institute, La Jolla, CA.

Abstract #

#687 **Poster Board Number 541**
Concordance in RNA-Seq Profiles between Formalin-Fixed Paraffin-Embedded and Frozen Liver Samples. *S. D. Hester*[1], B. N. Chorley[1], G. Carswell[1], H. Mortensen[1], W. Jones[2], and C. E. Wood[1]. [1]Systems Biology Branch, US-EPA, Durham, NC; and [2]Genomics-Bioinformatics, EA-Quintiles, Durham, NC.

#688 **Poster Board Number 542**
Irinotecan-Induced Steatosis *In Vivo*: The Possible Role of Fatty Acid *De Novo* Lipogenesis. P. Mallick Bandi, and *R. Ghose*. Pharmacology and Pharmaceutics, University of Houston, Houston, TX.

#689 **Poster Board Number 543**
Detecting the Diclofenac-Induced Liver Injury Using TNF-Alpha-Exposure Mouse Model and Candidate for Its Mechanism. S. Moriwaki, J. Deguchi, K. Hoshino, S. Goto, I. Matsumoto, I. Miyawaki, and H. Funabashi. Preclinical Research Laboratories, Sumitomo Dainippon Pharma Co., Ltd., Osaka, Japan. Sponsor: *T. Yamada*.

#690 **Poster Board Number 544**
MicroRNA Involvement in Drug-Induced Hepatotoxicity: A Multi-Omics Approach. W. Van den Hof[1], M. Coonen[1], A. Van Summeren[1], M. van Herwijnen[1], K. Brauers[1], W. Wodzig[2], and J. Kleinjans[1]. [1]Department of Toxicogenomics, Maastricht University, Maastricht, Netherlands; and [2]Department of Clinical Chemistry, Maastricht University Medical Center, Maastricht, Netherlands. Sponsor: *H. van Loveren*.

#691 **Poster Board Number 545**
Exposure of iPSC-Derived Hepatocytes to Physiological Liver Parameters Results in Molecular Phenotypic Differentiation and Maturation Relevant for Drug Metabolism and Toxicity. S. Marukian[1], *T. K. Baker*[2], B. Blackman[1], R. Feaver[1], L. Mark[1], A. Mackey[1], D. Manka[1], B. Wamhoff[1], and *A. Dash*[1]. [1]HemoShear, Charlottesville, VA; and [2]Eli Lilly, Indianapolis, IN.

#692 **Poster Board Number 546**
Activation of PGC-1-Related Coactivator during Metabolic and Xenobiotic Stress in the Liver Is Associated with Adaptive and Pathological Responses. M. Buler, and U. Andersson. Drug Safety and Metabolism, AstraZeneca R&D, Mölndal, Sweden. Sponsor: *R. Roberts*.

#693 **Poster Board Number 547**
The Hepatic "Matrisome" Responds Dynamically to Toxic Stress: Novel Proteomic Characterization of the Hepatic ECM. C. E. Dolin, *V. L. Massey*, L. G. Poole, D. L. Siow, M. L. Merchant, D. W. Wilkey, and *G. E. Arteel*. Pharmacology and Toxicology, University of Louisville, Louisville, KY.

#694 **Poster Board Number 548**
Development of an *In Vitro* High-Content Imaging Assay for Quantitative Assessment of Mouse Hepatocyte Proliferation. *V. Soldatow*[1], *R. C. Peffer*[2], *D. Cowie*[2], *R. A. Clewell*[1], *M. E. Andersen*[1], *E. LeCluyse*[1], and *C. Deisenroth*[1]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [2]Syngenta Crop Protection, LLC, Greensboro, NC.

Program Schedule (Continued)

Abstract #

#695 **Poster Board Number 549**
Plateable Cryopreserved Human Hepatocytes Pooled from Multiple Donors for *In Vitro* Evaluation of Adverse Drug Properties. *A. P. Li*, U. Doshi, and *Q. Yang*. In Vitro ADMET Laboratories, Advanced Pharmaceutical Sciences, Columbia, MD.

#696 **Poster Board Number 550**
Multiple Parameter Assessment of Drug-Induced Liver Toxicity in HepG2 Cells. *J. Xuan*[1], T. Qing[2], *S. Chen*[1], *L. Couch*[1], *L. Shi*[2,1], *W. Tong*[1], and *L. Guo*[1]. [1]National Center for Toxicological Research/US Food and Drug Administration, Jefferson, AR; and [2]State Key Laboratory of Genetic Engineering and MOE Key Laboratory of Contemporary Anthropology, Schools of Life Sciences and Pharmacy, Shanghai, China.

#697 **Poster Board Number 551**
Analysis of Acetaminophen-Induced Hepatotoxicity in Female C57BL/6J Mice Lacking the ATP-Binding Cassette Subfamily C Member 4 (Abcc4, Mrp4). E. Daniel[2], *A. M. Bataille*[1], and *J. E. Manautou*[1]. [1]Pharmaceutical Sciences, University of Connecticut, Storrs, CT; and [2]Biology and Chemistry, William Jewell College, Liberty, MO.

#698 **Poster Board Number 552**
Increased Hepatic O-GlcNAcylation Aggravates Acetaminophen-Induced Liver injury. *S. McGreal*, *B. Bhushan*, *C. Walesky*, *M. R. McGill*, *H. Jaeschke*, Z. Zhang, E. Tan, C. Slawson, and *U. Apte*. KUMC, Kansas City, KS.

#699 **Poster Board Number 553**
L-Phenylalanine-Derived Rhodanine Analog (LPAR)-Induced Diverse Cytoprotective Mechanisms in Cultured Mouse and Human Hepatoma Cells. *L. Chen*, T. Talele, *X. Cheng*, and B. A. Patel. Pharmaceutical Science, St. John's University, Queens, NY.

#700 **Poster Board Number 554**
Role of Mitochondrial ATP Binding Cassette Transporter Abcb6 in Acetaminophen Hepatotoxicity. *H. D. Chavan*, *P. Borude*, *B. Bhushan*, R. Tessmann, *U. Apte*, and *P. Krishnamurthy*. Department of Pharmacology, Toxicology & Therapeutics, Kansas University Medical Center, Kansas City, KS.

#701 **Poster Board Number 555**
Uric Acid Inhibits Lipid Metabolism through Suppression of Lipophagy. K. Lee[1], Y. Choi[1], S. Oh[2], and *B. Lee*[1]. [1]College of Pharmacy and Research Institute of Pharmaceutical Sciences, Seoul National University, Seoul, Republic of Korea; and [2]The Division of Natural Medical Sciences, College of Health Science, Chosun University, Gwangju, Republic of Korea.

#702 **Poster Board Number 556**
The Role of the Adaptive Immune System in a Mouse Model of Halothane-Induced Liver Injury. *A. M. Fullerton*, M. Chakraborty, *K. Semple*, J. D. Berkson, L. S. Chea, X. Zeng, *W. R. Proctor*, and *L. R. Pohl*. Section of Molecular and Cellular Toxicology, National Institutes of Health - NHLBI, North Bethesda, MD.

Abstract #

#703 **Poster Board Number 557**
Evaluation of BDE-47 and -99 Lipid Modulating Effects in HepG2 Human Carcinoma Cells. E. Holovac, M. Langton, K. Ciampi, *P. Shimpi*, P. P. Nahar, and *A. Slitt*. University of Rhode Island, Kingston, RI.

#704 **Poster Board Number 558**
Progression of Liver Injury Results from Increased Levels of Lipid Peroxidation Products in Male GSTA4-4 Knockout Mice Fed Alcohol Chronically. *M. Ronis*[1,2], K. E. Mercer[1,2], *C. T. Shearn*[3], C. F. Pulliam[2], B. Engi[1], and *D. R. Petersen*[3]. [1]UAMS, Little Rock, AR; [2]Arkansas Children's Nutrition Center, Little Rock, AR; and [3]University of Colorado Anschutz Medical Center, Denver, CO.

#705 **Poster Board Number 559**
Exposure to TCDD Increases Fibrogenesis during Experimental Liver Fibrosis. *C. L. Lamb*, *W. A. Harvey*, and *K. A. Mitchell*. Biological Sciences, Boise State University, Boise, ID.

#706 **Poster Board Number 560**
TCDD Treatment Modulates Gene Expression during Experimental Liver Fibrosis. D. Perkins, *C. L. Lamb*, and *K. A. Mitchell*. Biological Sciences, Boise State University, Boise, ID.

#707 **Poster Board Number 561**
Effect of Gut Microbiota Depletion on the Ontogeny of Drug-Processing Genes in Mouse Liver. *F. Selwyn*[1], B. Prasad[2], M. Vrana[2], *J. Cui*[1], and *C. D. Klaassen*[1]. [1]Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA; and [2]Department of Pharmaceutics, University of Washington, Seattle, WA.

#708 **Poster Board Number 562**
A Tissue-Engineered Rat/Human Liver Microphysiological System for Drug and Chemical Testing. *S. Chang*[1], J. L. Voellinger[2], *C. White*[1], *E. J. Kelly*[2], and *D. L. Eaton*[1]. [1]Environmental and Occupational Health Science, University of Washington, Seattle, WA; and [2]Pharmaceutics, University of Washington, Seattle, WA.

#709 **Poster Board Number 563**
Dynamic Flow Models of Tissue Bioreactors for 3D Hepatocyte Culture. J. Shim[1], *J. M. Pedersen*[1], *J. D. Schroeter*[2], J. M. Macdonald[3], *M. E. Andersen*[1], *H. J. Clewell*[1], and *M. Yoon*[1]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; [2]Applied Research Associates, Inc., Raleigh, NC; and [3]University of North Carolina, Chapel Hill, NC.

#710 **Poster Board Number 564**
Differences in Predicted EC-50 Using Time-Resolved, Nonlinear Toxicant Exposure Compared to Static Exposures *In Vitro*. *M. Bunger*, and R. E. McClelland. SciKon Innovation, Research Triangle Park, NC.

#711 **Poster Board Number 565**
A Novel *In Vitro* Model to Assess Chemical-Induced Steatosis and Phospholipidosis. *K. K. Wolf*[1], *O. Trask*[1], K. Rose[1], *O. Ukairo*[2], A. Moore[2], J. Gaffney[2], *M. E. Andersen*[1], and *E. LeCluyse*[1]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [2]Hepregen Corporation, Medford, MA.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#712 **Poster Board Number 566**
Nuclear Receptor-Mediated Changes in Gene Expression in a Human Hepatic Micropatterned Coculture Model following Treatment with Hepatotoxic Compounds. K. Rose[1], *K. K. Wolf*[1], *O. Ukairo*[2], A. Moore[2], J. Gaffney[2], *M. E. Andersen*[1], and *E. LeCluyse*[1]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [2]Hepregen Corporation, Medford, MA.

#713 **Poster Board Number 567**
Multiplexed Method to Screen for Chemical-Induced Hepatotoxicity Using a Novel Micropatterned Human Hepatocyte Coculture Platform. *E. LeCluyse*[1], *K. K. Wolf*[1], *O. Trask*[1], K. Rose[1], *O. Ukairo*[2], A. Moore[2], J. Gaffney[2], and *M. E. Andersen*[1]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [2]Hepregen Corporation, Medford, MA.

#714 **Poster Board Number 568**
***In Vitro* Modeling of Inflammation-Drug Interactions Using Micropatterned Cocultures of Primary Hepatocytes and Kupffer Macrophages.** O. Irrechukwu, M. McVay, and *O. Ukairo*. Hepregen Corporation, Medford, MA.

#715 **Poster Board Number 569**
Candidate Risk Factors for Tolvaptan-Induced Liver Injury Are Identified Using a Collaborative Cross Approach. *M. Mosedale*[1], *T. Wiltshire*[2], J. S. Eaddy[1], *W. J. Brock*[3], S. Roth[3], *D. E. Dodd*[1], R. W. Corty[2], Y. Xie[2], W. Valdar[2], and *P. B. Watkins*[1,2]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; [2]The University of North Carolina at Chapel Hill, Chapel Hill, NC; and [3]Otsuka Pharmaceutical Co., Ltd., Rockville, MD.

#716 **Poster Board Number 570**
Effect of Tolvaptan on the Hepatobiliary Disposition of Bile Acids in Human B-CLEAR® Hepatocytes. K. R. Brouwer[1], J. P. Jackson[1], K. M. Freeman[1], C. Hubert[1], R. St Claire[1], M. Pan[2], and *W. J. Brock*[2]. [1]Qualyst Transporter Solutions, Durham, NC; and [2]Otsuka Pharmaceuticals, Rockville, MD.

#717 **Poster Board Number 571**
Inhibition of BSEP- and NTCP-Mediated Taurocholate Transport by Tolvaptan and Metabolites. Y. Lu[1], J. Slizgi[1], *W. J. Brock*[2], M. Pan[2], and K. L. Brouwer[1]. [1]Division of Pharmacotherapy and Experimental Therapeutics UNC Eshelman School of Pharmacy, University of North Carolina at Chapel Hill, Chapel Hill, NC; and [2]Otsuka Pharmaceutical Co., Ltd, Rockville, MD.

#718 **Poster Board Number 572**
A Comparative UPLC-MS-Based Metabonomic Study of the Hepatotoxic Agents Tienilic Acid and Tienilic Acid Isomer. I. Grant[1], P. M. Rademacher[2,3], M. A. Scott[4], *R. A. Roth*[4], S. D. Nelson[3], E. J. Want[1], and M. Coen[1]. [1]Computational and Systems Medicine, Imperial College London, London, United Kingdom; [2]Global Blood Therapeutics, South San Francisco, CA; [3]University of Washington, Seattle, WA; and [4]Michigan State University, East Lansing, MI.

Abstract #

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Biological Modeling

Chairperson(s): *Andy Nong, Health Canada, Ottawa, ON, Canada.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#719 **Poster Board Number 601**
Nonlinearities in Cellular Dose-Response Behaviors Can Be Enhanced by Protein Stabilization. *Q. Zhang*[1], *S. Bhattacharya*[1], *R. B. Conolly*[2], and *M. E. Anderson*[1]. [1]The Hamner Institutes, Durham, NC; and [2]USEPA, Durham, NC.

#720 **Poster Board Number 602**
Applying the Skin Sensitisation AOP to Human Health Risk Assessment. G. Maxwell, R. Cubberley, S. Dhadra, N. Gellatly, R. Pendlington, J. Pickles, J. Reynolds, O. Saib, D. Sheffield, R. Stark, V. Summerfield, D. Tang, and C. MacKay. SEAC, Unilever, Bedford, United Kingdom. Sponsor: *P. Carmichael.*

#721 **Poster Board Number 603**
Semi-Mechanistic Systems Pharmacology Modeling of High-Dose Baclofen for Assessment of Cardiovascular Site of Action. J. Mettetal, H. W. Kamendi, H. Barthlow, M. Beaudoin, and *R. A. Bialecki*. Drug Safety and Metabolism, AstraZeneca, Waltham, MA.

#722 **Poster Board Number 604**
Mathematical Models Predicting the Effects of Generic Medical Countermeasures on Hematopoiesis following Radiation Exposure. J. Wentz, D. Oldson, and *D. L. Stricklin*. Health Effects and Risk Assessment, Applied Research Associates, Arlington, VA.

#723 **Poster Board Number 605**
Computational Modeling of the HPG Axis and Toxicity Equivalent Calculations to Predict Effects of Endocrine Disruptors on Estradiol Levels in Fathead Minnows. *W. Cheng*[1], A. Schroeder[2], D. L. Villeneuve[2], G. T. Ankley[2], and *R. B. Conolly*[1]. [1]ORD/NHEERL/ISTD, US EPA, Research Triangle Park, NC; and [2]ORD/NHEERL/MED, US EPA, Duluth, MN.

#724 **Poster Board Number 606**
A Quantitative Adverse Outcome Pathway Linking Aromatase Inhibition in Fathead Minnows with Population Dynamics. *R. B. Conolly*[1], *W. Cheng*[1], D. L. Villeneuve[2], G. T. Ankley[2], D. H. Miller[3], K. Watanabe[4], M. Mayo[5], and *E. J. Perkins*[5]. [1]ORD/NHEERL/ISTD, US EPA, Research Triangle Park, NC; [2]ORD/NHEERL/MED, US EPA, Duluth, MN; [3]ORD/NHEERL/MED, US EPA, Grosse Isle, MI; [4]Oregon Health & Science University, Portland, OR; and [5]US Army Engineer Research and Development Center, Vicksburg, MS.

MONDAY

Program Schedule (Continued)

Abstract #

#725 **Poster Board Number 607**
Predicting Serum Thyroid Hormones Changes in the Bottle-Fed Infant Ingesting Dietary Iodine and the Environmental Contaminant Perchlorate. *J. W. Fisher*[1], *T. L. Leavens*[2], *E. D. McLanahan*[3], and *P. M. Schlosser*[4]. [1]Department of Biochemical Toxicology, FDA/NCTR, Jefferson, AR; [2]Consultant, Cary, NC; [3]Division of Community Health Investigations, ATSDR, Atlanta, GA; and [4]NCEA, US EPA, Research Triangle Park, NC.

#726 **Poster Board Number 608**
A Computational Approach for a Quantitative and Mechanistic Understanding of Thiocyanate Kinetics and Dose Response. *P. Smith*[1,2], *J. Fisher*[1], and *A. Lumen*[1]. [1]Biochemical Toxicology, FDA/NCTR, Jefferson, AR; and [2]Colorado State University, Fort Collins, CO.

#727 **Poster Board Number 609**
Using PBPK Modeling to Evaluate the Concurrent Effects of Perchlorate, Other Goitrogens, and Iodine on Thyroid Status. *M. Peterson*[1], *G. Charnley*[2], and *T. Lewandowski*[1]. [1]Gradient, Seattle, WA; and [2]HealthRisk Strategies LLC, Washington, DC.

#728 **Poster Board Number 610**
A Multiscale Virtual Tissue Model of the Liver Lobule to Assess Zonal Heterogeneity in AhR Adverse Outcome Pathway-Induced Biological Responses. *S. Bhattacharya*, *P. D. McMullen*, S. Pendse, and *M. E. Andersen*. Institute for Chemical Safety Sciences, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#729 **Poster Board Number 611**
Agent-Based Computational Modeling of Cell Culture: Variation in Dose with Degree of Confluence. C. R. Eklund[1], *R. B. Conolly*[1], *W. Cheng*[1], *P. Wages*[2,3], K. Lavrich[2,3], J. Samet[2], and *S. Bhattacharya*[4]. [1]ORD/NHEERL/ISTD, US EPA, Research Triangle Park, NC; [2]ORD/NHEERL/EPHD, USEPA, Chapel Hill, NC; [3]Curriculum in Toxicology, UNC, Chapel Hill, NC; and [4]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#730 **Poster Board Number 612**
How Much Are the Cells Exposed to Nanoparticles versus Ions after Exposure to Silver Nanoparticles *In Vitro*? *Y. Zhao*[1], *M. Yoon*[1], *J. M. Brown*[2], *W. Bai*[2], *C. Peeples*[1], *J. G. Teeguarden*[3], *T. Fennell*[4], and *H. J. Clewell*[1]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; [2]University of Colorado Anschutz Medical Campus, Aurora, CO; [3]Pacific Northwest National Laboratory, Richland, WA; and [4]RTI International, Research Triangle Park, NC.

#731 **Poster Board Number 613**
Utilizing a Tetraphasic-Logistic Growth Model to Assess Developmental and Reproductive Effects in F344/N Rats Exposed Two Years to Butyl Benzyl Phthalate. T. D. Walker, and J. T. Walker. US Environmental Protection Agency, Washington, DC. Sponsor: *X. Arzuaga*.

Abstract #

#732 **Poster Board Number 614**
The Use of PBPK Modeling and Bayesian Inference to Characterize the Pharmacokinetics Associated with Acetaminophen Overdose. *T. Zurlinden*[1], K. Heard[2], and *B. Reisfeld*[1,3]. [1]Chemical and Biological Engineering, Colorado State University, Fort Collins, CO; [2]Emergency Medicine, University of Colorado School of Medicine, Aurora, CO; and [3]School of Biomedical Engineering, Colorado State University, Fort Collins, CO.

#733 **Poster Board Number 615**
Comprehensive Dosimetry Model for Libby Amphibole Asbestos: Inhalability, Deposition, and Retention in the Respiratory Tract of F344 Rats and Humans. *A. M. Jarabek*[1], O. Price[2], *S. H. Gavett*[1], and *B. Asgharian*[3]. [1]US EPA, Durham, NC; [2]Arlington Division, Applied Research Associates, Arlington, VA; and [3]Arlington Division, Applied Research Associates, Raleigh, NC.

#734 **Poster Board Number 616**
Understanding the Kinetics of Amiodarone and Its Metabolite Desethylamiodarone in Rats Using a Physiologically Based Pharmacokinetic Model. *J. Lu*[1], Y. Cai[2], and *Y. C. Tan*[1]. [1]National Exposure Research Laboratory, US EPA, Durham, NC; and [2]Michigan State University, East Lansing, MI.

#735 **Poster Board Number 617**
Assessment of Nicotine Uptake and Particle Deposition following a Single-Puff Inhalation of Cigarette Smoke. *B. Asgharian*[1], O. Price[2], Y. Caner[3], and J. McAughey[3]. [1]Arlington Division, Applied Research Associates, Raleigh, NC; [2]Arlington Division, Applied Research Associates, Arlington, VA; and [3]British American Tobacco, Southampton, United Kingdom.

#736 **Poster Board Number 618**
Evaluation of Oral, Inhalation, and Dermal Exposure to Tebuthiuron in Rats by the Application of Predictive Pharmacokinetic Modeling Tools. *A. T. McCoy*[1], *M. J. Bartels*[1], *J. A. Hotchkiss*[1], and *M. Corvaro*[2]. [1]The Dow Chemical Company, Midland, MI; and [2]Dow AgroSciences, Indianapolis, IN.

#737 **Poster Board Number 619**
Tissue Dose-Modeling and Bronchiolar Fibrosis Risk for Inhalation of Highly Water Soluble Irritant Gases: Comparison of Acetaldehyde, Acrolein, and Diacetyl. *B. D. Kerger*[1], *A. J. Bernal*[1], and P. Scott[2]. [1]Cardno ChemRisk, Aliso Viejo, CA; and [2]Cardno ChemRisk, Pittsburgh, PA.

#738 **Poster Board Number 620**
Biomarker Utility Analysis Using an Exposure-PBPK/PD Model: A Carbaryl Case Study. *M. B. Phillips*[1], *M. Yoon*[2], B. Young[3], and *Y. C. Tan*[4]. [1]NERL ORD, US EPA, Duluth, MN; [2]Institute for Chemical Safety Sciences, The Hamner Institutes for Health Sciences, Research Triangle Park, NC; [3]Bayer CropScience, Research Triangle Park, NC; and [4]NERL ORD, US EPA, Research Triangle Park, NC.

#739 **Poster Board Number 621**
***In Vivo* Efficiencies of Hexavalent Chromium Reduction in the Gastric Environments of Mice, Rats, and Humans.** A. F. Sasso, and *P. M. Schlosser*. US EPA, Washington, DC.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#740 **Poster Board Number 622**
Evaluating Epidemiological Associations between High Blood Concentrations of Poly Brominated Diphenyl Ether (PBDEs) and Altered Timing of Menarche: Are They Meaningful? *H. J. Clewell*[1], C. Peeples[1], G. Song[1], *M. Yoon*[1], *H. Wu*[1], *M. Verner*[2], *M. E. Andersen*[1], and *M. P. Longnecker*[3]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; [2]Université de Montréal, Montreal, QC, Canada; and [3]National Institutes of Environmental Health Sciences, Research Triangle Park, NC.

#741 **Poster Board Number 623**
Reduction of Hexavalent Chromium by Gastric Fluids from Fed and Fasted Individuals with Applications to Toxicokinetic Modeling. *C. R. Kirman*[1], *D. Proctor*[2], *M. Suh*[2], and *S. Hays*[3]. [1]Summit Toxicology LLP, Orange, OH; [2]ToxStrategies, Rancho Santa Margarita, CA; and [3]Summit Toxicology, Lyons, CO.

#742 **Poster Board Number 624**
Comparison of Phthalate Biomonitoring and High-Throughput Screening Data Using Pharmacokinetic Modeling. M. Moreau, and *A. Nong*. Environmental Health Sciences and Research Bureau, Health Canada, Ottawa, ON, Canada.

#743 **Poster Board Number 625**
A Mechanism-Based Translational Mathematical Model for Gastrointestinal Toxicity. H. Shankaran[1], P. Jasper[2], *M. Wagoner*[1], J. Tolsma[2], and J. Mettetal[1]. [1]Drug Safety and Metabolism, AstraZeneca, Waltham, MA; and [2]RES Group Inc, Needham, MA.

#744 **Poster Board Number 626**
INTEGRA: Advancing Risk Assessment Using Internal Dosimetry Metrics. *D. A. Sarigiannis*[1,2], S. P. Karakitsios[1,2], A. Gotti[1], V. Handakas[1], and K. Papadaki[1]. [1]Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece; and [2]Chemical Process and Energy Resources Institute, Centre for Research and Technology Hellas, Thermi, Greece.

#745 **Poster Board Number 627**
Predicting Oral Bioavailability of Parabens Using Biokinetic Modeling Together with a New *In Vitro* Intestinal Absorption Model of Carboxyesterase-2 Expressing Caco-2 Cells. *M. Yoon*, *Y. Zhao*, X. Sun, J. Dong, and *H. J. Clewell*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#746 **Poster Board Number 628**
Development of a Physiologically Based Pharmacokinetic Model for Bisphenol A in Humans to Address the Uncertainties Surrounding the Risk Assessment of BPA. *X. Yang*[1], *J. G. Teeguarden*[2,3], *D. R. Doerge*[1], and *J. Fisher*[1]. [1]FDA/NCTR, Jefferson, AR; [2]Pacific Northwest National Laboratory, Richland, OR; and [3]Oregon State University, Corvallis, OR.

#747 **Poster Board Number 629**
Quantitative *In Vitro* to *In Vivo* Extrapolation for Environmental Esters: PBPK Model for Methyl-, Propyl-, and Butylparaben in Rat and Human. *J. Campbell*, *M. Yoon*, and *H. J. Clewell*. Institute for Chemical Safety Sciences, The Hamner Institutes, Research Triangle Park, NC.

Abstract #

#748 **Poster Board Number 630**
Development of a Toxicokinetic Model for the Insensitive Munitions (IMX) Component 2,4-Dinitroanisole. *L. M. Sweeney*[1], M. R. Goodwin[2], A. D. Hulgan[3], and C. P. Gut[2]. [1]NAMRU Dayton, Henry M. Jackson Foundation, Wright-Patterson Air Force Base, OH; [2]NAMRU Dayton, CAMRIS, Wright-Patterson Air Force Base, OH; and [3]NAMRU Dayton, Oak Ridge Institute for Science and Education, Wright-Patterson Air Force Base, OH.

#749 **Poster Board Number 631**
PBPK Modeling Describes Route-Specific Kinetics of Cyclic Volatile Methyl Siloxanes. *T. McMullin*[1], *J. Campbell*[2], *K. P. Plotzke*[1], *M. E. Andersen*[2], *J. Y. Domoradzki*[1], and *H. J. Clewell*[2]. [1]Dow Corning Corporation, Midland, MI; and [2]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#750 **Poster Board Number 632**
Application of Local and Global Sensitivity Analysis to a Human Multiroute PBPK Model for Bromodichloromethane. *E. Kenyon*[1], *T. L. Leavens*[2], C. R. Eklund[1], and *R. A. Pegram*[1]. [1]ORD/NHEERL/ISTD, US EPA, Durham, NC; and [2]TLL, Cary, NC.

#751 **Poster Board Number 633**
Predicting Pharmacokinetics of Components of Vehicle in a Generic Docetaxel Formulation for Safety Evaluation and Regulatory Approval. *H. A. Barton*[1], M. Shiue[2], and *R. MacFarland*[3]. [1]Pharmacokinetics, Dynamics, and Metabolism, Pfizer, Inc., Groton, CT; [2]Pharmacokinetics, Dynamics, and Metabolism, Pfizer, Inc., La Jolla, CA; and [3]Drug Safety Research & Development, Pfizer, Inc., La Jolla, CA.

#752 **Poster Board Number 634**
Physiologically Based Pharmacokinetic Modeling for 1-Bromoproane in Rat Using Gas Uptake Inhalation Studies. S. Liang[1], *E. Garner*[2], L. Yin[1], and *X. Yu*[1]. [1]Environmental Health Science, University of Georgia, Athens, GA; and [2]Lovelace Respiratory Research Institute, Albuquerque, NM.

#753 **Poster Board Number 635**
***In Silico* Modeling Can Predict the Unforeseen Renal Failure Caused by SGX523, a c-MET Kinase Inhibitor.** M. Lawless, J. DiBella, and M. Bolger. Simulations Plus, Lancaster, CA. Sponsor: *B. Hagenbuch*.

#754 **Poster Board Number 636**
Application of the All-Ages Lead Model to Improve Evaluation of Variable Exposures. L. Wilder[1], *R. R. Worley*[1,2], *E. D. McLanahan*[1], *D. A. Fowler*[1], D. Mellard[1], *R. DeWoskin*[3], and *G. L. Diamond*[4]. [1]CDC/ATSDR, Chamblee, GA; [2]UGA, Athens, GA; [3]US EPA/ORD/NCEA, Research Triangle Park, NC; and [4]SRC Inc., Syracuse, NY.

#755 **Poster Board Number 637**
A Multiobjective PBPK-PD Approach for Dose Schedule Optimization of Brain Tumour Treatments Using Myelosuppresive Drugs. *R. McDougall*[1], F. Gibbons[2], C. Housand[3], and P. Poulin[4]. [1]Translational Safety, AstraZeneca, Waltham, MA; [2]Oncology DMPK, AstraZeneca, Waltham, MA; [3]The AEgis Technologies Group, Orlando, FL; and [4]Independent Consultant, Quebec City, QC, Canada.

MONDAY

Program Schedule (Continued)

Abstract #

#756 **Poster Board Number 638**
Analysis of Measured Serum-PFOA Data Using a PBPK Model Predicts Drinking-Water Exposure Concentrations in a Contaminated Community. *R. R. Worley*[1,2], and *J. Fisher*[3,2]. [1]CDC/ATSDR, Chamblee, GA; [2]UGA, Athens, GA; and [3]NCTR, FDA, Jefferson, AR.

#757 **Poster Board Number 639**
Application of Reverse Dosimetry to Compare *In Vitro* and *In Vivo* Estrogen Receptor Activity. *X. Chang*[1], *N. Kleinstreuer*[1], *P. Ceger*[1], *N. Y. Choksi*[1], *J. Hsieh*[2], *M. DeVito*[2], *D. G. Allen*[1], and *W. Casey*[3]. [1]ILS/NICEATM, Research Triangle Park, NC; [2]NIEHS/NTP, Research Triangle Park, NC; and [3]NTP/NICEATM, Research Triangle Park, NC.

#758 **Poster Board Number 640**
Evaluation of Physiologically Based Toxicokinetic (PBTK) Modelling for Reverse Dosimetry Approaches. E. Fabian, K. Guth, R. Zbranek, *B. van Ravenzwaay*, and *R. Landsiedel*. Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany.

#759 **Poster Board Number 641**
Advanced QSAR Models for Use in Toxicokinetic Modelling. *D. A. Sarigiannis*, K. Papadaki, and S. P. Karakitsios. Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece.

Monday Afternoon, March 23
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Epidemiology

Chairperson(s): *Ge Tao, Gradient, Cambridge, MA; and Yudan Wei, Department of Community Medicine, Mercer University School of Medicine, Macon, GA.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#760 **Poster Board Number 645**
PAHs and $PM_{2.5}$ Emissions and Female Breast Cancer Incidence in Metro Atlanta and Rural Georgia. P. Parikh[1], and *Y. Wei*[2]. [1]Mercer University School of Medicine, Macon, GA; and [2]Department of Community Medicine, Mercer University School of Medicine, Macon, GA.

#761 **Poster Board Number 646**
A Systematic Review of the Association between Pleural Plaques and Changes in Lung Function. L. Kopylev, K. Christensen, *J. S. Brown*, and G. S. Cooper. NCEA, EPA, Washington, DC.

#762 **Poster Board Number 647**
Interactive Effects of N6AMT1 and AS3MT in Arsenic Biomethylation and the Resulting Cytotoxic Outcomes. *H. Zhang*[1], *Y. Ge*[1], P. He[2], Y. Qiu[1], D. S. Aga[2], and *X. Ren*[1]. [1]Epidemiology and Environmental Health & Pharmacology and Toxicology, University at Buffalo, Buffalo, NY; and [2]Department of Chemistry, University at Buffalo, Buffalo, NY.

#763 **Poster Board Number 648**
Forest-Fire Fine Particulate Matter and Daily Mortality in Greater Boston and New York City. G. Tao, K. Zu, C. Long, *J. E. Goodman*, and *P. A. Valberg*. Gradient, Cambridge, MA.

Abstract #

#764 **Poster Board Number 649**
Elderly Health and Indoor Environment. A. Mendes[1,3], A. Papoila[2], L. Aguiar[1,3], C. Pereira[1,3], M. Neves[1], S. Silva[1,3], D. Mendes[1], T. Palmeiro[2], I. Caires[2], A. Botelho[2], P. Carreiro-Martins[2], N. Neuparth[2], and J. P. Teixeira[1,3]. [1]Environmental Health, National Health Institute, Porto, Portugal; [2]CEDOC, NOVA Medical School, Lisbon, Portugal; and [3]EPIUnit - Institute of Public Health, University of Porto, Porto, Portugal. Sponsor: *A. Karakaya*.

#765 **Poster Board Number 650**
Does Pharmaceutical Exposure Mediate Risks Associated with Exposure to Heavy Metals? An Epidemiological Investigation of NHANES. *N. Basu*[1,2], M. A. Bradley[1], M. Siedlikowski[1], and S. Park[3,4]. [1]School of Dietetics and Human Nutrition, McGill University, Sainte-Anne-de-Bellevue, QC, Canada; [2]Department of Natural Resource Sciences, McGill University, Sainte-Anne-de-Bellevue, QC, Canada; [3]Department of Environmental Health Sciences, School of Public Health, University of Michigan, Ann Arbor, MI; and [4]Department of Epidemiology, School of Public Health, University of Michigan, Ann Arbor, MI.

#766 **Poster Board Number 651**
Important Covariates of the Cord Blood Transcriptome. S. Remy[1,2], E. Govarts[2], P. De Boever[2], E. Den Hond[2], and G. Schoeters[1,2,3]. [1]University of Antwerp, Wilrijk, Belgium; [2]Flemish Institute of Technological Research, Mol, Belgium; and [3]University of Southern Denmark, Odense, Denmark. Sponsor: *H. Van Loveren*.

#767 **Poster Board Number 652**
Examining the Association between Urinary Concentrations of 2,5-Dichlorophenol and Blood Pressure in US Adults. *Y. Wei*[1], and J. Zhu[2]. [1]Department of Community Medicine, Mercer University School of Medicine, Macon, GA; and [2]Department of Mathematics and Computer Science, Fort Valley State University, Fort Valley, GA.

#768 **Poster Board Number 653**
Evaluation of US EPA's Noncancer Risk Assessment of Libby Amphibole Asbestos. *K. Zu*, G. Tao, L. E. Kerper, *L. R. Rhomberg*, and *J. E. Goodman*. Gradient, Cambridge, MA.

#769 **Poster Board Number 654**
Steatohepatitis Associated with Adipocytokine Abnormalities in the Anniston Community Health Survey. *H. Clair*[1], C. Pinkston[1], N. Dutton[2], M. Pavuk[2], *K. C. Falkner*[1], *B. Wahlang*[1], *R. A. Prough*[1], and *M. Cave*[1]. [1]University of Louisville, Louisville, KY; and [2]Air Toxic Substances Disease Registry, Atlanta, GA.

#770 **Poster Board Number 655**
Aflatoxin B1 Exposure Modulates HIV to AIDS Pathogenic Progression. *M. Kang*[1], *L. Tang*[1], R. Muwanika[2], P. M. Nkurunziza[3], *T. L. Guo*[4], X. Song[5], *K. S. Xue*[1], J. W. Finger[1], T. Lutalo[2], D. Serwadda[2], J. Seeley[3], and *J. Wang*[1]. [1]Environmental Health Science, University of Georgia, Athens, GA; [2]Rakai Health Science Program, Entebbe, Uganda; [3]British MRC/UVRI, Entebbe, Uganda; [4]Veterinary Biosciences and Diagnostic Imaging, University of Georgia, Athens, GA; and [5]Epidemiology and Biostatistics, University of Georgia, Athens, GA.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#771 **Poster Board Number 656**
Polychlorinated Biphenyls, Diabetic Status, and Inflammatory Cytokines. M. Pavuk[1], N. Dutton[2,1], *H. Clair*[3], *B. Wahlang*[3], C. Pinkston[3], and *M. Cave*[3]. [1]Agency for Toxic Substances and Disease Registry (ATSDR), Atlanta, GA; [2]Oak Ridge Institute of Science and Education - Research Participation Program, Atlanta, GA; and [3]University of Louisville, Louisville, KY.

#772 **Poster Board Number 657**
Circulating Oxidized LDL and Conventional Biomarkers of Cardiovascular Health in a Navajo Cohort Exposed to Uranium-Mining Metal Contaminants. *M. E. Harmon*[1], *C. Miller*[2], *M. Campen*[1], C. Shuey[3], M. Cajero[2], B. Pacheco[2], *E. Erdei*[1], G. Stark[2], S. Ramone[3], T. Nez[3], and *J. L. Lewis*[1,2]. [1]Department of Pharmaceutical Sciences, University of New Mexico, Albuquerque, NM; [2]Community Environmental Health Program, University of New Mexico, Albuquerque, NM; and [3]Southwest Research and Information Center, Albuquerque, NM.

#773 **Poster Board Number 658**
The Occurrence of Cyanobacterial Toxins in Alberta Recreational Waters. *V. Charoensuk*[1], *D. Huang*[1], C. Niu[1,2], J. Graydon[2], W. Zhang[2], J. Popadynetz[3], *S. Gabos*[1,4], and D. W. Kinniburgh[1,4]. [1]Physiology & Pharmacology, Alberta Centre for Toxicology, University of Calgary, Calgary, AB, Canada; [2]Health Protection Branch, Alberta Health, Edmonton, AB, Canada; [3]Population, Public and Aboriginal Health, Alberta Health Services, Edmonton, AB, Canada; and [4]Laboratory Medicine and Pathology, University of Alberta, Edmonton, AB, Canada.

#774 **Poster Board Number 659**
Lung Cancer Risk in Chromate Production Workers Exposed to Hexavalent Chromium. *M. Suh*[1], L. Mittal[2], S. Hirsch[3], R. Valdes[3], C. Bartlett[3], *A. C. Rohr*[4], and *D. Proctor*[1]. [1]ToxStrategies, Mission Viejo, CA; [2]ToxStrategies, Katy, TX; [3]SciMetrika, Durham, NC; and [4]Electric Power Research Institute, Palo Alto, CA.

#775 **Poster Board Number 660**
Welding and Occupational Exposure to Manganese Fumes and Parkinson's Disease: An Evidence-Based Causation Analysis. *J. K. Britt*[1], and *R. C. James*[2]. [1]ToxStrategies, Inc., Tallahassee, FL; and [2]ToxStrategies, Inc., Boise, ID.

#776 **Poster Board Number 661**
Aflatoxin Exposure in Mothers and Children in East Timor, Indonesia. *L. Tang*[1], *J. Wang*[1], *K. S. Xue*[1], *M. Kang*[1], L. Ascolillo[2], S. Ghosh[2], S. Gurung[2], J. K. Griffiths[2], P. Webb[2], and S. Musulmatan[3]. [1]University of Georgia, Athens, GA; [2]Tufts University, Boston, MA; and [3]University of Jakarta, Jakarta, Indonesia.

#777 **Poster Board Number 662**
Mechanisms of Health Effects from Traffic-Related Air Pollution (TRAP): Real World Studies in Humans. *H. Kipen*, and R. Laumbach. EOHSI, Rutgers University, Piscataway, NJ.

Abstract #

#778 **Poster Board Number 663**
Ozone Exposure and Systemic Biomarkers: Evaluation of Evidence of Adverse Cardiovascular Health Impacts. S. N. Sax[1], *D. M. Pizzurro*[1], *K. Zu*[1], *H. N. Lynch*[1], *R. L. Prueitt*[2], and *J. E. Goodman*[1]. [1]Gradient, Cambridge, MA; and [2]Gradient, Seattle, WA.

Monday Afternoon, March 23
1:30 PM to 2:30 PM
CC Ballroom 6A

FS

Meet the Directors: A Conversation with Linda Birnbaum and Jim Jones

Chairperson(s): *Peter L. Goering, Society of Toxicology Vice President; US FDA-CDRH, Silver Spring, MD.*

Lecturer(s): *Linda S. Birnbaum, NIEHS, Research Triangle Park, NC; and Jim Jones, US EPA, Washington, DC.*

This important session will provide an informal venue for meeting attendees to have a candid and open discussion with two key leaders of federal organizations with missions to protect and improve public and environmental health: Dr. Linda Birnbaum, Director, NIEHS, and Jim Jones, Assistant Administrator, US EPA Office of Chemical Safety and Pollution Prevention. The entire session will be devoted to a question-and-answer format concerning scientific directions and priorities for NIEHS and US EPA-OCSPP, funding priorities and outlooks, and training opportunities. Dr. Birnbaum has served as the Director of the National Institute of Environmental Health Sciences and the National Toxicology Program since 2009. Jim Jones has served as OCSPP Assistant Administrator since 2013, as Deputy Assistant Administrator from 2007–2011, and as Director, Office of Pesticide Programs, from 2003–2007.

Monday Afternoon, March 23
1:30 PM to 5:00 PM
CC Room 33B
(By Invitation Only)

Undergraduate Education Program

Hosted by:
Committee on Diversity Initiatives

The program for undergraduate students who received travel funding from the Committee on Diversity Initiatives continues. See page 96 for details.

MONDAY

Program Schedule (Continued)

Monday Afternoon, March 23,
1:45 PM to 2:45 PM
CC Room 22

E

Exhibitor-Hosted Session: Alternative Models Developing in KIT for Predictive Toxicology

Presented by:
Korea Institute of Toxicology

Agenda—1) Tissue engineering for alternative toxicology; 2) Predictive toxicology models based on the multiorgan interaction.

Monday Afternoon, March 23,
1:45 PM to 2:45 PM
CC Room 24C

E

Exhibitor-Hosted Session: Diabetes and Weaker Bones—Exploring the Connection

Presented by:
Charles River

Osteoporosis and increased fracture risk have been added to the long list of complications of diabetes. This session will explore skeletal function and underlying mechanisms of compromised bones in metabolic diseases and will highlight endpoints to be included in safety studies to monitor for all diabetic complications.

Monday Afternoon, March 23,
1:45 PM to 2:45 PM
CC Room 24B

E

Exhibitor-Hosted Session: Solutions and Lessons Learned with Inhaled Compounds in the Pharmaceutical and Chemical Industries: Perspective and Insights from Key Opinion Leaders James Swenberg and Chet Leach

Presented by:
Lovelace Respiratory Research Institute

Case studies for the use of inhaled models of industrial chemicals and pharmaceutical development will be provided by keynote speakers James Swenberg, DACVP, DVM, PhD, and Chet Leach, PhD, DABT.

Monday Afternoon, March 23,
1:45 PM to 2:45 PM
CC Room 24A

E

Exhibitor-Hosted Session: The Gut Microbiota As a Source of Variability in Animal Models

Presented by:
IDEXX Laboratories

Aaron Ericsson, DVM, PhD, will present data regarding differences in the gut microbiota of mice associated with different genotypes, commercial source, and variables related to husbandry; effects of the gut microbiota on host responses to non-specific stimuli; and cost-effective methods of monitoring and manipulating the gut microbiota of mice.

Abstract #

Monday Afternoon, March 23
2:00 PM to 4:45 PM
CC Ballroom 6C

S

Symposium Session: Cardio-Oncology Concerns Encourage Novel Approaches to Pharmaceutical Risk Assessment

Advancing Clinical and Translational Toxicology

Chairperson(s): *Myrtle Davis, NIH/NCI, Bethesda, MD; and Brian R. Berridge, Safety Assessment, GlaxoSmithKline, Research Triangle Park, NC.*

Endorser(s):
Cardiovascular Toxicology Specialty Section

Recent successes in prolonging the life of cancer patients with optimized use of traditional approaches and the addition of novel classes of drugs (e.g., tyrosine kinase inhibitors) has raised the visibility and interest in managing the cardiovascular sequelae of a number of these therapeutic regimens. These concerns have energized the development of the unique and emerging field of cardio-oncology. A number of recent workshops have explored significant gaps and opportunities for improving both clinical and nonclinical approaches. This symposium intends to explore the knowns, unknowns, and opportunities for improvement in nonclinical approaches to cardiovascular risk assessment of anticancer drugs. The ultimate goal of these discussions is to identify opportunities to further enhance translation of nonclinical approaches and enhance relevance to patient outcomes.

#779	2:00	**Cardio-Oncology Concerns Encourage Novel Approaches to Pharmaceutical Risk Assessment.** D. Sawyer[3], B. R. Berridge[2], *K. L. Kolaja*[4], *J. R. Turk*[5], and *M. Davis*[1]. [1]National Cancer Institute, Bethesda, MD; [2]GlaxoSmithKline, Research Triangle Park, NC; [3]Vanderbilt School of Medicine, Nashville, TN; [4]Cellular Dynamics, Montclair, NJ; and [5]Amgen, Thousand Oaks, CA.
	2:00	**Introduction.** B. R. Berridge. GlaxoSmithKline, Research Triangle Park, NC.
#780	2:05	**Clinical Challenges for Managing Cardiovascular Risk in Cancer Patients in an Era of Prolonged Life Expectancy.** D. Sawyer. Vanderbilt School of Medicine, Nashville, TN. Sponsor: *S. Pettit*.
#781	2:34	**The Intersection of Pharmacology and Toxicology in an Age of Targeted Cancer Therapies.** B. R. Berridge. GlaxoSmithKline, Research Triangle Park, NC. Sponsor: *S. Pettit*.
#782	3:03	**Use of Human-Induced Pluripotent Stem Cell-Derived Cardiomyocytes As a Screen for Drug-Induced Cardiotoxicity.** *K. L. Kolaja*. Cellular Dynamics, Inc., Montclair, NJ.
#783	3:32	**Novel *In Vivo* Modeling Approaches to Nonclinical Characterization of Cardiotoxicity in Cancer Patients.** *J. R. Turk*. Amgen, Inc., Thousand Oaks, CA.
#784	4:01	**Opportunities for Improving Clinical and Nonclinical Approaches to Managing Cardiovascular Risk in Cancer Patients.** *M. Davis*. National Cancer Institute, Bethesda, MD.
	4:30	**Panel Discussion/Q&A.**

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

Monday Afternoon, March 23
2:00 PM to 4:45 PM
CC Ballroom 6F

S

Symposium Session: Immunostimulant Cancer Treatments: Toxicology Programs with an Autoimmmune "Twist"

Advancing Clinical and Translational Toxicology

Chairperson(s): *Lauren Black, Charles River, Laurel, MD; and Helen G. Haggerty, Immunotoxioclogy, Bristol-Myers Squibb, East Syracuse, NY.*

Endorser(s):
Biotechnology Specialty Section
Immunotoxicology Specialty Section

Stimulating cellular immunity is transforming the way cancer is treated. But agonists to "attack" pathways (or antagonists to "brake" pathways) have caused Severe Adverse Events in clinical trials. Drugs in this category include antibodies, novel proteins, or engineered T cells. Since targets may not be in healthy animals, each tox program has unique hurdles, and so experts will delve into pathway, model, and program details that enabled clinical trials despite known clinical hazards. For example, an agonist antibody against the costimulatory receptor 4-1BB (CD137) caused Grade 4 hepatic inflammation in patients. Additional mechanistic toxicology was conducted using mice and an antimurine CD137 mAb to inform patient risks. PD-1/PD-L1 is studied by many firms because cancer cells upregulate this path to evade immunity—but blocking this pathway poses liabilities of autoimmune and infectious diseases. MPDL3280A blocks PD-L1 and was studied mainly in mice and cynomolgus monkeys; however, integrated assessment led to a more conservative first-in-human starting dose than the standard NOAEL or HNSTD approaches. CEA and OX40 offer two other promising targets: preclinical studies employed translational immunopharmacologic (*in vitro* and *in vivo*) models to characterize the safety for a novel BiTE constructs against CEA and an agonist mAb to OX40. Recent oncology clinical trials have also studied T cells that have been genetically modified to express "new" T cell receptors (TCRs) or chimeric antigen receptors ("CARs," essentially fragments of therapeutic mAbs). These "CAR-T" cells can recognize selected extracellular targets and kill target-expressing cells. Surprisingly, preclinical studies for these biologic immunostimulants have been underutilized. Together, these talks should paint a detailed landscape of biologic cancer immunotherapies, and challenges facing toxicologists.

#785	2:00	**Immunostimulant Cancer Treatments: Toxicology Programs with an Autoimmune "Twist".** *L. Black*[1], *H. G. Haggerty*[2], C. Horvath[3], *R. Prell*[4], *R. Dixit*[5], and W. Helms[6]. [1]Charles River, Laurel, MD; [2]Bristol-Myers Squibb, New Brunswick, NJ; [3]Bluebird Bio, Cambridge, MA; [4]Genentech, South San Francisco, CA; [5]MedImmune/AstraZeneca, Gaithersburg, MD; and [6]US FDA/CDER Oncology, Silver Spring, MD.
	2:00	**Introduction.** L. Black. Charles River Laboratories, Wilmington, MA.
#786	2:07	**"CAR-T" Cells—A Crash Course in Immunostimulant Safety Concerns.** C. Horvath. Bluebird Bio, Cambridge, MA. Sponsor: *L. Black*.
#787	2:35	**Integrated Nonclinical Safety Evaluation of a PD-L1 Antagonist with Impacts on Dosing.** *R. Prell*. Genentech, South San Francisco, CA.
#788	3:03	**Balancing Safety and Efficacy of Novel Immune System Agonists to CEA and OX40 Targets.** *R. Dixit*. MedImmune/AstraZeneca, Gaithersburg, MD.
#789	3:31	**Overcoming the Safety Challenges of a CD137-Agonist Immuno-Oncology Therapeutic.** *H. G. Haggerty*. Bristol-Myers Squibb, New Brunswick, NJ.
#790	3:59	**Thinking beyond General Toxicology Studies for Immunotherapeutics.** W. Helms. US FDA/CDER, Silver Spring, MD. Sponsor: *L. Black*.
	4:27	**Panel Discussion/Q&A.**

Abstract #

Monday Afternoon, March 23
2:00 PM to 4:45 PM
CC Room 1

S

Symposium Session: Nrf2 Signaling Pathways in Model Systems: A Master Regulator of Neurotoxicity and a Potential Therapeutic Target

Chairperson(s): *Richard M. Nass, Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN; and Jeffrey A. Johnson, University of Wisconsin, Madison, WI.*

Endorser(s):
Neurotoxicology Specialty Section

The nuclear respiratory factor 2 (Nrf2), a bZip transcription factor, plays a critical role in maintaining cellular redox homeostasis in normal physiology, and in initiating environment- or pathophysiology-associated stress response. The high conservation of Nrf2's structure, target genes, and downstream signal transduction pathways across animal phyla, in concert with the emerging evidence that the transcription factor is a regulator of protein degradation, neurotoxicity, and cell death, suggests that exploring Nrf2-associated molecular pathways in invertebrate and vertebrate genetic models will have significant relevance to human toxicology. In this symposium, we describe novel insights and strengths, as well as limitations, of increasingly complex genetic models including the nematode, fly, fish, and rodents to identify the molecular pathways involved in Nrf2-associated neuronal protection, as well as the utility of Nrf2-mediated therapeutic targets. Dr. Richard Nass will describe his studies utilizing the nematode *C. elegans* to explore the genetic and molecular basis of Nrf2- and sirtuin-associated DA neuronal vulnerability. Dr. Leo Pallanck will discuss his studies using the genetic fruit fly model *D. melanogaster* to identify Nrf2-inducing compounds to inhibit PD-associated neurodegeneration. Dr. Evan Gallagher will describe his research utilizing the genetic zebrafish model *D. rerio* to elucidate the role of Nrf2 in maintaining sensory behaviors following cadmium exposure. Dr. Jeff Johnson will discuss his studies on how astrocytic Nrf2 activation inhibits PD-associated genetic- and chemical-induced neuropathology in rodents. Finally, Dr. Donna Zhang will discuss her studies involving the regulation of Nrf2 by E3 ubiquitin ligases in rodents and humans, and the opportunities this regulation provides for identifying novel therapeutic targets and leads.

#791	2:00	**Nrf2 Signaling Pathways in Model Systems: A Master Regulator of Neurotoxicity and a Potential Therapeutic Target.** *R. M. Nass*. Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.
	2:00	**Introduction.** R. M. Nass. Indiana University School of Medicine, Indianapolis, IN.
#792	2:05	**The Identification and Characterization of an SKN-1/Nrf2 Pathway Involved in Toxicant-Associated *C. elegans* Models of Parkinson's Disease.** B. Arbuckle[1], *N. VanDuyn*[1], *W. Li*[1], J. Trinidad[2], and *R. M. Nass*[1]. [1]Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN; and [2]Chemistry, Indiana University, Bloomington, IN.
#793	2:34	**Identifying Neuroprotective Factors from Coffee and Tobacco.** K. Trinh, and *L. Pallanck*. Genome Sciences, University of Washington, Seattle, WA.
#794	3:03	**Role of Nrf2 in Regulating Cellular Antioxidant Responses of Fish.** *E. P. Gallagher, L. Wang,* R. Ramsden, and M. Mills. Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.
#795	3:32	**A Role for Astrocytic Nrf2 Activation in Neuroprotection.** *J. A. Johnson*. Pharmacology and Toxicology, University of Wisconsin-Madison, Madison, WI.

MONDAY

Program Schedule (Continued)

Abstract #

#796 4:01 **The Molecular Mechanisms of Nrf2 Regulation beyond Keap1: Developing Therapeutics Targeting the "Correct" E3 Ubiquitin Ligase for Nrf2 Activation.** *T. Wu, B. Harder, S. Tao, W. Tian, E. Chapman,* and *D. D. Zhang.* Pharmacology and Toxicology, University of Arizona, Tucson, AZ.

4:30 **Panel Discussion/Q&A.**

Monday Afternoon, March 23
2:00 PM to 4:45 PM
CC Ballroom 6E

Workshop Session: Evaluating and Quantifying Stress for Inclusion in Cumulative Risk Assessment

Approaches for Protecting Vulnerable Populations

Chairperson(s): *Cynthia V. Rider, NTP/NIEHS, Research Triangle Park, NC; and Jane Ellen Simmons, US EPA, Research Triangle Park, NC.*

Endorser(s):
Mixtures Specialty Section
Risk Assessment Specialty Section

The environmental justice movement has long recognized disproportionate exposure to chemical and nonchemical stressors in vulnerable populations. While chemical stressors are clearly defined, the term nonchemical stressor covers a broad landscape from physical (e.g., radiation, heat) to psychosocial (e.g., fear of violence). Here, we define nonchemical stressors as factors that stimulate a physiological stress response, with a particular focus on stressors that are relevant to people living in vulnerable communities. Both nonchemical and chemical stressors can contribute to multiple diseases (e.g., cardiovascular disease, asthma) that have higher incidence in vulnerable communities. However, there are many challenges to moving forward with quantitative risk assessments that accurately account for chemical and nonchemical stressors. Progress toward this goal requires focused research attention on developing and validating approaches for measuring the physiological effects of nonchemical stressors and interactions between chemical and nonchemical stressors. Additionally, advancement will require developing and evaluating case studies that adapt available approaches from epidemiology, toxicology, and risk assessment to estimate cumulative risk from chemical and nonchemical stressors. This workshop will bring together experts to discuss the latest science aimed at evaluating chemical and nonchemical stressors and incorporating them into cumulative risk assessments. Discussion will encompass a broad range of diseases (cardiovascular disease, neurodevelopmental delay), chemicals (air pollutants, metals), and stress types (maternal stress, chronic stress). Throughout the workshop, speakers will discuss promising approaches, knowledge gaps, and suggested future research. The concerted, multidisciplinary effort embodied in this workshop will help to shed light on the real impact of exposure to chemical and nonchemical stressors on health and disease in our most vulnerable communities. (This abstract does not reflect US EPA policy.)

#797 2:00 **Evaluating and Quantifying Stress for Inclusion in Cumulative Risk Assessment.** *C. V. Rider*[1], and *J. Simmons*[2]. [1]NTP/NIEHS, Research Triangle Park, NC; and [2]NHEERL/US EPA, Research Triangle Park, NC.

2:00 **Introduction.** C. V. Rider. NTP/NIEHS, Research Triangle Park, NC.

#798 2:05 **Vulnerable Communities: At the Intersection of Chemical and Nonchemical Stressors.** *E. S. Craft.* Environmental Defense Fund, Austin, TX.

#799 2:34 **Alterations in CNS Effects of Lead and Methylmercury by Prenatal Stress and Early Behavioral Adversity.** *D. A. Cory-Slechta.* Environmental Medicine, University of Rochester Medical School, Rochester, NY.

#800 3:03 **Quantifying "Stress" in Epidemiological Studies.** *D. B. Miller.* CDC-NIOSH, Morgantown, WV.

Abstract #

#801 3:32 **A Framework for Examining Social Stress and Susceptibility to Air Pollution in Respiratory Health.** J. E. Clougherty. Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA. Sponsor: *C. Rider.*

#802 4:01 **Quantifying Chronic Stress Exposure for Cumulative Risk Assessment: Lessons Learned from a Case Study of Allostatic Load.** A. M. Evans[1], G. Rice[2], L. Teuschler[3], and J. Wright[2]. [1]ORISE/US EPA, Cincinnati, OH; [2]US Environmental Protection Agency, Cincinnati, OH; and [3]Linda Teuschler & Associates, St. Petersburg, FL. Sponsor: *C. Rider.*

4:30 **Panel Discussion/Q&A.**

Monday Afternoon, March 23
2:00 PM to 4:45 PM
CC Ballroom 6B

Workshop Session: Infant Formula Nutrition: Regulatory and Safety Evaluation of Ingredients

Approaches for Protecting Vulnerable Populations

Chairperson(s): *A. Wallace Hayes, Department of Environmental Health, Harvard School of Public Health, Andover, MA; and Brinda Mahadevan, Abbott Laboratories, Columbus, OH.*

Endorser(s):
Food Safety Specialty Section
Regulatory and Safety Evaluation Specialty Section
Women in Toxicology Special Interest Group

Research continues to increase our understanding of human milk biology and its physiological functions in the newborn. This understanding has led to advancements in the safety and composition of formulas that ensure non-breastfed infants receive the nutrition needed for normal growth and development. Infant formulas marketed in the United States must meet specific federal requirements relative to composition, clinical merit, and quality. The purpose of the Infant Formula Act of 1980 and subsequent amendments is to ensure the safety and nutritional value of infant formulas—including minimum, and in some cases, maximum levels of specified nutrients. To accomplish this purpose, the Act authorizes the US FDA to promulgate appropriate regulations. The ingredient must be shown to be reasonably certain to be safe. The scientific evidence used to document the safety and to complete the risk assessment of these ingredients includes, but may not be limited to, chemical characterization, anticipated exposure level, and data from animal models and clinical studies. The objectives of this workshop are to address: (1) how infant formulas are regulated by the US Food and Drug Administration (US FDA), including composition, product processing conditions, and clinical data, as well as ingredient safety requirements; (2) the need for innovation that spurs development of new approaches that requires US FDA review prior to product commerce; (3) the challenges in a risk assessment that is conducted to evaluate the generally recognized as safe (GRAS) status of an infant formula ingredient to meet the burden of proof that satisfies regulatory standards; (4) discussion of a preclinical approach—the neonatal pig as a research model for infant formula safety assessment. All speakers will take part in a panel/Q&A discussion including postmarket surveillance following the last presentation.

#803 2:00 **Infant Formula Nutrition: Regulatory and Safety Evaluation of Ingredients.** *B. Mahadevan*[1], *A. Hayes*[2], C. L. Assar[3], *R. Clemens*[4], *C. Kruger*[5], and *B. A. Thorsrud*[6]. [1]Regulatory Affairs, Abbott Nutrition, Columbus, OH; [2]Harvard School of Public Health, Boston, MA; [3]US FDA, College Park, MD; [4]University of Southern California, Los Angeles, CA; [5]Spherix Consulting, a division of ChromaDex, Inc, Bethesda, MD; and [6]MPI Research, Mattawan, MI.

2:00 **Introduction.** A. Hayes[1], and B. Mahadevan[2]. [1]Harvard School of Public Health, Boston, MA; and [2]Abbott Nutrition, Columbus, OH.

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#804 2:10 **Infant Formula Regulation: Nutritional Adequacy and Ingredient Safety.** C. L. Assar. Center for Food Safety and Applied Nutrition, US Food and Drug Administration, College Park, MD. Sponsor: *B. Mahadevan*.

#805 2:40 **Infant Formula Innovations for Improved Infant Health.** *R. Clemens*. Horn/USC School of Pharmacy, University of Southern California, Los Angeles, CA.

#806 3:10 **General Guidelines on the Safety Assessment of Novel Ingredients for Infant Formula.** *C. Kruger*. Spherix Consulting, a division of ChromaDex, Inc, Rockville, MD.

#807 3:40 **The Neonatal Pig As a Research Model for Infant Formula Safety Assessment.** *B. A. Thorsrud*. Developmental & Reproductive Toxicology, MPI Research, Mattawan, MI.

4:10 **Panel Discussion/Q&A.**

Monday Afternoon, March 23
2:00 PM to 4:45 PM
CC Ballroom 6D

W

Workshop Session: Pulmonary Toxicity of Graphene Nanomaterials: An Emerging Concern in Manufacturing and Applications?

Chairperson(s): *Jenny R. Roberts, HELD/PPRB, NIOSH, Morgantown, WV; and Aaron Erdely, NIOSH, Morgantown, WV.*

Endorser(s):
Inhalation and Respiratory Specialty Section
Nanotoxicology Specialty Section
Occupational and Public Health Specialty Section

Graphene, a one-atom-thick monolayer of carbon, is an engineered nanomaterial (ENM) with physical and chemical properties that may offer application advantages over other carbonaceous ENMs, such as carbon nanotubes (CNT). As use of graphene nanomaterials (GNMs) in a variety of industries and manufacturing increases, the potential for respiratory exposure, particularly in the workplace, also rises. Unlike CNT, toxicity of GNMs has not been well defined. In addition, GNMs can vary in dimension, surface chemistry, number of layers, and other physico-chemical parameters, which in turn may affect toxicological potency of the material. The goal of this workshop is to present the most recent toxicological research findings in the field of GNMs and gain an understanding of the hazard and risk for exposure. The workshop will cover the physico-chemical characteristics and applications of a variety of GNMs, potential exposure in occupational settings, toxicity related to size and composition following various methods of pulmonary exposure in animal models, and comparative toxicity to well-defined carbonaceous ENMs. The outcome for the session is to establish whether GNM exposure poses a potential health hazard by providing an understanding of GNMs and conveying the most recent material science expertise and toxicological research related to respiratory exposure to various forms of GNMs.

#808 2:00 **Pulmonary Toxicity of Graphene Nanomaterials: An Emerging Concern in Manufacturing and Applications?** *J. R. Roberts*, and *A. Erdely*. HELD/PPRB, NIOSH, Morgantown, WV.

2:00 **Introduction.** J. R. Roberts. NIOSH, Morgantown, WV.

#809 2:05 **Physical and Chemical Properties of a Variety of Graphene Nanomaterials—Engineering Materials for Specific Applications.** A. Kyrlidis, and *I. Chaudhuri*. Cabot Corporation, Billerica, MA.

#810 2:34 **Occupational Exposures along the Graphene Product Value Chain: Production, Formulation, and Use.** *C. M. Sayes*. RTI International, Durham, NC.

Abstract #

#811 3:03 **Particle Characterization and Toxicological Evaluation of Pulmonary Exposure to Graphenes of Different Sizes.** *J. R. Roberts*[1], R. R. Mercer[1], *T. M. Sager*[1], A. Kenyon[1], S. Bilgesu[1], J. F. Scabilloni[1], M. S. Seehra[2], U. K. Geddam[2], S. S. Leonard[1], N. R. Fix[1], D. Schwegler-Berry[1], *I. Chaudhuri*[3], A. Kyrlidis[1], *B. M. Yingling*[2,1], M. Wolfarth[1], *D. W. Porter*[1], *V. Castranova*[1], and *A. Erdely*[1]. [1]NIOSH, Morgantown, WV; [2]West Virginia University, Morgantown, WV; and [3]Cabot Corporation, Billerica, MA.

#812 3:32 **A Five-Day Repeated Inhalation and 28-Day Post-Exposure Study of Graphene.** *I. Yu*[1], and J. Shin[2]. [1]Institute of NanoProduct Safety Research, Hoseo University, Asan, Republic of Korea; and [2]Occupational Lung Diseases Institute, KCOMWEL, Asan, Republic of Korea.

#813 4:01 **Comparative Inhalation Toxicities of Graphene and Other Carbonaceous Nanomaterials.** *R. Landsiedel*. BASF Product Safety - Experimental Toxicology and Ecology, Ludwigshafen, Germany.

4:30 **Panel Discussion/Q&A.**

Monday Afternoon, March 23
2:00 PM to 4:45 PM
CC Room 7

EC

Education-Career Development Session: Challenges in the Life Cycle of a Toxicologist

Chairperson(s): *Tina E. Levine, Retired, Arlington, VA; and William J. Brock, Brock Scientific Consulting, Montgomery Village, MD.*

Endorser(s):
Career Resource and Development Committee
Education Committee
Women in Toxicology Special Interest Group

Toxicologists face different challenges at different stages of their career life cycle. This session will explore some of these challenges, and offer potential solutions to those challenges. Industry, academia, and government employ 47%, 21%, and 14% of toxicologists, respectively. For students and postdoctoral trainees applying for jobs in these sectors, the initial challenge in getting that first position is presenting oneself on paper and in person. The goal of the first presentation will be to demystify the US federal hiring process with specific emphasis on how to describe oneself on paper as a toxicologist in order to be considered for a government position. The second speaker will address early-career toxicology positions in industry, and how the roles and responsibilities of the entry-level toxicologist contribute to the developing career. For the mid-career toxicologist, the challenge is often how to keep progressing, whether to pursue a technical or managerial track, and whether to consider transitioning to peripheral disciplines. The mid-career toxicologist speaker will provide guidance on how to develop a broad skill-set to enhance career opportunities. The fourth speaker will address how work/life satisfaction can be attained in the context of careers in science, which are very often a way of life and far more than a job. The tools presented will assist attendees in identifying strategies that can have the biggest impact on their work/life satisfaction and in developing their own personal action plan, whatever their career stage. The final challenge for many toxicologists is how to transition to semi- or full retirement; many toxicologists continue to work either full or part-time as consultants. Some choose to pursue interests long deferred due to the demands of full-time work. The last presentation will explore challenges encountered by the toxicologist as "retirement" and the twilight of a career approach. At the end of the session, a panel discussion will convene to address specific issues that arise in the career of the attendees, and discuss strategies for advancing the toxicology career.

#814 2:00 **Challenges in the Life Cycle of a Toxicologist.** *T. E. Levine*[1], and *W. J. Brock*[2]. [1]Retired, Arlington, VA; and [2]Brock Scientific Consulting, Montgomery Village, MD.

Program Schedule (Continued)

Abstract #		
	2:00	**Introduction.** T. E. Levine. Retired, Arlington, VA.
#815	2:05	**The Nuts and Bolts of Getting Hired As a Government Toxicologist.** *T. E. Levine*. Retired, Arlington, VA.
#816	2:31	**Taking the Leap: Myths and Realities of Starting Your Career As an Industry Toxicologist.** *J. S. Moffit*. FORUM Pharmaceuticals, Inc., Boston, MA.
#817	2:57	**Mid-Career Challenges and Opportunities for the Toxicologist.** *D. Badger*. Amgen, Inc., Thousand Oaks, CA.
#818	3:23	**Improving Your Work/Life Satisfaction.** D. J. Dean. Association for Women in Science, Hedgesville, WV. Sponsor: *T. Levine*.
#819	3:49	**Challenges for the Late-Career Toxicologist.** *W. Allaben*. Pharmaceutical Sciences Radiation Health, University of Arkansas Medical Center, Little Rock, AR.
	4:15	**Panel Discussion/Q&A.**

Monday Afternoon, March 23
2:00 PM to 4:45 PM
CC Room 8

PL

Platform Session: 21st Century DART: Advances, Challenges, and Promises

Chairperson(s): *Leon E. Gray, Endocrinology Branch, NHEERL, US EPA, Research Triangle Park, NC; and Aldert H. Piersma, RIVM, Bilthoven, Netherlands.*

#820	2:00	**Comparing OASIS Estrogen/Androgen Receptor Binding QSAR Predictions to Results from ToxCast II Estrogen/Androgen Receptor Binding Assays.** B. Bhhatarai, *D. Wilson*, *P. S. Price*, *S. Marty*, A. K. Maguire, and *E. W. Carney*. TERC, The Dow Chemical Company, Midland, MI.
#821	2:20	**Systems Toxicology of Male Reproductive Development: Profiling 774 Chemicals for Molecular Targets and Adverse Outcomes.** *M. C. Leung*[1,2], *J. Phuong*[2], N. C. Baker[3], *N. S. Sipes*[1,2], *G. Klinefelter*[4], *M. T. Martin*[2], K. W. McLaurin[1,2], *W. Setzer*[2], *S. P. Darney*[4], *R. Judson*[2], and *T. B. Knudsen*[2]. [1]Oak Ridge Institute for Science and Education, Oak Ridge, TN; [2]National Center for Computational Toxicology, US Environmental Protection Agency, Research Triangle Park, NC; [3]Lockheed Martin, Research Triangle Park, NC; and [4]National Health and Environmental Effects Research Laboratory, US Environmental Protection Agency, Research Triangle Park, NC.
#822	2:40	**Anti- and Androgenic Activities in MDA-kb2 Cells: A Comparison of Performance in 96 Well versus HTS Assays.** *L. E. Gray*, N. Evans, and *V. S. Wilson*. RTB, NHEERL, ORD, US EPA, Research Triangle Park, NC.
#823	3:00	**Visualizing Compound Distribution in Zebrafish Embryos: The Effect of Lipophilicity.** C. de Koning, M. Beekhuijzen, M. Tobor-Kaplon, B. van de Waart, and *H. Emmen*. Toxicology, WIL Research Europe B.V., Den Bosch, Netherlands.

Abstract #		
#824	3:20	**Validation and Predicitivity of the Zebrafish Embryotoxicity Assay (ZETA) with 37 Preclinically Tested Reference Pharmaceutical Compounds.** E. Krupp, A. Mohr, S. Koenen, G. Lodder, H. Jost, M. Roth, and A. Czich. R&D DSAR, Sanofi-Aventis Deutschland GmbH, Frankfurt, Germany. Sponsor: *D. Keller*.
#825	3:40	**Mode of Action Clarifies Endosulfan's Pathways Leading to Developmental Male Reproductive Toxicity.** *S. A. Knadle*[1,2], *A. Fan*[2], and *G. Alexeeff*[2]. [1]Environmental Toxicology, UC Davis, Davis, CA; and [2]OEHHA, Cal/EPA, Sacramento, CA.
#826	4:00	**An Adverse Outcome Pathway Framework for Neural Tube and Axial Defects Mediated by Modulation of Retinoic Acid Homeostasis.** A. H. Piersma, J. L. Pennings, and E. C. Tonk. RIVM, Bilthoven, Netherlands. Sponsor: *H. van Loveren*.
#827	4:20	***In Vitro* Rat Whole-Embryo Culture (WEC) and Mouse Embryonic Stem Cell Test (mEST) to Assess Teratogenicity Potential of Drugs and Reduce Animal Testing.** M. L. Green, C. Raymond, B. Redfern, L. Zhu, E. Wang, E. Cutler, *K. Q. Tanis*, Y. Yu, B. Mattson, J. DeGeorge, *F. D. Sistare*, and *J. Lebron*. Merck and Co., Inc, West Point, PA.

Monday Afternoon, March 23
2:00 PM to 3:00 PM
CC Room 14A

Specialty Section Collaboration and Communication Group Meeting

MONDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Monday Afternoon, March 23,
3:15 PM to 4:15 PM
CC Room 24C

E

Exhibitor-Hosted Session: 3D Microtissues Meet OMICS Technologies and High-Content Imaging

Presented by:
InSphero Inc.

OMICS technologies and high-content imaging have been demonstrated to be valuable tools to unravel biological pathways and phenotypic outcomes. This session aims to introduce the use of confocal imaging techniques, transcriptomics, and proteomics in combination with organotypic 3D model systems to assess toxicological pathways and mechanisms.

Monday Afternoon, March 23,
3:15 PM to 4:15 PM
CC Room 24A

E

Exhibitor-Hosted Session: Chemical Risk Assessment Best Practices

Presented by:
NSF International

Chemical risk assessments establish compliance with regulation and permit informed decision-making in product development and stewardship. When properly conducted, they are crucial to sustainable commercialization and public health protection. This session will review best practices in developing scientifically credible environmental and human health risk assessments and disseminating peer-reviewed risk values.

Monday Afternoon, March 23,
3:15 PM to 4:15 PM
CC Room 22

E

Exhibitor-Hosted Session: Further Exploration of Study Design for Tg.rasH2 Mouse Carcinogenicity Studies

Presented by:
BioReliance

BioReliance, the leader in transgenic carcinogenicity testing, will present the latest data from our historical database, the largest for these studies. BioReliance has recently published several papers suggesting changes to the designs of Tg.rasH2 carcinogenicity studies. These suggestions will be discussed with data to support the hypotheses.

Monday Afternoon, March 23,
3:15 PM to 4:15 PM
CC Room 24B

E

Exhibitor-Hosted Session: *In Silico* Approach to the ICH M7 Challenges

Presented by:
MultiCASE Inc

MultiCASE Inc, the leading provider of *in silico* toxicology solutions for chemical and pharmaceutical industries, will share their experience and expertise in the ICH M7 challenges with comprehensive CASE Ultra solutions. Highlights, interpretation scenarios and case studies will be presented.

Monday Afternoon, March 23
3:30 PM to 4:30 PM
CC Room 32B

Undergraduate Education Program: Host Mentor and Peer Mentor Meeting

Chairperson(s): *Jorge Naciff, Procter & Gamble Company, Mason, OH; and Sakina Elzebair Eltom, Meharry Medical College, Nashville, TN.*

Host mentors and peer mentors meet to provide feedback on the Undergraduate Education Program.

Monday Afternoon, March 23
4:45 PM to 6:00 PM
CC Ballroom 6A

FS

SOT/EUROTOX Debate: *In Vitro* Alternatives Are Ready to Be Implemented and Relied Upon for Human Safety Testing

Chairperson(s): *John B. Morris, University of Connecticut, Storrs, CT; and Mumtaz Iscan, Ankara University, Ankara, Turkey.*

SOT Debater: *George P. Daston, Procter & Gamble Company, Cincinnati, OH.*

EUROTOX Debater: *Maurice P. Whelan, European Commission Joint Research Centre, EURL ECVAM, Ispra, Italy.*

Endorser(s):
Society of Toxicology (SOT)
European Societies of Toxicology (EUROTOX)

Each year the SOT Annual Meeting includes a debate that continues a tradition that originated in the early 1990s, in which leading toxicologists advocate opposing sides of an issue of significant toxicological importance. This year, our debaters will address the proposition: *In Vitro* Alternatives Are Ready to Be Implemented and Relied Upon for Human Safety Testing.

In vitro and other nonanimal test methods have been under development for many years as possible replacements for animal testing as the basis for human safety risk assessment. The need for these methods is acute, both because of legislative pressure, such as the European Union's Cosmetics Regulation, which forbids the use of ingredients tested in animals after March 2013, and because of the growing discrepancy between the number of chemicals being introduced into commerce and the ability to thoroughly evaluate their toxicity in animals. Despite these pressures, implementation of alternative methods has been slow, both because of the rigorous validation process required to qualify them as replacements and because of the difficulties in modeling all relevant aspects of pharmacokinetics and pharmacodynamics that are present in the intact organism. Still, scientists and regulators continue to look for applications for alternative methods that will be reliable and withstand criticism. Some of these include the use of read-across to support safety assessment for groups of related chemicals, or high-throughput screening such as the ToxCast program to prioritize large numbers of chemicals for further testing. The debaters will discuss the state of the science of alternative methods and whether they can be relied upon for supporting human safety assessments.

Program Schedule (Continued)

(Con't)

Regardless of framework differences and personal convictions, each scientific debate delegate will present relevant evidence and compelling scientific arguments to persuade and appeal to the response of the audience in order to obtain the approval or refusal of the motion. In addition to being a featured session at the SOT Annual Meeting in San Diego, California, this debate will again take place (with the debaters taking the reverse positions) in Porto, Portugal, during the 51st Congress of the European Societies of Toxicology (2015 Eurotox Annual Congress), September 13–16.

Monday Afternoon, March 23,
4:45 PM to 5:45 PM
CC Room 24C

E

Exhibitor-Hosted Session: Practical SEND Planning and Implementation: Key Learnings from a Dedicated Community of Experience and Expertise

Presented by:
Instem

This session will review the experiences of twenty-one sponsors and CROs across eleven countries that have completed or are implementing new processes for SEND.

Monday Afternoon, March 23,
4:45 PM to 5:45 PM
CC Room 24A

E

Exhibitor-Hosted Session: Semi-Automatic Generation of Expert Reports for ICH M7 Regulatory Submissions

Presented by:
Leadscope, Inc.

This session presents a semi-automated framework to rapidly generate an M7 submission report containing an expert opinion that is transparent, complete, consistent, and traceable.

Monday Afternoon, March 23,
4:45 PM to 5:45 PM
CC Room 24B

E

Exhibitor-Hosted Session: Strategies to Reduce Attrition in Early and Late Stages of Drug Development

Presented by:
APTUIT LLC

Besides being a regulatory requirement, electrophysiology can be used in early stages of drug development to allow the early detection of a potential cardiotoxicity. Abuse liability may represent a risk to the development portfolio, and appropriate abuse liability strategy may mean the difference between failure and success of an asset.

MONDAY EVENING

Monday Evening, March 23
5:00 PM to 6:30 PM
Marriott Marquis Balboa

Allegheny-Erie and Michigan Regional Chapters Joint Reception

Monday Evening, March 23
5:00 PM to 8:00 PM
Marriott Marquis San Diego Ballroom B

American Association of Chinese in Toxicology Special Interest Group Reception and Distinguished Chinese Toxicologist Lectureship Presentation

Monday Evening, March 23
5:00 PM to 6:00 PM
Henry's Pub

Ohio Valley and Midwest Regional Chapters Joint Reception

Program Schedule (Continued)

Monday Evening, March 23
5:30 PM to 7:30 PM
Karl Strauss Brewery

National Capital Area and North Carolina Regional Chapters Joint Reception

Monday Evening, March 23
5:30 PM to 7:30 PM
Harbor House

Pacific Northwest Regional Chapter Reception

Monday Evening, March 23
5:30 PM to 7:30 PM
Rama Thai

Toxicologists of African Origin Special Interest Group Reception

Monday Evening, March 23
6:00 PM to 10:00 PM
Dublin Square Authentic Irish Pub & Grille

Southeastern Regional Chapter Reception

Monday Evening, March 23
6:00 PM to 7:30 PM
CC
See room listing below.

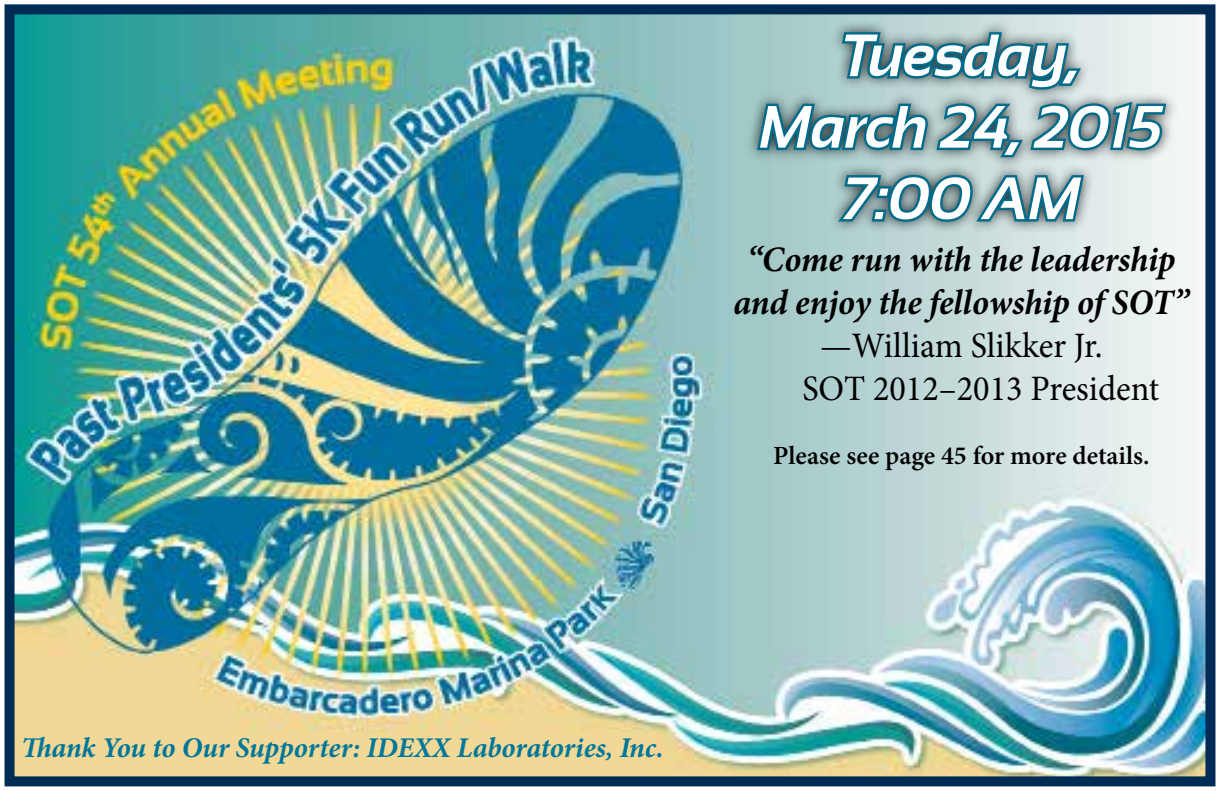
Specialty Section Meeting/Receptions: Carcinogenesis (31C); Inhalation and Respiratory (30A); Mixtures (30E); Molecular and Systems Biology (29A); Regulatory and Safety Evaluation (28A)

Monday Evening, March 23
7:00 PM to 9:00 PM
Marriott Marquis Temecula

Association of Scientists of Indian Origin Special Interest Group Reception

Monday Evening, March 23
7:00 PM to 9:00 PM
Nippon Sushi Bar and Thai Food

Korean Toxicologists Association in America Meeting/Reception



Program Schedule (Continued)

TUESDAY MORNING

Tuesday Morning, March 24
7:00 AM
Embarcadero Marina Park

Past Presidents' 5K Fun Run/Walk

Supported by:
IDEXX Laboratories, Inc.

When you pack for SOT 2015, don't forget your running shoes so you can join us for the fifth annual Past Presidents' 5K Fun Run/Walk! Open to anyone interested, this event is a great opportunity to meet old friends and make new acquaintances in a casual environment, joining SOT's Past Presidents in showing support for SOT. Whether you're in it for some friendly competition or would rather take a leisurely stroll, this event's emphasis is on camaraderie and will bring together runners and walkers of all levels and paces. Come join us—we look forward to seeing you!

To register, visit the Special Events section of the SOT Annual Meeting website. Registration is only $20, and all proceeds will go toward the SOT Endowment Fund.

Tuesday Morning, March 24
7:30 AM to 9:00 AM
CC Room 3

American Association of Chinese in Toxicology/Korean Toxicologists Association in America Special Interest Groups Career Workshop 1: Current US Job Market for Toxicologists

Tuesday Morning, March 24
7:45 AM to 8:45 AM
Marriott Marquis Malibu

Women in Toxicology Special Interest Group Executive Board Meeting

Tuesday Morning, March 24
8:00 AM to 8:50 AM
CC Ballroom 6B

FS

Translational Impact Award Lecture: How to Make a (Translational) Impact

Lecturer: *Jefferey Burgess, University of Arizona, Tucson, AZ.*

Three exposure scenarios will be presented to demonstrate the importance of translational public health studies: 1) Combustion Product Exposure in Firefighters. Exposures to firefighters, even in the absence of visible smoke or individual chemicals exceeding occupational exposure limits, can cause acute adverse health effects, leading to the need for appropriate respiratory protection. 2) Environmental Arsenic Exposure. Limiting population exposures to arsenic has traditionally been focused on drinking water, yet existing exposure limits are associated with measurable adverse effects and adequately protective concentrations are not known. In addition, diet is a more important source of exposure than water below existing maximum contaminant levels. 3) Exposure to Diesel and Alternative Fuel Emissions in Miners. Alternative fuels, such as biodiesel, are used to reduce exposure to particulate emissions, yet the potential benefits and/or detriments are not known. In each of these cases, lines of inquiry were requested and informed by partners and benefited from collaboration with multidiscliplinary teams. The critical steps in all of these lines of study are to work with partners and colleagues, ask questions, and learn from others. For rapid translation, research must address partner needs and be provided in a fashion that can influence changes.

Tuesday Morning, March 24,
8:30 AM to 9:30 AM
CC Room 22

E

Exhibitor-Hosted Session: Challenges, Conundrums, and the "Catch-22" in Abuse Liability Testing for NDA Approvals: The Bugaboo of Biologics?

Presented by: MPI Research

There is a growing concern from the published literature that some "biologic-products" on the market have the potential to be psychoactive or have the capacity not only to modify ongoing behavior but also to enter into important behavioral processes that serve as markers of abuse in the clinical population.

Tuesday Morning, March 24,
8:30 AM to 9:30 AM
CC Room 24A

E

Exhibitor-Hosted Session: Considerations and Challenges Associated with Medical Device Risk Assessment

Presented by:
WuXi AppTec

Risk assessments based on chemical characterization data and intended use have recently become an integral component in the overall evaluation of medical device biocompatibility. Using ISO 10993-17 as a framework, the basic principles of risk assessment can be applied to the evaluation of medical device extracts.

Program Schedule (Continued)

Tuesday Morning, March 24,
8:30 AM to 9:30 AM
CC Room 24C

E

Exhibitor-Hosted Session: Key Factors an End-User Must Consider When Examining a Vendor's Extractable/Leachable Program

Presented by:
Toxikon Corporation

Container closure suitability for a drug product necessitates the quantitative examination of leachable substances, obtained under simulated use conditions. Target leachates are selected by end users from extractable studies that must be adequate to capture and model the critical conditions of concern.

Tuesday Morning, March 24,
8:30 AM to 9:30 AM
CC Room 24B

E

Exhibitor-Hosted Session: The Use of Human HepatoPac, an *In Vitro* Microliver Platform, for Predictive Toxicology

Presented by:
Hepregen Corporation

Current *in vitro* platforms to assess hepatotoxicity have been poor predictors of *in vivo* performance. HepatoPac is a highly predictive *in vitro* microliver platform demonstrated to improve sensitivity. It remains functional for several weeks, making it an ideal platform for "extended-horizon" scenarios, including chronic toxicity and DDIs.

Tuesday Morning, March 24
9:00 AM to 12:00 Noon
CC Ballroom 6A

FS

Frontiers for Toxicology Session: Bugs to Drugs: The Microbiome in Human Health, Disease, and Therapeutics

Chairperson(s): *David Ross, School of Pharmacy, University of Colorado Health Sciences Center, Aurora, CO; and Paul C. Howard, Division of Biochemical Toxicology, US FDA-NCTR, Jefferson, AR.*

Endorser(s):
Scientific Program Committee

The human microbiome represents a symbiotic ecosystem that plays a key role in host metabolism and physiology, and is incredibly diverse even between healthy individuals. Dysfunctional microbiomes in various host environments are being increasingly recognized in the pathogenesis of altered metabolic states and diseases, such as metabolic syndrome, obesity, diabetes, certain autoimmune disorders, atherosclerosis, autism, asthma, and allergies. In particular, the gut microbiome plays a role in metabolism and absorption of drugs, toxicants, environmental chemicals and dietary components; these exposures also alter the microbiota species composition and microbiome. Breakthroughs in analytical methods and tools have accelerated the understanding of the roles of the microbiome in human health and disease. Metagenomics represents a powerful approach to define the microbiota species composition in a given ecosystem through detection of their genes and gene products, and the role of altered microbiomes in disease. Vast microbiota diversity exists within and between humans, each population producing a large array of their own metabolites and products, which contributes to regulating the overall host biology within this symbiotic relationship.

Abstract #

(Cont')

Metabolic profiling strategies, including new mass spectrometric and bioinformatics techniques, are being developed to analyze the microbial metabolome to generate chemical maps that describe the molecular connections and communications between host cells and microbes. Understanding microbiome-metabolome-host interactions will drive the identification of novel drug targets and development of new therapeutic interventions for many diseases. Rapid advances linking microbiota, the microbiome, and metabolome and their role in health and disease represent an important frontier from a toxicological perspective. The goal of this session is to feature eminent scientists who have made important contributions and advances to current knowledge of the microbiome. Integrated areas that will be explored include metagenomic characterization of microbiomes in human and environmental ecosystems, changes in the microbiome from birth to death and important applications to forensics, the molecular characterization of the microbiome and the challenges of linking large amounts of genome sequencing and mass spectrometric data, and the metabolic crosstalk between the host and the symbiotic microbiome and its influence on disease and therapeutic, personalized medicine interventions.

#828	9:00	**Bugs to Drugs: The Microbiome in Human Health, Disease, and Therapeutics.** *P. L. Goering.* Society of Toxicology Vice President; US FDA-CDRH, Silver Spring, MD.
	9:00	**Introduction.** P. L. Goering. Society of Toxicology Vice President; US FDA-CDRH, Silver Spring, MD.
#829	9:05	**Metagenomic Approaches for Understanding the Microbial Foundations of Complex Ecosystems.** M. D. Adams. J. Craig Venter Institute, San Diego, CA. Sponsor: *P. Goering.*
#830	9:45	**Dynamics of the Human Microbiota.** R. Knight[1,2]. [1]Department of Pediatrics, University of California San Diego, San Diego, CA; and [2]Department of Computer Science and Engineering, University of California San Diego, San Diego, CA. Sponsor: *P. Goering.*
#831	10:25	**A Community-Based Molecular GPS from Microbes to People-Implications for Forensics, Health Monitoring, and Therapeutics.** P. C. Dorrestein. Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California San Diego, San Diego, CA. Sponsor: *P. Goering.*
#832	11:05	**Microbiome-Host Metabolic Axes—New Dimensions in Personalized and Public Healthcare?** *J. K. Nicholson.* Department of Surgery and Cancer, Faculty of Medicine, Imperial College London, London, United Kingdom.
	11:45	**Panel Discussion/Q&A.**

TUESDAY

Program Schedule (Continued)

Abstract #

Tuesday Morning, March 24
9:00 AM to 11:45 AM
CC Ballroom 6D

S

Symposium Session: Alternative Models to Study Classical Toxicants: A Mechanistic View

Safety Assessment Approaches for Product Development

Chairperson(s): *Kathryn E. Page, Nutritional Sciences and Toxicology, University of California Berkeley, Berkeley, CA; and Monica R. Langley, Biomedical Sciences, Iowa State University, Ames, IA.*

Endorser(s):
Graduate Student Leadership Committee
Mechanisms Specialty Section
Postdoctoral Assembly

Alternatives to *in vivo* toxicity testing are increasingly necessary due to regulatory mandates (e.g., REACH legislation), cost and time constraints, as well as ethical considerations. Models are being used in government, industry, and academia to develop a system for chemical screening and prioritization framework, and to study the mechanistic action of compounds traditionally studied *in vivo*. Graduate and postdoctoral researchers will describe their studies of classical toxicants using cell-based and alternative animal models that demonstrate how *in vitro* systems can be developed to elucidate mechanistic action of classical toxicants. The first presenter will describe the evaluation of ToxCast compounds to characterize multidimensional developmental and neurotoxicological effects using zebrafish. The second speaker will describe his efforts studying the developmental effects of RyR-active PCBs using embryonic zebrafish as a novel *in vivo* model. The third presenter will discuss the use of *C. elegans* in a genetic screen assessing MeHg-associated dopaminergic neuron degeneration, highlighting involvement of SKN-1/Nrf2 and MRP-7. The fourth speaker will present the development of an *in vitro* 'omics approach to identify pathways of developmental neurotoxicity, and discovery of gene expression and metabolite changes relating to pesticides, pharmaceuticals, and metals. The fifth presenter will discuss a novel *in vitro* model for ozone adaptation, analyzing expression of proinflammatory and oxidative stress genes and discovery of the role of histone acetylation in the epigenetic control of ozone adaptation. The final speaker will present a combined functional genomics approach, using *S. cerevisiae* and avian DT40 cells, to determine the genotoxic mechanism of DCVC as a contributor to TCE renal toxicity. Attendees will learn of alternative methods with presenters stressing the strengths of these models in studying mechanisms of toxicity, while providing a retrospective look at classic toxicants and where we are now.

#833	9:00	**Alternative Models to Study Classical Toxicants: A Mechanistic View.** *K. E. Page*[1], and *M. R. Langley*[2]. [1]Nutritional Sciences and Toxicology, University of California Berkeley, Berkeley, CA; and [2]Biomedical Sciences, Iowa State University, Ames, IA.
	9:00	**Introduction.** K. E. Page. University of California Berkeley, Berkeley, CA.
#834	9:05	**Multidimensional Rapid-Throughput Screening of ToxCast Chemicals Using the Embryonic Zebrafish.** *L. Truong*[1], *D. Reif*[2], *L. St. Mary*[2], M. Geier[3], *H. D. Truong*[1], and *R. L. Tanguay*[1]. [1]NCCT, US EPA-ORD, Research Triangle Park, NC; [2]Department of Biological Sciences, North Carolina State University, Raleigh, NC; and [3]Department of Environmental and Molecular Toxicology, Environmental Health Sciences Center, Oregon State University, Corvallis, OR.
#835	9:30	**A Zebrafish Model of PCB Developmental Neurotoxicity.** *G. W. Miller*, K. M. Walter, *E. B. Fritsch*, and *P. Lein*. University of California Davis, Davis, CA.

Abstract #

#836	9:55	**Identification and Characterization of Molecular Modulators of MeHg-Induced Toxicity in the Genetic Model *C. elegans*.** *N. VanDuyn*[1,2], and *R. M. Nass*[2]. [1]US EPA, Durham, NC; and [2]Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.
#837	10:20	**3D Models and 'Omics Approaches to Study Pathways of Developmental Neurotoxicity.** *D. Pamies*, *T. Hartung*, and *H. T. Hogberg*. Johns Hopkins University, Baltimore, MD.
#838	10:45	**Modern Techniques and an Old Mystery: Exploring Mechanisms of Ozone Adaptation.** *E. C. Bowers*[1,2], *S. D. McCullough*[2], L. A. Dailey[2], J. J. Kahle[2], and D. Diaz-Sanchez[1,2]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; and [2]Clinical Research Branch, US EPA, Chapel Hill, NC.
#839	11:10	**Functional Genomics Approach in Yeast Identifies Mechanisms of Trichloroethylene Toxicity.** *V. De La Rosa*[1], J. B. Asfaha[1], A. Loguinov[1], *M. Fasullo*[2], and *C. Vulpe*[1]. [1]University of California Berkeley, Berkeley, CA; and [2]State University of New York, Albany, NY.
	11:35	**Panel Discussion/Q&A.**

Tuesday Morning, March 24
9:00 AM to 11:45 AM
CC Ballroom 6B

S

Symposium Session: Immune Responses to Different Classes of Inhaled Particulates: Unique vs. Shared Responses and Mechanisms

Chairperson(s): *Andrij Holian, CEHS, University of Montana, Missoula, MT; and Seishiro Hirano, Environmental Nanotoxicology Section RCER, National Institute for Environmental Studies, Tsukuba, Japan.*

Endorser(s):
Inhalation and Respiratory Specialty Section
Immunotoxicology Specialty Section
Nanotoxicology Specialty Section

Inhaled particulates, including silica, asbestos, particulate matter, and nanoparticles, induce pulmonary inflammation, lung fibrosis and, often, systemic disease. As these materials each range in size, shape, durability, composition, and surface properties, they are often evaluated for immunotoxic effects individually rather than collectively. Often they are considered "distinct" classes of toxicants, and information that could be used to advance the overall knowledge about immunotoxicity of inhaled particulates is not frequently exchanged or evaluated in the context of a single toxicant class, viz., particulates. Taking a more unifying approach, some common findings about immunotoxicities (and associated mechanisms) have begun to emerge. For example, with each class of material, an initial pulmonary response is induced that is mediated via the innate immune system and, in turn, drives an early inflammatory response. Similarly, an adaptive immune response is then triggered that appears to be responsible for the onset of systemic diseases/pathologies. Nevertheless, each of these four particulate classes is capable of inducing some unique pathologies; consequently, there are likely some innate/adaptive responses (and associated mechanisms) induced by each type of particulate that somehow also specifically differ. The purpose of this symposium is to bring together experts to discuss, utilizing new cutting-edge information obtained about the immunotoxicity of these materials, the uniqueness of the innate and adaptive immune responses to each of the different particulates. A final presentation will then review areas of commonality and uniqueness. Based on these presentations, the symposium will seek to build a consensus about particle immunotoxicology that will help accelerate research for all particles and improve cross fertilization of research.

Program Schedule (Continued)

Abstract #

#840	9:00	**Immune Responses to Different Classes of Inhaled Particulates: Unique vs. Shared Responses and Mechanisms.** *A. Holian*[1], and *S. Hirano*[2]. [1]CEHS, University of Montana, Missoula, MT; and [2]NanoTox Project, National Institute for Environmental Risk, Tsukuba, Japan.
	9:00	**Introduction.** S. Hirano. National Institute for Environmental Studies, Tsukuba, Japan.
#841	9:05	**Diverse Immune Effects of Silica and Mineral Silicates/Asbestos.** *T. Otsuki*, and S. Lee. Department of Hygiene, Kawasaki Medical School, Kurashiki, Japan.
#842	9:40	**Unique Aspects of the Immunotoxicity of Silicates.** *K. M. Pollard*. Department of Molecular and Experimental Medicine, The Scripps Research Institute, La Jolla, CA.
#843	10:15	**Influence of Source and Chemistry on Immune Effects by Ambient Particulate Matter.** *M. I. Gilmour*. US EPA, Research Triangle Park, NC.
#844	10:50	**Molecular Mechanisms of Particulate-Induced Pulmonary Inflammation: Intrinsic Adjuvant and Allergy.** *E. Kuroda*. WPI Immunology Frontier Research Center, Osaka University, Osaka, Japan.
#845	11:25	**Commonalities and Differences of the Distinct Particulates That Characterize Their Unique Properties in Both Stimulating Immunity and, Subsequently, Disease.** *A. Holian*. CEHS, University of Montana, Missoula, MT.

Tuesday Morning, March 24
9:00 AM to 11:45 AM
CC Ballroom 6C

Symposium Session: Local and Systemic Toxicity from Cobalt and Chromium-Containing Hip Prostheses

Advancing Clinical and Translational Toxicology

Jointly Provided by: *University of Arkansas for Medical Sciences College of Medicine and SOT Approved for AMA PRA Category 1 Credit™—See mobile app for details*

Chairperson(s): *Allister Vale, School of Biosciences and College of Medical and Dental Sciences, University of Birmingham, Birmingham, United Kingdom; and Jeffrey Brent, University of Colorado Denver, Denver, CO.*

Endorser(s):
Clinical and Translational Toxicology Specialty Section
Metals Specialty Section
Occupational and Public Health Specialty Section

Over 500,000 patients in the US have received a metal-on-metal hip prosthesis. Movement of loosened components in a failing prosthesis and friction between bearing surfaces can result in increased local and systemic metal concentrations, principally of cobalt and chromium. Metallic debris affects bone health through direct effects on bone cells and through indirect inflammatory signalling. These effects vary with the metal, its concentration, physical form, and valency. Cobalt and chromium localize at nuclear and perinuclear sites in osteoblasts, suggesting uptake through cell membrane transporters, and is modulated by P2 receptor blockade. Metallic debris induces a range of cellular responses by direct cytotoxicity mediated through activation of redox reactions or the substitution of other bivalent cations in biological pathways, and through cytokine induction that is potentiated by direct and indirect activation of inflammasome signaling. Clinical studies have demonstrated that cobalt causes cardiovascular, visual, auditory, and thyroid dysfunction; malnourished heavy drinkers, for example, develop cardiomyopathy. Eighteen patients with systemic toxicity in association with a metal-containing hip have been reported. The reported systemic features fell into three main categories: neuro-ocular toxicity [14 patients: peripheral

Abstract #

neuropathy (six cases), sensori-neural hearing loss (seven), cognitive decline (five), ocular toxicity (six)], cardiotoxicity (11 patients), and thyroid toxicity (nine patients). Currently, there is no evidence that chelation with any antidote will exert a beneficial therapeutic impact on clinical outcome in patients with health problems associated with cobalt-containing hip prostheses.

#846	9:00	**Local and Systemic Toxicity from Cobalt and Chromium-Containing Hip Prostheses.** *A. Vale*[1], M. Wilkinson[2], *J. Brent*[3], *S. Bradberry*[4], and *M. J. Kosnett*[3]. [1]School of Biosciences and College of Medical and Dental Sciences, University of Birmingham, Birmingham, United Kingdom; [2]Department of Human Metabolism, University of Sheffield, Sheffield, United Kingdom; [3]School of Medicine, University of Colorado, Aurora, CO; and [4]West Midlands Poisons Unit, City Hospital, Birmingham, United Kingdom.
	9:00	**Introduction.** A. Vale. University of Birmingham, Birmingham, United Kingdom.
#847	9:05	**Hip Prostheses: What Toxicologists Need to Know.** *A. Vale*. School of Biosciences and College of Medical and Dental Sciences, University of Birmingham, Birmingham, United Kingdom.
#848	9:30	**Adverse Local Tissue Responses to Metal.** M. Wilkinson. Department of Human Metabolism, University of Sheffield, Sheffield, United Kingdom. Sponsor: *A. Vale*.
#849	10:00	**Mechanisms of Cardiovascular, Neurological, and Thyroid Effects of Cobalt Toxicity.** *J. Brent*. School of Medicine, University of Colorado, Aurora, CO.
#850	10:30	**Systemic Toxicity following Insertion of a Cobalt- and Chromium-Containing Prosthesis: A Critical Review of Published Cases.** *S. Bradberry*. West Midlands Poisons Unit, City Hospital, Birmingham, United Kingdom.
#851	11:00	**Is There a Role for Chelating Agents in the Management of Adverse Health Effects in Patients with Cobalt- and Chromium-Containing Hip Prostheses?** *M. J. Kosnett*. School of Medicine, University of Colorado, Aurora, CO.
	11:30	**Panel Discussion/Q&A.**

Tuesday Morning, March 24
9:00 AM to 11:45 AM
CC Room 7

Workshop Session: Considering Pharmacokinetics As the Mechanistic Basis to Link Chemical Exposures to Adverse Outcome Pathways

Strategies for Exposure and Risk Assessments

Chairperson(s): *Stephen Edwards, US EPA, Research Triangle Park, NC; and Yumei C. Tan, US EPA, Durham, NC.*

Endorser(s):
Biological Modeling Specialty Section
Molecular and Systems Biology Specialty Section

The Adverse Outcome Pathway (AOP) framework guides the formal characterization of the series of key events starting with chemical perturbation of a molecular initiating event (MIE) and resulting in an adverse outcome relevant for regulatory decision-making. AOPs should be chemical agnostic to allow general use in interpreting high-throughput assays developed based on the MIE, but practical application of AOPs in risk assessment requires comparison between the concentration expected to result in an adverse outcome based on the extent of MIE stimulation and the biologically effective target tissue dose for a chemical. This requirement in turn speaks to the

Program Schedule (Continued)

Abstract #

critical need to consider absorption, distribution, metabolism, and excretion (ADME) of a chemical, which may render an otherwise toxic chemical inaccessible to molecular targets in AOPs. Considerations of ADME not only link biological responses to chemical exposure, but are essential when extrapolating *in vitro* assays to *in vivo* conditions and across species and lifestages. With the maturation of the AOP framework, this workshop seeks to open a dialogue within the Society on how to apply this same rigor to developing a framework that incorporates ADME events connecting environmental chemical exposure and AOP initiation. To provide the broadest array of perspectives on this problem, scientists from around the world have been invited to discuss toxicity pathways, adverse outcome pathways, pharmacokinetic modeling, and chemoinformatic tools. Following the presentations, there will be a discussion period to facilitate open discussion among workshop attendees on the state of the science in connecting ADME to AOP research. Participants should leave with a better appreciation of how ADME and AOPs together can improve toxicity predictions based on *in vitro* measurements. The overarching goal of this workshop is to enhance the use of the AOP framework in chemical-specific risk assessment by better integrating knowledge and data between ADME and AOPs.

#852	9:00	**Considering Pharmacokinetics As the Mechanistic Basis to Link Chemical Exposures to Adverse Outcome Pathways.** *S. Edwards*, and *Y. C. Tan*. US EPA, Research Triangle Park, NC.
	9:00	**Introduction.** S. Edwards. US EPA, Research Triangle Park, NC.
#853	9:05	**Toxicokinetic Aspects Contributing to Species Sensitivity.** K. Groh[1,2], and K. Schirmer[1,2,3]. [1]Eawag, Dübendorf, Switzerland; [2]ETH Zürich, Zürich, Switzerland; and [3]EPF Lausanne, Lausanne, Switzerland. Sponsor: *S. Edwards*.
#854	9:35	**The Role of Toxicokinetics and AOPs for the Zebrafish Embryo As a Predictive Model.** R. Altenburger, K. Goss, E. Küster, T. Luckenbach, and S. Scholz. Helmholtz Centre for Environmental Research-UFZ, Leipzig, Germany. Sponsor: *S. Edwards*.
#855	10:05	**Translation of *In Vitro* Concentration-Response Relationships of Key Events to Human *In Vivo*.** G. D. Loizou. Mathematical Sciences Unit, Health & Safety Laboratory, Buxton, United Kingdom. Sponsor: *C. Tan*.
#856	10:35	**Cheminformatic Tools in Support of Pharmacokinetics and ADME Profiling.** M. R. Goldsmith, and D. Chang. Chemical Computing Group, Montreal, QC, Canada. Sponsor: *S. Edwards*.
#857	11:05	**An "ADME Module" in the Adverse Outcome Pathway Knowledgebase.** *Y. C. Tan*[1], *M. Phillips*[2], *H. A. El-Masri*[1], and *S. Edwards*[1]. [1]US EPA, Durham, NC; and [2]US EPA, Duluth, MN.
	11:30	**Panel Discussion/Q&A.** S. Edwards. US EPA, Research Triangle Park, NC.

Abstract #

Tuesday Morning, March 24
9:00 AM to 11:45 AM
CC Ballroom 6F

Workshop Session: Regulatory Neurodevelopmental Testing: New Guiding Principles for Harmonization of Data Collection and Analysis

Approaches for Protecting Vulnerable Populations

Chairperson(s): *Abby Li, Exponent, San Francisco, CA; and Wayne Bowers, Health Canada, Ottawa, ON, Canada.*

Endorser(s):
Neurotoxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section
Reproductive and Developmental Toxicology Specialty Section

There is increasing concern worldwide about the potential for chemicals to affect neurodevelopment in children. In 2012, OECD published the extended one-generation reproductive toxicity guideline 443, which will generate new auditory startle, motor activity, and morphometric data. Since these endpoints will have increased regulatory significance, their conduct and interpretation requires increased attention. New evaluations of older DNT studies conducted according to US EPA guidelines (including learning and memory) in global regions are also playing a larger role in children's health risk assessment. Yet, data from the same study has resulted in different risk assessments in different countries, leading to potential trade barriers. In addition, data are sometimes incompletely reported or analyzed, adding to inconsistencies in evaluations. These issues also apply to juvenile and pre-postnatal studies conducted for pharmaceuticals. Although various regulatory bodies have different risk management frameworks, this workshop will provide an opportunity to develop more harmonized scientific approaches for evaluating DNT data. One major reason for varying regulatory decisions based on the same data is expectations for variability of DNT data. Speakers from industry, academia, and government with regulatory neurotoxicology expertise will discuss inherent and controllable variability, suggest guiding principles for assessment of DNT data, and selection of benchmark response levels that take into account different variability. Speakers will address shortcomings in study conduct, data reporting, and analysis that are encountered by regulatory authorities, and will propose approaches to harmonize evaluation of data using different DNT endpoints as case studies. The workshop will end with discussion led by two discussants from industry and government. This session is especially timely as laboratories in different world areas are developing new capabilities to conduct the OECD 443 guideline and regulatory bodies place new emphasis on evaluation of DNT data for children's health risk assessments.

#858	9:00	**Regulatory Neurodevelopmental Testing: New Guiding Principles for Harmonization of Data Collection and Analysis.** *A. Li*[1], and W. Bowers[2]. [1]Exponent, San Francisco, CA; and [2]Health Canada, Ottawa, ON, Canada.
	9:00	**Introduction.** A. Hofstra. Syngenta Canada Inc, Guelph, ON, Canada.
#859	9:05	**Evaluating Data Variability for Neurobehavioral Measure: How Much Is Too Much?** *L. P. Sheets*. Bayer CropScience, Research Triangle Park, NC.
#860	9:30	**New Insights into Analysis of Highly Variable Data: Motor Activity As Case Study.** W. Bowers[1,2]. [1]Health Canada, Ottawa, ON, Canada; and [2]Carleton University, Ottawa, ON, Canada. Sponsor: *A. Li*.
#861	9:55	**Hypothesis-Driven Testing and Analysis: Auditory Startle As Case Study.** *K. C. Raffaele*[1], E. Lau[2], *T. Vidmar*[3], and *A. Li*[2]. [1]OSWER, US EPA, Washington, DC; [2]Exponent, San Francisco, CA; and [3]BioSTAT, Kalamazoo, MI.

TUESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#862 10:20 **From SOPs to Reports to Evaluations: Learning and Memory As Case Study of How Missing Data and Methods Impact Evaluation.** *V. C. Moser*[1], and *A. Hofstra*[2]. [1]NHEERL/ORD, US EPA, Research Triangle Park, NC; and [2]Syngenta Canada Inc, Guelph, ON, Canada.

#863 10:45 **Weight of Evidence (WOE) and Benchmark Dose (BMD) Analysis: Brain Morphometry and Startle Behavior As Examples.** *A. Li*[1], *R. H. Garman*[2], W. Kaufmann[3], and *B. Bolon*[4]. [1]Exponent, San Francisco, CA; [2]Consultants in Veterinary Pathology, Murrysville, PA; [3]Global Pathology & Reproductive Toxicology, Merck KGaA, Darmstadt, Germany; and [4]The Ohio State University, College of Veterinary Medicine, Columbus, OH.

#864 11:10 **Discussion.** F. Bailey[1], and *A. Hofstra*[2]. [1]Pest Management Regulatory Agency, Health Canada, Ottawa, ON, Canada; and [2]Syngenta Canada Inc., Guelph, ON, Canada.

Tuesday Morning, March 24
9:00 AM to 11:45 AM
CC Room 1

Workshop Session: The EDSP Screening Battery: A Work in Progress for Prioritizing Compounds for Quantitative Risk Assessment

Strategies for Exposure and Risk Assessments

Chairperson(s): *Bethany R. Hannas, Toxicology & Environmental Research & Consulting, The Dow Chemical Company, Midland, MI; and Cynthia V. Rider, NTP/NIEHS, Research Triangle Park, NC.*

Endorser(s):
Regulatory and Safety Evaluation Specialty Section
Reproductive and Developmental Toxicology Specialty Section
Risk Assessment Specialty Section

The US Environmental Protection Agency (US EPA) Endocrine Disruptor Screening Program (EDSP) has been evolving since its inception in 1998. The two-tiered program was initiated in response to a mandate by Congress to investigate the potential for pesticides and drinking water contaminants to have adverse effects on endocrine signaling. The collection of 11 assays included in EDSP Tier 1 were compiled to provide a standardized battery by which compounds could be screened for the potential to interact with estrogen, androgen, or thyroid (EAT) hormone signaling pathways. Compounds showing potential EAT activity in the Tier 1 battery are anticipated to undergo further, more comprehensive testing in EDSP Tier 2, which will provide dose-response data on adverse endpoints for use in quantitative risk assessment. Since 2009, when the US EPA issued the first set of testing orders for Tier 1 screening, 52 compounds have been screened through this battery of assays. Many challenges were encountered during this initial testing, including meeting assay performance criteria, interpreting data, and allocating time and resources for such a large-scale screening battery. One of the most significant and challenging questions that transpired following this first attempt at EDSP Tier 1 testing was, "Where do we go from here?" Addressing this question will be paramount in effectively implementing this program. Issues related to the dynamic process of optimizing the screening portion of the EDSP include challenges associated with Tier 1 screening, proposed approaches for streamlining the screening program, the future of the program as EDSP21, endocrine screening in nonmammalian species, and lingering questions on the aptness of the Tier 1 battery. Discussions focused on these topics are timely, with impending Tier 1 test orders on the horizon for List 2 compounds and upcoming decisions regarding the future for Tier 1 positive compounds as relates to moving into Tier 2 testing.

Abstract #

9:00 **Introduction.** B. R. Hannas. The Dow Chemical Company, Midland, MI.

#865 9:00 **The EDSP Screening Battery: A Work in Progress for Prioritizing Compounds for Quantitative Risk Assessment.** *B. R. Hannas*[1], and *C. V. Rider*[2]. [1]The Dow Chemical Company, Midland, MI; and [2]NTP, NIEHS, Research Triangle Park, NC.

#866 9:10 **Challenges of Conducting and Interpreting Tier 1 EDSP Assays.** *S. Marty*. The Dow Chemical Company, Midland, MI.

#867 9:38 **A Two-Tiered-Testing Decision Tree for Assays in the US EPA-EDSP Screening Battery: Using 15 Years of Experience to Improve Screening and Testing for Endocrine Active Chemicals.** *L. E. Gray*[1], and G. T. Ankley[2]. [1]NHEERL, US EPA, Research Triangle Park, NC; and [2]NHEERL, US EPA, Duluth, MN.

#868 10:06 **Use of Computational Toxicology for Integrated Bioactivity-Exposure Prioritization of the EDSP Chemical Universe.** P. Browne[1], *R. Judson*[2], A. Dixon[1], *N. Kleinstreuer*[4], *W. Casey*[3], D. R. Bergfelt[1], *T. D. Green*[1], R. Kent[1], S. G. Lynn[1], *L. Touart*[1], and *R. S. Thomas*[2]. [1]OCSPP, US EPA, Washington, DC; [2]ORD, US EPA, Research Triangle Park, NC; [3]ICEATM, NTP, Research Triangle Park, NC; and [4]ILS/NICEATM, Research Triangle Park, NC.

#869 10:34 **Tier 1 Testing: Big Hopes for a Small Target.** *G. A. LeBlanc*. Toxicology Program, Department of Biological Sciences, North Carolina State University, Raleigh, NC.

#870 11:02 **Species Extrapolations for EDSP—Are Species Adequately Evaluated in the EDSP.** G. Van Der Kraak[1], D. MacLatchy[2], and A. Lister[2]. [1]Integrative Biology, University of Guelph, Guelph, ON, Canada; and [2]Biology, Wilfrid Laurier University, Waterloo, ON, Canada. Sponsor: *B. Hannas*.

11:30 **Panel Discussion/Q&A.**

Tuesday Morning, March 24
9:00 AM to 11:45 AM
CC Ballroom 6E

Workshop Session: Understanding and Communicating Uncertainty in Hazard Assessment and Dose Response

Strategies for Exposure and Risk Assessments

Chairperson(s): *Nancy B. Beck, Regulatory and Technical Affairs, American Chemistry Council, Washington, DC; and Lynn H. Pottenger, The Dow Chemical Company, Midland, MI.*

Endorser(s):
Occupational and Public Health Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Hazard and risk assessment programs generally provide a single estimate as a final work product. These point estimates of human health hazard/risk associated with environmental exposures are regularly used by risk managers in regulatory decision-making in setting standards, determining emissions controls, setting occupational standards, and mitigating exposures to pollutants both nationally and internationally. Methodologies used to derive these point estimates vary, and many rely on upper bound or worst-case assumptions. Additionally, understanding of the components of these assessments, including the attendant uncertainty surrounding the point estimates and how this uncertainty impacts the estimates, is often limited, particularly in the summary information that is provided. Thus risk assessors, risk managers, and stakeholders are often challenged to understand all of the assumptions and uncertainties embedded in a hazard characterization. An improved approach to communication can help to fully convey the plausible range of risk estimates to risk managers. A better understanding of the uncertainties in these assessments will allow users a better sense of the overall confidence with which a risk value can be used and whether there is a proper balance between being protective and being predictive.

TUESDAY

Program Schedule (Continued)

Abstract #

This workshop session will explore different approaches and visual tools that have recently been developed to better communicate the uncertainties and confidence within hazard assessments, such as IRIS. With each presented approach, specific examples will be provided so that we can move past discussion of the theoretical implementation and examine exactly what the approach would look like when used. In addition, US EPA will also be providing an update on the changes they have been making to help improve the communication of their findings within the IRIS program.

#871	9:00	**Understanding and Communicating Uncertainty in Hazard Assessment and Dose Response.** *N. B. Beck*[1], and *L. H. Pottenger*[2]. [1]Regulatory and Technical Affairs, American Chemistry Council, Washington, DC; and [2]The Dow Chemical Company, Midland, MI.
	9:00	**Introduction.** N. B. Beck. American Chemistry Council, Washington, DC.
#872	9:05	**Setting the Stage in Addressing Uncertainty, Variability, and Sensitivity.** *B. Meek*. University of Ottawa, Ottawa, ON, Canada.
#873	9:34	**Unpacking Toxicity Assessments to Understand and Improve Confidence.** R. L. Grant[2], *S. L. Santos*[3], *M. L. Dourson*[4], *S. Shirley*[2], *N. K. Erraguntla*[2], *R. J. Lewis*[5], and *N. B. Beck*[1]. [1]Regulatory and Technical Affairs, American Chemistry Council, Washington, DC; [2]Texas Commission on Environmental Quality, Austin, TX; [3]FOCUS GROUP Risk Communication and Environmental Management Consultants, Medford, MA; [4]Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH; and [5]ExxonMobil Biomedical Sciences, Inc, Annandale, NJ.
#874	10:03	**Presenting Uncertainty in the Context of Biological Monitoring and Exposure Information.** *W. H. Farland*[1], *N. B. Beck*[2], *J. S. LaKind*[3], P. Nance[4], and *T. Simon*[5]. [1]Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO; [2]Regulatory and Technical Affairs, American Chemistry Council, Washington, DC; [3]LaKind Associates, Catonsville, MD; [4]Toxicology Excellence for Risk Assessment, Cincinnati, OH; and [5]Ted Simon, LLC, Winston, GA.
#875	10:32	**Improving Transparency and Prioritization of Data Needs in Hazard Value Development.** C. R. Kirman[1], *G. Gray*[2], and *B. Meek*[3]. [1]Summit Toxicology LLP, Orange, OH; [2]George Washington University, Washington, DC; and [3]University of Ottawa, Ottawa, ON, Canada.
#876	11:01	**Characterizing Uncertainty in Human Health Risk Assessment: An Agency Perspective.** *L. Flowers*, *V. J. Cogliano*, *W. A. Chiu*, K. Hogan, D. Bussard, and *N. Birchfield*. National Center for Environmental Assessment (NCEA), US Environmental Protection Agency, Crystal City, VA.
#877	11:30	**Facilitated Discussion on "Understanding and Communicating Uncertainty in Hazard Assessment and Dose Response"** *L. H. Pottenger*. The Dow Chemical Company, Midland, MI.

Abstract #

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Pharmaceutical Safety: Models and Methods

Safety Assessment Approaches for Product Development

Chairperson(s): *Chidozie J. Amuzie, Pathology, MPI Research, Mattawan, MI.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#878	**Poster Board Number ..... 101** **A Smart Combination of Screening Assays for Assessing Drug-Induced Liver Injury in Humans.** S. Schadt, *F. Boess*, A. Brink, S. Kustermann, S. Simon, C. McGinnis, M. Ullah, K. Youdim, R. Alvarez-Sanchez, *T. Singer*, *A. B. Roth*, F. Schuler, and C. Funk. Roche Innovation Center Basel, pRED, Pharmaceutical Sciences, F. Hoffmann-La Roche Ltd., Basel, Switzerland.
#879	**Poster Board Number ..... 102** **Characterization of a Resazurin/Resorufin Assay for Reactive Acyl Glucuronides with Dicumarol and Reactive Aldehyde Trapping Agents.** *M. Mcmillian*[1], F. Xu[2], H. Lim[2], N. Hari Singh[1], and A. Ananthanarayanan[1]. [1]InvitroCue, Singapore, Singapore; and [2]Pharmacokinetics, Dynamics & Metabolism, Janssen PRD, Spring House, PA.
#880	**Poster Board Number ..... 103** **Evaluation of an *In Vitro* Cytotoxicity Assay in FBS-Free Medium to Select Safer Compounds.** *S. Kakiuchi-Kiyota*[1], *R. T. Naven*[1], D. DeSilver[1], K. Riccardi[2], and *N. Greene*[1]. [1]Compound Safety Prediction, Pfizer, Groton, CT; and [2]Pharmacokinetics, Dynamics and Metabolism, Pfizer, Groton, CT.
#881	**Poster Board Number ..... 104** **Nrf2 Stress Response, a Suitable Biomarker for Oxidative Stress and Reactive Metabolites Formation?** H. Gerets, K. Tilmant, F. Atienzar, and *J. Valentin*. iTOX, UCB Pharma Sprl, Braine l'Alleud, Belgium.
#882	**Poster Board Number ..... 105** **An *In Vitro* Assay Panel to Predict Drug-Induced Mitochondrial Toxicity.** K. Jambunathan, J. Miller, and *J. C. Mirsalis*. Biosciences Division, SRI International, Menlo Park, CA.
#883	**Poster Board Number ..... 106** **A Novel Cell-Based Assay System for Risk Assessment of Drug-Induced Liver Injury Considering Immune- and Inflammation-Related Gene Expression.** *S. Oda*[1], K. Matsuo[2], M. Nakajima[2], A. Nakajima[1], and *T. Yokoi*[1]. [1]Drug Safety Sciences, Nagoya University Graduate School of Medicine, Nagoya, Japan; and [2]Drug Metabolism and Toxicology, Kanazawa University, Kanazawa, Japan.
#884	**Poster Board Number ..... 107** **Mitochondrial Deregulation: A Potential Explanation for Drug-Induced Organ Toxicity.** K. Tilmant[1], H. Gerets[1], P. De Ron[1], C. Bento-Pereira[1,2], F. Atienzar[1], and *J. Valentin*[1]. [1]iTOX - NCD, UCB Pharma Sprl, Braine l'Alleud, Belgium; and [2]Pharmacology, University of Bath, Bath, United Kingdom.

TUESDAY

Program Schedule (Continued)

Abstract #

#885 **Poster Board Number 108**
Evaluation of SEAware™ Computational Approach to Predict Toxicological Liabilities of Small Molecules. *Y. Zhong*, *K. Ford*, and *D. Diaz*. Safety Assessment, Genentech, South San Francisco, CA.

#886 **Poster Board Number 109**
Increased Mitochondrial ROS Formation by Acetaminophen Is Associated with Disrupted Expression of Mitochondrial Electron Transport Chain-Related Genes in Human Hepatic Cells. J. Jiang, J. Briede, D. Jennen, A. Van Summeren, K. Brauers, J. Kleinjans, and T. M. de Kok. Toxicogenomics, Maastricht University, Maastricht, Netherlands. Sponsor: *H. van Loveren*.

#887 **Poster Board Number 110**
Are Variable Changes in Acylcarnitine Profiles Diagnostic of Effects on Mitochondrial Functions? J. L. Price[1], P. Virdi[2], S. A. Stryker[1], and *D. Robertson*[1]. [1]Discovery Toxicology, Bristol-Myers Squibb, Princeton, NJ; and [2]Bioanalytical and Discovery Analytical Sciences, Pharmaceutical Clinical Optimization Department, Bristol-Myers Squibb, Princeton, NJ.

#888 **Poster Board Number 111**
Diversity Outbred Mice Indicate Idiosyncratic Drug-Induced Liver Injury Potential. L. Lyn-Cook[1], D. M. Gatti[2], G. A. Churchill[2], and *A. Harrill*[1]. [1]University of Arkansas for Medical Sciences, Little Rock, AR; and [2]The Jackson Laboratory, Bar Harbor, ME.

#889 **Poster Board Number 112**
Test for Learning Ability in Juvenile Cynomolgus Monkeys Toxicity Studies. C. Rose, C. M. Luetjens, S. Grote-Wessels, and B. Niggemann. Covance Laboratories GmbH, Muenster, Germany. Sponsor: *G. Weinbauer*.

#890 **Poster Board Number 113**
Cellular Impacts of Lysosomotropism. N. Lin, A. Cheng, *B. A. Jessen*, R. Abraham, and *S. Lu*. Pfizer Inc, San Diego, CA.

#891 **Poster Board Number 114**
Histaminergic Reactions: Lower Susceptibility of Mice vs. Rats and Modification by the Infusion Rate. U. Wirnitzer[1], and H. van Wijk[2]. [1]Toxicology, Bayer HealthCare AG, Wuppertal, Germany; and [2]Toxicology, Covance, Harrogate, United Kingdom. Sponsor: *H. Ellinger-Ziegelbauer*.

#892 **Poster Board Number 115**
Evaluation of Spherical Liver Microtissues for *In Vitro* Cytotoxicity Assessment of Antibody-Drug Conjugates. J. Vogt, M. Tseng, *W. R. Proctor*, *D. L. Misner*, K. Achilles-Poon, and M. Schutten. Safety Assessment, Genentech, Inc., South San Francisco, CA.

#893 **Poster Board Number 116**
Background Data on Functional Observational Battery in the Common Marmoset. R. Inoue[1], A. Fujiwara[2], A. Kazue[2], I. Masahiko[2], C. Nishime[1], E. Nishinaka[1], *H. Tsutsumi*[1], and S. Shinichi[2]. [1]Testing Department, Central Institute for Experimental Animals, Kawasaki, Japan; and [2]Research Administration Department, Ina Research Inc., Ina, Japan.

Abstract #

#894 **Poster Board Number 117**
The Influence of Body Weight Changes on Organ Weight Variations in GLP Safety Assessment Studies in Rats. *C. J. Amuzie*, K. Whittington, L. McNally, C. Dykstra, P. Perrin, and S. Denham. Drug Safety, MPI Research, Mattawan, MI.

#895 **Poster Board Number 118**
Mitigation of Infusion Reactions for Cell-Based Therapies. *J. L. Lynch*[1], R. Bhatia[1], K. Brosnan[1], K. Lilova[1], *D. L. Newcomb*[2], *S. M. Jackman*[2], and *C. Sachs*[1]. [1]Biologics Center of Excellence, Janssen R & D, Spring House, PA; and [2]Charles River Laboratories, Horsham, PA.

#896 **Poster Board Number 119**
Microscopic Changes in Various Organs Due to Restricted Feeding in Wistar Rats. *V. Goyal*, *S. Pandey*, S. Kakade, U. Bijegaonkar, and R. Nirogi. Discovery Toxicology, Suven Life Science Ltd, Hyderabad, India.

#897 **Poster Board Number 120**
Use of Instant Glucose Measurements for Detection of Acute Hypoglycaemia in Rats. V. Golozoubova, J. Tovborg Jensen, J. Løgsted, and *A. Makin*. CiToxLAB, Lille Skensved, Denmark.

#898 **Poster Board Number 121**
Use of Histopathology, MRI Images, and Plasma Biomarkers to Identify and Monitor Drug-Induced Slow Myofiber Selective Myopathy. H. Zhang[1], H. Andersson[1], A. W. Bidar[2], C. Johansson[1], M. Wigenborg[1], L. Brändén[1], J. Stende[1], C. Karlsson[1], S. Bickerton[1], E. Bratt[3], *B. Dahl*[1], and Å. Ström[1]. [1]DSM, AstraZeneca, Mölndal, Sweden; [2]PHB Imaging, Astrazeneca, Mölndal, Sweden; and [3]Medicinal Chemistry, AstraZeneca, Mölndal, Sweden.

#899 **Poster Board Number 122**
Developing a Heat Map for CNS Profiling Based on the Irwin Test. P. De Ron, F. Martin, A. Nogueira da Costa, and *J. Valentin*. UCB BioPharma SPRL, Braine l'Alleud, Belgium.

#900 **Poster Board Number 123**
Effects of Different Vehicles Used in Preclinical Studies on the Neurobehavioral Profile and General Activity of Sprague-Dawley Rats. P. De Ron, M. Berwaer, W. Brione, A. Delaunois, and *J. Valentin*. UCB BioPharma SPRL, Braine l'Alleud, Belgium.

#901 **Poster Board Number 124**
Considerations for the Inclusion of Polysorbates As Surfactants in Pediatric Intravenous Drug Products. H. Fikree, *L. A. Haighton*, and *J. W. Card*. Intertek, Mississauga, ON, Canada.

#902 **Poster Board Number 125**
The Differential Effect of Nembutal and Ketamine/Xylazine Anesthetic on Dofetilide-Induced QT Interval Prolongation. L. Neves, H. Wang, O. Tiniakova, J. Huang, *P. B. Senese*, and M. R. Gralinski. CorDynamics, Chicago, IL.

Program Schedule (Continued)

Abstract #

#903 **Poster Board Number 126**
Development of the Methodology for Neurobehavioral, Cardiovascular, and Respiratory (NCR) Assessments Using Oral Administration of Amphetamine and Acepromazine to Conscious Beagle Dogs. *C. M. Kelly*, A. Lelkes, B. Kalvin, C. Dziak, J. Sentz, *J. Sheehan*, M. Miyamoto, T. Ziegelhoffer, and *R. M. Parker*. DART, Huntingdon Life Sciences, East Millstone, NJ.

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Systems Biology and Toxicology

Chairperson(s): *Nilson A. Assunção, Chemistry, Unifesp, Diadema, Brazil; and Weida Tong, US FDA/NCTR, Jefferson, AR.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#904 **Poster Board Number 129**
RNA-Seq and Microarray Gene Expression Vie for Toxicogenomics Superiority. *W. Tong*[1], J. Xu[1], *P. R. Bushel*[2], *S. S. Auerbach*[2], and *C. Wang*[3]. [1]FDA/NCTR, Jefferson, AR; [2]NIEHS, Research Triangle Park, NC; and [3]Loma Linda University, Loma Linda, CA.

#905 **Poster Board Number 130**
RAGE Null Mice Exposed to Cigarette Smoke Demonstrate Attenuated Oxidative and ER Stress Responses in Lung Alveolar Macrophages. *D. Delker*[1], T. Huecksteadt[1], Y. Zhang[2], K. Sanders[1], and J. Hoidal[1]. [1]University of Utah, Salt Lake City, UT; and [2]University of Kansas, Kansas City, KS.

#906 **Poster Board Number 131**
Integrating Differential Gene Expression with Hepatic, Serum, and Urinary Metabolomes Identifies TCDD-Elicited Interactions between Disrupted Metabolic Pathways. *R. Nault*[1,2], *K. A. Fader*[1,2], D. A. Ammendolia[2], S. Y. Lunt[3], and *T. R. Zacharewski*[1,2]. [1]Center for Integrative Toxicology, Michigan State University, East Lansing, MI; [2]Biochemistry & Molecular Biology, Michigan State University, East Lansing, MI; and [3]Physiology, Michigan State University, East Lansing, MI.

#907 **Poster Board Number 132**
Mathematical Modelling of the Mevalonate Pathway As a Tool in the Development of a Quantitative Adverse Outcome Pathway for Cholesterol Biosynthesis Inhibitors. F. Pool[1], *R. Currie*[2], *D. Salazar*[2], P. Sweby[1], and M. Tindall[1]. [1]Department of Mathematics and Statistics, University of Reading, Reading, United Kingdom; and [2]Syngenta Ltd, Jealotts Hill, United Kingdom.

#908 **Poster Board Number 133**
Integrative Data Mining of High-Throughput *In Vitro* Screens, *In Vivo* Data, and Disease Information to Identify Adverse Outcome Pathway (AOP) Signatures. N. Oki[1,2], and *S. Edwards*[2]. [1]Oak Ridge Institute for Science and Education, Research Triangle Park, NC; and [2]National Health and Environmental Effects Research Laboratory, US EPA, Research Triangle Park, NC.

Abstract #

#909 **Poster Board Number 134**
Formaldehyde-Associated Changes in Gene and Cytokine Expression Profiles within Nonhuman Primate Nose and Circulating Blood. S. K. Miller[1], *J. E. Rager*[1], *B. C. Moeller*[2], *D. Kracko*[2], *M. Doyle-Eisele*[2], *J. A. Swenberg*[1,2,3], and *R. Fry*[1,3,4]. [1]Environmental Sciences and Engineering, UNC, Chapel Hill, NC; [2]Lovelace Respiratory Research Institute, Albuquerque, NM; [3]Curriculum in Toxicology, UNC, Chapel Hill, NC; and [4]Center for Environmental Health and Susceptibility, UNC, Chapel Hill, NC.

#910 **Poster Board Number 135**
Live Cell Imaging-Based Pathway of Toxicity Reporter Allows Identification of Chemical Specific Pathways Activation. S. Wink, S. Hiemstra, S. Huppelschoten, and *B. van de Water*. Division of Toxicology, LACDR, Leiden, Netherlands.

#911 **Poster Board Number 136**
Validation of a Genomics-Based Hypothetical Adverse Outcome Pathway: 2,4-Dinitrotoluene Perturbs PPAR Signaling Thus Impairing Energy Metabolism and Exercise Endurance. *M. S. Wilbanks*[1], K. Gust[1], S. Atwa[2], I. Sunesara[3], *D. Johnson*[4], C. Y. Ang[5], *S. A. Meyer*[2], and E. J. Perkins[1]. [1]Environmental Laboratory, US Army, Engineer Research & Development Center, Vicksburg, MS; [2]Toxicology, University of Louisiana at Monroe, Monroe, LA; [3]Biostatistics & Bioinformatics, University of Mississippi Medical Center, Jackson, MS; [4]Conestoga-Rovers & Associates, Dallas, TX; and [5]Badger Technical Services, San Antonio, TX.

#912 **Poster Board Number 137**
Sex-Dependent Metabolome Changes Depending on Age and Reproductive Cycle in Wistar Rats. G. Montoya[1], V. Strauss[1], H. Kamp[1], E. Fabian[1], M. Herold[2], G. Krennrich[3], R. Looser[2], W. Mellert[1], E. Peter[2], T. Walk[2], and *B. van Ravenzwaay*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany; [2]Scientific Computing, BASF SE, Ludwigshafen am Rhein, Germany; and [3]metanomics GmbH, Berlin, Germany.

#913 **Poster Board Number 138**
Strain-Differences in the Proteome of Dioxin-Sensitive and -Resistant Mice Treated with 2,3,7,8-Tetrabromodibenzo-*p*-dioxin. T. Nguyen[1], M. Lauan[1], J. Yoo[1], M. Iida[2], T. Agusa[1], *E. Kim*[3], T. Miyazaki[4], M. Nose[5], and *H. Iwata*[1]. [1]Center for Marine Environmental Studies, Ehime University, Matsuyama, Japan; [2]Kyushu Institute of Technology, Iizuka, Japan; [3]Department of Life and Nanopharmaceutical Science, Kyung Hee University, Seoul, Republic of Korea; [4]Gifu University Hospital, Gifu, Japan; and [5]Tohoku University, Sendai, Japan.

#914 **Poster Board Number 139**
The Role of the Intestine in TCDD-Mediated Steatohepatitis in C57BL/6 Mice. *K. A. Fader*[1,2], *R. Nault*[1,2], D. A. Ammendolia[1], *R. Crawford*[2,3], *N. E. Kaminski*[2,3], L. R. McCabe[2,4], and *T. R. Zacharewski*[1,2]. [1]Biochemistry & Molecular Biology, Michigan State University, East Lansing, MI; [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI; [3]Pharmacology & Toxicology, Michigan State University, East Lansing, MI; and [4]Physiology, Michigan State University, East Lansing, MI.

TUESDAY

Program Schedule (Continued)

Abstract #

#915 **Poster Board Number 140**
Arsenic Causes Dysregulation of the AAA+ Chaperone p97. *J. Tillotson*, K. Jung, *D. D. Zhang*, and E. Chapman. College of Pharmacy, University of Arizona, Tucson, AZ.

#916 **Poster Board Number 141**
Systems Toxicology Analysis of Cardiovascular and Respiratory Endpoints from ApoE-/- Mice Showed Similar Effects after Switching to a Candidate-Modified Risk Tobacco Product, THS 2.2, or to Smoking Cessation. H. De Leon[1], B. Phillips[2], M. Cabanski[1], S. Boue[1], G. Vuillaume[1], F. Martin[1], P. Leroy[1], E. Veljkovic[1], *A. Hayes*[3], M. Peitsch[1], and J. Hoeng[1]. [1]Biological Systems Research, Philip Morris International, Neuchatel, Switzerland; [2]Research Laboratories, Philip Morris International, Singapore, Singapore; and [3]Spherix Consulting, Rockville, MD.

#917 **Poster Board Number 142**
Quantitative Metabolomics Informs a Systems Biological Approach to Characterize Toxicity in Zebrafish Larvae. *S. Huang*, *J. P. Benskin*, B. Chandramoulie, and *J. R. Cosgrove*. Axys Analytical Services Ltd., Sidney, BC, Canada.

#918 **Poster Board Number 143**
Oral Administration of *Archachatina marginata* Hemolymph Depresses Reactive Oxygen Species Scavenging Potentials in Normotensive Wistar Rat. A. B. Ojekale, U. Agbafor, and *A. D. Wusu*. Biochemistry, Lagos State University, Lagos, Nigeria.

#919 **Poster Board Number 144**
Arsenic Exposure Affects Muscle Extracellular Matrix Composition and Inhibits Muscle Regeneration after Injury. C. Zhang[1], R. Ferrari[1], E. Brown[1], K. Stearns[1], *A. Barchowsky*[2], and F. Ambrosio[1]. [1]Physical Medicine and Rehabilitation, University of Pittsburgh, Pittsburgh, PA; and [2]Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA.

#920 **Poster Board Number 145**
Chemoproteomic Profiling of Environmental Electrophiles Reveals Toxicity through Altered Cellular Metabolism. D. Medina-Cleghorn, A. M. Heslin, and D. K. Nomura. Nutritional Science and Toxicology, UC Berkeley, San Francisco, CA. Sponsor: *M. Smith*.

#921 **Poster Board Number 146**
What Is Normal in Metabolomics? *B. van Ravenzwaay*[1,2], G. Krennrich[1], E. Peter[2], *H. Kamp*[1], T. Ramirez[1], G. Montoya[1], V. Strauss[1], E. Fabian[1], M. Herold[2], A. Strigun[2], W. Mellert[1], M. Spitzer[2], and T. Walk[2]. [1]Toxicology, BASF SE, Ludwigshafen am Rhein, Germany; and [2]metanomics GmbH, Berlin, Germany.

#922 **Poster Board Number 147**
A Unifying Approach to Annotation of Biological Activities by Transcription Factor Profiling. S. S. Makarov[1], M. Moeser[1], L. Medvedeva[1], E. Martsen[1], A. Granick[1], L. Raines[1], M. Zeng[1], *K. Houck*[2], and *A. Medvedev*[1]. [1]Attagene Inc, Research Triangle Park, NC; and [2]US Environmental Protection Agency, Research Triangle Park, NC.

Abstract #

#923 **Poster Board Number 148**
Systems Biology Analysis of the Biological Impact of Harmful/Potentially Harmful Constituents of Tobacco Smoke in Endothelial Cells. I. Gonzalez Suarez[1], D. Marescotti[1], S. Acali[1], S. Johne[1], E. Guedj[1], R. Dulize[1], K. Baumer[1], D. Peric[1], F. Martin[1], N. Ivanov[1], S. Frentzel[1], C. Mathis[1], *A. Hayes*[2], J. Hoeng[1], and M. Peitsch[1]. [1]Philip Morris International R&D, Neuchatel, Switzerland; and [2]Spherix Consulting, Rockville, MD.

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Chairperson(s): Monika Maier, Evonki Industries AG, Hanau, Germany.

***Displayed:** 9:00 AM–12:30 PM*

***Author-Attended:** 9:00 AM–11:00 AM*

#924 **Poster Board Number 151**
Inactivation of *Fusarium* by Neutral Electrolyzed Oxidizing Water in Tomato Seeds. M. Chavez-Bautista[1], C. F. Sandoval-Coronado[2], J. A. Torres-Castillo[3], A. Mendez-Albores[4], and *A. G. Marroquin-Cardona*[1]. [1]Faculty of Veterinary Medicine, Universidad Autonoma de Nuevo Leon, General Escobedo, Mexico; [2]Faculty of Biological Sciences, Universidad Autonoma de Nuevo Leon, San Nicolas de los Garza, Mexico; [3]Institute of Applied Ecology, Universidad Autonoma de Tamaulipas, Ciudad Victoria, Mexico; and [4]Facultad de Estudios Superiores, Universidad Nacional Autonoma de Mexico, Cuautitlan, Mexico.

#925 **Poster Board Number 152**
Effects of Neutral Electrolyzed Oxidizing Water on *Aspergillus* Inactivation in Tomato Seeds. *A. G. Marroquin-Cardona*[1], M. Chavez-Bautista[1], C. F. Sandoval-Coronado[2], J. A. Torres-Castillo[3], and A. Mendez-Albores[4]. [1]Faculty of Veterinary Medicine, Universidad Autonoma de Nuevo Leon, General Escobedo, Mexico; [2]Faculty of Biological Sciences, Universidad Autonoma de Nuevo Leon, San Nicolas de los Garza, Mexico; [3]Institute of Applied Ecology, Universidad Autonoma de Tamaulipas, Ciudad Victoria, Mexico; and [4]Facultad de Estudios Superiores, Universidad Nacional Autonoma de Mexico, Cuatitlan, Mexico.

#926 **Poster Board Number 153**
Development of a Zearalenone Entersorbent to Mitigate Toxin Exposures from the Diet. C. R. Maki, *S. Elmore*, *A. A. Romoser*, and *T. D. Phillips*. College of Veterinary Medicine and Biomedical Sciences, Texas A&M, College Station, TX.

#927 **Poster Board Number 154**
Critical Control Point-Based Reduction of Deoxynivalenol and Zearalenone in Stored Adlay (*Coix lachryma-jobi* L.) Grains. J. Kim[1], T. An[2], H. Choi[1], Y. Ahn[2], and *Y. Moon*[1]. [1]Laboratory of Mucosal Exposome and Biomodulation, Department of Biomedical Sciences, Immunoregulatory Therapeutics Group in Brain Busan 21 Project, Pusan National University School of Medicine, Yangsan, Republic of Korea; and [2]Department of Herbal Crop Research, National Institute of Horticultural & Herbal Science, RDA, Eumseong, Republic of Korea.

TUESDAY

Program Schedule (Continued)

Abstract #

#928 **Poster Board Number 155**
Suppression of Arsenite-Induced Cytotoxicity and Activation of Nrf2 by Aliphatic Electrophiles from *Coriandrum sativum* L. Leaf Extract in HepG2 Cells. *Y. Abiko*[1], M. Mizokawa[2], and *Y. Kumagai*[1,2]. [1]Faculty of Medicine, University of Tsukuba, Tsukuba, Japan; and [2]Graduate School of Environmental Sciences, University of Tsukuba, Tsukuba, Japan.

#929 **Poster Board Number 156**
Prevalence of Enterobacteriaceae in Retailed Poultry Eggs and Their Zoonotic Relationship in South Africa. *A. R. Jambalang*, F. S. Botha, and E. Buys. Paraclinical Sciences, University of Pretoria, Pretoria, South Africa.

#930 **Poster Board Number 157**
Inactivation of Pathogens on Contact Surfaces Using Decontaminating Substances Produced by Radiant Catalytic Ionization. J. T. Mannozzi[1], *W. J. Mackay*[1], C. H. Sommers[2], D. Fulford[1], C. Steele[1], T. Saunders[1], K. Celestin[1], K. Parker[1], K. Patel[1], J. Wallace[1], and K. Okasime[1]. [1]Biology and Health Services, Edinboro University, Edinboro, PA; and [2]Food Safety Intervention Technologies Research Unit, Eastern Regional Research Center USDA, Wyndmoor, PA.

#931 **Poster Board Number 158**
Does Nanostructured Synthetic Amorphous Silica in Industrially Manufactured Powdered Food Products Disintegrate after Oral Uptake? M. Maier[1], P. Albers[2], R. Retamal Marin[3], F. Babick[3], and M. Stintz[3]. [1]Evonik Industries AG, Hanau, Germany; [2]Aqura GmbH, Hanau, Germany; and [3]Technische Universität Dresden, Dresden, Germany. Sponsor: *D. Warheit*.

#932 **Poster Board Number 159**
Autophagy and Senescence, Stress Responses Induced by the DNA-Damaging Mycotoxin Alternariol. A. Solhaug[1], M. L. Torgersen[2], J. A. Holme[3], D. Lagadic-Gossmann[4], and G. S. Eriksen[1]. [1]Norwegian Veterinary Institute, Oslo, Norway; [2]The Norwegian Radium Hospital, Oslo, Norway; [3]Division of Environmental Medicine, Norwegian Institute of Public Health, Oslo, Norway; and [4]Inserm U1085, IRSET, Rennes, France. Sponsor: *U. Nygaard*.

#933 **Poster Board Number 160**
***In Vitro* Metabolism of Rebaudioside E under Anaerobic Conditions: Comparison with Rebaudioside A.** S. Purkayastha[1], *S. Bhusari*[2], *G. Pugh*[2], X. Teng[3], D. Kwok[3], and *S. M. Tarka*[4]. [1]The PureCircle Ltd, Oak Brook, IL; [2]The Coca-Cola Company, Atlanta, GA; [3]BRI Biopharmaceutical Research Inc, Vancouver, BC, Canada; and [4]The Tarka Group, Inc., Carlisle, PA.

#934 **Poster Board Number 161**
***In Vitro* Toxicity of Clays Potentially Used in Food Packaging.** S. O. Maisanaba[1], S. O. Pichardo[1], M. O. Jordá-Beneyto[2], S. Aucejo[2], A. M. Cameán[1], and A. Jos[1]. [1]Toxicology, University of Sevilla, Sevilla, Spain; and [2]Area of Packaging Materials and Systems, ITENE, Paterna, Spain. Sponsor: *G. Font*.

Abstract #

#935 **Poster Board Number 162**
HPTLC Analysis of Phthalate Migration from Plastic Containers to Commonly Available Edible Oils in UAE. A. B. Zachariah[2], V. Chandrasekaran[2], and R. Kuppusamy[1]. [1]Pharmacy, Gulf Medical University, Ajman, United Arab Emirates; and [2]Toxicology, Gulf Medical University, Ajman, United Arab Emirates. Sponsor: *S. Devi*.

#936 **Poster Board Number 163**
Genotoxicity and Mutagenicity Evaluation of Carvacrol, a Major Compound of Oregano Essential Oil, by the *In Vitro* Micronucleus and Mouse Lymphoma Assays. S. O. Maisanaba[1], A. I. Prieto[1], M. Puerto[1], D. O. Gutiérrez-Praena[1], A. Jos[1], E. Demir[2], R. Marcos[2], and A. M. Cameán[1]. [1]Toxicology, University of Sevilla, Sevilla, Spain; and [2]Genetic and Microbiology, Autonomous University of Barcelona, Barcelona, Spain. Sponsor: *G. Font*.

#937 **Poster Board Number 164**
Occurrence of Ochratoxin A in Red Pepper Powder Commercialized in Turkey. A. Tosun, and *S. Ozden*. Pharmaceutical Toxicology, Istanbul University, Faculty of Pharmacy, Istanbul, Turkey.

#938 **Poster Board Number 165**
Medicinal Plants As a Source for Al Dietary Intake. M. C. Rubio-Armendáriz[1], D. Ramos-Abellán[1], D. González-Weller[1], Á. J. Gutiérrez[1], A. Hardisson[1], and *A. R. Anadón*[2]. [1]Toxicology, University of La Laguna, La Laguna, Spain; and [2]Toxicology and Pharmacology, Universidad Complutense de Madrid, Madrid, Spain.

#939 **Poster Board Number 166**
E171 Effects in Chicken Chorioallantoic Membrane Angiogenesis Model. *V. Freyre-Fonseca*[1,2], G. Gutierrez Lopez[2], and *Y. I. Chirino*[1]. [1]UNAM, Mexico City, Mexico; and [2]ENCB-IPN, Mexico City, Mexico.

#940 **Poster Board Number 167**
***Aloe vera* Extracts Induce Mutations and Oxidative Stress in Cultured.** *N. Mei*[1], *X. Guo*[1], S. L. Dial[1], *D. D. Levy*[2], and *M. M. Moore*[3]. [1]FDA/NCTR, Jefferson, AR; [2]Center for Food Safety and Applied Nutrition, College Park, MD; and [3]ENVIRON International Corporation, Little Rock, AR.

#941 **Poster Board Number 168**
Evaluation of the Food Additive Carrageenan in a Caco-2 Intestinal Absorption Model. *J. M. McKim*[1], and J. A. Willoughby[2]. [1]IONTOX, LLC, Kalamazoo, MI; and [2]Cyprotex, Kalamazoo, MI.

#942 **Poster Board Number 169**
Crosstalk between Macrophage Inhibitory Cytokine 1 and Activating Transcription Factor 3 in Carrageenan-Exposed Enterocytes. H. Choi, and *Y. Moon*. Laboratory of Mucosal Exposome and Biomodulation, Department of Biomedical Sciences, Immunoregulatory Therapeutics Group in Brain Busan 21 Project, Pusan National University School of Medicine, Yangsan, Republic of Korea.

#943 **Poster Board Number 170**
Analysis of Aflatoxin Occurrence in Animal Feeds and Milk from Dairy Farms. R. Ortiz-Martinez, C. De Luna -Lopez, A. G. Valdivia, and T. Quezada-Tristan. Disciplinas Pecuarias, Universidad Autonoma de Aguascalientes, Aguascalientes, Mexico. Sponsor: *G. Pallas-Guzman*.

Program Schedule (Continued)

Abstract #

#944 **Poster Board Number 171**
Phytochemical Screening of Various Lots of *Echinacea* for Use in Toxicity Studies. *S. Waidyanatha*[1], T. Cristy[2], S. Graves[2], E. Mutlu[1], and *K. Ryan*[1]. [1]Division of the National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC; and [2]Battelle Memorial Institute, Columbus, OH.

#945 **Poster Board Number 172**
Evaluation of *In Vitro* Macrophage Assay for Predicting Nanoparticle-Induced Inhalation Toxicity. M. Wiemann[1], A. Vennemann[1], L. Ma-Hock[2], *K. Wiench*[3], and *R. Landsiedel*[2]. [1]IBE R&D, GmbH Institut for Lung Health, Münster, Germany; [2]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany; and [3]Product Safety, BASF SE, Ludwigshafen am Rhein, Germany.

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Neurotoxicology, Metals—Mercury

Chairperson(s): *Richard M. Nass, Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#946 **Poster Board Number 201**
Sex Differences in the Response of Acetylcholinesterase to Subchronic Low-Level Inorganic Mercury Exposure. *A. D. Wusu*[1], *O. O. Ogunrinola*[1], *O. K. Afolabi*[4], *E. O. Abam*[6], *D. O. Babayemi*[2], O. B. Onunkwor[2], O. A. Dosumu[2], *E. A. Balogun*[5], *O. O. Odukoya*[3], and *O. Ademuyiwa*[2]. [1]Biochemistry, Lagos State University, Lagos, Nigeria; [2]Biochemistry, Federal University of Agriculture, Abeokuta, Nigeria; [3]Chemistry, Federal University of Agriculture, Abeokuta, Nigeria; [4]Biochemistry, Ladoke Akintola University of Technology, Ogbomosho, Ogbomosho, Nigeria; [5]Biochemistry, University of Ilorin, Ilorin, Nigeria; and [6]Chemical Sciences, Bells University of Technology, Ota, Ota, Nigeria.

#947 **Poster Board Number 202**
Proteomic Analysis of Cerebellum of Common Marmoset Treated with Methylmercury. Y. Shao[1], M. Yamamoto[2], D. Figeys[3], and *L. Chan*[4]. [1]Natural Resources and Environmental Studies Program, University of Northern British Columbia, Prince George, BC, Canada; [2]Department of Basic Medical Science, National Institute for Minamata Disease, Minamata, Japan; [3]Ottawa Institute of Systems Biology, University of Ottawa, Ottawa, ON, Canada; and [4]Department of Biology, University of Ottawa, Ottawa, ON, Canada.

#948 **Poster Board Number 203**
Methylmercury (MeHg) Alters Nuclear Factor Erythroid 2-Related Factor 2 (Nrf2) Gene Expression in Primary Astrocytes. *M. Culbreth*, and *M. Aschner*. Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY.

Abstract #

#949 **Poster Board Number 204**
Methylmercury-Induced Stress Responses in Astroglia Cells. F. Usuki[1], and M. Fujimura[2]. [1]Clinical Medicine, National Institute for Minamata Disease, Minamata, Japan; and [2]Basic Medical Sciences, National Institute for Minamata Disease, Minamata, Japan. Sponsor: *A. Naganuma*.

#950 **Poster Board Number 205**
Low-Level of Methylmercury Inhibits Cell Proliferation through the Activation of Glycogen Synthase Kinase 3β and Subsequent Degradation of Cyclin E in Cortical Progenitor Cells of Rats. M. Fujimura[1], and F. Usuki[2]. [1]Basic Medical Science, National Institute for Minamata Disease, Minamata, Japan; and [2]Clinical Medicine, National Institute for Minamata Disease, Minamata, Japan. Sponsor: *A. Naganuma*.

#951 **Poster Board Number 206**
***In Vivo* Methylmercury Exposure Alters Glutamate Receptor mRNA Levels in Rat Forebrain.** *A. Colon-Rodriguez*[1,2,3], R. Hajela[1], *Y. Yuan*[1], and *W. D. Atchison*[1,2,3]. [1]Pharm/Tox, Michigan State Univ, East Lansing, MI; [2]CMIB, Michigan State Univ, East Lansing, MI; and [3]CIT, Michigan State Univ, East Lansing, MI.

#952 **Poster Board Number 207**
Effects of Chronic Methylmercury Exposure on Expression of Voltage-Gated Calcium Channel mRNA in Rat Forebrain. *A. Colon-Rodriguez*, Z. I. Cordero Badillo, and *W. D. Atchison*. Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#953 **Poster Board Number 208**
Role of the Alpha-7 Subtype Specific Nicotinic Acetylcholine Receptor in Mediating Calcium Dysregulation during Acute Methylmercury Exposure in PC12 Cells. *M. Rios*, and *W. D. Atchison*. Michigan State University, East Lansing, MI.

#954 **Poster Board Number 209**
Complex Interactions between Methylmercury (MeHg) and Intracellular Ca^{2+} Regulation in Human Embryonic Kidney (HEK293) Cells. *H. Hannon*, *M. Rios*, and *W. D. Atchison*. Dept. Pharmacol/Toxicol, Mich State Univ, E. Lansing, MI.

#955 **Poster Board Number 210**
Effects of Varying Extracellular Calcium Concentration on MeHg-Induced Dopamine Release in Undifferentiated PC12 Cells. Y. Rodriguez[1], *M. Khalid*[2,3], and *W. D. Atchison*[2,3]. [1]Biological Sciences Dept, St. Mary's University, San Antonio, TX; [2]Pharm/Tox Dept, Michigan State University, East Lansing, MI; and [3]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#956 **Poster Board Number 211**
Potentiated Dopamine Release from PC12 Cells, with and without Methylmercury Treatment, by Replacing Extracellular Calcium with Barium. *M. Khalid*[1,2], and *W. D. Atchison*[1,2]. [1]Pharm/Tox Dept, Michigan State University, East Lansing, MI; and [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

Program Schedule (Continued)

Abstract #

#957 **Poster Board Number 212**
Molecular and Cellular Characterization of a Novel Multidrug Resistance Protein That Inhibits Methylmercury-Associated Dopaminergic Neurodegeneration in *Caenorhabditis elegans*. M. Rudgalvyte[2], B. Arbuckle[1], *N. VanDuyn*[1], G. Wong[2], J. Trinidad[3], and *R. M. Nass*[1]. [1]Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN; [2]Neurobiology, University of Eastern Finland, Kuopio, Finland; and [3]Chemistry, Indiana University, Bloomington, IN.

#958 **Poster Board Number 213**
Distortion of Times Estimations by Methylmercury, Partial Prevention by Isradipine, and Partial Reversal by D-Amphetamine. D. A. Pope, B. A. Hutsell, A. N. Shen, M. A. Arnold, and *C. Newland*. Auburn University, Auburn, AL.

#959 **Poster Board Number 214**
Behavioral Experience Alters the Profile of Monoaminergic Changes Induced by Developmental Methylmercury Exposure. *D. A. Cory-Slechta*, *H. Weston*, D. Weston, and *J. L. Allen*. Environmental Medicine, University of Rochester Medical School, Rochester, NY.

#960 **Poster Board Number 215**
Developmental Methylmercury Exposure Produces Behavioral Toxicity in Female Mice That Is Only Seen in Combination with Prenatal Stress in Male Mice. *D. A. Cory-Slechta*, *H. Weston*, D. Weston, K. Morris-Schaffer, and *J. L. Allen*. Environmental Medicine, University of Rochester Medical School, Rochester, NY.

#961 **Poster Board Number 216**
Neonatal Exposure to a Mixture of MeHg and Chlorpyrifos Induces Neurotoxic Effects in the Mouse Brain. *I. Lee*, and *H. Viberg*. Uppsala University, Uppsala, Sweden.

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Neurotoxicology, Metals—Manganese

Chairperson(s): *Aaron B. Bowman, Neurology, Vanderbilt University, Nashville, TN.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#962 **Poster Board Number 217**
Activated Adult Neurogenesis in the Subventricular Zone following Intranasal Manganese Exposure in Rats. *S. L. O'Neal*, *X. Fu*, and *W. Zheng*. Purdue University, West Lafayette, IN.

#963 **Poster Board Number 218**
Detection of Retinal Changes in Chronic Manganese-Exposed Nonhuman Primates by Optical Coherence Tomography. *J. S. Schneider*[1], *D. W. Anderson*[1], C. Williams[1], M. Ault[1], and *T. R. Guilarte*[2]. [1]Pathology, Anatomy and Cell Biology, Thomas Jefferson Univ., Philadelphia, PA; and [2]Environmental Health Sciences, Mailman School of Public Health, Columbia Univ., New York, NY.

Abstract #

#964 **Poster Board Number 219**
Egocentric Learning Deficits in Rats Produced by Developmental Manganese Overexposure or Adulthood 6-Hydroxydopamine Toxicity Are Exacerbated by the Combination. M. T. Williams, *R. M. Amos-Kroohs*, A. A. Braun, A. Gutierrez, and *C. V. Vorhees*. Neurology, Cincinnati Children's, Cincinnati, OH.

#965 **Poster Board Number 220**
Manganese Activates the NLRP3 Inflammasome in Microglia. *R. Gordon*[1], D. C. Christie[1], A. B. Robertson[2], M. A. Cooper[2], and T. Woodruff[1]. [1]Biomedical Sciences, The University of Queensland, Brisbane, QLD, Australia; and [2]The Institute for Molecular Bioscience, The University of Queensland, Brisbane, QLD, Australia.

#966 **Poster Board Number 221**
Loss of *pdr-1/parkin* Alters Mn Homeostasis through Modulation of Ferroportin in *C. elegans*. *S. Chakraborty*[1], *P. Chen*[2], J. Bornhorst[3], T. Schwerdtle[3], *A. B. Bowman*[4], and *M. Aschner*[2]. [1]Neuroscience Graduate Program, Vanderbilt University Medical Center, Nashville, TN; [2]Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY; [3]Institute of Nutritional Science, University of Potsdam, Potsdam, Germany; and [4]Neurology, Vanderbilt University Medical Center, Nashville, TN.

#967 **Poster Board Number 222**
Parkinsonism Due to a Hereditary Defect in a Manganese Efflux Transporter. D. Levya-Illades[1], *P. Chen*[2], C. Zogzas[1], S. Hutchens[1], *A. B. Bowman*[3], *M. Aschner*[2], and *S. Mukhopadhyay*[1]. [1]Pharmacology & Toxicology, University of Texas at Austin, Austin, TX; [2]Molecular Pharmacology, Albert Einstein College of Medicine, New York, NY; and [3]Neurology, Vanderbilt University, Nashville, TN.

#968 **Poster Board Number 223**
Intracellular Mn-Modifying Small Molecules Identified in a High-Throughput Screen Reveal Developmental Regulation of Mn Control Mechanisms in Human Dopaminergic Neurons. K. J. Horning[1], *K. K. Kumar*[1], J. X. Sun[1], M. Odak[1], *M. Aschner*[2], and *A. B. Bowman*[1]. [1]Neurology, Vanderbilt University, Nashville, TN; and [2]Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY.

#969 **Poster Board Number 224**
Manganese Activates ATM-p53 Signaling and Is Selectively Impaired in Huntington's Disease. M. R. Bryan[1], *A. Tidball*[1], M. A. Uhouse[1], *K. K. Kumar*[1], *M. Neely*[1], *M. Aschner*[2], and *A. B. Bowman*[1]. [1]Neurology, Vanderbilt University, Nashville, TN; and [2]Molecular Pharmacology, Einstein College, Bronx, TN.

#970 **Poster Board Number 225**
Exploring Manganese Supplementation to Ameliorate Cellular Phenotypes in Huntington's Disease. M. A. Uhouse, *M. R. Bryan*, *A. Tidball*, *T. V. Bichell*, M. Wegrzynowicz, and *A. B. Bowman*. Neurology, Vanderbilt University, Nashville, TN.

TUESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#971 **Poster Board Number 226**
***In Vivo* Changes in Basal Ganglia GABA Levels Indicate That Manganese Targets the Indirect Pathway.** *R. Ma*[1,2], E. Zauber[2], *C. Yeh*[1,2], *Z. Long*[3], S. Snyder[1], and *U. Dydak*[1,2]. [1]School of Health Sciences, Purdue University, West Lafayette, IN; [2]Indiana University School of Medicine, Indianapolis, IN; and [3]Mayo Clinic, Rochester, MN.

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Neurotoxicology, Metals—Lead and Others

Chairperson(s): *Maria E. Gonsebatt, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#972 **Poster Board Number 227**
Neurological Effects of Gestational Arsenic Exposure. L. A. Ramos-Chavez[1], C. R. Rendon-López[1], A. Zepeda[1], D. Silva-Adaya[2], *L. M. Del Razo*[3], and *M. E. Gonsebatt*[1]. [1]Instituto de Investigaciones Biomedicas, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico; [2]Laboratorio Experimental de Enfermedades Neurodegenerativas, Instituto Nacional de Neurología y Neurocirugia, Mexico City, Mexico; and [3]Toxicologia Ambiental, CINVESTAV, Mexico City, Mexico.

#973 **Poster Board Number 228**
Investigation of Zinc Toxicity in Olfactory Neurons Using *In Silico* and Molecular Techniques. *H. Hsieh*, and *M. Genter*. Environmental Health, University of Cincinnati, Cincinnati, OH.

#974 **Poster Board Number 229**
The Impairment of Learning Ability of Male F1 Tokai High Avoider Rats Exposed to Tributyltin via the Placenta, Their Dams' Milk, and Their Food. *M. Tsunoda*[1], K. Kajiwara[2], T. Hasegawa[1], T. Kido[3], M. Hosokawa[4], C. Sugaya[1], Y. Sugiura[1], H. Horiguchi[1], H. Endo[5], and T. Watanabe[5]. [1]Hygiene, Kitasato University School of Medicine, Sagamihara, Japan; [2]Kitasato University School of Medicine, Sagamihara, Japan; [3]Public Health and Environmental Medicine, Jikei University School of Medicine, Tokyo, Japan; [4]Department of Epidemiology and Environmental Health, Faculty of Medicine, Juntendo University, Tokyo, Japan; and [5]Basic Clinical Science and Public Health, Tokai University School of Medicine, Isehara, Japan.

#975 **Poster Board Number 230**
Early-Life Lead Exposure and Sensitization to Cocaine: A Novel Pathway to Addiction. *K. H. Stansfield*, *J. L. McGlothan*, and *T. R. Guilarte*. Environmental Health Sciences, Columbia University, New York, NY.

#976 **Poster Board Number 231**
Lead Significantly Impairs Critical Processes for Adult Hippocampal Neurogenesis in Primary Cultured Adult Neural Stem Cells. *A. K. Engstrom*, and *Z. Xia*. DEOHS, University of Washington, Seattle, WA.

Abstract #

#977 **Poster Board Number 232**
Low-Level Lead Exposure in Rats Differentially Impairs Attentional Set Shifting Task Performance Depending on Developmental Period of Exposure. L. S. Neuwirth, *D. W. Anderson*, and *J. S. Schneider*. Pathology, Anatomy, and Cell Biology, Thomas Jefferson University, Philadelphia, PA.

#978 **Poster Board Number 233**
Sex-Dependent Effects of Lead and Prenatal Stress on Adult Glucocorticoid Receptor Expression and Its Epigenetic Control. *D. W. Anderson*[1], *J. S. Schneider*[1], *M. Sobolewski*[2], and *D. A. Cory-Slechta*[2]. [1]Pathology, Anatomy, and Cell Biology, Thomas Jefferson University, Philadelphia, PA; and [2]Environmental Medicine, University of Rochester School of Medicine, Rochester, NY.

#979 **Poster Board Number 234**
Assessment of Ototoxicity Due to Chronic Lead and Cadmium Exposure with and without Noise Exposure in CBA/J Mice. *K. M. Carlson*[1], R. Neitzel[1], and J. Schacht[2]. [1]EHS, University of Michigan, Ann Arbor, MI; and [2]Kresge Hearing Research Institute, University of Michigan, Ann Arbor, MI.

#980 **Poster Board Number 235**
Age-Dependent Increase of Brain Cu Levels and Expressions of Cu Regulatory Genes in the Subventricular Zone and Choroid Plexus. *X. Fu*, W. Jiang, and *W. Zheng*. School of Health Sciences, Purdue University, West Lafayette, IN.

#981 **Poster Board Number 236**
A Gene-Metal Screen Reveals Enhanced Selenium and Cadmium Neurotoxicity in Dopaminergic Cells Expressing Human Alpha-Synuclein. W. Chong, and *G. Kwakye*. Neuroscience, Oberlin College, Oberlin, OH.

#982 **Poster Board Number 237**
Post-Traumatic Stress Disorder (PTSD) among Gulf War 1 Veterans Exposed to Depleted Uranium (DU): 22 Years of Follow-Up. P. Gucer[1], B. Kaup[3], P. Langenberg[2], *K. S. Squibb*[1], and *M. A. McDiarmid*[1]. [1]Medicine, University of Maryland School of Medicine, Baltimore, MD; [2]Preventive Medicine, University of Maryland School of Medicine, Baltimore, MD; and [3]Department of Medical Affairs Medical Center, Baltimore, MD.

#983 **Poster Board Number 238**
Response of Erythrocyte Acetylcholinesterase Activity in Rats Subchronically Exposed to Low-Level Cadmium. *O. O. Ogunrinola*[1], *A. D. Wusu*[1], *O. K. Afolabi*[1,2], *E. A. Balogun*[1,3], *E. O. Abam*[1,4], *O. Ademuyiwa*[1,5], and *O. O. Odukoya*[1,6]. [1]Biochemistry, Lagos State University, Ojo-Lagos, Nigeria; [2]Biochemistry, Ladoke Akintola University, Ogbomosho, Nigeria; [3]Biochemistry, University of Ilorin, Ilorin, Nigeria; [4]Biochemistry, Bell University of Technology, Ota, Nigeria; [5]Biochemistry, Federal University of Agriculture, Abeokuta, Nigeria; and [6]Chemistry, Federal University of Agriculture, Abeokuta, Nigeria.

Program Schedule (Continued)

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Carcinogenesis I

Chairperson(s): *Suryanarayana V. Vulimiri, ORD/NCEA-W, US EPA, Washington, DC; and J. Craig Rowlands, The Dow Chemical Company, Midland, MI.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

Abstract #

#984 **Poster Board Number 239**
Characterization of microRNA Expression Patterns and Their Target Genes in the Liver of Rats Treated with Thioacetamide, a Carcinogen, to Discover Potential Biomarkers for Hhepatocarcinogenesis. *Y. Wang*[1], C. Castro[2], B. Gong[1], M. Yuji[3], J. Yan[1], *T. Chen*[1], and *W. Tong*[1]. [1]National Center for Toxicological Research, Jefferson, AR; [2]University of North Carolina, Charlotte, NC; and [3]Shinonogi & Co., Ltd., Osaka, Japan.

#985 **Poster Board Number 240**
An Epigenetic Role of NR2E3, an Orphan Nuclear Receptor, in BaP-Mediated Gene Regulation. *K. Kim*, K. Tilak, W. Yang, J. Lee, F. J. Sanchez-Martin, and *A. Puga*. University of Cincinnati, Cincinnati, OH.

#986 **Poster Board Number 241**
Benzo[a]pyrene in Colon Carcinogenesis. Q. Deng, and *Y. Li*. University of Louisville, Louisville, KY.

#987 **Poster Board Number 242**
Arsenite Causes Zinc Loss and Inhibits the Activity of Poly(ADP-ribose) Polymerase-1 through ROS/RNS Generation and Peroxynitrite Production. X. Zhou[1], F. Wang[2], W. Liu[1], X. Sun[1], C. Chen[1], J. Shen[3], L. G. Hudson[1], and *K. Liu*[1]. [1]College of Pharmacy, University of New Mexico, Albuquerque, NM; [2]Department of Nutrition and Food Hygiene, Fourth Military Medical University, Xi'an, China; and [3]School of Chinese Medicine, University of Hong Kong, Hong Kong, China.

#988 **Poster Board Number 243**
Gli2-Mediated Induction of c-Myc Induces Melanoma Tumor Growth. *N. M. Fofaria*, and *S. K. Srivastava*. Biomedical Sciences, Texas Tech University Health Sciences Center, Amarillo, TX.

#989 **Poster Board Number 244**
Comparison Study of Anti-Inflammatory Effects of Polyphenolics in Colitis Rat Model Targeting mTOR Signaling Pathway. *H. Kim*[1], *N. Banerjee*[1,2], I. Ivan[3], S. Talcott[1], and S. Talcott[1,2,3]. [1]Nutrition and Food Science, Texas A&M University, College Station, TX; [2]Interdisciplinary Program of Toxicology, Texas A&M University, College Station, TX; and [3]Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX.

Abstract #

#990 **Poster Board Number 245**
Mechanistic Studies of Cancer Cell Mitochondria- and NQO1-Mediated Redox Activation of Beta-Lapachone, a Potentially Novel Anticancer Agent. *Z. Jia*[1], J. Li[1], *H. Zhu*[2], *M. A. Trush*[3], and *Y. Li*[2]. [1]University of North Carolina at Greensboro, Greensboro, NC; [2]Campbell University School of Osteopathic Medicine, Buies Creek, NC; and [3]Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD.

#991 **Poster Board Number 246**
Silencing KRAS Overexpression in Cadmium-Transformed Prostate Epithelial Cells Mitigates Malignant Phenotype. *N. O. Ngalame*, *E. J. Tokar*, and *M. P. Waalkes*. NTP, NIEHS, Research Triangle Park, NC.

#992 **Poster Board Number 247**
Hematological Alterations and Markers of B Cell Activation in Workers Exposed to Benzene, Formaldehyde, and Trichloroethylene. *L. Zhang*[1], B. A. Bassig[2], R. Vermeulen[3], X. Tang[4], G. Li[5], W. Hu[2], W. Guo[1], M. P. Purdue[2], S. Yin[5], S. Rappaport[1], M. Shen[2], Z. Ji[1], C. Qiu[4], Y. Ge[4], H. Hosgood[2], B. Reiss[3], L. Li[4], F. Yue[4], L. Beane-Freeman[2], A. Blaire[2], H. Huang[4], N. Rothman[2], R. Hayes[2], *M. T. Smith*[1], and Q. Lan[2]. [1]School of Public Health, University of California, Berkeley, CA; [2]Division of Cancer Epidemiology and Genetics, NCI, Bethesda, MD; [3]Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands; [4]Guangdong Poison Control Center, Guangzhou, China; and [5]Institute of Occupational Health and Poison Control, China CDC, Beijing, China.

#993 **Poster Board Number 248**
Membrane Progesterone Receptor Alpha Signaling in Breast Cancer Cells. *M. Salazar*[1], *A. Ashley*[1], A. Lerma-Ortiz[1], J. P. Houston[2], and R. L. Ashley[1]. [1]Animal and Range Sciences, New Mexico State University, Las Cruces, NM; and [2]Chemical Engineering, New Mexico State University, Las Cruces, NM.

#994 **Poster Board Number 249**
Gene Expression Changes in Human Endometrial Cells Exposed to the Tamoxifen Metabolite Endoxifen. *E. E. Hernandez Ramon*[1], K. Divi[1], E. Asaki[2], *O. Olivero*[1], and *M. C. Poirier*[1]. [1]LCBG, National Cancer Institute, National Institutes of Health, Bethesda, MD; and [2]Advanced Technology Center, NCI, National Institutes of Health, Bethesda, MD.

#995 **Poster Board Number 250**
Regulation of Gene Expression Profiles in Clear Cell Renal Cell Carcinoma by Cadmium Exposure. *S. Brooks*, and W. Rathmell. UNC-CH, Chapel Hill, NC.

#996 **Poster Board Number 251**
Zingerone Suppresses the Development of Precancerous Lesions via Regulating the Hyperproliferation, Inflammation and Angiogenesis in the Colon of Wistar Rats. *M. U. Rehman*[1,2], A. Farooq[2], A. Arif[1], B. Ahmad[1], F. H. Pottoo[2], S. A. Bhat[1], R. Razzaq[1], M. H. Masoodi[2], M. R. Mir[1], and M. Y. Shah[2]. [1]Veterinary Biochemistry, Faculty of Veterinary Science & Animal Husbandry, SKUAST-Kashmir, Srinagar, India; and [2]Pharmaceutical Sciences, University of Kashmir, Srinagar, India.

Program Schedule (Continued)

Abstract #

#997 **Poster Board Number 252**
Analysis of DNA Methyltransferase Expression in a Transplacental Mouse Model with Indole-3-Carbinol Dietary Intervention during Exposure to Dibenzo[*def,p*]Chrysene. H. Markey[1], *T. Harper*[2,3,4], *L. K. Siddens*[2], *W. M. Baird*[2,4], and *D. E. Williams*[2,3,4]. [1]Society of Toxicology Undergraduate Research Program, Oregon State University, Corvallis, OR; [2]Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR; [3]Linus Pauling Institute, Oregon State University, Corvallis, OR; and [4]Environmental Health Sciences Center, Oregon State University, Corvallis, OR.

#998 **Poster Board Number 253**
Ligand Activation of PPARβ/δ Inhibits UVB-Induced Skin Cancer. *K. C. Pramanik*[1], *P. Krishnan*[1], *F. Gonzalez*[2], and *J. M. Peters*[1]. [1]Veterinary and Biomedical Sciences, Penn State University, State College, PA; and [2]Laboratory of Metabolism, National Cancer Institute, Bethesda, MD.

#999 **Poster Board Number 254**
Peroxisome Proliferator-Activated Receptor-β/δ (PPARβ/δ) Inhibits Tumorigenesis by Interfering with RARα-Mediated MMP2 Activation and Inducing Cell Differentiation in Human Testicular Embryonal Carcinoma Cells. *P. Yao*[1], L. Chen[1], D. A. Philips[1], *B. Zhu*[1], *F. Gonzalez*[2], and *J. M. Peters*[1]. [1]The Pennsylvania State University, University Park, PA; and [2]National Cancer Institute, Bethesda, MD.

#1000 **Poster Board Number 255**
PPARβ/δ and PPARγ Modulate UV-Induced Apoptosis and Cytokine Secretion in a Human Melanoma Cell Line. A. L. Wagner[1], *F. Gonzalez*[2], *J. M. Peters*[3], and *M. G. Borland*[1,3]. [1]Chemistry and Biochemistry, Bloomsburg University of Pennsylvania, Bloomsburg, PA; [2]Laboratory of Metabolism, NCI, Bethesda, MD; and [3]Veterinary and Biomedical Sciences, Penn State University, University Park, PA.

#1001 **Poster Board Number 256**
7-Cysteine-pyrrole Adducts Is a Potential Active Metabolite Leading to Pyrrolizidine Alkaloid-Induced Cytotoxicity and Tumorigenicity. Q. Xia[1], L. Ma[1], L. Cai[2], and P. Fu[1]. [1]NCTR, FDA, Jefferson, AR; and [2]Biotranex LLC, Monmouth Junction, NJ. Sponsor: *L. Guo*.

#1002 **Poster Board Number 257**
Tributyrin Chemopreventive Mechanisms Involve Changes in Subcellular Localization of p53 and CRM1 Proteins. J. F. Ortega[1], *A. de Conti*[2], *V. Tryndyak*[2], K. S. Furtado[1], M. A. Horst[1], R. Heidor[1], *I. Pogribny*[2], and F. S. Moreno[1]. [1]Department of Food and Experimental Nutrition - FCF/USP, University of Sao Paulo, Sao Paulo, Brazil; and [2]Division of Biochemical Toxicology, National Center for Toxicological Research, Jefferson, AR.

#1003 **Poster Board Number 258**
The AhR Is a Negative Regulator of Keratinocyte Apoptosis and Critically Involved in Skin Carcinogenesis. K. Frauenstein[1], S. Shaik[1], J. Tigges[1], T. Douki[2], *C. Esser*[1], J. Krutmann[1], and *T. Haarmann-Stemmann*[1]. [1]Leibniz Research Institute for Environmental Medicine, Duesseldorf, Germany; and [2]Laboratoire Lésions des Acides Nucléiques, CEA, Grenoble, France.

Abstract #

#1004 **Poster Board Number 259**
Repeated TCDD Exposure Produces Region-Specific Cellular Effects in Laser Capture Microdissected Centrilobular and Periportal Hepatocytes from the Rat Liver. *J. Rowlands*[1], B. Parks[2], *M. B. Black*[2], *R. Budinsky*[1], *J. A. Harrill*[2], and *R. S. Thomas*[2]. [1]The Dow Chemical Company, Midland, MI; and [2]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#1005 **Poster Board Number 260**
Chronic Exposure to Hexavalent Chromium Induces Angiogenesis via Activation of EGFR Signaling. D. Kim, L. Fai, and Z. Zhang. University of Kentucky, Lexington, KY. Sponsor: *Y. Son*.

#1006 **Poster Board Number 261**
Development of a Cellular Bioluminescense Assay for Assessing the Effects of Chemical Exposures on Circadian Rhythm. *M. Fang*[1], *H. Kang*[2], and *H. Zarbl*[1]. [1]Robert Wood Johnson Medical School, Environmental and Occupational Health Sciences Institute, NIEHS Center for Environmental Exposure and Disease, Rutgers, The State University of New Jersey, Piscataway, NJ; and [2]Toxicology and Residue Chemistry Division, Animal, Plant and Fisheries Quarantine and Inspection Agency (QIA), An-Yang, Republic of Korea.

#1007 **Poster Board Number 262**
Deregulation of CArG-box Binding Factor-A (CBF-A) Contributes to Carcinogenesis. *J. T. Barrett*[1], X. Zhang[3], *M. Fang*[2], *K. R. Reuhl*[2], and *H. Zarbl*[2]. [1]GSBS, RWJMS, Rutgers University, Piscataway, NJ; [2]Environmental and Occupational Health Sciences Institute, Robert Wood Johnson Medical School, Center for Environmental Exposures and Disease, Rutgers University, Piscataway, NJ; and [3]University of Washington, Seattle, WA.

#1008 **Poster Board Number 263**
The Role of Lgr5 Stem Cells in the PhIP/DSS-Induced Colon Carcinogenesis in CYP1A-Humanized Mice. *J. X. Chen*[1], H. Wang[2], A. Liu[2], L. Zhang[3], and C. S. Yang[2]. [1]Toxicology, Rutgers University, Piscataway, NJ; [2]Chemical Biology, Rutgers University, Piscataway, NJ; and [3]Gastrointestinal and Liver Pathology, University Medical Center of Princeton, Plainsboro, NJ.

#1009 **Poster Board Number 264**
TP53 and Xenobiotic Metabolizing Enzyme Polymorphisms and Clinical Outcome in Lung Cancer. *M. Iscan*[1], V. Karacaoglan[1], A. O. Ada[1], S. Bilgen[1], S. Kunak[2], and M. Gulhan[3]. [1]Toxicology, Ankara University, Ankara, Turkey; [2]Pharmacology, Ordu University, Ordu, Turkey; and [3]Pulmonary Diseases, Ataturk Pulmonary Diseases and Thoracic Surgery Hospital, Ankara, Turkey.

#1010 **Poster Board Number 265**
Reduction in Benzo(a)pyrene [BaP]-Induced Colon Tumors Occurs through Altered BaP Metabolism and Decreased Oxidative Damage in Apc^{Min} Mice. *L. D. Banks*[1], P. Amoah[1], M. S. Niaz[1], M. K. Washington[2], S. E. Adunyah[1], and *A. Ramesh*[1]. [1]Biochemistry & Cancer Biology, Meharry Medical College, Nashville, TN; and [2]Pathology, Vanderbilt University, Nashville, TN.

Program Schedule (Continued)

Abstract #

#1011 **Poster Board Number 266**
Exposure to the Genotoxic Chemical 1,3-Butadiene Confers Tissue-Specific Alterations in Chromatin Organization and Gene Expression. *G. Chappell*[1,2], J. Simon[1], S. Pott[3], *K. G. Sexton*[1], A. Safi[4], I. Kotenko[5], J. Lieb[3], G. Crawford[4], *I. Rusyn*[2], and T. Furey[1]. [1]UNC Chapel Hill, Chapel Hill, NC; [2]Texas A&M University, College Station, TX; [3]University of Chicago, Chicago, IL; [4]Duke University, Durham, NC; and [5]Princeton University, Princeton, NJ.

#1012 **Poster Board Number 267**
Mouse Lung Genomic Responses in Styrene-Treated Wild-Type, CYP2F2 Knockout, and CYP2F1 Humanized Mice Support the Low Human Relevance of Mouse-Specific Lung Toxicity and Tumorigenicity. *G. Cruzan*[1], *J. Bus*[2], *M. I. Banton*[3], *S. S. Sarang*[4], *D. E. Dodd*[5], *M. B. Black*[5], and *M. E. Andersen*[5]. [1]ToxWorks, Bridgeton, NJ; [2]Exponent, Midland, MI; [3]LyondellBasell Company, Houston, TX; [4]Shell International, Houston, TX; and [5]The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Oxidative Injury and Redox Biology

Chairperson(s): *Bhagavatula Moorthy, Pediatrics, Baylor College of Medicine, Houston, TX.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#1013 **Poster Board Number 301**
Ataxia Telangiectasia Mutated (ATM) Activation Is Independent from Hyperoxia-Induced Mitochondrial Dysfunction. E. Resseguie[1], R. Staversky[1], L. Kalifa[1,2], P. Brookes[3], and M. O'Reilly[2,1]. [1]Environmental Medicine, University of Rochester, Rochester, NY; [2]Pediatrics, University of Rochester, Rochester, NY; and [3]Anesthesiology, University of Rochester, Rochester, NY. Sponsor: *P. Lawrence*.

#1014 **Poster Board Number 302**
Oxidative Responses to Extracted Cookstove Emissions in Lung Epithelial Cells. *E. Gibbs-Flournoy*[1], J. Jetter[2], E. H. Boykin[3], *S. Simmons*[3], J. K. McGee[3], *M. A. Higuchi*[3], and J. A. Dye[3]. [1]ORISE, Research Triangle Park, NC; [2]NRMRL, US EPA, Research Triangle Park, NC; and [3]NHEERL, US EPA, Research Triangle Park, NC.

#1015 **Poster Board Number 303**
Protection against Ethanol-Induced Osteopenia in Female Mice by Dietary Antioxidants. A. Alund[1], K. E. Mercer[1,2], C. F. Pulliam[2], T. N. Turner[1], L. J. Suva[1], *T. M. Badger*[1], and *M. Ronis*[1,2]. [1]UAMS, Little Rock, AR; and [2]Arkansas Children's Nutrition Center, Little Rock, AR.

#1016 **Poster Board Number 304**
Loss of Mrp1 Potentiates Doxorubicin-Induced Cardiotoxicity in Mice. *W. Zhang*[1], J. Deng[1], D. Coy[1], C. Wang[2], and *M. Vore*[1,2]. [1]Graduate Center for Toxicology, University of Kentucky, Lexington, KY; and [2]Markey Cancer Center, University of Kentucky, Lexington, KY.

Abstract #

#1017 **Poster Board Number 305**
Ozone Effects on Protein Carbonyl Content in the Frontal Cortex and Cerebellum of Young Adult, Middle Age, and Senescent Brown Norway Rats. *P. S. Kodavanti*[1], *J. E. Royland*[2], J. Richards[3], D. I. Agina-Obu[1], and *R. C. MacPhail*[1]. [1]Toxicity Assessment Division, US EPA, Research Triangle Park, NC; [2]Integrated Systems Toxicology Division, US EPA, Research Triangle Park, NC; and [3]Environmental Public Health Division, US EPA, Research Triangle Park, NC.

#1018 **Poster Board Number 306**
Determining Adaptive and Adverse Oxidative Stress Responses in Human Bronchial Epithelial Cells Exposed to Zinc. *J. M. Currier*[1,2], W. Cheng[1], *R. B. Conolly*[1], and B. N. Chorley[1]. [1]NHEERL, US Environmental Protection Agency, Research Triangle Park, NC; and [2]Oakridge Institute for Science and Education, Research Triangle Park, NC.

#1019 **Poster Board Number 307**
An Imaging-Based RNAi Screen Identifies Novel Regulators of Nrf2 Activation. S. Hiemstra, M. C. Niemeijer, B. Herpers, S. Wink, and *B. van de Water*. Toxicology, Leiden Academic Centre for Drug Research, Leiden, Netherlands.

#1020 **Poster Board Number 308**
Oxidative Damage to Macromolecules Induced by Polycyclic Aromatic Hydrocarbons and Extractable Organic Matter from Particulate Matter in Human Embryonic Lung Fibroblasts. P. Rossner, B. Novotna, and *J. Topinka*. Institute of Experimental Medicine, Prague, Czech Republic.

#1021 **Poster Board Number 309**
Aberrant Regulation of G2-M Transition in Aniline-Induced Splenocyte Proliferation. J. Wang, *G. Wang*, and *M. Khan*. University of Texas Medical Branch, Galveston, TX.

#1022 **Poster Board Number 310**
Targeting Heme in Cytochrome P450 to Inhibit Mixed Function Oxidase Reactions. J. T. Szilagyi[1,2], V. Mishin[2], *D. E. Heck*[4], *Y. Jan*[3], *J. R. Richardson*[3], *D. L. Laskin*[1,2], and *J. D. Laskin*[1,3]. [1]Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ; [2]Pharmacology & Toxicology, Rutgers University, Piscataway, NJ; [3]Environmental & Occupational Medicine, Rutgers University Robert Wood Johnson Medical School, Piscataway, NJ; and [4]Environmental Health Science, New York Medical College, Valhalla, NY.

#1023 **Poster Board Number 311**
Oxidative Stress Alters Global Histone Methylation and Acetylation. *T. L. Des Marais*[1], *Y. Yao*[1], Y. Niu[2,1], and *M. Costa*[1]. [1]Environmental Medicine, New York University, Tuxedo, NY; and [2]Occupational Disease and Toxicology, Chao-Yang Hospital Affiliate of Capital Medical University, Beijing, China.

#1024 **Poster Board Number 312**
Potential Role of NQO1 As a Redox-Sensitive Molecular Switch. D. Siegel, and *D. Ross*. Skaggs School of Pharmacy, University of Colorado Anschutz Medical Center, Aurora, CO.

#1025 **Poster Board Number 313**
Molecular Mechanisms of All-*Trans*-Retinoic Acid-Mediated Selective Cytoprotection against Renal Injury. *J. Sapiro*, *T. J. Monks*, and *S. S. Lau*. University of Arizona, Tucson, AZ.

TUESDAY

Program Schedule (Continued)

Abstract #

#1026 **Poster Board Number 314**
Plant Extracts from Nordic Fruits and Vegetables Activate a Nuclear Factor-Erythroid 2-Related Factor (Nrf2) Pathway and Exert Protective Effects on Human Cells *In Vitro*. J. Lundqvist[1], M. E. Olsson[2], and *A. Oskarsson*[1]. [1]Dept of Biomedical Sciences and Veterinary Public Health, Swedish University of Agricultural Sciences, Uppsala, Sweden; and [2]Dept of Plant Breeding, Swedish University of Agricultural Sciences, Alnarp, Sweden.

#1027 **Poster Board Number 315**
Oxidative Stress Response in Samples from Surface Water and a Drinking Water Treatment Plant. *A. Oskarsson*[1], R. Tröger[2], J. Kreuger[2], L. Ahrens[2], K. Wiberg[2], and J. Lundqvist[1]. [1]Dept of Biomedical Sciences and Veterinary Public Health, Swedish University of Agricultural Sciences, Uppsala, Sweden; and [2]Dept of Aquatic Sciences and Assessment, Swedish University of Agricultural Sciences, Uppsala, Sweden.

#1028 **Poster Board Number 316**
Mn Superoized Dismutase (MnSOD) Attenuates Hyperoxia-Induced Cell Death by Altering ERK Activation. X. Yang[1], W. Wu[1], J. Wu[1], J. Melendez[2], and *L. Mantell*[1]. [1]Pharmaceutical Sciences, St. John's University, Jamaica, NY; and [2]Center for Immunology & Microbial Disease, Albany Medical College, Albany, NY.

#1029 **Poster Board Number 317**
Oxidative Stressors Induce Differential Cellular Responses between Human Primary and HaCaT Keratinocyte Cells. *B. Huang*[1], *P. Xue*[1], *B. Sun*[1], *J. Pi*[1], *A. White*[2], *M. E. Andersen*[1], and *R. A. Clewell*[1]. [1]Institute for Chemical Sciences, The Hamner Institutes for Health Sciences, Durham, NC; and [2]Safety and Environmental Assurance Centre, Unilever, Bedfordshire, United Kingdom.

#1030 **Poster Board Number 318**
Prolonged Use of Chloramphenicol Induces Aplastic Anemia and Oxidative Stress in Broiler Chicken. *O. I. Azeez*, *O. T. Iji*, and *A. S. Akinrinde*. Department of Veterinary Physiology, Biochemistry and Pharmacology, University of Ibadan, Ibadan, Nigeria.

#1031 **Poster Board Number 319**
Role of GDF15 (Growth and Differentiation Factor 15) in Pulmonary Oxygen Toxicity. K. Lingappan, K. Tiwari, and *B. Moorthy*. Baylor College of Medicine, Houston, TX.

#1032 **Poster Board Number 320**
C66 Ameliorates Diabetic Nephropathy by Upregulating Nrf2 Function via Enhancing miR-200a and Downregulating miR-21 via CBP Inhibiting Activity. *H. Wu*[1,2], L. Miao[2], and *L. Cai*[1]. [1]University of Louisville, Louisville, KY; and [2]2nd Hospital of Jilin University, Changchun, China.

#1033 **Poster Board Number 321**
Unique Natural Product Compounds Activate Nrf2 and Autophagy. *B. Harder*, T. Jiang, W. Tian, L. Gunatilaka, E. Chapman, and *D. D. Zhang*. University of Arizona, Tucson, AZ.

#1034 **Poster Board Number 322**
ATM-14, a Novel Antioxidant Radio-Mitigator Targeting Mitochondria. A. Goja, *A. Banerjee*, R. Giri, *K. K. Kabirov*, and *A. V. Lyubimov*. TRL/UIC, Chicago, IL.

Abstract #

#1035 **Poster Board Number 323**
Protective Role of Methionyl Dipeptide against Hypochlorous Acid Toxicity Depends on Sequence. *S. Babu*, and M. O. Claville. Department of Chemistry, Hampton University, Hampton, VA.

#1036 **Poster Board Number 324**
Mutated in Colorectal Cancer (MCC) Interacts with Keap1 and Activates Nrf2 Signaling. *E. M. Rojo de la Vega Guinea*, S. Tao, and *D. D. Zhang*. College of Pharmacy, University of Arizona, Tucson, AZ.

#1037 **Poster Board Number 325**
Identification of Poly(ADP-Ribose)-Associated Proteins in Response to ROS Stress. *A. Islas-Robles*, *F. M. Ramirez*, *F. Zhang*, *A. Ooi*, *S. S. Lau*, and *T. Monks*. Pharmacology and Toxicology, The University of Arizona, Tucson, AZ.

#1038 **Poster Board Number 326**
Vitamin A (VA) Prevents Oxygen-Induced Retinopathy (OIR) in Newborn Rats via Transcriptional Regulation of VEGF-A and HIF-1alpha (HIF-1α). *X. Couroucli*, P. Maturu, Y. W. Liang, W. Jiang, and *B. Moorthy*. Pediatrics, Baylor College of Medicine, Houston, TX.

#1039 **Poster Board Number 327**
Impaired Nrf2 Signaling and Mitochondrial Dysfunction Mediate Hypoglycemia-Induced Oxidative Stress and Toxicity at Blood-Brain Barrier Endothelium. *R. K. Sajja*, and *L. Cucullo*. Pharmaceutical Sciences, TTUHSC, Amarillo, TX.

#1040 **Poster Board Number 328**
PFOA Activates the Unfolded Protein Response in Pancreatic Acinar Cells. S. E. Hocevar, *L. M. Kamendulis*, and *B. A. Hocevar*. Environmental Health, Indiana University School of Public Health, Bloomington, IN.

#1041 **Poster Board Number 329**
Role of Plasma Antioxidants for Assessing the Response to Oxidative Stress by Systemic Inflammation. *M. B. Kadiiska*. NIEHS/NIH, Research Triangle Park, NC.

#1042 **Poster Board Number 330**
Cerium Dioxide Nanoparticles: Pro- or Antioxidant Potential *In Vivo*? *V. C. Minarchick*[1], *P. G. Stapleton*[1], E. M. Sabolsky[2], and *T. R. Nurkiewicz*[1]. [1]Center for Cardiovascular and Respiratory Sciences, West Virginia University, Morgantown, WV; and [2]Mechanical Engineering, West Virginia University, Morgantown, WV.

#1043 **Poster Board Number 331**
Exposure to 1,2-Naphthoquinone Induces Protein Sulfenylation in Human Bronchial Epithelial Cells. *P. Wages*[1], *K. Lavrich*[1], and J. Samet[1,2]. [1]Curriculum in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, NC; and [2]EPHD, EPA, Research Triangle Park, NC.

#1044 **Poster Board Number 332**
Investigating Sulforaphane As a Protective Agent against Benzoquinone Toxicity in Mouse Fetal Liver Cells. *N. A. Philbrook*[1], and *L. M. Winn*[1,2]. [1]Department of Biomedical and Molecular Sciences, Queen's University, Kingston, ON, Canada; and [2]Biomedical and Molecular Sciences, Queen's University, Kingston, ON, Canada.

Program Schedule (Continued)

Abstract #

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Juvenile Toxicity

Approaches for Protecting Vulnerable Populations

Chairperson(s): *Betzabet Quintanilla-Vega, Department of Toxicology, CINVESTAV IPN, Mexico City, Mexico; and Michele La Merrill, Environmental Toxicology, University of California Davis, Davis, CA.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#1045 **Poster Board Number 337**
Persistent Antiretroviral Nucleoside Reverse Transcriptase Inhibitor (NRTI)-Induced Mitochondrial Compromise in Transplacentally Exposed Patas Monkey Offspring. *Y. Liu*[1], E. Shim[1], A. T. Gibbons[1], E. Shide[1], R. L. Divi[2], R. A. Woodward[3], M. J. Sowers[3], and *M. C. Poirier*[1]. [1]Carcinogen-DNA Interactions, CCR Section, National Cancer Institute, Bethesda, MD; [2]Methods and Technologies Branch, DCPC, National Cancer Institute, Rockville, MD; and [3]Animal Center, Shared Animal Facility, National Institutes of Health, Dickerson, MD.

#1046 **Poster Board Number 338**
Microsampling in Juvenile Rats. M. Wenker, C. Ouwens, M. Blonk, B. Frieling, and *H. Emmen*. WIL Research Europe B.V., Hertogenbosch, Netherlands.

#1047 **Poster Board Number 339**
The Postnatal Development and Growth of the Cardio-Respiratory System in Sprague-Dawley Rats. A. Apreutese[1,2], C. Gordon[1], *R. Forster*[1], A. Graham[1], R. Tavcar[1], B. Palate[1], J. Haruna[1], and M. Benoit-Biancamano[2]. [1]CiToxLAB North America, Laval, QC, Canada; and [2]Faculty of Veterinary Medicine, University of Montreal, St-Hyacinthe, QC, Canada.

#1048 **Poster Board Number 340**
Histomorphologic Features of Neonatal and Juvenile Uro-Genital Development in Sprague-Dawley Rats. A. Apreutese[1,2], C. Gordon[1], *R. Forster*[1], A. Graham[1], R. Tavcar[1], B. Palate[1], J. Haruna[1], and M. Benoit-Biancamano[2]. [1]CiToxLAB North America, Laval, QC, Canada; and [2]Faculty of Veterinary Medicine, University of Montreal, St-Hyacinthe, QC, Canada.

#1049 **Poster Board Number 341**
Exposure to Particulate Matter Increases the DNA Methylation of Repair Genes in Urban Children. *I. Alvarado-Cruz*[1], *M. Sanchez-Guerra*[1,2], L. Hernandez-Cadena[3], *A. De Vizcaya-Ruiz*[1], M. J. Solís-Heredia[1], V. Mugica[4], H. Byun[2], A. Baccarelli[2], and *B. Quintanilla-Vega*[1]. [1]Toxicology, Cinvestav, Mexico City, Mexico; [2]Harvard School of Public Health, Boston, MA; [3]National Institute of Public Health, Mexico City, Mexico; and [4]Basic Sciences, Autonomous Metropolitan University, Mexico City, Mexico.

Abstract #

#1050 **Poster Board Number 342**
The Impact of Prenatal Parental Tobacco Smoking on Risk of Diabetes Mellitus in Middle-Aged Women. *M. La Merrill*[1], P. Cirillo[2], N. Krigbaum[2], and B. Cohn[2]. [1]Environmental Toxicology, UC Davis, Davis, CA; and [2]Public Health Institute, Berkeley, CA.

#1051 **Poster Board Number 343**
Juvenile Toxicity Testing in Nonhuman Primate Models: Challenges and Experiences. *G. Weinbauer*[1,2], and *P. Baldrick*[2]. [1]Covance Laboratories GmbH, Muenster, Germany; and [2]Covance, Harrogate, United Kingdom.

#1052 **Poster Board Number 344**
Clinical Chemistry Sampling and Assessment in Juvenile Rats—Reduction in and/or Elimination of the Need for Additional Subsets of Pups. S. Clubb, and L. Jardine. Charles River, Edinburgh, United Kingdom. Sponsor: *A. Hoberman*.

#1053 **Poster Board Number 345**
Microsampling-Coupled Bioanalysis in the Neonatal and Juvenile Göttingen Minipig and Beagle Dog. G. P. Bailey[1], M. De Meulder[1], B. Feyen[1], L. De Zwart[1], E. Marsden[2], L. Penard[2], H. Voute[2], and *S. Baudet*[2]. [1]Janssen Pharmaceutical, Beerse, Belgium; and [2]WIL Research Europe, Lyon, France.

#1054 **Poster Board Number 346**
Sprague-Dawley Rat Juvenile Toxicity Studies: Control Data (Part 1). *R. M. Parker*, *D. Williams*, and G. Baxter. DART, Huntingdon Life Sciences, East Millstone, NJ.

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Genetic Toxicology II

Chairperson(s): *John Wise, University of Southern Maine, Portland, ME.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#1055 **Poster Board Number 401**
Selection of a Positive Control in the Modified Comet Assay for Crosslinking Agents. K. Pant[1], *N. Roden*[2], C. Wood[2], *C. Zhang*[2], and *K. Pendino*[2]. [1]BioReliance by SAFC, Rockville, MD; and [2]Purdue Pharma, Cranbury, NJ.

#1056 **Poster Board Number 402**
Testing of 14-Hydroxycodeinone (14HC) in a Combined Modified and Standard Comet Assay. *K. Pendino*[1], *N. Roden*[1], C. Wood[1], *C. Zhang*[1], and K. Pant[2]. [1]Purdue Pharma, Cranbury, NJ; and [2]BioReliance by SAFC, Rockville, MD.

#1057 **Poster Board Number 403**
Approaches of Cytotoxicity and Genotoxicity Assessment of Cadmium, Mercury, and Their Mixture on *Clarias gariepinus*. *P. Guedenon*[1], C. G. Alimba[2], J. Segbo[3], and P. A. Edorh[4,1]. [1]Laboratory of Environmental Health and Toxicology, University of Abomey-Calavi, Cotonou, Benin; [2]Department of Cell Biology and Genetics, University of Ibadan, Ibadan, Nigeria; [3]Laboratory of Applied Research in Biology, University of Abomey-Calavi, Cotonou, Benin; and [4]Biochemistry and Cellular Biology, University of Abomey-Calavi, Cotonou, Benin.

TUESDAY

Program Schedule (Continued)

Abstract #

#1058 **Poster Board Number 404**
An *In Vivo* Mouse Micronucleus Test with O-Methoxy Cinnamaldehyde. *B. A. Wall*, *V. T. Politano*, and *A. Api*. Research Institute for Fragrance Materials, Woodcliff Lake, NJ.

#1059 **Poster Board Number 405**
Comparison of JAK1 Inhibitors Using Whole Blood and Isolated Human Peripheral Blood Lymphocytes in the *In Vitro* Micronucleus Test. *C. S. Farabaugh*[1], S. B. Hurtado[1], M. L. Moy[1], M. M. Wells[1], and *E. B. Harstad*[2]. [1]WIL Research, Skokie, IL; and [2]Genentech, Inc., South San Francisco, CA.

#1060 **Poster Board Number 406**
Validation of an *In Vivo Pig-a* Gene Mutation Assay for Use in Regulatory Toxicology Studies. J. Godin-Ethier[1], F. Leroux[1], N. Wang[1], S. Thébaud[1], F. Merah[1], *S. Dertinger*[2], and A. Nelson[1]. [1]ITR Laboratories Canada, Inc, Montreal, QC, Canada; and [2]Litron Laboratories, Rochester, NY.

#1061 **Poster Board Number 407**
Effects of Grape Seed Extract against Aflatoxin B1-Induced DNA Damage in Rats. *S. A. Albakheet*, and S. M. Attia. Pharmacology and Toxicology, King Saud University, Riyadh, Saudi Arabia.

#1062 **Poster Board Number 408**
***In Vivo* Genotoxicity Studies with Six Different Titanium Dioxide Materials (Three Pigment-Grade and Three Nanostructured) Demonstrate Negative Effects in Orally-Exposed Rats.** A. L. Myhre[1], *R. J. Boatman*[2], *E. M. Donner*[1], A. Wessels[3], and *D. B. Warheit*[1]. [1]DuPont Haskell Lab, Newark, DE; [2]Boatman Toxicology Consulting LLC, Rochester, NY; and [3]BSL Bioservice Labs, Munich, Germany.

#1063 **Poster Board Number 409**
TiO_2 Nanoparticles Are Genotoxic on Lung, Blood, and Liver Cells after Repeated Respiratory Exposure in Rats. C. Relier[1], M. Dubreuil[1], O. Lozano Garcia[2], S. Lucas[2], G. Lacroix[1], and B. Trouiller[1]. [1]Experimental Toxicology Unit, INERIS, Verneuil-en-Halatte, France; and [2]Physics Department, University of Namur, Namur, Belgium. Sponsor: *A. Haase*.

#1064 **Poster Board Number 410**
Increased Micronucleus Frequency in Peripheral Blood from Post-Weaning Malnourished Rats. *M. Pacheco-Martinez*[1,2], D. Carrillo[2], E. Cervantes-Ríos[2], C. García-Rodríguez[3], and R. Ortiz-Muñiz[2]. [1]PhD Student, Universidad Autónoma Metropolitana-Iztapalapa, México D. F., Mexico; [2]Ciencias de la Salud. Biología Celular y Citometría de Flujo, Universidad Autónoma Metropolitana-Iztapalapa, México D.F., Mexico; and [3]Unidad de Investigación en Genética y Toxicología Ambiental, Universidad Nacional Autonoma de México, México D. F., Mexico.

#1065 **Poster Board Number 411**
Evaluation of Cytotoxic, Cytostatic, and Genotoxic Effect of Temephos in Human Lymphocytes. A. B. Benitez-Trinidad[1], G. Vázquez-Estrada[1,2], M. Sordo[2], P. Ostrosky[2], I. M. Medina[1], B. S. Barrón[1], M. Robledo-Marenco[1], and A. E. Rojas-García[1]. [1]Laboratorio de Contaminación y Toxicología Ambiental, Universidad Autónoma de Nayarit, Tepic, Mexico; and [2]Departamento de Medicina Genómica y Toxicología Ambiental, Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, Mexico City, Mexico. Sponsor: *B. Quintanilla*.

Abstract #

#1066 **Poster Board Number 412**
Genotoxic Effect of Temephos in Human Liver Carcinoma Cells (HepG2). F. Herrera-Moreno[1], F. Verdín-Betancourt[1], M. Sordo[2], P. Ostrosky[2], A. M. Salazar[2], I. M. Medina[1], B. S. Barrón[1], M. Robledo-Marenco[1], and A. E. Rojas-García[1]. [1]Laboratorio de Contaminación y Toxicología Ambiental, Universidad Autónoma de Nayarit, Tepic, Mexico; and [2]Departamento de Medicina Genómica y Toxicología Ambiental, Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, Mexico City, Mexico. Sponsor: *B. Quintanilla*.

#1067 **Poster Board Number 413**
Cytotoxicity, Genotoxicity, and Mutagenicity Tests with HepG2 Cells Showed Negative Results for the Azo Dye "Acid Black 210". O. P. Rocha, C. A. Cesila, and *D. P. Oliveira*. Faculdade de Ciências Farmacêuticas de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, Brazil.

#1068 **Poster Board Number 414**
Prediction of Mutagenicity and Carcinogenicity Using SAR Softwares for Caffeine and Epinephrine. A. Keshava[1], and *G. Krishna*[2]. [1]Wake Early College of Health and Sciences, Raleigh, NC; and [2]Supernus Pharmaceuticals, Research and Development, Rockville, MD.

#1069 **Poster Board Number 415**
Mitochondrial Fission- and Fusion-Deficient *C. elegans* Display Hypersensitivity to Environmental Mitotoxicants. *A. Luz*, and *J. Meyer*. Nicholas School of the Environment, Duke University, Durham, NC.

#1070 **Poster Board Number 416**
***In Vivo* Genotoxicity Study of NNK in Sprague-Dawley Rats.** *W. Ding*[1], R. A. Mittelstaedt[1], M. G. Pearce[1], M. E. Bishop[1], K. J. Davis[2], D. Norton[2], D. Nontiho[2], *Y. Tang*[3], H. Rosenfeldt[4], *P. C. Howard*[3], *P. Yeager*[4], and S. Hu[3]. [1]Division of Genetic and Molecular Toxicology, FDA/National Center for Toxicological Research, Jefferson, AR; [2]Toxicologic Pathology Associates, FDA/National Center for Toxicological Research, Jefferson, AR; [3]Office of Scientific Coordination, FDA/National Center for Toxicological Research, Jefferson, AR; and [4]FDA/Center for Tobacco Products, Silver Spring, MD.

#1071 **Poster Board Number 417**
Genoticity Screening of Hospital Wastewaters from University of Port Harcourt Teaching Hospital (UPTH), Nigeria, Using the Allium Cepa Test. *B. B. Babatunde*, and I. F. Vincent-Akpu. Animal and Environmental Biology, University of Port Harcourt, Port Harcourt, Nigeria.

#1072 **Poster Board Number 418**
Cyto- and Genotoxic Potentials of Some Carbamate Pesticides in Human Lymphocytes *In Vitro*. E. Oztas, and *G. Ozhan*. Faculty of Pharmacy, Istanbul University, Istanbul, Turkey.

#1073 **Poster Board Number 419**
Use of a Derived Centrosome Primary Cilia Model to Detect Aneugens. *M. C. Poirier*, *O. Olivero*, and *K. Divi*. National Cancer Institute, Bethesda, MD.

TUESDAY

Program Schedule (Continued)

Abstract #

#1074 **Poster Board Number 420**
Using Human Cell Panel-Based Real-Time Cell Analysis Method to Detect and Differentiate Genotoxic Chemicals. D. Santa Ana[1], *C. Jin*[1], W. Zhang[2], S. Gabos[3,4], *D. Y. Huang*[4], D. W. Kinniburgh[4,3], Y. A. Abassi[1], X. Wang[1], and X. Xu[1]. [1]Acea Biosciences, Inc, San Diego, CA; [2]Alberta Health, Edmonton, AB, Canada; [3]Department of Laboratory Medicine and Pathology, University of Alberta, Edmonton, AB, Canada; and [4]Alberta Center for Toxicology, University of Calgary, Calgary, AB, Canada.

#1075 **Poster Board Number 421**
Evaluating the Inflammatory and Genotoxic Effects of Smokeless Tobacco Using a Human Organotypic Model of Oral Epithelium. M. A. Bachelor, J. Oldach, B. Breyfogle, M. Klausner, and *P. J. Hayden*. MatTek Corporation, Ashland, MA.

#1076 **Poster Board Number 422**
Environmental Toxins Found Historically in the Polycythemia Vera Cluster Area and Their Potential for DNA Damage. E. Irvin-Barnwell[1], M. Lu[2], A. Ragin-Wilson[1], *J. Wheeler*[1], and R. Hoffman[2]. [1]Agency for Toxic Substances and Disease Registry, Atlanta, GA; and [2]Icahn School of Medicine, Mt. Sinai, New York, NY.

#1077 **Poster Board Number 423**
Cytotoxicity and Genotoxicity Assessment of Sandalwood Essential Oil in Human Breast Cell Lines MCF-7 and MCF-10A. *C. M. Ortiz-Sanchez*[1], L. Morales[1,2], A. Castro[3], M. Sastre[3], W. Haskins[4], and *J. L. Matta*[1]. [1]Physiology, Pharmacology, and Toxicology, Ponce School of Medicine and Health Sciences, Ponce, Puerto Rico; [2]Public Health, Ponce School of Medicine and Health Sciences, Ponce, Puerto Rico; [3]Biology, UPR-Humacao, Humacao, Puerto Rico; and [4]Pediatric Biochemistry Laboratory, University of Texas, San Antonio, TX.

#1078 **Poster Board Number 424**
Genotoxicity Assessment of Glyphosate-Based Formulations in Zebrafish Embryos (*Danio rerio*) Using Comet Assay. L. B. Brito[1], F. R. Abe[2], L. B. Rodrigues[1], R. Oliveira[3], *D. P. Oliveira*[2], C. K. Grisolia[3], M. C. Valadares[1], and G. A. Oliveira[1,2]. [1]Universidade Federal de Goias (FF/UFG), Goiania, Brazil; [2]Universidade de Sao Paulo (FCFRP/USP), Ribeirao Preto, Brazil; and [3]Universidade de Brasilia (ICB/UnB), Brasilia, Brazil.

#1079 **Poster Board Number 425**
Mutagenic Activity and Molecular Markers of Inflammation Present in Emissions from On-Road Heavy-Duty Diesel Vehicles with and without Advance Retrofit Devices. *N. Y. Kado*[1,2,3], *C. F. Vogel*[1,2], J. Herner[3], R. Kobayashi[1], W. Robertson[3], A. Alvarado[3], L. Smith[3], and *P. Wong*[3,2]. [1]Dept. Environmental Toxicology, University of California, Davis, CA; [2]Center for Health and the Environment, University of California, Davis, CA; and [3]California Environmental Protection Agency, Air Resources Board, Sacramento, CA.

Abstract #

#1080 **Poster Board Number 426**
Genotoxic Effect of Commercial-Grade Temephos in Human Lymphocytes and Hepatoma Cells. G. Vázquez-Estrada[1,2], F. Verdín-Betancourt[1], Y. Y. Bernal Hernández[1], M. Sordo[2], P. Ostrosky[2], I. M. Medina[1], M. L. Robledo[1], B. S. Barrón[1], and A. E. Rojas-García[1]. [1]Laboratorio de Contaminación y Toxicología Ambiental, Universidad Autónoma de Nayarit, Tepic, Mexico; and [2]Departamento de Medicina Genómica y Toxicología Ambiental, Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, Mexico City, Mexico. Sponsor: *B. Quintanilla*.

#1081 **Poster Board Number 427**
Ethanol Extract of *Eclipta alba* Leaf Suppresses Sodium Arsenite-Induced Genotoxicity and Hepatotoxicity in Male Wistar Rats. *O. A. Odunola*[1], N. O. Fashina[2], I. M. Iloba[1], *M. A. Gbadegesin*[1], *A. M. Adegoke*[1], and *J. O. Olugbami*[1]. [1]Department of Biochemistry, University of Ibadan, Ibadan, Nigeria; and [2]African Indigenous Knowledge Production Unit, University of Ibadan, Ibadan, Nigeria.

#1082 **Poster Board Number 428**
Detection of Sulfur Mustard-Induced DNA Adducts in Pig Skin with Fluorescence Microscopy. K. Kehe[1,2], S. Müller[2], *H. Thiermann*[2], and D. Steinritz[2]. [1]E-Research and Development, Bundeswehr Medical Academy, München, Germany; and [2]Bundeswehr Institute of Pharmacology and Toxicology, München, Germany.

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Gene Regulation and Signal Transduction

Chairperson(s): *Saurabh Vispute, St. John's University, Fresh Meadows, NY.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#1083 **Poster Board Number 431**
PCB126 Regulates hTERT Involving the AhR-ARNT and HIF1α-ARNT Signaling Pathways. *X. Xin*, *S. U. Vorrink*, F. E. Domann, J. L. Schnoor, and *G. Ludewig*. The University of Iowa, Iowa City, IA.

#1084 **Poster Board Number 432**
Carbamoyl Phosphate Synthase 1-Mediated Homocitrullination of Histone H1.2 Constitutes a Novel Epigenetic Mark Associated with Aryl Hydrocarbon Receptor-Driven Gene Expression. *A. D. Joshi*, *G. M. Mustafa*, *C. F. Lichti*, and *C. J. Elferink*. Pharmacology, UTMB, Galveston, TX.

#1085 **Poster Board Number 433**
Comparative Assessment of Dose-Dependent TCDD-Elicited Hepatic Gene Expression in Mice. *T. R. Zacharewski*, *K. A. Fader*, and *R. Nault*. Biochemistry & Molecular Biology, Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

TUESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#1086 **Poster Board Number 434**
Activation of the Aryl Hydrocarbon Receptor by Carcinogenic Aromatic Amines and Modulatory Effects of Their N-Acetylated Metabolites. L. Juricek[1], L. Bui[2,1], F. Busi[2], S. Pierre[1], E. Guyot[1], J. Dupret[2], A. Lamouri[3], *R. Barouki*[1,4], F. Rodrigues-Lima[2], and X. D. Coumoul[1]. [1]INSERM UMR-S 1124, Université Paris Descartes, Sorbonne Paris Cité, Paris, France; [2]Université Paris Diderot, Sorbonne Paris Cité, CNRS EAC 4413, Biologie Fonctionnelle et Adaptative, Paris, France; [3]Université Paris Diderot, Sorbonne Paris Cité, Laboratoire ITODYS, CNRS UMR 7086, Paris, France; and [4]AP-HP, Hôpital Necker-Enfants Malades, Service de Biochimie Métabolique, Paris, France.

#1087 **Poster Board Number 435**
A Novel Role for the Cytosolic Aryl Hydrocarbon Receptor in Pancreatic Cancer. *U. Jin*, and *S. H. Safe*. VTPP, Texas A&M University, College Station, TX.

#1088 **Poster Board Number 436**
The Aryl Hydrocarbon Receptor Is a Novel Regulator of the Circadian Nuclear Receptor Rev-erb Alpha. M. Sun[1], J. Lin[2], and *S. Tischkau*[1]. [1]Pharmacology and Neuroscience, SIU School of Medicine, Springfield, IL; and [2]Internal Medicine, SIU School of Medicine, Springfield, IL.

#1089 **Poster Board Number 437**
Constitutive Androstane Receptor (CAR) Activation Altered microRNA Profiling in Mouse Liver. *R. Hao*[1,2], Y. Wan[3], D. Coslo[2], *F. Chen*[2], *T. Chen*[2], I. Albert[3], *X. Han*[1], and *C. J. Omiecinski*[2]. [1]DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE; [2]Center for Molecular Toxicology and Carcinogenesis, The Pennsylvania State University, University Park, PA; and [3]Department of Bioinformatics and Genomics, The Pennsylvania State University, University Park, PA.

#1090 **Poster Board Number 438**
Transcriptional Regulation of SULT1C2 by Vitamin D Receptor in Human Intestinal and Kidney Cells. K. G. Barrett, H. Fang, *T. A. Kocarek*, and *M. A. Runge-Morris*. Institute of Environmental Health Sciences, Wayne State University, Detroit, MI.

#1091 **Poster Board Number 439**
Regulation of SULT1C3 Transcription by Peroxisome Proliferator Activated-Receptor Gamma in Human Colorectal Adenocarcinoma LS180 Cells. S. T. Dubaisi[1], H. Fang[2], *T. A. Kocarek*[1,2], and *M. A. Runge-Morris*[2]. [1]Pharmacology, Wayne State University, Detroit, MI; and [2]Institute of Environmental Health Sciences, Wayne State University, Detroit, MI.

#1092 **Poster Board Number 440**
Human Cytochrome P450 2C8 (CYP2C8) Is a Novel Target of Peroxisome Proliferator-Activated Receptor α (PPARα) in Human Liver. N. L. Makia, S. Surapureddi, and *J. A. Goldstein*. Laboratory of Toxicology and Pharmacology, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

Abstract #

#1093 **Poster Board Number 441**
Novel Regulatory Function of Human Glutathione S-transferase P1-1 in Classical Estrogen Receptor α Signaling Pathway. X. Liu[1], B. An[3,1], J. Park[2], and *M. Chang*[1]. [1]Medical & Pharmaceutical Sciences, Sookmyung Women's University, Seoul, Republic of Korea; [2]Department of Biological Sciences, Sookmyung Women's University, Seoul, Republic of Korea; and [3]Department of Food and Nutrition, Sookmyung Women's University, Seoul, Republic of Korea.

#1094 **Poster Board Number 442**
Transcriptional Regulation of Human Paraoxonase 1 by PXR Receptor in Human Hepatoma Cells. N. Ponce-Ruiz[3], I. M. Medina[1], E. Rojas[1], B. S. Barrón[1], M. L. Robledo[1], Y. Y. Bernal Hernández[1], M. I. Girón-Pérez[1], G. Azuela[2], and *B. Quintanilla-Vega*[4]. [1]Secretaria de Investigacion y Posgrado, Universidad Autonoma de Nayarit, Tepic, Mexico; [2]Biología Celular, CINVESTAV, Mexico City, Mexico; [3]Posgrado en Ciencias Biológico Agropecuarias, Universidad Autonoma de Nayarit, Tepic, Mexico; and [4]Toxicología, CINVESTAV, Mexico City, Mexico.

#1095 **Poster Board Number 443**
Modulation of CYP3A Enzymes: Role of Cytokines and MAP-Kinases. G. Taneja[1], *C. Chu*[2], *B. Moorthy*[2], and *R. Ghose*[1]. [1]Department of Pharmacological and Pharmaceutical Sciences, University of Houston, Houston, TX; and [2]Department of Pediatrics, Baylor College of Medicine, Houston, TX.

#1096 **Poster Board Number 444**
Impact of Obesity on the Expression of Xenobiotic Metabolism Genes in the Mouse Liver. L. Cheng[1], *J. Nteeba*[2], *A. Keating*[2], and *J. Cui*[1]. [1]University of Washington, Seattle, WA; and [2]Iowa State University, Ames, IA.

#1097 **Poster Board Number 445**
Induction of the Antioxidant Response in White Adipose Tissue via Calorie Restriction Induction of AMPK and Nrf2. *L. Armstrong*, and *A. Slitt*. Biomedical and Pharmaceutical Sciences, University of Rhode Island, Narragansett, RI.

#1098 **Poster Board Number 446**
Effect of Metformin on Upregulation of microRNA-34a to Reduce Sirt1 Expression Leading to Enhanced Sensitivity of Cancer Cells by Oxidative Stress. M. Do, H. Kim, and *H. Jeong*. Pharmacy, Chungnam National University, Daejeon, Republic of Korea.

#1099 **Poster Board Number 447**
Reactive Sulfur Species-Mediated Activation of the Keap1-Nrf2 Pathway by 1,2-Napthoquinone through Sulfenic Acids Formation under Oxidative Stress. Y. Shinkai[1,2], T. Miura[1], H. Kakehashi[1], T. Akaike[3], and *Y. Kumagai*[1,2]. [1]Graduate School of Comprehensive Human Sciences, University of Tsukuba, Tsukuba, Japan; [2]Faculty of Medicine, University of Tsukuba, Tsukuba, Japan; and [3]School of Medicine, Tohoku University, Sendai, Japan.

TUESDAY

Program Schedule (Continued)

Abstract #

#1100 **Poster Board Number 448**
HGF Confers a Survival Response Against Ethanol and Acetaldehyde-Induced Toxicity in a Pancreatic Cell Line by a Mechanism Dependent on ERK Activation. M. Palestino-Dominguez[1], D. Clavijo-Cornejo[1], M. Hiriart[2], L. Bucio[1], V. Souza[1], R. U. Miranda[1], J. Marquardt[3], *M. C. Gutierrez Ruiz*[1], and L. Gomez-Quiroz[1]. [1]Health Sci, Universidad Autonoma Metropolitana Iztapalapa, Mexico City, Mexico; [2]Universidad Nacional Autonoma de Mexico, Mexico City, Mexico; and [3]Medicine, Johannes Gutenberg University, Mainz, Germany.

#1101 **Poster Board Number 449**
Nrf2 Response to Whole Smoke in Three-Dimensional (3D) Airway Cultures. W. Fields, B. Keyser, and B. Bombick. R. J. Reynolds Tobacco Company, Winston-Salem, NC. Sponsor: *P. Harp*.

#1102 **Poster Board Number 450**
Dexamethasone Induces Fibroblast Growth Factor (Fgf) 21 Expression via Activation of Glucocorticoid Receptor. *S. Vispute*, P. Bu, *Y. Le*, and *X. Cheng*. Pharmaceutical Sciences, St. John's University, Queens, NY.

#1103 **Poster Board Number 451**
Effect of Statins on the Regulation of Transport Genes in Human Kidney and Heart. A. Roque Atilano, and *M. S. Joy*. Skaggs School of Pharmacy & Pharmaceutical Sciences, University of Colorado, Aurora, CO.

#1104 **Poster Board Number 452**
A Cost-Effective Targeted Sequencing Method for Monitoring Gene Expression. J. M. Yeakley[1], *N. Abdo*[2], *G. Chappell*[2,3], P. Shepard[1], *I. Rusyn*[3], and B. Seligmann[1]. [1]BioSpyder Technologies, Inc., Rancho Santa Fe, CA; [2]Univ. North Carolina, Chapel Hill, NC; and [3]Texas A&M Univ., College Station, TX.

#1105 **Poster Board Number 453**
Regulation of Cyclin D1 by Arsenic and miRNA Inhibits Adipogenesis. *K. Beezhold*, and *A. Barchowsky*. EOH, University of Pittsburgh, Pittsburgh, PA.

#1106 **Poster Board Number 454**
Early Activation of Aryl Hydrocarbon Receptor Disrupted the Expression of Genes in WNT, BMP2/4, and TGFβ Signal Pathways and Inhibits Binding of Key Cardiac Transcription Factors to Target Genes. *Q. Wang*, J. Chen, *C. Ko*, Y. Fan, *Y. Xia*, M. Medvedovic, and *A. Puga*. University of Cincinnati, Cincinnati, OH.

#1107 **Poster Board Number 455**
Protein Kinase C Activating Tumor Promoters Induce a Synergistic Gene Signature Associated with Inflammation and Oncogenic Resistance in DNA-Damage Stressed Cells. *K. P. Glover*[1], Z. Chen[2], *L. K. Markell*[1], and *X. Han*[1]. [1]Haskell, DuPont, Newark, DE; and [2]Industrial Biotechnology, DuPont, Wilmington, DE.

Abstract #

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Educational Activities and Outreach

Chairperson(s): *Marie M. Bourgeois, Environmental and Occupational Health, University of South Florida, College of Public Health, Tampa, FL; and Christine P. Curran, Biological Sciences, Northern Kentucky University, Highland Heights, KY.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#1108 **Poster Board Number 501**
Using Authentic Institutional Data to Understand STEM Persistence and Identify Curricular Areas for Targeted Reform. *R. S. Pollenz*. Cell Biology, University of South Florida, Tampa, FL.

#1109 **Poster Board Number 502**
"Lotions Are Not Potions" But Are a Good Medium to Bring Together Toxicology Mentors and Students: Results of an SOT K–12 Education Outreach Workshop. *A. Slitt*[1], *V. S. Bhat*[2], *D. E. Arrieta*[3], *D. R. Johnson*[4], *T. D. Camenisch*[5], and *B. Eidemiller*[6]. [1]Univ of Rhode Island, Kingston, RI; [2]NSF International, Ann Arbor, MI; [3]Chevron Phillips Chemical Co LP, The Woodlands, TX; [4]Conestoga-Rovers & Assoc, Dallas, TX; [5]Univ of Arizona, Tucson, AZ; and [6]SOT Education Committee, Reston, VA.

#1110 **Poster Board Number 503**
NorCal SOT K–12 Student Outreach: The Key Is to Have FUN FUN FUN! *T. Parman*[1], Y. He[2], and *D. Zane*[3]. [1]SRI International, Menlo Park, CA; [2]University of California Berkeley, Berkeley, CA; and [3]Genentech, Inc., South San Francisco, CA.

#1111 **Poster Board Number 504**
Development of Environmental Health Animated Tutorials for K–12 Students and Teachers. *P. J. Hakkinen*, E. Ahmed, A. Keselman, C. Hochstein, S. Jordan, K. Matzkin, J. Kramer, A. Plumer, J. E. Kelly, and G. Dutcher. NLM, Specialized Information Services, NIH, Bethesda, MD.

#1112 **Poster Board Number 505**
Using the Life Science Teaching Resource Community's Digital Library to Enhance Toxicology Teaching. *K. L. Willett*. BioMolecular Sciences, Div. of Pharmacology, University of Mississippi, University, MS.

#1113 **Poster Board Number 506**
Design and Assessment of Classroom and Laboratory Activities during a One-Week Toxicology High School Program. *G. L. Guo*[1,2], *J. E. Moscovitz*[1], *A. Venosa*[1], *T. Golden*[1], *L. M. Aleksunes*[1,2], *A. Gow*[1,2], and *D. L. Laskin*[1,2]. [1]Dept. Pharm & Tox and Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ; and [2]EOHSI, Rutgers University, Piscataway, NJ.

#1114 **Poster Board Number 507**
The Undergraduate Student's Perspective on Toxicology Education. *M. Reynolds*[1], and *S. Cheng*[2]. [1]Biology, Washington College, Chestertown, MD; and [2]Sciences, John Jay College of Criminal Justice, New York, NY.

TUESDAY

Program Schedule (Continued)

Abstract #

#1115 **Poster Board Number 508**
The Science of Terrorism: A Model Interdisciplinary Undergraduate Capstone Course. *J. P. Gray*, L. A. Allen, S. M. Bateman, and E. J. Page. Science, US Coast Guard Academy, New London, CT.

#1116 **Poster Board Number 509**
"CREATTE" an Ecotox Research Program on a Shoestring. K. Harand, and *M. M. Bourgeois*. EOH, USF COPH, Tampa, FL.

#1117 **Poster Board Number 510**
A *C. elegans* Dose-Response Lab Using Avoidance Indices. *M. Pomeroy-Black*. LaGrange College, LaGrange, GA.

#1118 **Poster Board Number 511**
Risky Business: Incorporating Risk Assessment and Risk Management into an Undergraduate Environmental Toxicology Course. *C. P. Curran*. Biological Sciences, Northern Kentucky University, Highland Heights, KY.

#1119 **Poster Board Number 512**
Molecular Biology Lab Class As a Vehicle for Teaching Environmental Toxicology. *W. H. Powell*. Biology, Kenyon College, Gambier, OH.

#1120 **Poster Board Number 513**
Use of Multiple Model Systems to Develop Student-Designed Research Projects in an Undergraduate Toxicology Course. *S. J. Fretham*. Biology, Luther College, Decorah, IA.

#1121 **Poster Board Number 514**
Student-Centered Learning: From Student, by Student, and for Student. *S. Cheng*. Sciences, John Jay College, New York, NY.

#1122 **Poster Board Number 515**
Implementing Authentic Science Learning through Multitiered Collaboration. S. Swenson, and Y. He. Sciences, John Jay College, CUNY, New York, NY. Sponsor: *S. Cheng*.

#1123 **Poster Board Number 516**
SOT Funding and Regional Outreach Activities. *A. J. Abritis*[1], *M. M. Bourgeois*[1], C. Mendez[1], K. Harand[1], D. Hebert[2], and E. Renaud[2]. [1]EOH, USF COPH, Tampa, FL; and [2]University of South Florida, Tampa, FL.

#1124 **Poster Board Number 517**
Tutorial Video Series: Using Stakeholder Outreach to Increase Usage of ToxCast Data. C. Baghdikian[2], T. Bahadori[1], *R. S. Thomas*[1], M. Linnenbrink[1], and *K. Crofton*[1]. [1]National Center for Computational Toxicology, US EPA, Research Triangle Park, NC; and [2]ASPPH Fellow, US EPA/ Office of Research and Development, Research Triangle Park, NC.

#1125 **Poster Board Number 518**
Improving 3R Application in Regulatory Testing. P. Lafouge, C. Guichard, O. Gillardeaux, and *A. Romeike*. Safety Assessment, Covance Laboratory, Porcheville, France.

#1126 **Poster Board Number 519**
Is Open Discussion on Animal Research Beneficial to Science and the Industry? *A. Jackson*. Covance Laboratories Ltd, Harrogate, United Kingdom.

Abstract #

#1127 **Poster Board Number 520**
Risk Communication and Perceptions for Highly Beneficial Medical Devices and Pharmaceuticals with Limited Scientific Evidence for Adverse Consequences. *A. J. Bernal*[1], G. Huntley-Fenner[2], and *B. D. Kerger*[1]. [1]Cardno ChemRisk, Aliso Viejo, CA; and [2]Huntley-Fenner Advisors, Inc., Irvine, CA.

#1128 **Poster Board Number 521**
Awareness of Regulatory Processes Among Academic Researchers. *A. M. Lynch*[1,2]. [1]Roosevelt University College of Pharmacy, Schaumberg, IL; and [2]American Chemistry Council, Washington, DC.

#1129 **Poster Board Number 522**
From the Telephone to Twitter: 20 Years of Risk Communication from the National Pesticide Information Center. *D. L. Stone*. Oregon State University, Corvallis, OR.

#1130 **Poster Board Number 523**
Food Poisoning and Pregnancy: Vigilance and Vulnerability. *T. Dodd-Butera*. Nursing, CSU San Bernardino,College of Natural Sciences, San Bernardino, CA.

#1131 **Poster Board Number 524**
Multidisciplinary Environmental and Community-Based One Health Education, Infectious Disease, Nutrition Promotion, and Sustainability Innovation in Rural Sierra Leone. *L. Vakunta*[1,2], J. Rashid[1,2], W. Vakunta[1,2], C. Kalman[1,2], T. Jaraczewski[1,2], A. Aartsen[1,2], A. Begur[1,2], A. Mehotra[1,2], D. Vakunta[1,2], E. Bangura[3,2], A. B. Karim[3,2], and *A. Njai*[1,2,3]. [1]University of Wisconsin Madison, Madison, WI; [2]Project 1808, Inc, Madison, WI; and [3]University of Sierra Leone, Freetown, Sierra Leone.

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Immunotoxicity I

Advancing Clinical and Translational Toxicology

Chairperson(s): *Courtney E. Sulentic, Pharmacology and Toxicology, Wright State University, Dayton, OH.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#1132 **Poster Board Number 529**
TCDD-Mediated Impaired Human B Cell Activation Involves Altered Regulation of Src-Homology Phosphatase (SHP-1) through B Cell Lymphoma Protein (BCL-6). *A. Phadnis-Moghe*[1], R. Crawford[1,2], and *N. E. Kaminski*[1,2]. [1]Center for Integrative Toxicology, Michigan State University, East Lansing, MI; and [2]Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

#1133 **Poster Board Number 530**
TCDD-Mediated Alteration of EBF1 and PAX5 in Human Hematopoietic Stem Cells (HSCs) to B Cell Lineage Commitment. *J. Li*[1,3], *A. Phadnis-Moghe*[1,3], R. Crawford[2,3], and *N. E. Kaminski*[1,2,3]. [1]Genetics Program, Michigan State University, East Lansing, MI; [2]Pharmacology and Toxicology, Michigan State University, East Lansing, MI; and [3]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

TUESDAY

Program Schedule (Continued)

Abstract #

#1134 **Poster Board Number 531**
RNA-Sequencing Analysis of TCDD-Induced Responses in Primary Mouse, Rat, and Human B Lymphocytes. *N. Kovalova*[1,3], R. Crawford[1,3], *R. Nault*[2], *T. R. Zacharewski*[1,3], and *N. E. Kaminski*[1,3]. [1]Pharmacol. and Toxicol., Michigan State Univ., East Lansing, MI; [2]Biochemistry & Molecular Biology, Michigan State Univ., East Lansing, MI; and [3]Center for Integrative Toxicol., Michigan State Univ., East Lansing, MI.

#1135 **Poster Board Number 532**
The Effects of Genetic Variability on the Shape of a Dose-Response Curve: 2,3,7,8 Tetrachlorodibenzo-*p*-dioxin (TCDD)-Induced Suppression of CD40L-Activated Human Primary B Cells. P. W. Dornbos[1,3], R. Crawford[2,3], *N. E. Kaminski*[2,3], and *J. LaPres*[1,3]. [1]Department of Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI; [2]Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI; and [3]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

#1136 **Poster Board Number 533**
Differential Modulation of the Human 3' IgH Regulatory Region Enhancers by TCDD and B Cell Stimulation in Mouse and Human B Cells. *A. Snyder*, *A. K. Freiwan*, and *C. E. Sulentic*. Pharmacology and Toxicology, Wright State University, Dayton, OH.

#1137 **Poster Board Number 534**
Effect of TCDD on Immunoglobulin Expression in Human B Cells. *N. Burra*, B. Johnson, and *C. E. Sulentic*. Pharmacology & Toxicology, Wright State University, Dayton, OH.

#1138 **Poster Board Number 535**
Consequences of TCDD Exposure on CD11c+ Splenic Dendritic Cells during an Antigen-Specific Immune Response in Mice. J. Kreitinger[2,1], B. P. Seaver[1], *C. A. Beamer*[1], and *D. M. Shepherd*[1,2]. [1]Department of Biomedical Sciences, University of Montana, Missoula, MT; and [2]Department of Biological Science, University of Montana, Missoula, MT.

#1139 **Poster Board Number 536**
Immunotoxicity of Dioxin: A Long-Term Low-Dose Exposure Study. Y. Feng, J. Tian, and *B. Zhao*. Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, China.

#1140 **Poster Board Number 537**
Prostaglandin E2 Treatment Can Restore Inducibility of the Immunosuppressive Enzyme IDO in AhR-Negative Dendritic Cells. K. Zado[1], I. Bargen[1], A. A. Seida[1], S. Kadow[1], and *C. Esser*[2,1]. [1]IUF, Duesseldorf, Germany; and [2]University of Düsseldorf, Düsseldorf, Germany.

#1141 **Poster Board Number 538**
Determining the Role of the AhR in Ig Expression and Class Switch Recombination. *B. F. Kashgari*, *A. Snyder*, and *C. E. Sulentic*. Microbiology & Immunology, Wright State University, Dayton, OH.

Abstract #

#1142 **Poster Board Number 539**
Aryl Hydrocarbon Receptor Ligand-Specific Effects on Cytokines in TLR-Activated Dendritic Cells. K. McCulloh[1], S. Kado[1], W. W. Chang[2], and *C. F. Vogel*[1,3]. [1]Center for Health and the Environment, University of California, Davis, CA; [2]Center for Comparative Medicine, University of California, Davis, CA; and [3]Environmental Toxicology, University of California, Davis, CA.

#1143 **Poster Board Number 540**
Low-Level Arsenic Exposure Affects the Innate Immune Response in Embryonic Zebrafish. *L. St. Mary*, *C. J. Mattingly*, and *A. Planchart*. Biology, NC State University, Raleigh, NC.

#1144 **Poster Board Number 541**
Effects of Single Source versus Multisource Copper Indium Disulfide Nanoparticles on Mouse Macrophage Gene Expression. *J. C. Pfau*[1], J. Gilmer[1], D. Walker[2], J. Pak[2], L. Yang[1], and M. A. Thomas[1]. [1]Biological Sciences, Idaho State University, Pocatello, ID; and [2]Chemistry, Idaho State University, Pocatello, ID.

#1145 **Poster Board Number 542**
Cadmium-Associated Dysregulation of Proinflammatory Cytokines in Human Placenta. *J. J. Sollome*[1], *P. D. Ray*[1,2], J. E. Laine[1], M. Grace[3], E. M. Sebastian[1], L. Smeester[1], P. Cable[1], D. Barrow[4], *W. Bodnar*[1], K. Boggess[3], and *R. Fry*[1,2]. [1]Department of Environmental Sciences and Engineering, Gillings School of Global Public Health, University of North Carolina, Chapel Hill, NC; [2]Curriculum in Toxicology, School of Medicine, University of North Carolina, Chapel Hill, NC; [3]UNC Hospitals, University of North Carolina, Chapel Hill, NC; and [4]UNC Cytokine & Biomarkers Core Facility, School of Dentistry, University of North Carolina, Chapel Hill, NC.

#1146 **Poster Board Number 543**
Inorganic Arsenite Suppresses Phosphorylation of the Kinases Syk and PI3K in Mast Cells. *J. Shim*[1], *R. Kennedy-Smith*[1,2], *L. Weatherly*[1,2], A. Velez[1], H. Hashmi[1], and *J. A. Gosse*[1,2]. [1]Molecular and Biomedical Sciences, University of Maine, Orono, ME; and [2]Graduate School of Biomedical Science and Engineering, Orono, ME.

#1147 **Poster Board Number 544**
The Compromise of Macrophage Functions by Hyperoxia Is Attenuated by Ethacrynic Acid via Inhibition of NF-κB-Mediated Release of HMGB1. M. Wang[1], S. Gorasiya[1], D. Antoine[5], *R. A. Sitapara*[1], W. Wu[1], L. K. Sharma[1], H. Yang[4], C. R. Ashby[1], D. Vasudevan[6], M. Zur[1], D. D. Thomas[6], and *L. Mantell*[1,2,3]. [1]Pharmaceutical Science, St John's University, Jamaica, NY; [2]Center for Inflammation and Immunology, The Feinstein Institute for Medical Research, North Shore-LIJ Health System, Manhasset, NY; [3]Center for Heart and Lung Research, The Feinstein Institute for Medical Research, North Shore-LIJ Health System, Manhasset, NY; [4]Laboratory of Biomedical Science, The Feinstein Institute for Medical Research, North Shore-LIJ Health System, Manhasset, NY; [5]Department of Molecular and Clinical Pharmacology, University of Liverpool, Liverpool, United Kingdom; and [6]Department of Medicinal Chemistry and Pharmacognosy, University of Illinois Chicago, Chicago, IL.

Program Schedule (Continued)

Abstract #

#1148 **Poster Board Number 545**
The Immunomodulatory Effect of an Environmental Estrogen Bisphenol A on Fish Macrophages. M. Yang[1], W. Qiu[1], B. Chen[2], J. Chen[1], S. Liu[1], and K. Wang[2]. [1]School of Environmental and Chemical Engineering, Shanghai University, Shanghai, China; and [2]State Key Laboratory of Marine Environmental Science, Xiamen University, Xiamen, China. Sponsor: *H. Wang*.

#1149 **Poster Board Number 546**
Disruption of Lipid Raft Membrane Integrity by Benzo(a)pyrene Exposure Increases Macrophage Susceptibility to HIV-1 Infection. *R. S. Clark*[1], M. Maguire[1], *A. Ramesh*[3], and *D. B. Hood*[1,2]. [1]Department of Neuroscience and Pharmacology, Environmental Health Disparities and Medicine, Center for Molecular and Behavioral Neuroscience, Meharry Medical College, Nashville, TN; [2]Division of Environmental Health Sciences, College of Public Health and Department of Neuroscience, College of Medicine, The Ohio State University, Columbus, OH; and [3]Biochemistry and Cancer Biology, Meharry Medical College, Nashville, TN.

#1150 **Poster Board Number 547**
Inhibition of Acute Phase Response after Bacterial Infection in Zebrafish Developmentally Exposed to Benzo[a]pyrene. *S. R. Das*[1,2], R. Bessire[1], and J. Hansen[1,2,3]. [1]Western Fisheries Research Center, US Geological Survey, Seattle, WA; [2]Department of Epidemiology, University of Washington, Seattle, WA; and [3]Department of Global Health & Interdisciplinary Program in Pathobiology, University of Washington, Seattle, WA.

#1151 **Poster Board Number 548**
Influence of ELF-MF on the Juvenile Immune System of CD-1 Mice. M. Mueller, C. Ziemann, T. Tillmann, G. Lewin, and *C. Dasenbrock*. Fraunhofer ITEM, Hannover, Germany.

#1152 **Poster Board Number 549**
Exposure to Produced Water from "Fracking" Induces Immunotoxicity in Adult Male Mice. *S. E. Attreed*[1], *P. B. Tijerina*[1], *K. Galdanes*[1], *C. Hoffman*[1], *S. P. Doherty-Lyons*[1], *K. Kaur*[1], *J. L. Blum*[1], *A. Nadas*[1], *M. McCawley*[2], and *J. T. Zelikoff*[1]. [1]Environmental Medicine, NYU, Tuxedo, NY; and [2]School of Public Health, WVU, Morgantown, WV.

#1153 **Poster Board Number 550**
Protein Phosphorylation Profiling Identifies Potential Mechanisms for Direct Immunotoxicity. A. Peijnenburg[1], J. Shao[1,3], P. Hendriksen[1], *H. van Loveren*[2,3], and O. L. Volger[1]. [1]RIKILT, Wageningen University and Research Centre, Wageningen, Netherlands; [2]National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands; and [3]Department of Toxicogenomics, Maastricht University, Maastricht, Netherlands.

#1154 **Poster Board Number 551**
Embryonic Thymocyte Responsiveness to HPTE Is Dependent upon Concurrent TCR Signaling, but Not Estrogen Receptor Signaling. *C. Broussard*, L. Leung Liu, C. Zambrano, P. Escalante, A. Patel, F. Mourad, and Z. Muscato. Biology, University of La Verne, La Verne, CA.

#1155 **Poster Board Number 552**
Enhanced Histopathology in an Immunotoxicity Tiered Testing Strategy. *R. P. Frawley*, *S. Elmore*, *D. Malarkey*, and *D. Germolec*. National Toxicology Program, NIEHS, Research Triangle Park, NC.

Abstract #

#1156 **Poster Board Number 553**
Significant Differences in Specific Immune Cell Populations, in Particular CD8+ T Cell Subsets, in Chinese-Origin vs. Mauritius-Origin Cynomolgus Monkeys. C. Riveley[1], R. Capocasale[1], *P. Narayanan*[2], and *M. Fort*[2]. [1]FlowMetric Inc., Doylestown, PA; and [2]Amgen Inc., Seattle, WA.

#1157 **Poster Board Number 554**
Arsenic and Innate Immunity: Macrophage Function upon Arsenic Exposure. F. C. Sillé[1], D. Medina-Cleghorn[2], D. K. Nomura[2], C. Steinmaus[1], A. Smith[1], and *M. T. Smith*[1]. [1]School of Public Health, University of California, Berkeley, Berkeley, CA; and [2]Department of Nutritional Science & Toxicology, University of California, Berkeley, Berkeley, CA.

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: *In Vitro* Cardiovascular Safety

Chairperson(s): *Srikanth Nadadur, NIEHS, Research Triangle Park, NC.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#1158 **Poster Board Number 559**
***In Vitro* Toxicology Testing Using Human Induced Pluripotent Stem Cell-Derived Cardiomyocytes to Predict Tobacco Smoking-Related Cardiovascular Disease.** *X. Yang*[1], *Y. Luo*[1], and M. Yang[2]. [1]Division of Systems Biology, NCTR/FDA, Jefferson, AR; and [2]Office of Science, CTP/FDA, Silver Spring, MD.

#1159 **Poster Board Number 560**
Dietary Supplement Ingredients Alter Beating Parameters of iCell Cardiomyocytes. *R. J. Calvert*[1], S. Vohra[1], M. Ferguson[2], and *P. Wiesenfeld*[1]. [1]Division of Toxicology, US Food and Drug Administration, Laurel, MD; and [2]Division of Mathematics, US Food and Drug Administration, Laurel, MD.

#1160 **Poster Board Number 561**
Mcl-1 Knockdown Causes a Sub-Lethal Injury in Cultured Human iPSC-Cardiomyocytes. *L. Guo*[1], J. Mussio[1], *M. Furniss*[1], J. Hamre[1], *S. Eldridge*[2], R. Parchment[1], and *M. Davis*[2]. [1]Applied/Developmental Research Directorate, Frederick National Laboratory for Cancer Research, Frederick, MD; and [2]Division of Cancer Treatment and Diagnosis, National Cancer Institute, Bethesda, MD.

#1161 **Poster Board Number 562**
Elucidating Mechanisms of Cardiovascular Toxicity Using Phenotypic Data from Primary Human Cell Systems. *E. Berg*, M. A. Polokoff, A. O'Mahony, and X. Li. BioSeek, a division of DiscoveRx, South San Francisco, CA.

#1162 **Poster Board Number 563**
Postrecording Tracking of Cardiac Mixed Populations Allows Selective Assessment of Drug Activity. *F. Cerignoli*[1,2], R. Agustin[2], R. Ingermanson[2], P. McDonough[2], M. Mercola[1,3], and J. Price[2,3]. [1]Jacobs School of Engineering, UC San Diego, La Jolla, CA; [2]Vala Sciences Inc., San Diego, CA; and [3]Sanford-Burnham Medical Research Institute, La Jolla, CA.

TUESDAY

Program Schedule (Continued)

Abstract #

#1163 **Poster Board Number 564**
A Dominant-Negative Sox9b Partially Phenocopies TCDD-Induced Cardiac Toxicity in Larval Zebrafish. J. C. Gawdzik, *J. S. Plavicki*, *K. A. Lanham*, M. D. Russell, W. Heideman, and *R. E. Peterson*. Pharmaceutical Science, University of Wisconsin-Madison, Madison, WI.

#1164 **Poster Board Number 565**
Gefitinib, a Tyrosine Kinase Inhibitor, Induces Cardiotoxicity and Hypertrophy in Rat Cardiomyocyte H9c2 Cells: Role of Oxidative Stress and Apoptosis. H. M. Korashy[1], I. M. Attafi[2,1], M. A. Ansari[1], S. A. Ahmad[1], M. A. Assiri[1], M. Almujahid[1], O. Almuzaini[1], F. A. Aldughaim[1], and F. M. Alotaibi[1]. [1]Pharmacology & Toxicology, King Saud University, Riyadh, Saudi Arabia; and [2]Poison Control and Medical Forensic Chemistry Center, Jazan Health Affairs, Jazan, Saudi Arabia. Sponsor: *A. El-Kadi*.

#1165 **Poster Board Number 566**
Analysis of Mitochondrial Function Using Human iPSC-Derived Cardiomyocytes on the Seahorse. B. Bertram[1,2], R. Kettenhofen[1], G. Luerman[1], and M. Torvinen[2]. [1]Axiogenesis AG, Cologne, Germany; and [2]Seahorse Bioscience, North Billerica, MA. Sponsor: *E. Clarke*.

#1166 **Poster Board Number 567**
Cholesterol Homeostasis Is Regulated by Carboxylesterase 1 in Macrophage Foam Cells. *L. C. Mangum*, *J. A. Crow*, A. Borazjani, and *M. K. Ross*. Department of Basic Science, Mississippi State University, Mississippi State, MS.

#1167 **Poster Board Number 568**
Nitration of Linoleic Acid Prevents Polychlorinated Biphenyl-Induced Endothelial Cell Dysfunction. *M. C. Petriello*[1,2], A. Morris[2], and *B. Hennig*[2]. [1]Graduate Center for Toxicology, University of Kentucky, Lexington, KY; and [2]Superfund Research Center, University of Kentucky, Lexington, KY.

#1168 **Poster Board Number 569**
Monomethylarsonous Acid (MMA) Promotes Mitochondrial Pathology in Vascular Smooth Muscle. *C. Pace*[1], T. Das Banerjee[1], *B. Welch*[2], R. Dagda[1], and *J. E. Angermann*[1]. [1]University of Nevada, Reno, Reno, NV; and [2]Oregon State University, Corvallis, OR.

#1169 **Poster Board Number 570**
Characterization of the Homocysteine Thiolactonase Activity of Biphenyl Hydrolase-Like Protein/Valacyclovir Hydrolase. *J. Marsillach Lopez*[1], S. Suzuki[1], R. J. Richter[1], M. McDonald[2], P. Rademacher[2], M. J. MacCoss[3], E. J. Hsieh[3], A. E. Rettie[2], and *C. E. Furlong*[1,3]. [1]Medicine, Division of Medical Genetics, University of Washington, Seattle, WA; [2]Medicinal Chemistry, University of Washington, Seattle, WA; and [3]Genome Sciences, University of Washington, Seattle, WA.

Abstract #

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Alternatives to Mammalian Models III

Chairperson(s): *Amos O. Abolaji, Biochemistry, University of Ibadan, Ibadan, Nigeria; and James M. McKim, Investigative Toxicology, IONTOX, LLC, Kalamazoo, MI.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#1170 **Poster Board Number 601**
Crude Oil/Dispersant-Induced Spermatogenesis Defects in *Caenorhabditis elegans*: Implications in Reproductive Toxicity. Y. Zhang, and *X. Pan*. Biology, East Carolina University, Greenville, NC.

#1171 **Poster Board Number 602**
Screening Chemical Effects on Steroidogenesis in H295R Human Adrenocortical Carcinoma Cells. *A. Karmaus*[1,2], D. L. Filer[1,2], C. Toole[3], K. Lewis[4], and *M. T. Martin*[1]. [1]US EPA/ORD/NCCT, Research Triangle Park, NC; [2]ORISE, Research Triangle Park, NC; [3]Cyprotex, Inc., Kalamazoo, MI; and [4]OpAns, LLC., Durham, NC.

#1172 **Poster Board Number 603**
4-Vinylcyclohexene Diepoxide-Induced Toxicity in *Drosophila melanogaster*: Implications in Occupationally Exposed Women. *A. O. Abolaji*[1,2], T. K. Nascimento[2], *E. O. Farombi*[1], and J. B. Rocha[2]. [1]Biochemistry, University of Ibadan, Ibadan, Nigeria; and [2]Biochimica Toxicologica, Universidade Federal de Santa Maria, Santa Maria, Brazil.

#1173 **Poster Board Number 604**
Overlapping and Distinct Effects of Bisphenol A and Its Substitute Bisphenol S on Germ Cells. *Y. Chen*, *P. Allard*, and D. Lee. Molecular Toxicology, UCLA, Los Angeles, CA.

#1174 **Poster Board Number 605**
Morphologic Changes in 3D Human Breast Microtissues following Exposure to Endocrine Disruptors. *M. M. Vantangoli*, S. Madnick, S. Wilson, and *K. Boekelheide*. Pathology and Laboratory Medicine, Brown University, Providence, RI.

#1175 **Poster Board Number 606**
***In Vitro* Spermatogenesis Model for Assessing Male Reproductive Toxicity.** *H. Wei*, L. Yin, S. Liang, and *X. Yu*. Environmental Health Science, University of Georgia, Athens, GA.

#1176 **Poster Board Number 607**
Diet, Thermal Environment, and Early-Life Exposure to Methylmercury: *Daphnia pulex* As a Model Organism for Evaluating Multistressor Interactions across the Lifespan. *J. M. Gohlke*[1], *D. Doke*[1], *S. L. Hudson*[1], J. A. Dawson[2], and T. S. Schwartz[3]. [1]Environmental Health Sciences, University of Alabama at Birmingham, Birmingham, AL; [2]Biostatistics, University of Alabama at Birmingham, Birmingham, AL; and [3]Office of Energetics, University of Alabama at Birmingham, Birmingham, AL.

TUESDAY

Program Schedule (Continued)

Abstract #

#1177 **Poster Board Number 608**
Germline Defects in Mitochondrial Cholesterol Transporter *C. elegans* Mutants following Bisphenol A or Low Cholesterol Exposures. *D. W. Ferreira*, and *P. Allard*. Institute for Society and Genetics, University of California, Los Angeles, Los Angeles, CA.

#1178 **Poster Board Number 609**
***C. elegans*, a Valuable Model for Predicting Chemicals' Acute Toxicity in Rodent.** Y. Li, S. Gao, H. Jing, J. Ning, Z. Tan, S. Zheng, C. Zhao, L. Ma, Y. Deng, Y. Lou, Y. Ma, T. Gao, and *G. J. Li*. Institute for Toxicology, Beijing Centers for Disease Control and Prevention, Beijing Research Center for Preventive Medicine, Beijing, China.

#1179 **Poster Board Number 610**
Correlation of Tox21 and ToxCast *In Vitro* and Small Model Organism Outcomes to Rat Oral Toxicity. *W. W. Polk*[1], *N. Kleinstreuer*[1], *J. Strickland*[1], M. Paris[1], *D. G. Allen*[1], and *W. Casey*[2]. [1]ILS/NICEATM, Research Triangle Park, NC; and [2]NTP/NICEATM, Research Triangle Park, NC.

#1180 **Poster Board Number 611**
Development of a New Reconstituted Human Oral Mucosal Model to Assess the Oral Irritation Testing. S. Lee[1], S. Kim[1], H. Jung[1], S. Yang[2], K. Kim[2], and *K. Lim*[3]. [1]MCTT Bio, Seoul, Republic of Korea; [2]Yonsei University College of Dentistry, Seoul, Republic of Korea; and [3]Ewha Womans University, Seoul, Republic of Korea.

#1181 **Poster Board Number 612**
Optimization of the Estimation for Oral Mucosa Toxicity Using New 3-D Reconstructed Human Oral Tissue Model. *S. Cho*. Skin Research Division, AMOREPACIFIC Corporation R&D Center, Yongin-si, Republic of Korea.

#1182 **Poster Board Number 613**
Endocannabinoid Receptor Expressions in Japanese Medaka (*Oryzias latipes*) Is Organ-Specific. *S. K. Singha*[2], I. A. Khan[1,3], and *A. K. Dasmahapatra*[1,2]. [1]National Center for Natural Product Research, University of Mississippi, University, MS; [2]Department of Biomolecular Sciences, Division of Pharmacology, University of Mississippi, University, MS; and [3]Department of Biomolecular Sciences, Division of Pharmacognosy, University of Mississippi, University, MS.

#1183 **Poster Board Number 614**
Cytotoxicity, ROS Production, and DNA Damage of ZEA and Its Metabolites vs. Antioxidant Enzyme System of Ovarian and Hepatoma Cells. E. Tatay, *G. Font*, and M. Ruiz. Toxicology, University of Valencia, Burjassot, Spain.

#1184 **Poster Board Number 615**
Agrochemical Formulations: How to Avoid *In Vivo* Acute Toxicity Testing Using the GHS Additivity Formula. M. Corvaro, K. Andrew, R. Chatfield, and J. Mehta. European Development Centre, Dow Agrosciences, Milton, United Kingdom. Sponsor: *D. Juberg*.

Abstract #

#1185 **Poster Board Number 616**
Cytotoxicity Profiling of Chemicals Based on Cellular Growth Kinetics and Mean Graph Method. S. Gabos[1,3], F. Ackah[2], W. Zhang[2], *D. Y. Huang*[3], D. W. Kinniburgh[3,1], *C. Jin*[4], D. Santa Anna[4], Y. A. Abassi[4], and X. Xu[4]. [1]University of Alberta, Edmonton, AB, Canada; [2]Alberta Health, Edmonton, AB, Canada; [3]Alberta Center for Toxicology, Calgary, AB, Canada; and [4]ACEA Biosciences Inc., San Diego, CA.

#1186 **Poster Board Number 617**
Guarana (*Paullinia cupana* Mart) Extends Lifespan of *Caenorhabditis elegans*. L. P. Arantes[1,2], M. L. Machado[2], D. C. Zamberlan[2], F. A. Soares[2], and *M. Aschner*[1]. [1]Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY; and [2]Chemistry, Federal University of Santa Maria, Santa Maria, Brazil.

#1187 **Poster Board Number 618**
Protein and Plastic Binding: Impact on Cytotoxicity of Cationic Surfactants *In Vitro*. F. Groothuis[1], *B. J. Blaauboer*[1], S. Droge[1], B. Nicol[2], E. Opsahl[1], N. Timmer[1], and N. Kramer[1]. [1]Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands; and [2]Safety and Environmental Assurance Centre (SEAC), Unilever, Sharnbrook, United Kingdom.

#1188 **Poster Board Number 619**
Assignment of Chemicals to Mode-of-Action Categories (MoA) Using *In Vitro* Cellular Time-Response Curves. *D. Huang*[1], Z. Xi[2], S. Khare[2], T. Pan[2,3], F. Ibrahaim[2], B. Huang[2], *S. Gabos*[1,4], W. Zhang[5], D. W. Kinniburgh[1,4], *C. Jin*[6], D. Santa Ana[6], Y. A. Abassi[6], and X. Xu[6]. [1]Alberta Centre for Toxicology, University of Calgary, Calgary, AB, Canada; [2]Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada; [3]School of Electrical and Informational Engineering, Jiangsu University, Zhenjiang, China; [4]Laboratory Medicine and Pathology, University of Alberta, Edmonton, AB, Canada; [5]Alberta Health, Edmonton, AB, Canada; and [6]ACEA Biosciences Inc, San Diego, CA.

#1189 **Poster Board Number 620**
Development and Validation of a Standardized *In Vitro* Cytotoxicity Assay. *A. L. Niles*, K. R. Kupcho, M. Bratzh, J. Linderman, and J. Watson. Promega, Madison, WI.

#1190 **Poster Board Number 621**
Synergism of Fumonisin and Aflatoxin Toxicity and the Underlying Mechanism in Nematode *Caenorhabditis elegans*. *K. S. Xue*, *L. Tang*, and *J. Wang*. University of Georgia, Athens, GA.

#1191 **Poster Board Number 622**
Evaluation of an Integrated Human Multi-Organ Culture Plate for Predicting Systemic Toxicity *In Vitro*. J. Ipema[1], *E. LeCluyse*[2], *H. J. Clewell*[2], *M. E. Andersen*[2], and *J. M. McKim*[1]. [1]IONTOX, LLC, Kalamazoo, MI; and [2]The Hamner Institutes, Research Triangle Park, NC.

#1192 **Poster Board Number 623**
Roadmap for Animal-Free Acute Toxicity Assessments of Crop Protection Formulations. *S. C. Gehen*[1], *R. S. Settivari*[2], R. Acosta Amado[1], M. Corvaro[1], J. Mehta[1], *R. J. Rasoulpour*[1], and *E. W. Carney*[2]. [1]Dow AgroSciences LLC, Indianapolis, IN; and [2]The Dow Chemical Company, Midland, MI.

TUESDAY

Program Schedule (Continued)

Abstract #

#1193 **Poster Board Number 624**
Organelle Imaging Toxicology: Novel Analysis of the Sandwich High-Content Screening Project. *W. A. Irwin*, and *J. Liccione*. HED, US EPA, Arlington, VA.

#1194 **Poster Board Number 625**
Use of Semi-Permeable Membrane for Preliminary Evaluation of Transport of Native and an Enhanced Formulation of Butyrylcholinesterase. J. Hinckley[1], *M. Ehrich*[1], and Z. Zhou[2]. [1]Virginia-Maryland College of Veterinary Medicine, Virginia Tech, Blacksburg, VA; and [2]Luna NanoWorks, Danville, VA.

#1195 **Poster Board Number 626**
Butafenacil: A Positive Control for Identifying Anemia- and Porphyria-Inducing Chemicals. J. K. Leet, R. Hipszer, and *D. Volz*. University of South Carolina, Columbia, SC.

#1196 **Poster Board Number 627**
Microfluidic Culture of NRK52E Enhances Sensitivity to Proximal Tubule Toxicants. H. Jayakar[1], B. Pandian[2], K. Pant[2], *B. Jessen*[1], and *G. Yanochko*[1]. [1]Drug Safety Research & Development, Pfizer, San Diego, CA; and [2]CFD Research Corp, Huntsville, AL.

#1197 **Poster Board Number 628**
Assessment of an *In Vitro* Human Intestinal Epithelial Cell Model for Evaluation of Protein Cytotoxicity. *C. S. Zimmermann*[1], B. Hurley[2,3], W. Pirzai[2], *B. Delaney*[4], *M. S. Harper*[1], *G. Ladics*[5], and *J. M. Roper*[6]. [1]Biotech Affairs and Regulatory, DuPont Pioneer, Ankeny, IA; [2]Mucosal Immunology Laboratory, Massachusetts General Hospital, Charlestown, MA; [3]Department of Pediatrics, Harvard Medical School, Boston, MA; [4]Biotech Affairs and Regulatory, DuPont Pioneer, Johnston, IA; [5]Biotech Affairs and Regulatory, DuPont Pioneer, Wilmington, DE; and [6]Haskell Global Centers for Health and Environmental Sciences, DuPont, Newark, DE.

#1198 **Poster Board Number 629**
***In Vitro* Model Development for Safety Assessment of Acutely Ingested Proteins.** *L. K. Markell*[1,2,3], S. M. Waters[1], J. Yao[1], *J. Roper*[1], C. S. Zimmermann[2], *B. Delaney*[3], and *X. Han*[1]. [1]DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE; [2]DuPont Pioneer, Ankeny, IA; and [3]DuPont Pioneer, Johnston, IA.

#1199 **Poster Board Number 630**
Establishment of an Intestinal Model for Oral Vaccination Testing. C. Lotz[1], M. Schweinlin[1], H. Walles[1,2], and M. Metzger[1,2]. [1]Tissue Engineering and Regenerative Medicine, University Hospital Würzburg, Würzburg, Germany; and [2]Fraunhofer Project Group Oncology, Fraunhofer IGB, Würzburg, Germany. Sponsor: *B. De Wever*.

#1200 **Poster Board Number 631**
3D *In Vitro* Human Small Intestinal Tissue Models to Assess Drug Toxicity and Permeation. S. Ayehunie[1], Z. Stevens[1], T. Landry[1], M. Taimi[2], A. Armento[1], M. Klausner[1], and *P. J. Hayden*[1]. [1]R&D, MatTek, Ashland, MA; and [2]MatTek Corporation, Ashland, MA.

Abstract #

#1201 **Poster Board Number 632**
Standardized Rat and Human Microislets for Diabetes Research and Drug Safety Assessment. *S. Messner*[1], R. Prazak[1], J. M. Kelm[1], R. Zuellig[2], R. Lehmann[2], and W. Moritz[1]. [1]InSphero AG, Schlieren, Switzerland; and [2]Division of Endocrinology, University Hospital, Zurich, Switzerland.

Tuesday Morning, March 24
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Biomarkers

Chairperson(s): *Joshua Chandler, Emory University School of Medicine, Atlanta, GA.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#1202 **Poster Board Number 633**
A Novel Biomarker Panel to Identify Hepatocellular Carcinoma in Chronic Hepatitis C-Infected (HCV) Patients. *G. M. Mustafa*[1], J. R. Petersen[2], H. Spratt[3], L. Denner[4], and *C. Elferink*[1]. [1]Pharmacology, University of Texas Medical Branch, Galveston, TX; [2]Pathology, University of Texas Medical Branch, Galveston, TX; [3]PMCH-Admin, University of Texas Medical Branch, Galveston, TX; and [4]Internal Medicine, University of Texas Medical Branch, Galveston, TX.

#1203 **Poster Board Number 634**
Assessment of Individual Bile Acid Profiles after Single Oral Dose of Itraconazole in Rats and Dogs. A. Lynn, S. Chowdury, S. Yu, M. Gallacher, M. Johnson, R. Peters, C. D. Fisher, and *P. Kirby*. Takeda Pharmaceuticals, Cambridge, MA.

#1204 **Poster Board Number 635**
Biomarkers of Immune-Mediated Concanavalin A Hepatotoxicity. M. De Vera Mudry, and F. Christen. Pharma Research and Early Development, F. Hoffmann-La Roche Ltd., Basel, Switzerland. Sponsor: *T. Weiser*.

#1205 **Poster Board Number 636**
Profiling Individual Bile Acids in Human Populations Using a UPLC/MS/MS Method. L. Luo[1], J. Kenny[2], R. Warner[3], K. Johnson[3], and *J. L. Colangelo*[1]. [1]Drug Safety R&D, Pfizer Inc, Groton, CT; [2]Pre-Veterinary Medicine, University of Prince Edward Island, Charlottetown, PE, Canada; and [3]Medical School, University of Michigan, Ann Arbor, MI.

#1206 **Poster Board Number 637**
Plasma HMGB1 As a Biomarker for Severe Hepatotoxicity after Exposure to Toxic Industrial Chemicals. B. C. Donald[1], J. D. Stallings[2], and D. L. Ippolito[2]. [1]ORISE, Fort Detrick, MD; and [2]US Army Center for Environmental Health Research, Fort Detrick, MD. Sponsor: *D. Jackson*.

#1207 **Poster Board Number 638**
Proteomic Biomarker Identification of Preclinical Liver Injury in Rats. *L. Yu*[1], Y. Gao[1], Z. Cao[1], *X. Yang*[1], J. Sun[1], *S. Chen*[1], *R. D. Beger*[1], K. J. Davis[2], *W. F. Salminen*[3], and *D. L. Mendrick*[1]. [1]National Center for Toxicological Research, FDA, Jefferson, AR; [2]Toxicologic Pathology Associates, Inc., Jefferson, AR; and [3]PAREXEL, Sarasota, FL.

TUESDAY

Program Schedule (Continued)

Abstract #

#1208 **Poster Board Number 639**
Acetaminophen Metabolites and Protein Adducts in Human Plasma after Overdose and Relation to the Time of Clinical Presentation. *Y. Xie*[1], *M. R. McGill*[1], *S. F. Cook*[2], M. R. Sharpe[3], *D. G. Wilkins*[2], *D. E. Rollins*[2], and *H. Jaeschke*[1]. [1]Pharmacology, Toxicology & Therapeutics, University of Kansas Medical Center, Kansas City, KS; [2]Pharmacology and Toxicology, University of Utah, Salt Lake City, UT; and [3]Internal Medicine, University of Kansas Medical Center, Kansas City, KS.

#1209 **Poster Board Number 640**
Assessment of Urinary AFM_1 in a Population at High Risk for Liver Disease. *S. Elmore*[1], P. Jolly[2], C. Jolly[3], *A. A. Romoser*[1], and *T. D. Phillips*[1]. [1]Veterinary Integrative Biosciences, Texas A&M University, College Station, TX; [2]Epidemiology, University of Alabama at Birmingham, Birmingham, AL; and [3]Agricultural Economics and Rural Sociology, Auburn University, Auburn, AL.

#1210 **Poster Board Number 641**
PSTC and SAFE-T Collaboration: Evaluation of Normal Reference Ranges for 12 Novel Liver Safety Biomarkers in Healthy Volunteers. *P. Kirby*[1], *S. J. Schomaker*[3], *N. King*[2], *J. Sauer*[2], *M. Cisneroz*[2], F. Gao[1], J. Marcinak[1], *D. Robinson-Gravatt*[3], G. Kullak-Ublick[4], T. Joos[5], T. Knorpp[5], and J. Goepfert[5]. [1]Takeda, Cambridge, MA; [2]C-Path, Tucson, AZ; [3]Pfizer, Groton, CT; [4]Novartis, Basel, Switzerland; and [5]Natural and Medical Sciences Institute, Reutlingen, Germany.

#1211 **Poster Board Number 642**
***In Vitro* Study of Potential Nephrotoxicity Biomarkers through Gene Expression.** S. C. Silva[1], S. Soares[1], M. F. Grossi[1], L. A. Almeida[2], A. M. Valente[3], and C. A. Tagliati[1]. [1]Universidade Federal de Minas Gerais, Belo Horizonte, Brazil; [2]Universidade Federal de Alfenas, Alfenas, Brazil; and [3]Universidade Federal de Juiz de Fora, Juiz de Fora, Brazil. Sponsor: *S. Barros*.

#1212 **Poster Board Number 643**
TCDD Alters Keratin Expression in the Urogenital Sinus during Initiation of Prostatic Budding in Mice. A. J. Schneider, *T. Lin*, and *R. E. Peterson*. School of Pharmacy, University of Wisconsin - Madison, Madison, WI.

#1213 **Poster Board Number 644**
Fit-for-Purpose Validation of Urinary C5b-9 As a Glomerular Injury Biomarker in Rats. M. Ko, E. E. Nagiec, *D. Burt*, S. Berasi, *H. Lin*, J. Syed, A. Vitsky, and *B. L. Homer*. Drug Safety, Research & Development, Pfizer, San Diego, CA.

#1214 **Poster Board Number 645**
Assessment of Biomarkers for the Detection of Renal Toxicity following Intravenous Tobramycin Administration in Male and Female Cynomolgus Macaques. *H. Stock*, N. Chini, Y. Li, and *J. C. Mirsalis*. Bioscience, SRI International, Menlo Park, CA.

#1215 **Poster Board Number 646**
Urinary Biomarkers for Drug-Induced Renal Toxicities in Cynomolgus Monkeys. H. Uchino, J. Fujishima, K. Fukuoka, T. Iwakiri, H. Maeda, A. Kamikuri, K. Yunomae, F. Chatani, H. Sameshima, and *R. Nagata*. Shin Nippon Biomedical Laboratories (SNBL), Ltd., Kagoshima, Japan.

Abstract #

#1216 **Poster Board Number 647**
Performance of Urinary Kidney Translational Safety Biomarkers in Tenofovir-Treated Cynomolgus Monkeys and Beagle Dogs. *Y. Gu*[1], K. Vlasakova[2], *W. E. Glaab*[2], S. P. Troth[2], R. L. Peiffer[2], H. Tournade[3], F. R. Pasello dos Santos[3], and *F. D. Sistare*[2]. [1]Safety Assessment, Merck, Kenilworth, NJ; [2]Safety Assessment, Merck, West Point, PA; and [3]Safety Assessment, Merck, Riom, France.

#1217 **Poster Board Number 648**
Comparison of Urinary Liver-Type Fatty Acid-Binding Protein (L-FABP) and Other Urinary Nephrotoxicity Biomarkers in Gentamicin-Induced Nephrotoxicity in SD Rats. *T. Kadota*[1], Y. Suzuki[1], H. Komatsu[1], and T. Sugaya[2]. [1]CMIC Bioresearch Center Co., Ltd., Yamanashi, Japan; and [2]CMIC Holdings Co., Ltd., Tokyo, Japan.

#1218 **Poster Board Number 649**
Developing a Translatable Molecular Signature for Drug-Induced Kidney Injury. S. Dremier, P. De Ron, C. Berteau, S. Snelling, B. Massant, G. Toussaint, K. Tilmant, *J. Valentin*, and A. Nogueira da Costa. UCB BioPharma SPRL, Braine L'Alleud, Belgium.

#1219 **Poster Board Number 650**
Urinary KIM-1 Detection of Subclinical Nephrotoxicity in Oncology Patients Treated with Cisplatin. *B. George*[1,2], *X. Wen*[2], L. Ellison[3], *M. S. Joy*[3], and *L. M. Aleksunes*[2]. [1]Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ; [2]Department of Pharmacology & Toxicology, Rutgers University, Piscataway, NJ; and [3]Department of Pharmaceutical Sciences, University of Colorado, Aurora, CO.

#1220 **Poster Board Number 651**
Technical Best Practices for Urinary Biomarker Evaluation. *Y. Yang*[1], *B. Riefke*[2], *L. T. Rosini-Marthaler*[3], R. Khan-Malek[4], E. Harpur[5], and R. O'Lone[6]. [1]R45M, AbbVie Inc., North Chicago, IL; [2]Bayer HealthCare, Berlin, Germany; [3]Bristol-Myers Squibb, Princeton, NJ; [4]Sanofi, Paris, France; [5]Newcastle University, Newcastle upon Tyne, United Kingdom; and [6]ILSI Health and Environmental Sciences Institute (HESI), Washington, DC.

#1221 **Poster Board Number 652**
The Human FRY Gene Is a Novel Biomarker for Breast Cancer Progression and Prognosis. N. Takizawa[1,2], J. C. Graham[3], *M. Fang*[3,4], Z. Gong[5], B. Estrella[2], X. Ren[6], and *H. Zarbl*[1,2,4]. [1]GeneAssess, Inc., North Brunswick, NJ; [2]Toxicology, EOHSI-Rutgers, Piscataway, NJ; [3]Environmental and Occupational Medicine, RWJMS-Rutgers, Piscataway, NJ; [4]NIEHS CEED, Piscataway, NJ; [5]Cancer Prevention and Control, Roswell Park Cancer Institute, Buffalo, NY; and [6]Social and Preventive Medicine, University of New York, Buffalo, NY.

#1222 **Poster Board Number 653**
Identification and Quantification of MTH1 in Human Tissues As a Cancer Biomarker. *E. Coskun*[1,2], A. Jemth[3], O. Loseva[3], P. Jaruga[1], L. D. Scanlan[1], T. Helleday[3], and M. Dizdaroglu[1]. [1]Biomolecular Measurement Division, National Institute of Standards and Technology, Gaithersburg, MD; [2]Department of Toxicology, Gazi University, Ankara, Turkey; and [3]Department of Medical Biochemistry and Biophysics, Karolinska Institutet, Stockholm, Sweden.

Program Schedule (Continued)

Abstract #

#1223 **Poster Board Number 654**
Quantification of Biomarkers of Cardiac Toxicity across Four Animal Species. *M. Lindeblad*, R. Tiniakov, *A. V. Lyubimov*, *A. Banerjee*, and Y. Chen. Toxicology Research Laboratory, University of Illinois, Chicago, IL.

#1224 **Poster Board Number 655**
Biomarkers of Pathologic Cardiac Hypertrophy: Investigation of NTproANP and NTproBNP in Rats. S. K. Engle[1], M. E. Dunn[2], T. G. Manfredi[3], K. Agostinucci[3], J. Powe[4], N. King[5], L. A. Rodriguez[6], K. E. Gropp[7], M. Gallacher[4], F. J. Vetter[3], and *H. M. Colton*[6]. [1]Toxicology, Eli Lilly and Company, Indianapolis, IN; [2]Cardiovascular Research, Regeneron Pharmaceuticals, Tarrytown, NY; [3]University of Rhode Island, Kingston, RI; [4]Millennium: The Takeda Oncology Company, Cambridge, MA; [5]Predictive Safety Testing Consortium, Critical Path Institute, Tucson, AZ; [6]GlaxoSmithKline, Research Triangle Park, NC; and [7]Pfizer, Groton, CT.

#1225 **Poster Board Number 656**
Evaluation of Calcineurin Activity As a Biomarker of the State of Immunosuppression in Heart Transplantation. S. Sanquer[1,2], S. Varnous[2], C. Lena[1], E. Vermes[2], L. Herry[1], R. Niarra[2], R. Guillemain[2], *R. Barouki*[1,2], and C. Amrein[2]. [1]INSERM UMR-S 1124, Paris Descartes University, Paris, France; and [2]AP-HP, Paris, France.

#1226 **Poster Board Number 657**
Clinical Protein Array Screening to Discover Preclinical Biomarkers of Drug-Induced Vascular Injury. R. J. Gonzalez[1], K. Vlasakova[1], R. Warner[2], K. Johnson[2], *F. D. Sistare*[1], and *W. E. Glaab*[1]. [1]Merck & Co., West Point, PA; and [2]Department of Pathology, University of Michigan, Ann Arbor, MI.

#1227 **Poster Board Number 658**
Shotgun Proteomics of Human Sputum and Plasma Identifies Biomarkers of Acute Exposures to Diesel and Biodiesel Emissions. *A. Mehus*, S. Littau, *E. Lutz*, and *J. Burgess*. College of Public Health, University of Arizona, Tucson, AZ.

#1228 **Poster Board Number 659**
Comparative Analyses of Methods Used to Prepare Diisocyanate Conjugates; Implications in Clinical Assay Development. L. M. Wagner[1], T. A. Bledsoe[1], B. F. Law[1], M. L. Kashon[2], A. R. Lemons[1], J. M. Hettick[1], A. V. Wisnewski[3], and *P. D. Siegel*[1]. [1]Allergy and Clinical Immunology Branch, Health Effects Laboratory Division, NIOSH, CDC, Morgantown, WV; [2]Biostatistics and Epidemiology Branch, Health Effects Laboratory Division, NIOSH, CDC, Morgantown, WV; and [3]Internal Medicine, Yale, New Haven, CT.

#1229 **Poster Board Number 660**
Variability of Cytokine Response following *Ex Vivo* Stimulation of Blood from Cynomolgus Monkeys. M. S. Perpetua[1], *G. Bannish*[2], M. Castellana[1], L. A. Coney[3,2], S. Chilakala[1], Y. Xiao[1], and J. Doughty[1]. [1]Biomarkers, Bioanalysis and Clinical Sciences, Huntingdon Life Sciences, East Millstone, NJ; [2]Biologics, Huntingdon Life Sciences, East Millstone, NJ; and [3]Biologics, Huntingdon Life Sciences, Huntingdon, United Kingdom.

Abstract #

#1230 **Poster Board Number 661**
Impairment of Skin Function—Defining Biomarkers from Gene Expression Datasets. D. Mitic Potkrajac[1], V. Veljovic[1], *G. Apic*[1], and R. B. Russell[2]. [1]Cambridge Cell Networks Ltd, Cambridge, United Kingdom; and [2]Cell Networks, University of Heidelberg, Heidelberg, Germany.

#1231 **Poster Board Number 662**
Arsenic (+3) Methyltransferase (AS3MT) and Glutathione S-Transferase Omega (GSTO1) Genetic Variants Associated with Arsenic Susceptibility: Influences on As Metabolism and Skin Lesions. *E. Kadioglu*[1], N. Hisarli[2], E. Asik[3], *G. Cakmak Demircigil*[1], U. Alshana[4], N. Ertas[4], C. R. Celebi[5], E. Atabey[6], O. Ataman[7], H. Serce[8], N. Bilir[9], A. Tuncer[10], and *S. Burgaz*[1]. [1]Toxicology, Gazi University, Ankara, Turkey; [2]Biochemistry, Middle East Technical University, Ankara, Turkey; [3]Biotechnology, Middle East Technical University, Ankara, Turkey; [4]Analytic Chemistry, Gazi University, Ankara, Turkey; [5]Akropol, Medical Centre, Ankara, Turkey; [6]General Directorate of Mineral Research and Exploration, Ankara, Turkey; [7]Chemistry, Middle East Technical University, Ankara, Turkey; [8]Turkish Ministry of Health, Urgup Hospital, Nevsehir, Turkey; [9]Public Health, Hacettepe University, Ankara, Turkey; and [10]Cancer Control, Turkish Ministry of Health, Ankara, Turkey.

#1232 **Poster Board Number 663**
Cytokines and Chemokines As Biomarkers of Intestinal Toxicity, Damage, and Repair. *A. V. Lyubimov*, Y. Chen, *K. K. Kabirov*, and *A. Banerjee*. TRL/UIC, Chicago, IL.

#1233 **Poster Board Number 664**
ELISA for Bioactive Cholecystokinin—A Novel Biomarker for Enteroendocrine Cell Disruption. *S. Nguyen*, *H. Zhou*, and *J. J. Pestka*. Food Science, Michigan State University, East Lansing, MI.

TUESDAY

Program Schedule (Continued)

Tuesday Morning, March 24
9:30 AM to 4:30 PM
CC Room 11A

Research Funding Information Room

Hosted by:
Career Resource and Development Committee

SOT places a strong emphasis on the development of opportunities for research support and funding. As a service to its members and new investigators, SOT offers the Research Funding Information Room so that members and attendees may network and learn more about the various opportunities available to them. Program and review agency staff from federal agencies that fund research, including NIH, US FDA, NIEHS, CDC, and US EPA will be available in the Research Funding Information Room (Room 11A) for individual conversations. Attendees may check the posted schedule for specific times staff members will be available during the week to answer questions about the scientific review process and various grant opportunities. The schedule will be available in the Registration area and the Research Funding Information Room.

Tuesday Morning, March 24,
10:00 AM to 11:00 AM
CC Room 24B

E

Exhibitor-Hosted Session: Application of Color Calibration in Photomicrography for Toxicologic Pathology

Presented by:
Datacolor Inc.

In toxicologic pathology, it is critical that color in photomicrographs accurately represent those seen in the specimen. Consistency between images and image color rendering on computer monitors is essential for viewing and evaluating images. Several case studies will illustrate the importance of color calibration to assessments by toxicologic pathology.

Tuesday Morning, March 24,
10:00 AM to 11:00 AM
CC Room 24C

E

Exhibitor-Hosted Session: *In Vitro* Hepatotoxicity Evaluation with Cryopreserved Human, Animal, and Transgenic Animal Hepatocytes

Presented by:
In Vitro ADMET Laboratories, LLC

Application of plateable cryopreserved single donor and pooled human hepatocytes, hepatocytes from multiple preclinical animal species, and transgenic knock-out and humanized mouse hepatocytes in hepatotoxicity evaluation will be discussed, with emphasis on early hepatotoxicity screening in drug development and the elucidation of species difference, individual difference, and toxicological pathways.

Tuesday Morning, March 24,
10:00 AM to 11:00 AM
CC Room 22

E

Exhibitor-Hosted Session: Less Compound, Less Cost—How to Succeed in Early-Phase Inhalation Programs

Presented by:
Huntingdon Life Sciences/Harlan Laboratories

As the cost of drug development increases, companies have prioritized early readout of efficacy and toxicity to limit the cost of late-stage failure. This session will discuss and demonstrate approaches to test article conservation that can significantly reduce test article consumption while still providing high-quality data.

Tuesday Morning, March 24,
10:00 AM to 11:00 AM
CC Room 24A

E

Exhibitor-Hosted Session: Overcoming Challenges during Preclinical Sample Collection to Minimize the Impact on Toxicological Data

Presented by:
Algorithme Pharma

When conducting preclinical studies, maintaining sample integrity following collection is critical. Due to the complexity of pharmaceutical compounds, challenges that can impact data reliability may occur during and following sample collection. Potential issues include whole blood stability, anticoagulants, acid and preservatives, hemolyzed plasma, and co-administered medications.

Tuesday Morning and Afternoon, March 24
10:30 AM to 12:30 PM
CC Exhibit Hall *(Across from SOT Pavilion, Booth 526)*

High School Poster Exposition

Chairperson(s): *Marie Meagher Bourgeois, University of Southern Florida, Tampa, FL.*

Endorser(s):
Education Committee
K–12 Subcommittee

High school student research related to toxicology is featured in an area across from the SOT Pavilion. This display recognizes student effort and provides the high school students who have engaged in research with scientific meeting experience. Meeting attendees are invited to drop by to visit with these outstanding potential future toxicologists. More information is available on the SOT Annual Meeting website.

Tuesday Morning, March 24,
11:30 AM to 12:30 PM
CC Room 24C

E

Exhibitor-Hosted Session: Fully Automated and Easy-to-Use Solution for Your Cytochrome p450 Gene Expression Testing

Presented by:
HTG Molecular Diagnostics

Drug-metabolizing enzymes and transporter induction can result in clinically meaningful drug interactions. Measuring gene expression has traditionally relied upon RNA extraction from treated hepatocytes followed by RT-qPCR. An alternative, potentially more efficient method for measuring gene induction is the multiplex HTG Edge quantitative nuclease protection assay (HTG Edge chemistry).

Program Schedule (Continued)

Tuesday Morning, March 24,
11:30 AM to 12:30 PM
CC Room 24B

E

Exhibitor-Hosted Session: Making Cardiotoxicity Prediction Simple and Relevant: Human Ipsc-Cardiomyocytes and Integrated Impedance and Field Potential-Based Assays Enable Highly Predictive Cardiotoxicity Assessments across Multiple Mechanisms

Presented by:
Cellular Dynamics International and ACEA Biosciences

Cardiotoxicity manifests through several distinct mechanisms. This workshop will present (1) novel and peer-reviewed data using human cardiomyocytes with impedance and electrophysiological testing that validates a simplified and highly predictive workflow for electrical, biochemical, and contractile-based cardiotoxicity detection and (2) integration with the US FDA's Comprehensive *in vitro* Proarrhythmia Assay (CiPA).

Tuesday Morning, March 24,
11:30 AM to 12:30 PM
CC Room 24A

E

Exhibitor-Hosted Session: Models of Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) Threats: Considerations for Drug Development under the Animal Rule

Presented by:
Lovelace Respiratory Research Institute

CBRNE requires the integration of multidisciplinary teams to do strategic studies for developing new drugs to protect the public and soldier. The animal models are complex and heavily integrated with pharmacology and toxicokinetics to enable translation.

Tuesday Morning, March 24,
11:30 AM to 12:30 PM
CC Room 22

E

Exhibitor-Hosted Session: Structural and Functional Endpoints in Repeat-Dose Toxicity Cardiovascular Risk Assessments and the Use of *In Vivo* Physiologic Monitoring

Presented by:
Data Sciences International

Cardiovascular liabilities are an important source of drug development attrition. Risk assessment requires thorough understanding of the pathogenesis, structural, and functional changes. This presentation discusses the rationale for including structural and functional endpoints in repeat-dose toxicity studies and the efficacy of gathering these endpoints via implantable versus jacketed external telemetry.

TUESDAY AFTERNOON

Tuesday Afternoon, March 24
12:00 Noon to 1:30 PM
CC Room 3

American Association of Chinese in Toxicology Special Interest Group Career Workshop 2: Opportunities for Toxicologists in China

Tuesday Afternoon, March 24
12:00 Noon to 2:00 PM
Marriott Marquis La Costa

Association of Scientists of Indian Origin Special Interest Group Lunch and Learn

Tuesday Afternoon, March 24
12:00 Noon to 1:30 PM

Networking Time

You are encouraged to connect and engage with your colleagues today between sessions as only networking events and Exhibit Hall activities are scheduled during this time.

Tuesday Evening, March 24
12:00 Noon to 2:00 PM
CC Room 4

Northeast Regional Chapter Student Luncheon

Tuesday Afternoon, March 24
12:00 Noon to 1:15 PM
CC Ballroom 5
(Ticket Required)

Postdoctoral Assembly Luncheon

Chairperson(s): *Colleen E. McLoughlin, National Institute for Occupational Safety and Health, Morgantown, WV.*

Hosted by:
Postdoctoral Assembly

To encourage increased participation and networking among postdoctoral scholars, this year the Postdoctoral Assembly (PDA) Board has planned the PDA Luncheon to be more casual than a seated lunch. Finishing up a discussion from your morning poster session? Leaving early to set up a poster or attend another meeting? That's no problem; come stop in when you can! You can enjoy a buffet lunch and move around the room to mingle with others, including PDA officers, Postdoctoral Representatives, and SOT Councilors. This is the time for postdocs to relax, celebrate achievements, and have fun. At 12:30 pm there will be a short program, including recognition of the Best Postdoctoral Publication Award recipients and postdocs who receive awards from SOT Regional Chapters, Special Interest Groups, and Specialty Sections. PDA officers for 2015–2016 will share their vision for the future. Door prizes are always a big hit and add to the fun of the event. Postdocs should reserve a ticket for $10 when they register for the Annual Meeting.

Program Schedule (Continued)

Abstract #

Tuesday Afternoon, March 24
12:00 Noon to 2:00 PM
CC Room 2

Regulatory and Safety Evaluation Specialty Section Brown Bag Luncheon: Global Regulatory Toxicology: First Stop EU

Tuesday Afternoon, March 24
12:00 Noon to 1:30 PM
CC Room 28A

Risk Assessment Specialty Section Mentoring Luncheon

Tuesday Afternoon, March 24
12:00 Noon to 1:30 PM
CC
See room listing below.

Specialty Section Meeting/Luncheons: Cardiovascular Toxicology (29A); Occupational and Public Health (25A)

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Nanotoxicology, Carbon-Based Nanomaterials

Chairperson(s): *David Warheit, DuPont Haskell Laboratories, Newark, DE.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#1234 **Poster Board Number 101**
Allergen-Inducible Th2 Cytokines Inhibit Inflammasome Activation by Carbon Nanotubes via Suppression of Caspase-1 in Macrophages *In Vitro* and in the Lungs of Mice *In Vivo*. *K. A. Shipkowski*[1], A. Taylor[1], E. Thompson[1], *E. Glista-Baker*[1], *B. C. Sayers*[1], *R. N. Bauer*[2], *I. Jaspers*[2], and *J. C. Bonner*[1]. [1]Biological Sciences, North Carolina State University, Raleigh, NC; and [2]University of North Carolina, Chapel Hill, NC.

#1235 **Poster Board Number 102**
Pulmonary Expression and Activation of p53 Tumor Suppressor by Multiwalled Carbon Nanotubes in Mice *In Vivo* and in Lung Fibroblasts *In Vitro* Is Regulated by STAT1. *K. Duke*, E. Thompson, *K. A. Shipkowski*, *M. Ihrie*, A. Taylor, and *J. C. Bonner*. Department of Biological Sciences, North Carolina State University, Raleigh, NC.

#1236 **Poster Board Number 103**
Carbon Nanotubes Functionalized by Atomic Layer Deposition Coating with Metal Oxides Alter Proinflammatory and Pro-Fibrogenic Cytokine Production in a Macrophage-Mesothelial Cell Coculture System *In Vitro*. A. Taylor[1], *K. Duke*[1], *M. Ihrie*[1], E. C. Dandley[2], C. McClure[2], G. Parsons[2], and *J. C. Bonner*[1]. [1]Department of Biological Sciences, North Carolina State University, Raleigh, NC; and [2]Department of Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC.

Abstract #

#1237 **Poster Board Number 104**
Zinc Oxide Functionalization of Carbon Nanotubes by Atomic Layer Deposition Modifies the Fibrogenic Response of Human Lung Fibroblasts *In Vitro*. E. C. Dandley[2], A. Taylor[1], G. Parsons[2], and *J. C. Bonner*[1,2]. [1]Department of Biological Sciences, North Carolina State University, Raleigh, NC; and [2]Department of Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC.

#1238 **Poster Board Number 105**
Long-Term Effects of Single-Wall Carbon Nanotubes following Intratracheal Instillation in Rat Lung Tissue. *K. Fujita*[1,2], M. Fukuda[2], H. Fukui[1], M. Horie[1,2], S. Endoh[2], K. Uchida[1], M. Shichiri[1], Y. Morimoto[3], A. Ogami[3], and H. Iwahashi[4]. [1]National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; [2]Technology Research Association for Single Wall Carbon Nanotubes, Tsukuba, Japan; [3]University of Occupational and Environmental Health, Kitakyushu, Japan; and [4]Gifu University, Gifu, Japan.

#1239 **Poster Board Number 106**
Pulmonary Inflammatory Effects Observed in a 90-Day Inhalation Study with a Multiwalled Carbon Nanotube (MWCNT): When Is Inflammation Adverse? *M. P. DeLorme*, K. L. Reed, and *D. B. Warheit*. DuPont Haskell Lab, Newark, DE.

#1240 **Poster Board Number 107**
***In Vivo* Evidence of Free Radical Formation in the Mouse Lung and Distant Organs after Exposure to Single-Walled Carbon Nanotubes.** E. R. Kisin[1], A. R. Murray[1,2], M. B. Kadiiska[3], and *A. A. Shvedova*[1,2]. [1]PPRB, NIOSH, Morgantown, WV; [2]Physiology/Pharmacology, WVU, Morgantown, WV; and [3]NIEHS/NIH, Research Triangle Park, NC.

#1241 **Poster Board Number 108**
Comparative Inhalation Toxicities of Graphene and Other Carbonaceous Nanomaterials. L. Ma-Hock[1], T. Hoffmann[1], S. Gröters[1], *K. Wiench*[2], *B. van Ravenzwaay*[1], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany; and [2]Product Safety, BASF SE, Ludwigshafen am Rhein, Germany.

#1242 **Poster Board Number 109**
Inhalation Toxicity of Carbon Black Depends on Surface Coating with Polycyclic Aromatic Hydrocarbons. T. Hansen[1], P. König[2], O. H. Creutzenberg[1], K. Weinhold[2], S. Schlick[3], T. Tillmann[1], G. Pohlmann[1], A. Kolling[1], C. Ziemann[1], J. Kopf[1], M. Stroebele[4], H. Bockhorn[4], O. Danov[1], K. Sewald[1], B. Müller[5], and H. Fehrenbach[3]. [1]Fraunhofer Institute for Toxicology and Experimental Medicine, Hannover, Germany; [2]Universität zu Lübeck, Lübeck, Airway Research Center North (ARCN), Lübeck, Germany; [3]Research Center Borstel, Borstel, Germany; [4]Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany; and [5]Division of Pneumology, Faculty of Medicine, Philipps University, Marburg, Germany. Sponsor: *C. Dasenbrock*.

TUESDAY

Program Schedule (Continued)

Abstract #

#1243 **Poster Board Number 110**
Single-Wall or Double-Wall Carbon Nanotubes Induce Atherosclerosis Progression in Animal and Culture Models of Atherosclerosis. Y. Suzuki[1], *G. Ichihara*[2], C. Zong[2,3], S. Tada-Oikawa[1], K. Izuoka[1], and S. Ichihara[1]. [1]Graduate School of Regional Innovation Studies, Mie University, Tsu, Japan; [2]Faculty of Pharmaceutical Sciences, Tokyo University of Science, Noda, Japan; and [3]Department of Occupational and Environmental Health, Nagoya University Graduate School of Medicine, Nagoya, Japan.

#1244 **Poster Board Number 111**
Dose- and Time-Dependent Assessment of Human Mesothelial Cell Neoplastic Transformation Potential after Functionalized MWCNT Exposure. *T. A. Stueckle*[1], *D. C. Davidson*[1], R. Derk[1], P. Gracheck[2], N. Wu[2], Y. Rojanasakul[2], and L. Wang[1]. [1]NIOSH, Morgantown, WV; and [2]West Virginia University, Morgantown, WV.

#1245 **Poster Board Number 112**
Lessening Genotoxicity Using Nitrogen-Doping of Multiwalled Carbon Nanotubes. *K. Siegrist*[1,2], *S. H. Reynolds*[1], *R. R. Mercer*[1], *D. W. Porter*[1], *D. T. Lowry*[1], *M. L. Kashon*[1], *J. L. Salisbury*[3], *J. Mastovich*[4], *K. Bunker*[4], *M. Sparrow*[4], *S. Tsuruoka*[5], *M. Endo*[5], *M. McCawley*[2], and *L. M. Sargent*[1]. [1]Health Effects Laboratory Division, CDC/NIOSH, Morgantown, WV; [2]Occupational and Environmental Health Sciences, West Virginia University, Morgantown, WV; [3]Mayo Clinic, Rochester, MN; [4]RJ Lee Group, Monroeville, PA; and [5]Shinshu University, Nagano, Japan.

#1246 **Poster Board Number 113**
Carbon Nanotubes Promote Lung Tumor Progression through the Induction of Cancer-Associated Fibroblasts and Cancer Stem-Like Cells. S. Luanpitpong[1,2], *L. Wang*[3], *T. A. Stueckle*[3], S. Issaragrisil[2], and *Y. Rojanasakul*[1]. [1]Department of Pharmaceutical Sciences and Mary Babb Randolph Cancer Center, West Virginia University, Morgantown, WV; [2]Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand; and [3]Pathology and Physiology Research Branch, National Institute for Occupational Safety and Health, Morgantown, WV.

#1247 **Poster Board Number 114**
Differential Sensitivity of Healthy and Asthmatic Human Bronchial Epithelia to Multiwalled Carbon Nanotubes. *S. Hussain*[1], P. R. Bushel[2], K. Gerrish[3], and S. Garantziotis[1]. [1]Clinical Research Unit, NIEHS, Research Triangle Park, NC; [2]Biostatistics Branch, NIEHS, Research Triangle Park, NC; and [3]Molecular Genomics Core, NIEHS, Research Triangle Park, NC.

#1248 **Poster Board Number 115**
Effects of Pristine and Nitrogen-Doped Multiwalled Carbon Nanotubes (ND-MWCNT) on Reactive Oxygen Species (ROS) and Cell Cycle Progression. *A. Mihalchik*[1,2], W. Ding[1], *C. E. McLoughlin*[2], D. Schwegler-Berry[2], A. Stefaniak[2], *B. Talkington*[2], *S. Tsuruoka*[3], M. Endo[3], *V. Castranova*[1], *D. W. Porter*[2], and Y. Qian[2]. [1]West Virginia University, Morgantown, WV; [2]National Institute for Occupational Safety and Health, Morgantown, WV; and [3]Research Center for Exotic Nanocarbons, Shinshu University, Nagano, Japan.

Abstract #

#1249 **Poster Board Number 116**
Cross-Species Approach Reveals ER-Stress As a Conserved Mechanism of MWCNT-Mediated Biological Interactions. N. Chatterjee[1], Q. Choudhry[1], J. Yang[1], Y. Kim[2], and *J. Choi*[1]. [1]Faculty of Environmental Engineering, College of Urban Science, University of Seoul, Seoul, Republic of Korea; and [2]Department of Chemical Engineering, Kwangwoon University, Seoul, Republic of Korea.

#1250 **Poster Board Number 117**
MRNAs and miRNAs in Whole Blood Associated with MWCNT-Induced Lung Hyperplasia, Fibrosis, and Bronchiolo-Alveolar Adenoma and Adenocarcinoma following Inhalation Exposure in Mice. *B. Talkington*[1], C. Dong[2], *L. M. Sargent*[1], *D. W. Porter*[1], R. Raese[2], W. McKinney[1], B. T. Chen[1], L. A. Battelli[1], D. T. Lowry[1], S. H. Reynolds[1], V. Castranova[1], N. L. Guo[2], and *Y. Qian*[1]. [1]NIOSH, Morgantown, WV; and [2]West Virginia University, Morgantown, WV.

#1251 **Poster Board Number 118**
Systematic Evaluation of Carbon Nanotube Toxicity Using the Embryonic Zebrafish to Inform Health and Safety. *L. Wehmas*[1], L. M. Gilbertson[2], F. Melnikov[3], P. Anastas[3], J. B. Zimmerman[2,3], and *R. L. Tanguay*[1]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR; [2]Chemical and Environmental Engineering, Yale University, New Haven, CT; and [3]Forestry and Environmental Studies, Yale University, New Haven, CT.

#1252 **Poster Board Number 119**
Uptake, Translocation, and Stress Effects of Carbon Nanotubes in Drought-Induced Corn. A. S. Deleon[1], A. Parra[1], F. Irin[2], P. Paxton[3], M. Saed[4], M. Green[2], and J. Canas[1]. [1]Environmental Toxicology, Texas Tech University, Lubbock, TX; [2]Chemical Engineering, Texas A&M University, College Station, TX; [3]Agriculture, US Department of Agriculture, Lubbock, TX; and [4]Electrical and Computer Engineering, Texas Tech University, Lubbock, TX. Sponsor: *K. Singh*.

#1253 **Poster Board Number 120**
Enhanced Influenza Virus Infectivity through Suppression of Toll-Like Receptor Activity by Single-Walled Carbon Nanotubes. *X. Zheng*[1], *J. Loeb*[1], *J. Lednicky*[1], *N. B. Saleh*[2], and *T. Sabo-Attwood*[1]. [1]University of Florida, Gainesville, FL; and [2]University of Texas at Austin, Austin, TX.

#1254 **Poster Board Number 121**
Intratracheal Exposure of Multiwalled Carbon Nanotubes Induces a Nonalcoholic Steatohepatitis in C57BL/6J Mice. *J. Kim*[1], Y. Jang[1], and *M. Cho*[1,2,3]. [1]Laboratory of Toxicology, BK21 PLUS Program for Creative Veterinary Science Research, Research Institute for Veterinary Science and College of Veterinary Medicine, Seoul National University, Seoul, Republic of Korea; [2]Graduate School of Convergence Science and Technology, Seoul National University, Suwon, Republic of Korea; and [3]Graduate Group of Tumor Biology, Seoul National University, Seoul, Republic of Korea.

#1255 **Poster Board Number 122**
Single-Walled Carbon Nanotubes (SWCNT) Mediate Cytotoxicity via Apoptosis and Initiate Collagen Production in Rat Pleural Mesothelial Cells. S. B. Kallakuri, and *J. M. Cerreta*. PHS, St. John's University, Queens, NY.

TUESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#1256 **Poster Board Number 123**
Pathology-Directed Mass Spectrometry Determines Proteomic Differences Associated with Carbon Nanotube Exposure in the Lung. E. H. Seeley[1], G. Boyce[1], L. Bishop[2], R. Salmen[2], L. A. Battelli[2], *P. C. Zeidler-Erdely*[2], *J. M. Antonini*[2], G. W. Kilby[1], and *A. Erdely*[2]. [1]Protea Biosciences Inc, Morgantown, WV; and [2]NIOSH, Morgantown, WV.

#1257 **Poster Board Number 124**
Exposures to Carbon Nanotubes and Asbestos Induce Related but Distinct Profiles of Toxicologic Lung Pathology. E. Frank[1], *V. S. Carreira*[1], E. M. Birch[2], and *J. Yadav*[1]. [1]Department of Environmental Health, University of Cincinnati College of Medicine, Cincinnati, OH; and [2]CDC/NIOSH, Cincinnati, OH.

#1258 **Poster Board Number 125**
Single-Walled Carbon Nanotubes (SWCNTs) Induce Vasodilation in Isolated Rat Aortic Rings. M. Ramirez[2], J. M. Gutierrez-Hernandez[1], H. Rosas-Hernandez[2], S. Salazar-Garcia[2], D. A. Maldonado-Ortega[2], F. J. Gonzalez[1], *S. F. Ali*[3], and C. Gonzalez[2]. [1]Coordinacion para la Innovaccion y la Aplicacion de la Ciencia y la Technologia, Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico; [2]Facultad de Ciencias Quimicas, Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico; and [3]Division of Neurotoxicology, NCTR, Jefferson, AR.

#1259 **Poster Board Number 126**
Role of Stem-Like Cells in Carbon Nanotube-Induced Pulmonary Fibrosis. A. Manke[1], S. Luanpitpong[1,2], L. Wang[3], Y. Yang[4], and *Y. Rojanasakul*[1]. [1]Pharmaceutical Sciences, West Virginia University, Morgantown, WV; [2]Siriraj Center of Excellence for Stem Cell Research, Mahidol University, Bangkok, Thailand; [3]Pathology & Physiology Research Branch, National Institute for Occupational Safety and Health, Morgantown, WV; and [4]Chemical Engineering, West Virginia University, Morgantown, WV.

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Skin

Chairperson(s): *Carol S. Auletta, Program Management, Huntingdon Life Sciences, East Millstone, NJ; and Gabriel A. Knudsen, Toxicology and Toxicokinetics, NCI at NIEHS, Research Triangle Park, NC.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#1260 **Poster Board Number 128**
Phototoxicity of Ethyl Maltol in Hairless Mice. G. Ritacco, *V. T. Politano*, J. F. Lalko, and *A. Api*. Research Institute for Fragrance Materials, Woodcliff Lake, NJ.

#1261 **Poster Board Number 129**
Photosafety Screening on Benzophenones Using Photochemical and Dermal Cassette-Dosing Pharmacokinetic Data. Y. Seto, H. Ohtake, M. Kato, and S. Onoue. School of Pharmaceutical Sciences, University of Shizuoka, Shizuoka, Japan. Sponsor: *T. Yoshida*.

Abstract #

#1262 **Poster Board Number 130**
Differential Effects of Some Natural Compounds on the Transdermal Penetration of Caffeine and Salicylic Acid. *F. Muhammad*, and *J. E. Riviere*. Kansas State University, Manhattan, KS.

#1263 **Poster Board Number 131**
Stratum Corneum Proposed Water Domain Role in Percutaneous Absorption and Decontamination. H. Zhu, E. Jung, X. Hui, and *H. I. Maibach*. Dermatology, University of California San Francisco, San Francisco, CA.

#1264 **Poster Board Number 132**
Chemical Skin Contamination: Effects of Vehicles on Penetration and Stratum Corneum Binding. A. Zhang[2], E. Jung[1], H. Zhu[1], X. Hui[1], and *H. I. Maibach*[1]. [1]Dermatology, University of California San Francisco, San Francisco, CA; and [2]Harvard University, Cambridge, MA.

#1265 **Poster Board Number 133**
The Development of a Simple *In Vitro* Human Skin Model for Dermal Absorption Investigations. T. Patel[1], D. Salazar[3], G. Bell[3], B. Parr-Dobranzski[3], A. Ghaemmaghami[2], P. Williams[1], C. J. Roberts[1], and F. R. Rose[1]. [1]School of Pharmacy, University of Nottingham, Nottingham, United Kingdom; [2]School of Life Sciences, University of Nottingham, Nottingham, United Kingdom; and [3]Jealott's Hill International Research Centre, Syngenta Ltd, Berkshire, United Kingdom. Sponsor: *P. Botham*.

#1266 **Poster Board Number 134**
Dermal Exposure and Skin Notation—Important to Account for Evaporation. *G. Johanson*, *M. N. Fransson*, and M. Rauma. Work Environment Toxicology, IMM, Karolinska Institutet, Stockholm, Sweden.

#1267 **Poster Board Number 135**
Dermal Uptake of Tetrabromobisphenol A (TBBPA) by Female Wistar Han Rat or Human Skin. *G. A. Knudsen*[1], K. L. McIntosh[1], *J. M. Sanders*[1], *M. F. Hughes*[2], and *L. S. Birnbaum*[1]. [1]Toxicology and Toxicokinetics, NCI at NIEHS, Research Triangle Park, NC; and [2]NHEERL, US EPA-ORD, Research Triangle Park, NC.

#1268 **Poster Board Number 136**
Skin Permeability of Ortho-Phenylphenol in Metalworking Formulations. J. Kochenburger, T. Haegele, J. Brooks, and *R. E. Baynes*. NCSU-CVM, Raleigh, NC.

#1269 **Poster Board Number 137**
A Multicompartment Mathematical Model of the *In Vitro* Percutaneous Absorption of Nerve Agent VX. *J. Jenner*, *C. Dalton*, and S. Graham. Biomedical Sciences Department, Dstl, Salisbury, United Kingdom.

#1270 **Poster Board Number 138**
Nrf2 Controls Skin Inflammation Provoked by Chemical Allergens Regardless of the Chemical Reactivity of Contact Sensitizers. Z. El Ali[1], C. Gerbeix[2], *N. J. Pearson*[2], *R. Forster*[2], *M. Pallardy*[1], and S. Kerdine-Römer[1]. [1]Toxicologie, INSERM-UNI Paris Sud, Châtenay-Malabry, France; and [2]CiToxLab, Evreux, France.

Program Schedule (Continued)

Abstract #

#1271 **Poster Board Number 139**
The Glycolytic Byproduct and Glycation Intermediate Methylglyoxal Is a Potent UVA-Photosensitizer in Human Skin Cells and Reconstructed Skin. *R. Justiniano, S. Qiao*, J. D. Williams, and *G. T. Wondrak*. Pharmacology and Toxicology, College of Pharmacy and Arizona Cancer Center, University of Arizona, Tucson, AZ.

#1272 **Poster Board Number 140**
Combination of *In Silico* and *In Vitro* Tools for the Evaluation of Skin Sensitization: Application to Cosmetic Industrial Needs. S. Martinozzi Teissier[1], T. Pauloin[2], A. Del Bufalo[1], C. Piroird[1], C. Gomes[1], A. Detroyer[1], J. Eilstein[1], F. Rousset[1], N. Alépée[1], and J. Clouzeau[2]. [1]L'Oréal, Aulnay sous Bois, France; and [2]L'Oréal, Asnières, France. Sponsor: *E. Dufour*.

#1273 **Poster Board Number 141**
The Dermal Sensitization Threshold (DST) for Chemicals Classified As Protein Reactive. J. F. Lalko[1], R. J. Safford[2], D. Roberts[3], and *A. Api*[1]. [1]Research Institute for Fragrance Materials Inc., Woodcliff Lake, NJ; [2]B-Safe Toxicology Consulting, Rushden, United Kingdom; and [3]Liverpool John Moores University, Liverpool, United Kingdom.

#1274 **Poster Board Number 142**
Peptide Reactivity Associated with Skin Sensitization—A Comparison of the DPRA and the OECD QSAR Toolbox. D. Urbisch[1], W. Teubner[3], N. Honarvar[1], A. Mehling[2], K. Guth[1], S. Kolle[1], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany; [2]BASF Personal Care and Nutrition GmbH, Düsseldorf, Germany; and [3]BASF Schweiz AG, Basel, Switzerland.

#1275 **Poster Board Number 143**
A Snapshot of Nonanimal Test Data on Skin Sensitization. D. Urbisch[1], A. Mehling[2,1], N. Honarvar[1], S. Kolle[1], T. Ramirez[1], K. Guth[1], and *R. Landsiedel*[1]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany; and [2]BASF Personal Care and Nutrition, Düsseldorf, Germany.

#1276 **Poster Board Number 144**
Examining the Role of *In Silico* Assessment in Skin Sensitisation-Integrated Testing Strategies. D. Macmillan, S. Stalford, S. Canipa, and R. V. Williams. Lhasa Limited, Leeds, United Kingdom. Sponsor: *C. Barber*.

#1277 **Poster Board Number 145**
Vascularized Skin Models and Impedance Spectroscopy for the Assessment of Skin Toxicity. F. Groeber[1], H. Walles[1,2], and J. Hansmann[2,1]. [1]Fraunhofer Unit "Regenerative Therapies", Fraunhofer IGB, Würzburg, Germany; and [2]Department Tissue Engineering and Regenerative Medicine, University Hospital Würzburg, Würzburg, Germany. Sponsor: *B. De Wever*.

#1278 **Poster Board Number 146**
***In Vitro* Skin Metabolism of Cosmetic Ingredients: Experimental Influencing Factors, Comparison with *In Silico* Generated Data.** P. Quantin, S. Catoire, A. Thelu, and *H. Ficheux*. Toxicology, THOR Personal Care, Compiegne, France.

Abstract #

#1279 **Poster Board Number 147**
VEGF Expression on 3D Skin Equivalent Plays an Active Role in Maintaining Epithelial Integrity by Inducting Capillary-Like Structure and Keratinocyte Proliferation. D. M. Leme[1,2], F. R. Abe[2], C. V. Costa[1], E. S. Trindade[1], D. F. Buchi[1], and *D. P. Oliveira*[2]. [1]Universidade Federal do Paraná (UFPR), Curitiba, Brazil; and [2]FCFRP/USP, Ribeirão Preto, Brazil.

#1280 **Poster Board Number 148**
Toxicity Study of a Three-Dimensional (3D) Organotypic Skin Model Using Keratinocytes and Mesenchymal Stem Cells Immortalized by hTERT. A. Briley, and C. Zhang. ACS, ATCC, Gaithersburg, MD. Sponsor: *K. Donato*.

#1281 **Poster Board Number 149**
Metabolic Oxidation of Rhododendrol and Enhanced Cytotoxicity in Melanocytes. T. Akiyama[1], K. Shimizu[1], H. Fujimaki[1,2], T. Uchino[1], T. Nishimaki-Mogami[1], and Y. Ikarashi[1]. [1]National Institute of Health Sciences, Tokyo, Japan; and [2]Public Welfare Institute of Scientific Research, Tokyo, Japan. Sponsor: *A. Hirose*.

#1282 **Poster Board Number 150**
Activation of T Cell Protein Tyrosine Phosphatase Suppresses Keratinocyte Survival and Proliferation following UVB Irradiation. H. Lee[1,2], L. D. Morales[1], T. J. Slaga[2], and *D. J. Kim*[1,2]. [1]Medical Research Division, University of Texas Health Science Center at San Antonio, Edinburg, TX; and [2]Pharmacology, University of Texas Health Science Center at San Antonio, San Antonio, TX.

#1283 **Poster Board Number 151**
Transepidermal Water Loss and Tape Stripping in Minipig Skin. *A. Makin*, N. Grand, G. Jeppesen, T. Starostka, and J. Løgsted. CiToxLAB, Lille Skensved, Denmark.

#1284 **Poster Board Number 152**
Decon. Gel for Skin Decontamination *In Vitro* Human Skin Model. H. Zhu, E. Jung, X. Hui, and *H. I. Maibach*. Dermatology, University of California San Francisco, San Francisco, CA.

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Clinical and Translational Toxicology

Advancing Clinical and Translational Toxicology

Chairperson(s): *Mohamed Arifulla, Pharmacology, Gulf Medical University, Ajman, United Arab Emirates; and Teresa Dodd-Butera, Nursing, California State University San Bernardino, College of Natural Sciences, San Bernardino, CA.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#1285 **Poster Board Number 153**
Safe Use of Antimicrobial and Analgesic Drugs in Surgical Patients in a Tertiary Care Hospital in UAE. M. Arifulla[1], Y. M. Taher[2], S. S. Ilyas[1], and A. K. Agarwal[1]. [1]Pharmacology, Gulf Medical University, Ajman, United Arab Emirates; and [2]Surgery, GMC Hospital, Ajman, United Arab Emirates. Sponsor: *S. Devi*.

TUESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#1286 **Poster Board Number 154**
Antitoxic Effect of *Veratrilla baillonii* Franch on Acute Toxicity of Mice Induced by *Aconitum brachypodum* Diel, One of the Genus *Aconitum*. Y. Jiang, H. Zhou, M. Zheng, and *X. Huang*. South-Central University for Nationalities, Wuhan, China.

#1287 **Poster Board Number 155**
The Impact of Nonrodent Safety Data on Decision-Making for Small Molecule Anticancer Drugs. R. J. Knight, D. Deavall, and *R. Roberts*. AstraZeneca, Macclesfield, United Kingdom.

#1288 **Poster Board Number 156**
An Integrated Characterisation of Serological, Pathological, and Functional Events in Doxorubicin-Induced Cardiotoxicity. *R. Roberts*[1], L. Cove-Smith[2], N. Woodhouse[1], A. Hargreaves[1], J. Kirk[1], S. Smith[1], S. Price[1], M. Marsden[1], C. J. Betts[1], S. Brocklehurst[1], A. Backen[2], J. Radford[3], K. Linton[3], M. Schmitt[4], C. Dive[2], J. Tugwood[2], P. Hockings[1], and *H. R. Mellor*[1]. [1]AstraZeneca, Macclesfield, United Kingdom; [2]CRUK Manchester Institute, Manchester, United Kingdom; [3]Christie Hospital NHS Trust, Manchester, United Kingdom; and [4]University Hospital of South Manchester, Manchester, United Kingdom.

#1289 **Poster Board Number 157**
Toward Translational Toxicology: Integrated Analysis of Nonclinical and Clinical Toxicity. *W. B. Mattes*. Division of Systems Biology, FDA NCTR, Jefferson, AR.

#1290 **Poster Board Number 158**
Effects of Vitamin C on Tobacco Smoking-Related Gene Expression. *M. Yang*. Sookmyung Women's Univ., Seoul, Republic of Korea.

#1291 **Poster Board Number 159**
Assessment of Ethanol Effects on Pulmonary Antimicrobial Peptide (Cathelicidin/LL-37) Levels and Vitamin D Metabolism. O. A. Ogunsakin, T. K. Hottor, and *M. L. McCaskill*. Global Environmental Health Sciences, Tulane University, New Orleans, LA.

#1292 **Poster Board Number 160**
Acrolein Exacerbates HAART-Induced Apoptotic Death in Hepatocytes by Enhancing Transcriptionally Permissive Epigenetic Modifications at the FasL Promoter. *S. Ghare*[1,2], *H. Donde*[2], *S. Joshi-Barve*[1,2], *C. McClain*[1,2], and *S. Barve*[1,2]. [1]Medicine, University of Louisville, Louisville, KY; and [2]Pharmacology and Toxicology, University of Louisville, Louisville, KY.

#1293 **Poster Board Number 161**
***P. gingivalis* Modulates the Antiviral Immune Response in Oral Epithelial Cells.** S. M. Ramos-Díaz[1,2]. [1]North Carolina Central University, Durham, NC; and [2]University of North Carolina, Chapel Hill, NC. Sponsor: *J. Webster-Cyriaque*.

Abstract #

#1294 **Poster Board Number 162**
Identification of a Metformin-Methylglyoxal Imidazonlinone Product in Metformin-Treated Type 2 Diabetic Patient Urine. *O. R. Kinsky*[1], *T. L. Hargraves*[1], T. Anumol[2], N. Jacobsen[3], J. Dai[3], S. A. Snyder[2], *T. J. Monks*[1], and *S. S. Lau*[1]. [1]Southwest Environmental Health Sciences Center, Department of Pharm/Tox, College of Pharmacy, University of Arizona, Tucson, AZ; [2]Chemical and Environmental Engineering, University of Arizona, Tucson, AZ; and [3]Chemistry and Biochemistry, University of Arizona, Tucson, AZ.

#1295 **Poster Board Number 163**
Fenofibrate Prevents Diabetic Cardiomyopathy Probably via Activation of the FGF21-SIRT1-Dependent Recovery of the Impaired Autophagic Function. *J. Zhang*[1,2], *Y. Cheng*[1,3], Z. Li[2], and *L. Cai*[1]. [1]Pediatrics, University of Louisville, Louisville, KY; [2]Cardiology, The People's Hospital of Liaoning Province, Shenyang, China; and [3]University of Louisville, Louisville, KY.

#1296 **Poster Board Number 164**
Mechanistic Role of PDE4/cAMP in Regulating HIV Drugs-Induced Fas/FasL Expression and Hepatotoxicity. *H. Donde*[1], *S. Ghare*[1], D. Barker[2], *S. Joshi-Barve*[1,2], *C. McClain*[1,2,3], and *S. Barve*[1,2]. [1]Pharmacology & Toxicology, University of Louisville, Louisville, KY; [2]Internal Medicine, University of Louisville, Louisville, KY; and [3]Robley Rex Louisville, VA Medical Center, Louisville, KY.

#1297 **Poster Board Number 165**
Zinc Reduces the Detection of THC by ELISA Urine Testing, While Copper May Cause a False-Positive Result. A. Lerer, and N. H. Lents. John Jay College, New York, NY. Sponsor: *S. Cheng*.

#1298 **Poster Board Number 166**
Early Metabolomics Biomarkers of Doxorubicin-Induced Cardiac Injury in B6C3F1 Mice. *R. D. Beger*, L. Pence, *L. K. Schnackenberg*, *V. Vijay*, *J. C. Fuscoe*, and *V. Desai*. NCTR, Jefferson, AR.

#1299 **Poster Board Number 167**
Solid-Phase Microextraction As Rapid Direct Postmortem Sampling Tool. H. Peltenburg[1], I. J. Bosman[2], and J. Hermens[1]. [1]Institute for Risk Assessment Sciences, Utrecht University, Utrecht, Netherlands; and [2]Netherlands Forensic Institute, The Hague, Netherlands. Sponsor: *M. van den Berg*.

#1300 **Poster Board Number 168**
Arsenic Methylation Is Associated with Body Mass Index among US Adults. Y. Lin, *A. M. Kadry*, *R. Sams*, *J. Cowden*, and *B. R. Sonawane*. Office of Research and Development, National Center for Environmental Assessment, US Environmental Protection Agency, Washington, DC.

#1301 **Poster Board Number 169**
Marketed Drugs with Nonclinical Testicular Toxicity and Concordance with Clinical Semenology Findings: A Survey in Pharmapendium™ *S. A. Lerman*, S. J. Newsholme, R. F. Smith, and *P. J. Wier*. Safety Assessment, GlaxoSmithKline, King of Prussia, PA.

TUESDAY

Program Schedule (Continued)

Abstract #

#1302 **Poster Board Number 170**
The Effect of Crinkle Paper Nesting Material on Basic Toxicology Parameters. S. Gariepy[1], C. Brochu[1], B. N. Gaskill[2], and C. L. Winnicker[3]. [1]General Toxicology, Charles River, Sherbrooke, QC, Canada; [2]Purdue University College of Veterinary Medicine, West Lafayette, IN; and [3]Charles River, Wilmington, MA. Sponsor: *N. Hebert*.

#1303 **Poster Board Number 171**
Successful Combination of Scheduled Plasma Exchange with Continuous Veno-Venous Hemofiltration in Treatment of Fulminant Hepatic Failure Due to Ochratoxin A. D. Pham[1], T. Q. Le[1], T. H. Be[1], S. K. Nguyen[1], X. T. Dang[1], H. T. Ha[1], D. T. Nguyen[1], N. T. Nguyen[1], T. A. Nguyen[1], M. C. Hoang[2], and A. Q. Nguyen[1]. [1]Poison Control Center, Bach Mai Hospital, Hanoi, Vietnam; and [2]Poison Control Center, Vietnam Military Medical University, Hanoi, Vietnam. Sponsor: *T. Le*.

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Computational Toxicology and Data Integration I

Chairperson(s): *Amy Clippinger, PETA International Science Consortium, Ltd., Norfolk, VA.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#1304 **Poster Board Number 201**
Confidently Predicting Cardiac Liabilities in Drug Discovery, Applications of Conformal Prediction and Teaching Schedules. E. Ahlberg[1], L. Carlsson[1], J. Stålring[1], C. Pollard[2], and *P. Newham*[2]. [1]Drug Safety Metabolism, AstraZeneca, Mölndal, Sweden; and [2]Drug Safety Metabolism, AstraZeneca, Alderly Park, United Kingdom.

#1305 **Poster Board Number 202**
Implementation of New Cardiac Proarrhythmia Safety Paradigms in the eTOX Prediction System. M. Pastor[1], J. Saiz[2], J. Gomis-Tena[2], L. Romero[2], and F. Sanz[1]. [1]Health and Experimental Sciences, Universitat Pompeu Fabra, Barcelona, Spain; and [2]Grupo Bioelectronica I3BH, Universitat Politecnica de Valencia, Valencia, Spain. Sponsor: *F. Pognan*.

#1306 **Poster Board Number 203**
***In Silico* Prediction of Off-Target Related Adverse Drug Effects: Cardiotoxicity, Hepatotoxicity, and Reproductive Toxicity.** F. Schmidt[1], A. Amberg[1], D. Mulliner[1], M. Stolte[1], R. Brennan[3], *D. A. Keller*[3], H. Matter[2], G. Hessler[2], A. Dietrich[2], A. Czich[1], R. Garcia[4], and J. Mestres[4]. [1]R&D DSAR Preclinical Safety, Sanofi, Frankfurt, Germany; [2]R&D LGCR, Sanofi, Frankfurt, Germany; [3]R&D DSAR Standards & Innovation, Sanofi, Bridgewater, NJ; and [4]Chemotargets SL, Barcelona, Spain.

#1307 **Poster Board Number 204**
Computational Comparison of the Anti-Inflammatory Targets of the Traditional Chinese Medicine Sargentodoxa Cuneata (Hong Teng) and Western Therapeutics for the Treatment of Osteoarthritis. G. Liang, X. Huang, R. Trimble, C. Park, and *D. Johnson*. Nutri Sci & Toxicology, UC Berkeley, Berkeley, CA.

Abstract #

#1308 **Poster Board Number 205**
Computational Analysis of Coffee Constituents and Their Potential Neuroprotection Action in Alzheimer's Disease. T. Bradford, V. Man, M. Garg, N. Wong, and *D. Johnson*. Nutri Sci & Toxicology, UC Berkeley, Berkeley, CA.

#1309 **Poster Board Number 206**
Computational Analysis of Active Phytochemicals and Potential Synergism with Western Therapeutics in the Treatment of Parkinson's Disease. V. Ho, Y. Han, Y. Aldaher, and *D. Johnson*. Nutri Sci & Toxicology, UC Berkeley, Berkeley, CA.

#1310 **Poster Board Number 207**
A Computational Analysis of Ethnicity-Specific Polycystic Ovarian Syndrome Treatments Using Western and Traditional Medications. S. Ng, E. Qiu, A. Chang, L. Phan, and *D. Johnson*. Nutri Sci & Toxicology, UC Berkeley, Berkeley, CA.

#1311 **Poster Board Number 208**
A Computational Analysis of the Potential Environmental and Lifestyle Risk Factors Associated with Breast Cancer Incidence in South Napa, California. A. Goldbaum, R. Sood, R. Sail, and *D. Johnson*. Nutri Sci & Toxicology, UC Berkeley, Berkeley, CA.

#1312 **Poster Board Number 209**
Computational Investigation of the Combination of Traditional Chinese Medicine (TCM) and Western Therapeutics for the Treatment of Non-Small Cell Lung Cancer (NSCLC). J. Dovedy, A. Chen, A. Ly, M. Lucia, and *D. Johnson*. Nutri Sci & Toxicology, UC Berkeley, Berkeley, CA.

#1313 **Poster Board Number 210**
Integrated Panel of QSAR Models Representing Key Events in Skin Sensitization. A. Sedykh, S. Chakravarti, and R. D. Saiakhov. MultiCASE Inc, Beachwood, OH. Sponsor: *R. Benz*.

#1314 **Poster Board Number 211**
Updates to an Integrated Testing Strategy for Skin Sensitization Potency. J. Jaworska[1], J. Pirone[2], *J. Strickland*[3], *N. Kleinstreuer*[3], *D. G. Allen*[3], and *W. Casey*[4]. [1]P&G NV, Bever, Belgium; [2]SSS, Inc., Durham, NC; [3]ILS/NICEATM, Research Triangle Park, NC; and [4]NTP/NICEATM, Research Triangle Park, NC.

#1315 **Poster Board Number 212**
Impact of Local Lymph Node Assay Uncertainty on Predictions of a Bayesian Network Integrated Testing Strategy for Skin Sensitization Potency. J. Pirone[1], M. Smith[1], *J. Strickland*[2], *W. Casey*[3], and J. Jaworska[4]. [1]SSS, Inc., Durham, NC; [2]ILS/NICEATM, Research Triangle Park, NC; [3]NTP/NICEATM, Research Triangle Park, NC; and [4]P&G NV, Bever, Belgium.

#1316 **Poster Board Number 213**
Assessing Skin Sensitization Potential by Combining Multiple Information Types (Chemotype Alerts, QSAR, Chemical Reactivity and Metabolite Generation, and Biological Assay Data) in a Quantitative Weight-of-Evidence Approach. J. Rathman[1,2], R. Landsiedel[3], K. Schleifer[3], E. Wollenhaupt[3], D. Urbisch[3], C. Schwab[4], and *C. Yang*[1,4]. [1]Altamira LLC, Columbus, OH; [2]Chemical and Biomolecular Engineering, Ohio State University, Columbus, OH; [3]BASF SE, Ludwigshafen, Germany; and [4]Molecular Networks GmbH, Erlangen, Germany.

Program Schedule (Continued)

Abstract #

#1317 **Poster Board Number 214**
Verification of a Skin Sensitization Assessment Neural Network Model by Fragrance Materials. T. Atobe[1], M. Hirota[1], T. Ashikaga[1], A. Api[2], and J. F. Lalko[2]. [1]Shiseido Research Center, Yokohama, Japan; and [2]Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ. Sponsor: *J. Kanno*.

#1318 **Poster Board Number 215**
Cheminformatics Approaches to Tailor *In Silico* Profilers for Refined Category Formation to Support Chemical Safety Assessment. A. N. Richarz[1], B. Bienfait[2], S. J. Enoch[1], C. Schwab[2], M. T. Cronin[1], and *C. Yang*[3,2]. [1]School of Pharmacy and Chemistry, Liverpool John Moores University, Liverpool, United Kingdom; [2]Molecular Networks GmbH, Erlangen, Germany; and [3]Altamira LLC, Columbus, OH.

#1319 **Poster Board Number 216**
From Individual Datasets to Big Data: Developing Mechanism-Driven Predictive Liver Toxicity Models. *M. T. Kim*[1,2], *W. Wang*[1], *A. Sedykh*[1], *R. Huang*[3], *M. Xia*[3], and *H. Zhu*[1,2]. [1]Center for Computational and Integrative Biology, Rutgers, The State University of New Jersey, Camden, NJ; [2]Chemistry, Rutgers, The State University of New Jersey, Camden, NJ; and [3]Department of Health and Human Services, NIH National Center for Advancing Translational Sciences, Rockville, MD.

#1320 **Poster Board Number 217**
Predicting Hepatotoxicity Using ToxCast *In Vitro* Bioactivity and Chemical Structure. J. Liu[1,2,3], K. Mansouri[1,3], *R. Judson*[1], *M. T. Martin*[1], *H. Hong*[4], M. Chen[4], X. Xu[2,4], *R. S. Thomas*[1], and *I. Shah*[1]. [1]NCCT/EPA, Durham, NC; [2]UALR, Little Rock, AR; [3]ORISE, Oak Ridge, TN; and [4]NCTR/FDA, Jefferson, AR.

#1321 **Poster Board Number 218**
Analysis of Human and *In Vivo* Data for Hepatotoxicity Modelling. M. L. Patel, and K. Briggs. Lhasa Limited, Leeds, United Kingdom. Sponsor: *C. Barber*.

#1322 **Poster Board Number 219**
A Comparison of *In Silico* Computational Programs for Predicting Drug-Induced Liver Injury. *M. Masuda*[1], *S. Schadt*[2], *A. Brigo*[2], and *K. Ford*[1]. [1]Product Quality and Occupational Toxicology, Genentech, South San Francisco, CA; and [2]F. Hoffmann-La Roche Ltd., Basel, Switzerland.

#1323 **Poster Board Number 220**
Statistical Modeling of DILI Prediction for a Multiplexed HCS Toxicity Assay. H. Luithardt, S. Qin, J. Bradley, J. Gilbert, and *C. Strock*. Cyprotex US, Watertown, MA.

#1324 **Poster Board Number 221**
Consideration of Plasma Exposure for Better Predictions of Drug-Induced Liver Injury: Merits and Challenges. *F. Shah*[1], *M. D. Aleo*[2], L. Louis[3], *H. A. Barton*[3], *Y. Will*[2], A. Rodrigues[3], and *N. Greene*[1]. [1]Computational Science CoE, Pfizer, Groton, CT; [2]Drug Safety R&D, Pfizer, Groton, CT; and [3]Pharmacokinetics, Dynamics & Metabolism, Pfizer, Groton, CT.

#1325 **Poster Board Number 222**
Quantitative and Qualitative Predictive Models for Systemic and Target Organ Toxicity. *L. Truong*[1,2], *G. Ouédraogo*[3], S. Loisel-Joubert[3], H. Noçairi[3], and *M. T. Martin*[2]. [1]ORISE, Oak Ridge, TN; [2]EPA - NCCT, Durham, NC; and [3]L'Oréal, Paris, France.

Abstract #

#1326 **Poster Board Number 223**
Adverse Outcome Pathways for the Nephrotoxicity of Nonsteroidal Anti-Inflammatory Drugs. W. C. Drewe, and B. Surfraz. Lhasa Limited, Leeds, United Kingdom. Sponsor: *C. Barber*.

#1327 **Poster Board Number 224**
Understanding Oxidative Stress Responses via Nrf2-Related Pathways and ToxCast Data. *F. Melnikov*[1], L. Shen[1], E. Beach[1], J. B. Zimmerman[1], K. Mellor[1], J. Corrales[2], *L. A. Kristofco*[2], *M. Mullins*[2], B. Yates[2], *E. Williams*[2], *J. Kostal*[3], *C. M. Schaupp*[4], *M. Mills*[4], T. J. Kavanagh[4], N. Simcox[4], A. Voutchkova-Kostal[3], *E. P. Gallagher*[4], *B. W. Brooks*[2], and *P. Anastas*[1]. [1]Center for Green Chemistry & Green Engineering, Yale University, New Haven, CT; [2]Department of Environmental Science, Baylor University, Waco, TX; [3]Department of Chemistry, The George Washington University, Washington, DC; and [4]Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

#1328 **Poster Board Number 225**
Association between Health Effects and Chemical Structure of Environmental Pollutants. N. M. Khalil, A. Prussia, and E. Demchuk. Division of Toxicology and Human Health Sciences, Agency for Toxic Substances and Disease Registry, Atlanta, GA. Sponsor: *J. Wheeler*.

#1329 **Poster Board Number 226**
Acute Oral Toxicity Modeling Accounting for Mechanism and Toxicological Mode of Action. D. Nedelcheva[2], N. Dimitrova[2], S. Stoeva[2], K. Kirilov[2], A. Detroyer[1], S. Ringeissen[1], R. R. Note[1], D. Blanchet[1], S. Dimitrov[2], and O. Mekenyan[2]. [1]L'Oréal, Aulnay-sous-Bois, France; and [2]Laboratory of Mathematical Chemistry, University Prof. As. Zlatarov, Bourgas, Bulgaria. Sponsor: *E. Dufour*.

#1330 **Poster Board Number 227**
High-Content Screening of ToxCast Compounds Using Vala Sciences' Complex Cell Culturing Systems. *K. A. Connors*[1,2], D. L. Filer[1,2], *N. S. Sipes*[1,2], *R. Judson*[2], *K. Houck*[2], and *M. T. Martin*[2]. [1]ORISE Fellow, Research Triangle Park, NC; and [2]US EPA/ORD/NCCT, Research Triangle Park, NC.

#1331 **Poster Board Number 228**
Computational Modeling of Thyroid Hormone Regulated Neurodevelopment for Chemical Prioritization. E. D. Watt[1,2], D. F. Kapraun[1,2], *T. B. Knudsen*[2], *K. Crofton*[2], and *R. Judson*[2]. [1]Oak Ridge Institute for Science Education, Oak Ridge, TN; and [2]National Center for Computational Toxicology, US EPA, Research Triangle Park, NC.

#1332 **Poster Board Number 229**
Causal Inferences from Mining ToxCast Data and the Biomedical Literature for Molecular Pathways and Cellular Processes in Cleft Palate. N. C. Baker[1], *N. S. Sipes*[2], C. Grulke[1], *R. Judson*[2], and *T. B. Knudsen*[2]. [1]NCCT, Lockheed Martin/EPA, Research Triangle Park, NC; and [2]National Center for Computational Toxicology, ORD, EPA, Research Triangle Park, NC.

TUESDAY

Program Schedule (Continued)

Abstract #

#1333 **Poster Board Number 230**
Integrated, Multiscale Analysis of Behavioral and Morphological Data from High-Throughput Screening of Environmental Chemicals in Developing Zebrafish. G. Zhang[1], *L. Truong*[2], *R. L. Tanguay*[2], and *D. Reif*[1]. [1]Bioinformatics Research Center, North Carolina State University, Raleigh, NC; and [2]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.

#1334 **Poster Board Number 231**
Hazard Evaluation Support System (HESS): Development of a Category Approach to Predict the Testicular Toxicity of Chemical Substances Structurally Related to Ethylene Glycol Methyl Ether. T. Yamada[1], Y. Tanka[1], R. Hasegawa[1], Y. Sakuratani[1], *Y. Yamazoe*[2], *A. Ono*[3], *A. Hirose*[3], and *M. Hayashi*[4]. [1]National Institute of Technology and Evaluation, Tokyo, Japan; [2]Food Safety Commission of Japan, Tokyo, Japan; [3]National Institute of Health Sciences, Tokyo, Japan; and [4]BioSafety Research Center, Iwata, Japan.

#1335 **Poster Board Number 232**
Using ToxCast/Tox21 Assays and QSAR Modeling to Predict Androgen Receptor Pathway Activity. *N. Kleinstreuer*[1], *Q. Zang*[1], D. L. Filer[2], *M. T. Martin*[2], *K. Houck*[2], *D. G. Allen*[1], *W. Casey*[3], and *R. Judson*[2]. [1]ILS/NICEATM, Research Triangle Park, NC; [2]EPA/ORD/NCCT, Research Triangle Park, NC; and [3]NTP/NICEATM, Research Triangle Park, NC.

#1336 **Poster Board Number 233**
***In Vitro*/*In Silico* Approach to Address Safety Concerns of Zearalenone Metabolites.** E. Lo Piparo[1], V. Ehrlich[1], L. Dellafiora[2], J. Mollergues[1], C. Dall'Asta[2], P. Serrant[1], M. Marin-Kuan[1], P. Cozzini[2], and *B. Schilter*[1]. [1]Nestlé Research Center, Lausanne, Switzerland; and [2]University of Parma, Parma, Italy.

#1337 **Poster Board Number 234**
EDSP Prioritization: Collaborative Estrogen Receptor Activity Prediction Project (CERAPP). *K. Mansouri*[1], J. Kancherla[1], *A. M. Richard*[2], and *R. Judson*[2]. [1]ORD/NCCT (ORISE), US EPA, Durham, NC; and [2]ORD/NCCT, US EPA, Durham, NC.

#1338 **Poster Board Number 235**
Computational Alternative Analysis: Network Relationship of Structural Motifs for Chemicals of Concern Correlated with Health, Ecological, and Lifecycle Impacts. Y. He, B. Ford, N. Winje, and *D. Johnson*. Nutri Sci & Toxicology, UC Berkeley, Berkeley, CA.

#1339 **Poster Board Number 236**
Effectopedia: An Open Collaborative Platform for AOP Development and Application. H. Aladjov[3], *A. Clippinger*[1], *K. M. Sullivan*[2], and G. Veith[4]. [1]PETA International Science Consortium, Ltd., London, United Kingdom; [2]Physicians Committee for Responsible Medicine, Washington, DC; [3]Organisation for Economic Cooperation and Development, Paris, France; and [4]International QSAR Foundation, Duluth, MN.

Abstract #

#1340 **Poster Board Number 237**
Using Mode-of-Action (MOA) Data to Guide the Development of Local Quantitative Structure-Activity Relationship (QSAR) Models for Molecular and Early Cellular Events in an Adverse Outcome Pathway (AOP). *J. Melia*, K. Salinas, L. Morlacci, J. Rhoades, M. Kawa, C. Rudisill, *H. Carlson-Lynch*, and J. Tunkel. SRC, Inc., East Syracuse, NY.

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Immunotoxicity II

Advancing Clinical and Translational Toxicology

Chairperson(s): *Wendy J. Freebern, Immunotoxicology, Bristol-Myers Squibb, North Brunswick, NJ.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#1341 **Poster Board Number 239**
Prenatal and Postnatal Exposure to Concentrated Ambient Particulate Matter Alters the Developing Immune System of Mice. *P. B. Tijerina*, *J. L. Blum*, C. Hoffman, S. Park, *G. Grunig*, *L. Chen*, and *J. T. Zelikoff*. Environmental Medicine, NYUMC, Tuxedo, NY.

#1342 **Poster Board Number 240**
Regulation of Macrophage Activity by Histone Deacetylases during Nitrogen Mustard-Induced Lung Injury. *A. Venosa*, J. Gow, I. Berman, *R. Malaviya*, H. Yaren, H. Yaman, *A. Gow*, *J. D. Laskin*, and *D. L. Laskin*. Rutgers University, Piscataway, NJ.

#1343 **Poster Board Number 241**
Tracking Inflammatory Macrophage Accumulation in the Lung during Ozone-Induced Lung Injury in Mice. *M. Francis*, *M. Mandal*, *J. D. Laskin*, and *D. L. Laskin*. Rutgers University, Piscataway, NJ.

#1344 **Poster Board Number 242**
Alterations of Immune Parameters in HPBMC following Hardwood Smoke Exposures in Human Volunteers. F. T. Lauer[1], D. MacKenzie[1], *K. S. Harrod*[2], *J. D. McDonald*[2], and *S. W. Burchiel*[1]. [1]Pharmaceutical Sciences, University of New Mexico, Albuquerque, NM; and [2]Lovelace Respiratory Research Institute, Albuquerque, NM.

#1345 **Poster Board Number 243**
The α7 Nicotinic Acetylcholine Receptor Agonist GTS-21 Improves Hyperoxia-Compromised Bacterial Clearance from the Lung by Decreasing Hyperacetylation and the Release of Nuclear HMGB1. *R. A. Sitapara*[1], D. Antoine[2], L. K. Sharma[1], V. Patel[1], C. R. Ashby[1], S. Gorasiya[1], H. Yang[3], M. Zur[1], and *L. Mantell*[1,3]. [1]St. John's University, Queens, NY; [2]University of Liverpool, Liverpool, United Kingdom; and [3]Feinstein Institute for Medical Research, Manhasset, NY.

TUESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#1346 **Poster Board Number 244**
Ascorbic Acid Improves Hyperoxia-Compromised Host Defense against *Pseudomonas aeruginosa* Infection. V. S. Patel[1], V. Sampat[1], L. K. Sharma[1], *R. A. Sitapara*[1], W. Wu[1], H. Wang[2], M. Espey[3], and *L. Mantell*[1,2]. [1]Pharmaceutical Sciences, St. John's University College of Pharmacy and Health Sciences, Jamaica, NY; [2]Center for Inflammation and Immunology, The Feinstein Institute for Medical Research, North Shore-LIJ Health Science, Manhasset, NY; and [3]National Institutes of Health, Bethesda, MD.

#1347 **Poster Board Number 245**
Activation of Nrf2 by tBHQ Upregulates IgM Production by LPS-Activated Mouse Splenocytes. J. Bursley[1], T. Dunivin[1], S. Umthong[1], *J. W. Zagorski*[1,2], *A. E. Turley*[1,3], H. E. Dover[1], and *C. E. Rockwell*[1,2,3]. [1]Department of Pharmacology & Toxicology, Michigan State University, East Lansing, MI; [2]Cellular and Molecular Biology Program, Michigan State University, East Lansing, MI; and [3]Center for Integrated Toxicology, Michigan State University, East Lansing, MI.

#1348 **Poster Board Number 246**
The Food Additive tBHQ Inhibits Activation of Primary Human CD4 T Cells. *A. E. Turley*[1,2], *J. W. Zagorski*[2,3], and *C. E. Rockwell*[1,2,3]. [1]Pharmacology and Toxicology, Michigan State University, East Lansing, MI; [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI; and [3]Cellular and Molecular Biology Program, Michigan State University, East Lansing, MI.

#1349 **Poster Board Number 247**
The Food Additive, tBHQ, Exacerbates Anaphylactic Response to Food Allergen. *C. E. Rockwell*[1,2,4], V. Gangur[3], *J. J. Pestka*[3], R. Para[3], *A. E. Turley*[1,2], *J. W. Zagorski*[2,4], J. K. Bursley[1], and H. E. Dover[1]. [1]Pharmacology & Toxicology, Michigan State University, East Lansing, MI; [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI; [3]Food Science & Human Nutrition, Michigan State University, East Lansing, MI; and [4]Cell & Molecular Biology Program, Michigan State University, East Lansing, MI.

#1350 **Poster Board Number 248**
Renal Dendritic Cells Dependent on Flt3 but Not Csf1 Attenuate Cisplatin Nephrotoxicity. *R. K. Tadagavadi*, and W. Reeves. Medicine, Pennsylvania State University College of Medicine, Hershey, PA.

#1351 **Poster Board Number 249**
Calpain Inhibition Protects HepG2 Cells from Cytotoxicity Induced by Treatment with NSAIDs in Combination with Inflammatory Cytokines: Implications for Idiosyncratic Hepatotoxicity. A. B. Breier[1], *A. Maiuri*[1,2], *R. A. Roth*[1,2], and *P. E. Ganey*[1,2]. [1]Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI; and [2]Center for Integrative Toxicology, Michigan State University, East Lansing, MI.

Abstract #

#1352 **Poster Board Number 250**
Isoflavones Enhance Interleukin-17 Gene Expression via Retinoic Acid Receptor-Related Orphan Receptors α and γ H. Kojima[1], Y. Takeda[2], R. Muromoto[3], M. Takahashi[3], S. Takeuchi[1], A. M. Jetten[2], and T. Matsuda[3]. [1]Hokkaido Institute of Public Health, Sapporo, Japan; [2]National Institute of Environmental Health Sciences, Research Triangle Park, NC; and [3]Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan. Sponsor: *T. Yoshida*.

#1353 **Poster Board Number 251**
P,p'-DDE Alters Macrophage Reactivity *In Vitro* and Induces Monocyte/Macrophage Recruitment to the Stromal Vascular Fraction (SVF) of Adipose Tissue in C57Bl/6 Male Mice. *L. Mangum*[1], J. Stokes[2], *G. E. Howell*[1], *M. K. Ross*[1], *S. B. Pruett*[1], and *J. E. Chambers*[1]. [1]Center for Environmental Health Sciences College of Veterinary Medicine, Mississippi State University, Mississippi State, MS; and [2]Basic Sciences College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

#1354 **Poster Board Number 252**
Effect of Carbamate Pesticides on Perforin, Granzymes A-B-3/K, and Granulysin in Human Natural Killer Cells. *Q. Li*, M. Kobayashi, and T. Kawada. Hygiene and Public Health, Nippon Medical School, Tokyo, Japan.

#1355 **Poster Board Number 253**
Metabolites of Organophosphorous Pesticides (Diethyldithiophosphate) Induce Changes in Macrophages Polarization in a Breast Cancer Model. *L. Vega*, D. M. Medina-Buelvas, and E. Estrada-Muñiz. Toxicology, Centre for Research and Advanced Studies of the National Polytechnic Institute, Distrito Federal, Mexico.

#1356 **Poster Board Number 254**
Antimicrobial Agent Triclosan Is a Mitochondrial Uncoupler in Rat and Human Mast Cells. *L. Weatherly*[1,2], *J. Shim*[2], R. Kennedy-Smith[1,2], H. Hashmi[2], K. Blais[2], S. McGillicuddy[2], and *J. A. Gosse*[1,2]. [1]Graduate School of Biomedical Sciences and Engineering, University of Maine, Orono, ME; and [2]Molecular and Biomedical Sciences, University of Maine, Orono, ME.

#1357 **Poster Board Number 255**
Suppression of IFN-a Secretion by Plasmacytoid Dendritic Cells and IL-7Ra Expression in CD4 T Cells by Δ^9-Tetrahydrocannabinol. *J. E. Henriquez*[1,2], R. Crawford[2], and *N. E. Kaminski*[1,2]. [1]Pharmacology and Toxicology, Michigan State University, East Lansing, MI; and [2]Centers for Integrative Toxicology, Michigan State University, East Lansing, MI.

#1358 **Poster Board Number 256**
Exacerbation of House Dust Mite Antigen-Induced Asthmatic Symptoms in Adult B6C3F1 Mice following Developmental Exposure to Genistein. *T. L. Guo*[1], R. D. Brown[2], and A. H. Meng[2]. [1]University of Georgia, Athens, GA; and [2]Virginia Commonwealth University, Richmond, VA.

TUESDAY

Program Schedule (Continued)

Abstract #

#1359 **Poster Board Number 257**
Amodiaquine-Induced Liver Injury in PD1-/- Mice Cotreated with Anti-CTLA-4 Is Characterized by an Increase in Th17 and CD8 T Cells. A. Mak, and *J. Uetrecht*. Pharmaceutical Sciences, University of Toronto, Toronto, ON, Canada.

#1360 **Poster Board Number 258**
Investigation of Immune Response to OVA Challenge in PD-1 Deficient Mice. *W. J. Freebern*[1], *V. J. Johnson*[2], J. Woicke[3], *F. G. Burleson*[2], *M. P. Bernard*[1], L. T. Rosini-Marthaler[4], *H. G. Haggerty*[1], and *R. Bunch*[3]. [1]Immunotoxicology, Bristol-Myers Squibb, New Brunswick, NJ; [2]Burleson Research Technologies Inc., Morrisville, NC; [3]Drug Safety Evaluation, Bristol-Myers Squibb, Mount Vernon, IN; and [4]Operations, Bristol-Myers Squibb, Pennington, NJ.

#1361 **Poster Board Number 259**
Effects of Di-(n)-Butyl Phthalate (DBP) on Immune Cells *In Vitro*. R. Becher[1], B. P. Olderbø[1], J. A. Holme[1], *U. C. Nygaard*[1], P. E. Schwarze[1], and A. K. Bølling[1,2]. [1]Department of Air Pollution and Noise, Norwegian Institute of Public Health, Oslo, Norway; and [2]Department of Medicine, University of British Columbia, Vancouver, BC, Canada.

#1362 **Poster Board Number 260**
Role of POLD3 in Base Excision Repair Pathway in Burkett's Lymphoma Cells. I. Ban, and *V. Poltoratsky*. Pharmacy, St. John's University, Queens, NY.

#1363 **Poster Board Number 261**
Investigating the Role of B Cells in the Pathogenesis of Hydrocarbon Oil-Induced Lung Hemorrhage. *P. Prasad*, I. Valera, M. C. Fishbein, and R. Singh. Medicine-Division of Rheumatology, University of California, Los Angeles (UCLA), Los Angeles, CA.

#1364 **Poster Board Number 262**
Investigating the Role of Inflammasome Activation in the Proinflammatory Response Induced by Clozapine. *A. Lobach*[1,2], J. K. Weston[1], and *J. Uetrecht*[1]. [1]Pharmaceutical Sciences, University of Toronto, Toronto, ON, Canada; and [2]Food & Nutrition, Intertek Scientific & Regulatory Consulting, Mississauga, ON, Canada.

#1365 **Poster Board Number 263**
Activation of the NLRP3 Inflammasome As a Potential Biomarker of Idiosyncratic Drug Reactions. *J. K. Weston*, and *J. Uetrecht*. Pharmaceutical Science, University of Toronto, Toronto, ON, Canada.

#1366 **Poster Board Number 264**
AhR-Mediated Activation of Respiratory Innate Lymphoid Cells. *D. M. Shepherd*, B. P. Seaver, and *C. A. Beamer*. Biomedical and Pharmaceutical Sciences, University of Montana, Missoula, MT.

#1367 **Poster Board Number 265**
Shifts in Community of Mouse Gut Microbiome Exposed to TCDD. R. D. Stedtfeld[1], P. Bhaduri[1], T. M. Stedtfeld[1], K. Fader[3], *T. R. Zacharewski*[3], J. Tiedje[2], and S. A. Hashsham[1,2]. [1]Civil and Environmental Engineering, Michigan State University, East Lansing, MI; [2]Center for Microbial Ecology, Michigan State University, East Lansing, MI; and [3]Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI.

Abstract #

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Toxicity of Chemical Mixtures

Chairperson(s): *Mansi Krishan, University of Cincinnati, Cincinnati, OH; and David R. Mattie, Air Force Research Laboratory, US Air Force, Wright-Patterson AFB, OH.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#1368 **Poster Board Number 301**
Growth and Oxidative Stress Effects in Adult Male Wistar Rats Coexposed to Atrazine and Arsenic. J. Adeyemi[1,2], A. Martins Jr[2], E. Paula[2], *D. P. Oliveira*[2], and F. Barbosa Jr[2]. [1]Biological Sciences, Osun State University, Osogbo, Nigeria; and [2]Clinical Analyses, Toxicology and Food Sciences, University of Sao Paulo, Ribeirao Preto, Brazil.

#1369 **Poster Board Number 302**
Tissue-Specific Effects of Chronic Coexposure of Cr (VI) + B[a]P in C57Bl/6J Mice. *F. J. Sanchez-Martin*, Y. Fan, V. S. Carreira, J. Ovesen, A. Vonhandorf, and *A. Puga*. Department of Environmental Health, University of Cincinnati, Cincinnati, OH.

#1370 **Poster Board Number 303**
Toxicity Evaluation of Binary Mixture of Benzo[a] pyrene and Cadmium in Human Hepatocellular Carcinoma Cell Line. *S. Muthusamy*[1,2], C. Peng[1,2], and J. Ng[1,2]. [1]National Research Centre for Environmental Toxicology (Entox), University of Queensland, Brisbane, QLD, Australia; and [2]CRC for Contamination Assessment and Remediation of the Environment, (CRC-CARE), Adelaide, QLD, Australia.

#1371 **Poster Board Number 304**
Influence of Binary Mixtures of Aromatic Amines and Benzo[a]pyrene on CYP1A1/1B1 Activities in RT4 Cells. *S. Plöttner*, *H. U. Käfferlein*, and *T. Brüning*. Institute for Prevention and Occupational Medicine of the German Social Accident Insurance - Institute of the Ruhr-Universität Bochum (IPA), Bochum, Germany.

#1372 **Poster Board Number 305**
Transcriptional and Biochemical Effects of Chlorpyrifos and Malathion and Their Mixtures on Neurobehavioral Function in Coho Salmon. *L. Wang*, H. M. Espinoza, J. W. MacDonald, *T. K. Bammler*, *C. R. Williams*, *A. Yeh*, K. W. Louie, and *E. P. Gallagher*. Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

#1373 **Poster Board Number 306**
Assessment of Blood Lead and Polychlorinated Biphenyl (PCB) Levels and Toxicity in Construction Workers in Iowa. *S. H. Enayah*, F. Laurence, *S. M. Flor*, *H. Lehmler*, and *G. Ludewig*. Human Toxicology, University of Iowa, Iowa City, IA.

TUESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#1374 **Poster Board Number 307**
Effects of Taurine on Motor Activity and Anxiety in Wistar Rats Co-Exposed to Chlorpyrifos and Lead. M. G. Akande[1], and S. F. Ambali[2]. [1]Veterinary Pharmacology and Toxicology, University of Abuja, Gwagwalada, Nigeria; and [2]Veterinary Physiology and Pharmacology, University of Ilorin, Ilorin, Nigeria. Sponsor: *D. Wallace*.

#1375 **Poster Board Number 308**
Single Exposures to Lead, Inorganic Mercury, and Methylmercury Do Not Correctly Predict Their Mixture Effects on the Cardiovascular System. *S. D. Siciliano*[1,2], *L. P. Weber*[2,3], and *T. Wildemann*[1,2]. [1]Soil Science, University of Saskatchewan, Saskatoon, SK, Canada; [2]Toxicology Graduate Program, University of Saskatchewan, Saskatoon, SK, Canada; and [3]Veterinary Biomedical Sciences, University of Saskatchewan, Saskatoon, SK, Canada.

#1376 **Poster Board Number 309**
Evaluation and Modeling of the Impact of Coexposures to VOC Mixtures on Urinary Biomarkers. A. Marchand[1], R. Aranda-Rodriguez[2], *A. Nong*[2], R. Tardif[1], and *S. Haddad*[1]. [1]Environmental and Occupational Health, Université de Montréal, Montréal, QC, Canada; and [2]Exposure and Biomonitoring Division, Health Canada, Ottawa, ON, Canada.

#1377 **Poster Board Number 310**
Chemical Mixtures: Application of a Tiered Approach. *M. Krishan*[1], and *G. Rice*[2]. [1]ILSI North America, Washington, DC; and [2]National Center for Environmental Assessment, US EPA, Cincinnati, OH.

#1378 **Poster Board Number 311**
Mixtures of Full and Partial Agonists: Comparison of a Pharmacologic Model with the Toxic Unit Extrapolation Method and Generalized Concentration Addition. *T. Webster*. Department of Environmental Health, Boston University School of Public Health, Boston, MA.

#1379 **Poster Board Number 312**
The Silicoat Project: *In Vitro* and *In Vivo* Toxicity Screening of Quartz Varieties from Ceramics Industry and Approaches for an Effective Quartz Surface Coating. O. H. Creutzenberg[1], S. Reamon-Buettner[1], T. Tillmann[1], T. Hansen[1], M. J. Garcia[2], E. Monfort[2], G. Bonvicini[3], A. Escrig[2], and C. Ziemann[1]. [1]Inhalation Toxicology, Fraunhofer Institute of Toxicology and Experimental Medicine, Hannover, Germany; [2]Instituto de Tecnologia Ceramica-AICE, Castellon, Spain; and [3]Centro Ceramico di Bologna, Bologna, Italy. Sponsor: *C. Dasenbrock*.

#1380 **Poster Board Number 313**
Histological Pathological Changes in the Kidney of Mouse, *Mus norvegicus albinus*, on Exposure to Fluoride, Aluminum, and Mixtures. *A. Vijaya Bhaskara Rao*. Ecology and Environmental Sciences, Pondicherry University, Puducherry, India.

#1381 **Poster Board Number 314**
An Assessment of the Impact of Concomitant Exposure and Human Variability on the Calculation of LEQ for Three Drinking Water Contaminants. H. Tohon[1], *S. Haddad*[1], and *M. Valcke*[2]. [1]Environmental and Occupational Health, IRSPUM, Université de Montréal, Montréal, QC, Canada; and [2]INSPQ, Montréal, QC, Canada.

Abstract #

#1382 **Poster Board Number 315**
***In Vitro* Exposures to Isoprene-Derived Secondary Organic Aerosol: Assessing the Effects of SOA on Inflammation-Associated Gene Expression of BEAS-2B Using a Direct Deposition Approach.** M. Arashiro, Y. Lin, *K. G. Sexton*, *I. Jaspers*, *R. Fry*, A. Gold, and J. Surratt. Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#1383 **Poster Board Number 316**
Study of Bisphenol A and Naproxen Metabolic Interactions in Isolated Perfused Rat Liver. S. Bounakta, and *S. Haddad*. Environmental and Occupational Health, University of Montreal, Montréal, QC, Canada.

#1384 **Poster Board Number 317**
A Weight-of-Evidence (WOE) Approach to Include Nonchemical Factors in Chemical Mixtures Risk Assessment. *M. Mumtaz*[1], *P. Ruiz*[1], C. V. Smith[1], and L. Teuschler[2]. [1]Division of Toxicology and Environmental Medicine, CDC ATSDR, Atlanta, GA; and [2]L. K. Teuschler and Associates, St. Petersburg, FL.

#1385 **Poster Board Number 318**
Predicting Joint Effects of PPARgamma Ligands Using Generalized Concentration Addition. *J. Watt*, *T. Webster*, and *J. J. Schlezinger*. Environmental Health, Boston University School of Public Health, Boston, MA.

#1386 **Poster Board Number 319**
Enhancing the Chemical Mixture Methodology: New Approaches Using Target Organ System Effects, Mode of Action, and Specific Target Organ Effects. J. Yao, X. Yu, and C. Glantz. Fundamental & Computational Sciences Directorate, Pacific Northwest National Laboratory, Richland, WA. Sponsor: *A. Felsot*.

#1387 **Poster Board Number 320**
Health Hazard Assessment Summary of Alcohol-to-Jet (ATJ) Alternative Jet Fuels. *D. R. Mattie*[1], *K. L. Mumy*[2], *L. M. Sweeney*[2,3], *G. Reddy*[4], *W. C. McCain*[4], and *T. R. Sterner*[1,3]. [1]711 HPW/RHDJ, Wright-Patterson Air Force Base, OH; [2]NAMRU-D, Wright-Patterson Air Force Base, OH; [3]HJF, Wright-Patterson Air Force Base, OH; and [4]USAPHC, Aberdeen Proving Ground, MD.

#1388 **Poster Board Number 321**
An *In Vitro* Approach to Predict Chemical Mixtures Cytotoxicity Using Post-Translational Phosphorylation Responses of Individual Chemicals. *J. A. Vrana*, *A. A. Han*, and *J. W. Boyd*. Chemistry, West Virginia University, Morgantown, WV.

#1389 **Poster Board Number 322**
Using Signal Transduction to Forecast Cell Death in Response to Chemical Mixtures. *J. W. Boyd*, *J. A. Vrana*, and *A. A. Han*. Chemistry, West Virginia University, Morgantown, WV.

#1390 **Poster Board Number 323**
Toxicity of Disinfection Byproducts in Normal Human Colon Cell Cultures. *V. M. Richardson*[1], *J. Simmons*[1], and M. Moyer[2]. [1]US EPA, Research Triangle Park, NC; and [2]INCELL Corporation, San Antonio, TX.

TUESDAY

Program Schedule (Continued)

Abstract #

#1391 **Poster Board Number 324**
Combined Toxic Effects of Cadmium Ions and Dioxins on Zebrafish. *Y. Chen*, and *K. Chan*. Biochemistry, School of Life Science, The Chinese University of Hong Kong, Hong Kong, China.

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Food Safety, *In Vivo*

Chairperson(s): *Ronald Riley, USDA, Athens, GA.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#1392 **Poster Board Number 325**
Detecting Fumonisin-Induced Changes in Putative Sphingolipid Biomarkers in LM/Bc Mice and Humans Using Blood Spots. *R. T. Riley*[1], J. L. Showker[1], C. M. Lee[1], T. R. Mitchell[1], *K. A. Voss*[1], N. C. Zitomer[1], O. Torres[2,3], J. Matute[3], S. G. Gregory[4], A. E. Ashley-Koch[4], J. R. Maddox[5], and *J. B. Gelineau-van Waes*[5]. [1]USDA-ARS-RRC-TMRU, Athens, GA; [2]Laboratorio Diagnostico Molecular S.A., Guatemala City, Guatemala; [3]Centro de Investigaciones en Nutrición y Salud, Guatemala City, Guatemala; [4]Duke University Medical Center, Durham, NC; and [5]Creighton University School of Medicine, Omaha, NE.

#1393 **Poster Board Number 326**
Coexposure to Fumonisins and Aflatoxins in Maize-Based Foods in Central America: Guatemala As a Case Study. *K. A. Voss*[1], O. Torres[2], J. Matute[2], *J. B. Gelineau-van Waes*[3], J. R. Maddox[3], S. G. Gregory[4], A. E. Ashley-Koch[4], J. L. Showker[1], and *R. T. Riley*[1]. [1]USDA Agricultural Res. Service, Athens, GA; [2]Centro de Investigaciones en Nutrición y Salud, Guatemala City, Guatemala; [3]Creighton University School of Medicine, Omaha, NE; and [4]Duke University Medical Center, Durham, NC.

#1394 **Poster Board Number 327**
Sex and Age Are Critical Factors That Impact Deoxynivalenol Clearance in Mice. *E. S. Clark*[1], C. J. Doan[1], P. Fruhmann[2], and *J. J. Pestka*[1]. [1]Michigan State University, East Lansing, MI; and [2]Vienna University of Technology, Vienna, Austria.

#1395 **Poster Board Number 328**
Safety Evaluation of the Dietary Ingredient Melatonin. *A. W. Wong*. Council for Responsible Nutrition, Washington, DC.

#1396 **Poster Board Number 329**
Safety and Toxicological Evaluation of a Novel *Prunus domestica* (CR002) Extract. *D. Bagchi*[1,2], *M. Bagchi*[2], A. Swaroop[2], and P. Kumar[3]. [1]Pharmacological & Pharmaceutical Sciences, University of Houston College of Pharmacy, Houston, TX; [2]R&D, Cepham Research Center, Piscataway, NJ; and [3]R&D, Chemical Resources, Panchkula, India.

Abstract #

#1397 **Poster Board Number 330**
Locust Bean Gum Safety in Neonates and Young Infants—Integrated Review of the Toxicological Database and Clinical Evidence. L. Meunier[1], *J. Garthoff*[1], A. Schaafsma[2], L. Krul[3], J. Schrijver[4], J. B. van Goudoever[5,6], G. Speijers[7], and Y. Vandenplas[8]. [1]Food Safety Center, Danone Nutricia, Utrecht, Netherlands; [2]FrieslandCampina, Amersfoort, Netherlands; [3]TNO, Zeist, Netherlands; [4]Danone Nutricia Early Life Nutrition, Schiphol Airport, Netherlands; [5]Academic Medical Center, Emma Children's Hospital, Amsterdam, Netherlands; [6]Department of Pediatrics, VU University Medical Center, Amsterdam, Netherlands; [7]General Health Effects Toxicology Safety Food (GETS), Nieuwegein, Netherlands; and [8]Department of Pediatrics, UZ Brussel, Vrije Universiteit Brussel, Brussels, Belgium.

#1398 **Poster Board Number 331**
Six-Month Dosed-Feed Toxicity of Chitosan in Harlan Sprague-Dawley Rats. *B. C. Sayers*, *M. Cora*, *S. Elmore*, *G. E. Kissling*, *M. Vallant*, and *C. R. Blystone*. Division of the National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

#1399 **Poster Board Number 332**
Shaping Health Perceptions: Effectively Communicating about Chemicals in Food. E. Petrun[2], A. O. Flood[1], T. Sellnow[3], and M. Smith Edge[1]. [1]Food Safety, IFIC, Washington, DC; [2]UMD, College Park, MD; and [3]UKY, Lexington, KY. Sponsor: *A. Cuevas*.

#1400 **Poster Board Number 333**
Modulation of the Spleen Transcriptome by Aflatoxin B1 in the Turkey. M. S. Monson[2], R. E. Settlage[3], *S. Rawal*[1], *H. El-Nezami*[4], K. M. Reed[2], and *R. A. Coulombe*[1]. [1]Toxicology Graduate Program, Utah State University, Logan, UT; [2]Department of Veterinary and Biomedical Sciences, University of Minnesota, St. Paul, MN; [3]Virginia Bioinformatics Institute, Virginia Polytechnic Institute and State University, Blacksburg, VA; and [4]School of Biological Sciences, University of Hong Kong, Hong Kong, Hong Kong.

#1401 **Poster Board Number 334**
Pathological Changes in Acute Experimental Aflatoxicosis in Holstein Calves: Preliminary Results. C. De Luna-Lopez[1], A. G. Valdivia[4], F. Jaramillo Juarez[2], J. Reyes-Sanchez[3], R. Ortiz-Martinez[1], and T. Quezada-Tristan[4]. [1]Disciplinas Pecuarias, Universidad Autonoma de Aguascalientes, Aguascalientes, Mexico; [2]Fisiología y Farmacología, Universidad Autonoma de Aguascalientes, Aguascalientes, Mexico; [3]Fisiologia, Biofisica y Neurociencias, CINVESTAV, Mexico City, Mexico; and [4]Cinica Veterinaria, Universidad Autonoma de Aguascalientes, Aguascalientes, Mexico. Sponsor: *G. Pallas-Guzman*.

#1402 **Poster Board Number 335**
Health Hazard Assessment for Dicyaniamide and an Evaluation of Exposure via Dairy Products. *S. Assimon*, and J. Sheehan. CFSAN, USFDA, College Park, MD.

#1403 **Poster Board Number 336**
Caffeine Intake: A Comparison of Consumption Data and Marketing Data. *C. Llewellyn*, and *C. Rodriguez*. Global Scientific and Regulatory Affairs, The Coca-Cola Company, Atlanta, GA.

TUESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#1404 **Poster Board Number 337**
Benzoate Preservatives: An Evaluation of the Safety Database. *C. Rodriguez*, and *C. Llewellyn*. Global Scientific and Regulatory Affairs, The Coca-Cola Company, Atlanta, GA.

#1405 **Poster Board Number 338**
Risk Assessment of Dietary Intake of Aluminum-Containing Food Additives in China in 2009 and 2014. A. Lau, and *L. A. Haighton*. Intertek, Mississauga, ON, Canada.

#1406 **Poster Board Number 339**
Accumulation of Lolitrem B Residues in the Fat of Cattle Fed Perennial Ryegrass Straw. *J. M. Duringer*[1], A. Moon[1], and *A. M. Craig*[2]. [1]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR; and [2]Biomedical Sciences, Oregon State University, Corvallis, OR.

#1407 **Poster Board Number 340**
Acute Renal Toxicity Induced by Oral Exposure to Diglycolic Acid. Z. Keltner[1], N. Olejnik[1], C. Stine[2], E. Evans[2], M. Mossoba[1], S. Vohra[3], H. Toomer[3], J. Sprando[3], V. Topping[1], K. Belgrave[1], A. S. DePina[1], T. Black[1], and R. Sprando[1]. [1]Division of Toxicology/ Office of Applied Research and Safety Assessment/ Center for Food Safety and Applied Nutrition, US Food and Drug Administration, Laurel, MD; [2]Center For Veterinary Medicine, US Food and Drug Administration, Laurel, MD; and [3]Office of Applied Research and Safety Assessment, ORISE, Laurel, MD. Sponsor: *J. Yourick*.

#1408 **Poster Board Number 341**
Dietary Glycotoxins Increase Advanced Glycation End Products, but Do Not Accelerate Atherosclerotic Plaque Formation in Diabetic Apoliprotein E-Deficient Mice. C. Svendsen[1], J. Serrano[2], M. Martín-Garí[2], M. Mateu-Dolcet[2], M. Santacana[2], T. Husøy[1], J. Alexander[1], and M. Portero-Otin[2]. [1]Norwegian Institute of Public Health, Oslo, Norway; and [2]University of Lleida, Lleida, Spain. Sponsor: *B. Granum*.

#1409 **Poster Board Number 342**
Lack of Toxicity of the Omega-3 Fatty Acids, EPA and DHA. H. B. Rice[1], and *J. C. Griffiths*[2]. [1]Global Organization for EPA and DHA Omega-3s (GOED), Salt Lake City, UT; and [2]Council for Responsible Nutrition, Washington, DC.

#1410 **Poster Board Number 343**
Toxicity Studies of *Icacina trichantha* Tuber Extract and Fractions. M. M. Onakpa[1,2,3], M. Zhao[3], *I. U. Asuzu*[2], and C. Che[3]. [1]Veterinary Pharmacology and Toxicology, University of Abuja, Abuja, Nigeria; [2]Department of Veterinary Physiology and Pharmacology, University of Nigeria, Nsukka, Nigeria; and [3]Medicinal Chemistry and Pharmacognosy, University of Illinois at Chicago, Chicago, IL.

#1411 **Poster Board Number 344**
Polyphenolics from Mango (*Mangifera indica* L.) Suppress Breast Cancer Ductal Carcinoma by Targeting the mTOR Pathway *In Vivo.* *M. Nemec*[1,2], H. Kim[2], A. Marciante[3], R. Barnes[2], S. Talcott[2], and S. Talcott[1,2]. [1]Interdisciplinary Program of Toxicology, Texas A&M University, College Station, TX; [2]Department of Nutrition and Food Science, Texas A&M University, College Station, TX; and [3]Department of Biology, Texas A&M University, College Station, TX.

Abstract #

#1412 **Poster Board Number 345**
Aflatoxin B1-Induced Gut Microbiome Changes in Male F344 Rats. J. Wang, *L. Tang*, T. C. Glenn, and *J. Wang*. Environmental Health Science, The University of Georgia, Athens, GA.

#1413 **Poster Board Number 346**
"Substantially Equivalent": The Intersection of Toxicology and Policy in Characterizing Genetically Modified Foods (GMFs). M. Lovrich-Kerr[1], and *T. Dodd-Butera*[2]. [1]Union Institute & University, Cincinnati, OH; and [2]Nursing, CSU San Bernardino,College of Natural Sciences, San Bernardino, CA.

#1414 **Poster Board Number 347**
Effect of Exposure of Diacetyl in Proteomics and Metabolomics Approach in Mice Model. N. A. Assunção, and L. D. Jedlicka. Hard Sciences and Earth Sciences, UNIFESP, Sao Paulo, Brazil. Sponsor: *E. Bechara*.

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Reproductive Toxicology I

Chairperson(s): *Jeffrey S. Moffit, FORUM Pharmaceuticals Inc, Boston, MA; and Vicki Sutherland, Toxicology Branch, National Toxicology Program, Research Triangle Park, NC.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#1415 **Poster Board Number 401**
Avian Reproductive Toxicology Studies: Historical Data–*Coturnix coturnix japonica*. D. J. Esdaile, K. Sipos, and S. Gaty. CiToxLAB Hungary, Veszprem, Hungary. Sponsor: *R. Forster*.

#1416 **Poster Board Number 402**
The Effects of Long-Lasting Hypoglycemia on Male Reproductive Organs in Rats. T. Kobayashi, J. Namekawa, *T. Shimomoto*, M. Yasui, T. Iijima, Y. Itano, and D. Miura. Pharmaceutical Development Research Laboratories, Teijin Pharma Limited, Tokyo, Japan.

#1417 **Poster Board Number 403**
Nonhuman Primate Pre/Postnatal Studies: Does Measurement of Monoclonal Antibodies in Breast Milk Provide Useful Information? *S. Karanth*, *J. K. Meyer*, *D. L. Newcomb*, and *G. J. Chellman*. Toxicology, Charles River, Safety Assessment, Reno, NV.

#1418 **Poster Board Number 404**
Absence of Adverse Effects on Developmental Toxicity in an F1 Extended Two-Generation Reproductive Toxicity Study with Carbendazim. *B. Neal*[1], A. Hunerdosse[2], K. Hill[2], R. Read[2], R. Gilmore[2], and *D. Dandekar*[2]. [1]Exponent Inc, Alexandria, VA; and [2]Xenometrics LLC, Stilwell, KS.

#1419 **Poster Board Number 405**
Extended One-Generation Reproductive Toxicity Test in Rats Exposed to 3-Nitro-1,2,4-Triazol-5-One (NTO). E. M. Lent, L. Crouse, A. M. Jackovitz, and *M. S. Johnson*. Toxicology Portfolio, Army Institute of Public Health, Aberdeen Proving Ground, MD.

Program Schedule (Continued)

Abstract #

#1420 **Poster Board Number 406**
Ethylenethiourea (ETU): An Extended One-Generation Reproductive Toxicity Study (EOGRTS) in Rats. *M. Aggarwal*[1], C. Zablotny[2], *A. K. Andrus*[2], *S. Marty*[2], and A. Chukwudebe[3]. [1]Dow AgroSciences, Abingdon, United Kingdom; [2]Dow Chemical Company, Midland, MI; and [3]BASF Corporation, Durham, NC.

#1421 **Poster Board Number 407**
Current Use of the National Toxicology Program (NTP) Modified One-Generation Reproduction (MOG) Study. *P. M. Foster*, *M. Behl*, *B. McIntyre*, and *V. Sutherland*. National Toxicology Program, NIEHS, Research Triangle Park, NC.

#1422 **Poster Board Number 408**
Endocrine Activity of Bisphenol AF As Assessed by a Modified One-Generation Reproduction (MOG) Study in Harlan Sprague-Dawley Rats. *V. Sutherland*[1], *B. McIntyre*[1], K. Turner[2], *H. C. Cunny*[1], *L. E. Gray*[3], M. Mercado[1], and *P. M. Foster*[1]. [1]NTP, NIEHS, Research Triangle Park, NC; [2]DST, RTI, Research Triangle Park, NC; and [3]TAD/NHEERL/ORD, USEPA, Research Triangle Park, NC.

#1423 **Poster Board Number 409**
NTP Modified One-Generation Assessment (MOG) of 2-Ethylhexyl p-Methoxycinnamate (EHMC) in Hsd:Sprague-Dawley SD Rats. *B. McIntyre*[1], *K. Turner*[2], *S. Waidyanatha*[1], *H. C. Cunny*[1], and *P. M. Foster*[1]. [1]NIEHS/NTP, Research Triangle Park, NC; and [2]RTI International, Research Triangle Park, NC.

#1424 **Poster Board Number 410**
Effect of Orally Administered Encenicline (EVP-6124), a Selective α7 Nicotinic Acetylcholine Receptor Partial Agonist, on Pre- and Postnatal Development of Rats. *J. S. Moffit*, A. Hansen, and G. Loewen. FORUM Pharmaceuticals Inc, Watertown, MA.

#1425 **Poster Board Number 411**
Intramuscular Administration of CpG7909 in Rats and Rabbits to Assess Fertility, Embryo-Fetal Development, and Postnatal Potential Toxicity. C. Planty[1], G. Giordano[1], F. Delannois[3], *L. Segal*[2], K. Thacker[4], L. Reynaud[5], E. Destexhe[1], and N. Garçon[1]. [1]R&D, GSK, Rixensart, Belgium; [2]RA, GSK, Wavre, Belgium; [3]Safety, GSK, Wavre, Belgium; [4]Tox, Huntington Life Science, Ltd, United Kingdom; and [5]Tox, WIL Research-Europe, Lyon, France.

#1426 **Poster Board Number 412**
Prenatal Exposure to Di-(2-Ethylhexyl) Phthalate May Have Two-Generational Effects on Female Reproductive Outcomes. S. Rattan, *S. Steinmann*, and *J. A. Flaws*. Comparative Biosciences, University of Illinois at Urbana Champaign, Urbana, IL.

#1427 **Poster Board Number 413**
Comparative Assessment of the Effects of Prenatal Exposures to Bisphenol A (BPA) and Di (2-Ethylhexyl) Phthalate on Testicular Development in Male Rats. *J. O. Olukunle*[2,1], F. M. Abdel-Maksoud[1], and B. T. Akingbemi[1]. [1]Department of Anatomy, Physiology and Pharmacology, Auburn University, Auburn, AL; and [2]Veterinary Physiology and Pharmacology, University of Agriculture, Abeokuta, Abeokuta, Nigeria.

Abstract #

#1428 **Poster Board Number 414**
Enhanced Reproductive and Behavioral Deficits Induced by Maternal Exposure to a Mixture of Low-Dose Endocrine-Disrupting Chemicals. *M. Sobolewski*, K. Conrad, *J. L. Allen*, and *D. A. Cory-Slechta*. University of Rochester, Rochester, NY.

#1429 **Poster Board Number 415**
Reproductive Safety Evaluation of L-Ergothioneine. *P. Singh*[1], F. Spezia[1], D. Papineau[1], C. Sabadie[1], *R. Forster*[1], M. Moutet[2], and J. Yadan[2]. [1]CiToxLAB, Evreux, France; and [2]Tetrahedron, Vincennes, France.

#1430 **Poster Board Number 416**
Reproductive Organ Toxicity of *Catharanthus roseus* in Male Albino Rats. *S. Chauhan*[1], and S. Agrawal[2]. [1]Indian Council of Medical Research, New Delhi, India; and [2]Bhilai Mahila Mahavidyalaya, Bhilai, India.

#1431 **Poster Board Number 417**
Reproductive Toxicity of the Methanol Root Extract of *Cnestis ferruginea* (de Candolle) in Male Rats. *F. O. Olayemi*. Veterinary Physiology, Biochemistry and Pharmacology, University of Ibadan, Ibadan, Nigeria.

#1432 **Poster Board Number 418**
Reproductive and Toxic Effects of Methanol Extract of *Alchornea cordifolia* Leaf in Male Rats. *T. Ajibade*, and F. O. Olayemi. University of Ibadan, Ibadan, Nigeria.

#1433 **Poster Board Number 419**
Enhanced Reproductive Toxicological Testing of Prochloraz at Environmentally Relevant Concentrations. S. Melching-Kollmuss[1], S. Schneider[2], I. Fegert[1], and *B. van Ravenzwaay*[2]. [1]Regulatory Toxicology Crop Protection, BASF SE, Ludwigshafen, Germany; and [2]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen, Germany.

#1434 **Poster Board Number 420**
Reproductive Toxicity and Meiotic Dysfunction following Exposure to the Pesticides Maneb, Diazinon, and Fenarimol. *D. A. Parodi*, J. Sjarif, *Y. Chen*, and *P. Allard*. UCLA, Los Angeles, CA.

#1435 **Poster Board Number 421**
Validation of an ELISA for Analysis of Inhibin B in Rat Serum. T. Nett, M. Allen, K. Moreng, and E. Weber. Endolytics, LLC, Fort Collins, CO. Sponsor: *M. Legare*.

#1436 **Poster Board Number 422**
Ethylene Glycol Monomethyl Ether-Induced Testicular Toxicity in Cynomolgus Monkeys. K. Sakurai, K. Mikamoto, M. Shirai, K. Ito, K. Mori, and *W. Takasaki*. Medicinal Safety Research Laboratories, Daiichi Sankyo, Tokyo, Japan.

#1437 **Poster Board Number 423**
Comparative Mammary Gland Development in Male and Female Harlan Sprague-Dawley Rats: From Bud Development to Adulthood. *A. J. Filgo*[1,2], J. Foley[3], C. Reed[1], V. Chappell[1], and *S. E. Fenton*[1]. [1]NTP Laboratory, NIEHS, Research Triangle Park, NC; [2]Curriculum of Toxicology, UNC, Chapel Hill, NC; and [3]CMPB, NIEHS, Research Triangle Park, NC.

TUESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#1438 **Poster Board Number 424**
Derivation of a Maximum Allowable Dose Level for Methyl Chloride. *J. Fleischer*, and *M. H. Whittaker*. ToxServices LLC, Washington, DC.

#1439 **Poster Board Number 425**
A Data-Based Proposal for Derivation and Validation of a Specific Concentration Limit (SCL) Threshold for the Reproductive Toxicity of Tetrapropenyl Phenol (TPP). *D. Roesh, T. Patterson, L. Roberts, Z. Naufal, T. Wegesser*, and *S. Kinsler*. Chevron, San Ramon, CA.

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Reproductive Toxicology II

Chairperson(s): *Caitlin Murphy, University of Texas at Austin, Austin, TX; and Brandiese Beverly, US EPA, Durham, NC.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#1440 **Poster Board Number 428**
Mono-(2-ethylhexyl) Phthalate-Induced Sertoli Cell Injury Stimulates Macrophage Infiltration and the Production of Proinflammatory Cytokines in Peripubertal Male Fischer Rats. *C. Murphy, A. Stermer*, and *J. H. Richburg*. Pharmacology and Toxicology, University of Texas at Austin, Austin, TX.

#1441 **Poster Board Number 429**
Simvastatin Reduces Fetal Testosterone Production and Permanently Alters Reproductive Tract Development in the Male Crl:CD(SD) Rat. *B. Beverly*[1,2], *J. R. Furr*[2], *C. Lambright*[2], *B. McIntyre*[3], *P. M. Foster*[3], *G. Travlos*[3], *V. S. Wilson*[2], and *L. E. Gray*[2]. [1]ORISE, Oak Ridge, TN; [2]US EPA, Durham, NC; and [3]NIH, Research Triangle Park, NC.

#1442 **Poster Board Number 430**
A 10-Day Exposure to Di-n-butyl Phthalate (DBP) Disrupts Ovarian Function in CD-1 Mice. N. Sen, X. Liu, and *Z. R. Craig*. Animal and Comparative Biomedical Sciences, University of Arizona, Tucson, AZ.

#1443 **Poster Board Number 431**
Acute Mono-2-ethylhexyl Phthalate Exposure Causes Time-Dependent Alteration in Macrophage Functionality in the Peripubertal Fischer Rat Testis. *A. Stermer, C. Murphy*, and *J. H. Richburg*. Pharmacology and Toxicology, University of Texas at Austin, Austin, TX.

#1444 **Poster Board Number 432**
Di(2-Ethylhexyl) Phthalate Inhibits Estradiol Biosynthesis in Cultured Mouse Antral Follicles. *P. R. Hannon*, and *J. A. Flaws*. Department of Comparative Biosciences, University of Illinois, Urbana, IL.

#1445 **Poster Board Number 433**
Phthalate Mixture Exposure Affects Folliculogenesis and Induces Oxidative Stress in Neonatal Mouse Ovaries. *C. Zhou*[1], Z. Li[2], and *J. A. Flaws*[1]. [1]Comparative Biosciences, University of Illinois at Urbana-Champaign, Urbana, IL; and [2]Roy J. Carver Biotechnology Center, University of Illinois at Urbana-Champaign, Urbana, IL.

Abstract #

#1446 **Poster Board Number 434**
Outcome in Zygote Development after *In Vivo* Exposure to Di(2-ethylhexyl) Phthalate May Depend on the Fertilization System. A. Veloz-Contreras[1], S. Vargas-Marín[1], M. Sánchez-Gutiérrez[2], *D. G. Acuña-Hernández*[1], J. R. Herrick[3], and *I. Hernández-Ochoa*[1]. [1]Department of Toxicology, Cinvestav-IPN, Mexico City, Mexico; [2]Instituto de Ciencias de la Salud, UAEH, Pachuca, Mexico; and [3]National Foundation for Fertility Research, Center for Reproductive Medicine, Lone Tree, CO.

#1447 **Poster Board Number 435**
Effects of Tamoxifen on the Signaling Pathway of Ovary Maintenance and Activation of Sex Reversal in Adult Female Mice. *W. Liu*[1], M. Yu[1], J. Wang[2], J. Qin[3], Y. Wang[1], and Y. Wang[1]. [1]School of Environmental Science and Technology, Dalian University of Technology, Dalian, China; [2]School of Life Science and Biotechnology, Dalian University of Technology, Dalian, China; and [3]Department of Developmental and Regenerative Biology, Jinan University, Guangzhou, China.

#1448 **Poster Board Number 436**
Genistein May Alter Steroidogenesis by Decreasing Steroidogenic Enzyme Expression in Mouse Ovaries. *S. Patel, J. Peretz*, and *J. A. Flaws*. Comparative Biosciences, University of Illinois at Urbana Champaign, Urbana, IL.

#1449 **Poster Board Number 437**
Equol Inhibits Growth and Estradiol Production in Mouse Antral Follicles *In Vitro*. *S. Mahalingam, L. Gao*, and *J. A. Flaws*. Comparative Biosciences, University of Illinois at Urbana-Champaign, Urbana, IL.

#1450 **Poster Board Number 438**
Quercetin Attenuates Oxidative Testicular Damage in STZ-Induced Diabetic Rats. S. Alrejaie[1], and O. Alkhamees[2]. [1]Pharmacology & Toxicology, KSU, Riyadh, Saudi Arabia; and [2]Imam University, Riyadh, Saudi Arabia. Sponsor: *N. Zawia*.

#1451 **Poster Board Number 439**
Prior Attenuation of KiSS1 mRNA Expression in LH-Surge Center Is a Trigger for the Delayed Effect Induced by Neonatal Exposure to Estrogens in Rats. R. Ichimura[1,2,3], M. Takahashi[1], T. Morikawa[1], K. Inoue[1], J. Maeda[1], K. Usuda[2], M. Yokosuka[4], G. Watanabe[2], and *M. Yoshida*[1]. [1]Division of Pathology, National Institute of Health Science, Tokyo, Japan; [2]Department of Veterinary Medicine, Tokyo University of Agriculture and Technology, Tokyo, Japan; [3]Pharmaceutical Research Center, Mochida Pharmaceutical Co., Ltd., Shizuoka, Japan; and [4]Graduate School of Veterinary Medicine, Nippon Veterinary and Life Science University, Tokyo, Japan.

#1452 **Poster Board Number 440**
Individual and Mixture Endocrine Activity of BPS and BPC Using *In Vitro* Estrogenic/ Antiandrogenic Transcriptional Activation Assays and the *In Vivo* Uterotrophic Assay. *J. M. Conley*[1,2], M. Cardon[2], N. Evans[2], *L. E. Gray*[2], *P. M. Foster*[3], J. R. Furr[2], *B. R. Hannas*[2], P. Hartig[2], *V. Sutherland*[3], and *V. S. Wilson*[2]. [1]ORISE Postdoctoral Fellow, USEPA, Research Triangle Park, NC; [2]TAD/ NHEERL/ORD, USEPA, Research Triangle Park, NC; and [3]NTP/NIEHS, NIH, Research Triangle Park, NC.

TUESDAY

Program Schedule (Continued)

Abstract #

#1453 **Poster Board Number 441**
Perinatal Exposures to Bisphenol (BP) Analogs and Their Effects on Early and Pubertal Development in CD-1 Mice. *D. K. Tucker*[1,2], S. Ye[3], A. Calafat[3], G. E. Kissling[4], and *S. E. Fenton*[2]. [1]Curriculum in Toxicology, UNC Chapel Hill, Chapel Hill, NC; [2]NTPL, DNTP, NIEHS, Research Triangle Park, NC; [3]DLS, NCEH, CDC, Atlanta, GA; and [4]DIR, NIEHS, Research Triangle Park, NC.

#1454 **Poster Board Number 442**
The Effect of Bisphenol A on Cumulus Cells Expansion and Oocyte Viability in an *In Vitro* System. *D. G. Acuña-Hernández*, and *I. Hernández-Ochoa*. Department of Toxicology, Cinvestav-IPN, Mexico City, Mexico.

#1455 **Poster Board Number 443**
Chronic Low Levels of Bisphenol A Exposure Impairs Uterine Functions during Early Pregnancy by Disrupting Progesterone Receptor-Mediated Signaling. Q. Li[1,2], *J. Davila*[1], M. K. Bagchi[2], and I. C. Bagchi[1]. [1]Comparative Biosciences, University of Illinois at Urbana-Champaign, Urbana, IL; and [2]Molecular & Integrative Physiology, University of Illinois at Urbana-Champaign, Urbana, IL.

#1456 **Poster Board Number 444**
Benzo[a]pyrene Increases Germ Cell Apoptosis and Reduces Germ Cell Number in the Mouse Fetal Ovary. *J. Lim*, *W. Kong*, and *U. Luderer*. Medicine, University of California, Irvine, CA.

#1457 **Poster Board Number 445**
Cigarette Smoke Exposure Triggers the Autophagic Cascade via Activation of the AMPK Pathway. H. Furlong[1], M. Stampfli[2], *A. M. Gannon*[1], and *W. G. Foster*[1]. [1]Obstetrics and Gynecology, McMaster University, Hamilton, ON, Canada; and [2]Pathology and Molecular Medicine, McMaster University, Hamilton, ON, Canada.

#1458 **Poster Board Number 446**
The Sperm Parameters in Aroclor 1254-Exposed Rats at Different Selenium Status. P. Erkekoglu[1], N. Zeybek[2], S. Aydin[1], A. Asci[1], A. Balci[1], U. Yaman[1], N. Basaran[1], E. Asan[2], and B. Kocer-Gumusel[1]. [1]Toxicology, Hacettepe University Faculty of Pharmacy, Ankara, Turkey; and [2]Histology and Embryology, Hacettepe University Faculty of Medicine, Ankara, Turkey. Sponsor: *P. Erkekoglu*.

#1459 **Poster Board Number 447**
Role of Breast Cancer Resistance Protein (Bcrp/Abcg2) in Triptolide-Induced Testis Toxicity. *J. Ren*, C. Li, and X. Qi. Center for Drug Safety Evaluation and Research, Shanghai Institute of Materia Medica, Shanghai, China.

#1460 **Poster Board Number 448**
Investigating Toxicity of Diverse Compounds in an Organotypic Model of Testes Development: Impacts on Cytotoxicity, Cytokines, and Testosterone Production. *S. Harris*[1], *S. Wegner*[1], *J. Park*[1], S. E. Pacheco[2], *S. Hong*[1,2], and *E. M. Faustman*[1,2]. [1]Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA; and [2]Institute for Risk Analysis and Risk Communication, University of Washington, Seattle, WA.

Abstract #

#1461 **Poster Board Number 449**
Mechanism of the Toxic Effect of the Cocktail Carbendazim-Iprodione on the Pubertal Seminiferous Epithelium: An *Ex Vivo* Study. M. Perrard[1], A. Blondet[2], D. Carette[3], G. Martin[2], E. Christin[2], G. Pointis[3], and P. H. Durand[2]. [1]U 846, INSERM, Lyon, France; [2]Toxicology, Kallistem, Lyon, France; and [3]U 1065, INSERM, Nice, France. Sponsor: *R. Witorsch*.

#1462 **Poster Board Number 450**
Administration of 1-Aminobenzotriazole Reduces Adverse Effects of 1-Bromopropane on Epididymal Sperm. C. Huang[1], *E. Garner*[2], C. Zong[3,1], X. Zhang[3,1], *L. Zhang*[3], S. Ichihara[4], and *G. Ichihara*[3]. [1]Nagoya University, Nagoya, Japan; [2]Lovelace Respiratory Research Institute, Albuquerque, NM; [3]Occupational and Environmental Health, Tokyo University of Science, Noda, Japan; and [4]Mie University, Tsu, Japan.

#1463 **Poster Board Number 451**
SO2 and Fluoride Changed the miRNAs Expression Profiling in Mice Testis. J. Zhang[1], S. Wang[2], C. Liang[1], *R. Niu*[1], Z. Sun[1], and J. Wang[1]. [1]Shanxi Key Laboratory of Ecological Animal Science and Environmental Veterinary Medicine, Shanxi Agricultural University, Taigu, China; and [2]Physiology and Neurobiology, University of Virginia, Charlottesville, VA.

#1464 **Poster Board Number 452**
Mechanisms Underlying the Testicular Toxicity of Atrazine in Rats and Sertoli-Germ Cell Coculture. *E. O. Farombi*. Biochemistry, University of Ibadan, Ibadan, Nigeria.

#1465 **Poster Board Number 453**
A New Oxidative Mechanism of Methyl Parathion Reproductive Toxicity: Disruption of the Blood-Testis Barrier. P. Tello-Mora[1], M. J. Solís-Heredia[1], M. Ortega-Olvera[2], J. Luna-Muñoz[3], and *B. Quintanilla-Vega*[1]. [1]Toxicology, CINVESTAV, México City, Mexico; [2]Physiology and Neurosciences, CINVESTAV, México City, Mexico; and [3]LaNSE, CINVESTAV, México City, Mexico.

#1466 **Poster Board Number 454**
Modulation of Nrf2 and OGG1 Expression in Germ Testicular Cells by Methyl Parathion Exposure: An Epigenetic Mechanism. D. Hernández-Cortés, *I. Alvarado-Cruz*, M. J. Solís-Heredia, and *B. Quintanilla-Vega*. Toxicology, CINVESTAV, Mexico City, Mexico.

Program Schedule (Continued)

Abstract #

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Endocrine Toxicology

Chairperson(s): *Christopher Thompson, Scripps Research Institute, San Diego, CA; and Katie B. Paul, Human Safety Regulatory Toxicology, Bayer CropScience, Durham, NC.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#1467 **Poster Board Number 501**
Assessing the Potential Endocrine Disruptors within the ToxCast Compound Library by Profiling Their Impacts on Activities of Multiple Nuclear Receptors. A. Medvedev[1], M. Moeser[1], L. Medvedeva[1], A. Granick[1], E. Martsen[1], M. Zeng[1], *K. Houck*[2], and S. S. Makarov[1]. [1]R&D, ATTAGENE, Inc., Research Triangle Park, NC; and [2]NCCT, US EPA, Research Triangle Park, NC.

#1468 **Poster Board Number 502**
Evaluation of Tetrabromobisphenol A (TBBPA)-Induced Endocrine-Related Target Gene Activity Using High-Throughput Screening Data from ToxCast. *D. Wikoff*[1], *M. C. White*[1], *S. Borghoff*[2], and *L. C. Haws*[1]. [1]ToxStrategies, Inc., Austin, TX; and [2]ToxStrategies, Inc., Cary, NC.

#1469 **Poster Board Number 503**
Isoflavone Exposure Has No Effect on Breast Cell Proliferation or Apoptosis in Healthy Women or Breast Cancer Patients. M. Messina[2], A. Shao[3], and *J. C. Griffiths*[1]. [1]Council for Responsible Nutrition, Washington, DC; [2]Nutrition Matters, Inc., Port Townsend, WA; and [3]Herbalife, Torrance, CA.

#1470 **Poster Board Number 504**
Urinary Bisphenol A Levels in Obese Children: Preliminary Results. D. Bulus[2], A. Balci[1], A. Asci[1,3], U. Yaman[1,3], P. Erkekoglu[1], N. Andiran[2], and B. Kocer-Gumusel[1]. [1]Toxicology, Hacettepe University Faculty of Pharmacy, Ankara, Turkey; [2]Pediatric Endocrinology Unit, Keçiören Training and Research Hospital, Pediatrics Clinic, Ankara, Turkey; and [3]Toxicology, Ataturk University, Faculty of Pharmacy, Ankara, Turkey. Sponsor: *P. Erkekoglu.*

#1471 **Poster Board Number 505**
Systematic Review of Bisphenol A (BPA) Analogues and Analysis of High-Throughput Screening Data. *K. E. Pelch*[1], V. R. Walker[1], *J. Hsieh*[1], *S. S. Auerbach*[1], D. L. Svoboda[1], *M. DeVito*[1], S. Holmgren[2], *R. R. Tice*[1], and K. Thayer[1]. [1]NTP, NIEHS, Morrisville, NC; and [2]OSIM, NIEHS, Morrisville, NC.

#1472 **Poster Board Number 506**
Estrogen Receptor Isoforms ER Alpha 66, 46, and 36 Exhibit Distinct Signaling Interactions during Estrogen-Mediated Proliferative Events. *M. M. Miller*, *R. Alyea*, *J. Dong*, *M. E. Anderson*, and *R. A. Clewell.* ICSS, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Abstract #

#1473 **Poster Board Number 507**
Direct Measurement of Estrogenic and Androgenic Compounds in Human Plasma Using Cell-Based Reporter Gene Assays. S. S. Sanchez[1], P. Tachachartvanich[1], R. Thomas[1], E. M. John[3,4], *M. T. Smith*[1], and L. Fejerman[2]. [1]School of Public Health, University of California, Berkeley, Berkeley, CA; [2]Division of General Internal Medicine and Institute of Human Genetics, Department of Medicine, University of California, San Francisco, San Francisco, CA; [3]Cancer Prevention Institute of California, Fremont, CA; and [4]Division of Epidemiology, Stanford University School of Medicine, Palo Alto, CA.

#1474 **Poster Board Number 508**
Enabling a More Predictive Assessment of Effects on Steroidogenesis (OECD TG 456) by Applying an Improved LC-MS/MS Method. M. Dostler[1], T. Ramirez[2], M. Woll[1], R. Demin[1], V. Strauss[2], T. Walk[1], R. Fuchs[1], R. Looser[1], and *B. van Ravenzwaay*[2]. [1]metanomics GmbH, Berlin, Germany; and [2]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany.

#1475 **Poster Board Number 509**
Determination of Steroidal Compounds in Plasma from Individual Zebrafish Using 5-Minute Capillary Electrophoresis Separations. L. A. Holland[1], J. Ripley-Stueckle[2], V. Nyakubaya[1], M. Ellington[1], and B. C. Durney[1]. [1]Chemistry, West Virginia University, Morgantown, WV; and [2]Biology, West Virginia University, Morgantown, WV. Sponsor: *J. Boyd.*

#1476 **Poster Board Number 510**
Biomarkers of Endocrine Disruption in Tilapia Species from a Municipal Water Reservoir in Southwest Nigeria. R. A. Omiwole[1], *O. R. Ibor*[1], A. V. Chukwuka[1], *A. O. Adeogun*[1], and A. Arukwe[2]. [1]Department of Zoology, University of Ibadan, Ibadan, Nigeria; and [2]Department of Biology, Norwegian University of Science and Technology, Trondheim, Norway.

#1477 **Poster Board Number 511**
Detection of High Levels of Endocrine Activity in Selected Environmental Surface Water Samples Using ER, AR, and GR-Mediated *In Vitro* Bioassays. *V. S. Wilson*[1], N. Evans[1], M. Cardon[1], P. Hartig[1], K. Schenck[2], L. Rosenblum[3], and T. J. Reilly[4]. [1]Reproductive Toxicology Branch, USEPA,ORD, NHEERL, TAD, Research Triangle Park, NC; [2]USEPA, NRMRL, Cincinnati, OH; [3]CB&I Federal Services, Cincinnati, OH; and [4]USGS, Lawrenceville, NJ.

#1478 **Poster Board Number 512**
Using an *In Vitro* Cell Line to Assess Source and Treated Drinking Water Extracts for Estrogenic Activity. N. Evans[1], K. Schenck[2], H. Mash[2], L. Rosenblum[3], S. Glassmeyer[4], E. Furlong[5], D. Kolpin[6], and *V. S. Wilson*[1]. [1]EPA, NHEERL, Research Triangle Park, NC; [2]EPA, NRMRL, Cincinnati, OH; [3]CB&I Federal Services, Cincinnati, OH; [4]EPA, NERL, Cincinnati, OH; [5]USGS, Denver, CO; and [6]USGS, Iowa City, IA.

TUESDAY

Program Schedule (Continued)

Abstract #

#1479 **Poster Board Number 513**
Neonicotinoids and Atrazine Alter Promoter-Specific Expression and Catalytic Activity of Aromatase (CYP19). *E. Caron-Beaudoin*[1], *M. Denison*[2], and *T. Sanderson*[1]. [1]INRS-Institut Armand-Frappier, Laval, QC, Canada; and [2]Department of Environmental Toxicology, University of California, Davis, CA.

#1480 **Poster Board Number 514**
Recombinant Cell Bioassays for Detection of Aromatase Gene Activators. J. Zhao, and *M. Denison*. Environmental Toxicology, UC Davis, Davis, CA.

#1481 **Poster Board Number 515**
The Impact of Estrogens on Epithelial to Mesenchymal Transition in Lung Cells. *L. C. Smith*[1], and *T. Sabo-Attwood*[2]. [1]Physiological Sciences, University of Florida, Gainesville, FL; and [2]Environmental and Global Health, University of Florida, Gainesville, FL.

#1482 **Poster Board Number 516**
Androgen Receptor Binding Affinity Prediction of Chemicals Using Pharmacophore and 3D-QSAR Models. R. Rozot, A. Clary, A. Detroyer, N. Flamand, S. Imbert, R. R. Note, and S. Ringeissen. Recherche & Innovation, L'Oréal, Aulnay-sous-Bois, France. Sponsor: *E. Dufour*.

#1483 **Poster Board Number 517**
Establishment of Sensitive, Quantitative, and Real-Time Cellular Assays for Assessment of Modulators for Human Androgen Receptor Signaling Pathways. *C. Jin*, Y. A. Abassi, X. Xu, and X. Wang. Acea Biosciences, Inc, San Diego, CA.

#1484 **Poster Board Number 518**
Cadmium Upregulates Transcription of the Steroidogenic Acute Regulatory Protein (StAR) Gene through Phosphorylated CREB Rather Than SF-1 in K28 Cells. J. Soh, S. Park, and S. Oh. School of Biological Sciences and Technology, Chonnam National University, Gwangju, Republic of Korea. Sponsor: *T. Jeong*.

#1485 **Poster Board Number 519**
Vitamin E and Quercetin Attenuate Nigerian Bonny-Light Crude Oil-Induced Neuronal and Testicular Toxicity in Wistar Rats. *E. A. Peter*[1,2]. [1]Biochemistry and Molecular Biology, Federal University Ndufu Alike-Ikwo, Abakaliki, Nigeria; and [2]Biochemistry, University of Ibadan, Ibadan, Nigeria.

#1486 **Poster Board Number 520**
Evaluation of the Androgen Antagonist Potential of Quinoline (CAS: 91-22-5) in Surgically Castrated Peripubertal Male Rats. M. V. Patel[1], M. P. Poshiya[1], D. Ujawane[1], K. Hadiya[1], and *V. J. Piccirillo*[2]. [1]Department of Toxicology, Jai Research Foundation, Valvada, India; and [2]VJP Consulting, Ashburn, VA.

#1487 **Poster Board Number 521**
Obesogenic Effects of Endocrine Disrupting Chemicals in Tilapia Species from Ogun River, Nigeria. *O. R. Ibor*[1], *A. O. Adeogun*[1], O. A. Fagbohun[2], and A. Arukwe[3]. [1]Department of Zoology, University of Ibadan, Ibadan, Nigeria; [2]Department of Veterinary Microbiology and Parasitology, University of Ibadan, Ibadan, Nigeria; and [3]Department of Biology, Norwegian University of Science and Technology, Trondheim, Norway.

Abstract #

#1488 **Poster Board Number 522**
PCB126-Induced Activation of Aryl Hydrocarbon Receptor Inhibits Adipogenesis. *G. S. Gadupudi*[1,2], F. Gourronc[3], A. J. Klingelhutz[3], and *L. W. Robertson*[1,2]. [1]Human Toxicology, University of Iowa, Iowa City, IA; [2]Occupational and Environmental Health, University of Iowa, Iowa City, IA; and [3]Microbiology, University of Iowa, Iowa City, IA.

#1489 **Poster Board Number 523**
Mechanisms of Doxorubicin Toxicity in Pancreatic Beta Cells. E. M. Bobczynski[1], M. E. Balke[1], P. A. Beringer[1], E. Heart[2], and *J. P. Gray*[1,2]. [1]Science, US Coast Guard Academy, New London, CT; and [2]Cellular Dynamics, Marine Biological Laboratory, Woods Hole, MA.

#1490 **Poster Board Number 524**
Effect of *In Vitro* DDE Exposure on Pancreatic Beta Cell Markers Related to Beta Cell Dysfunction and Type 2 Diabetes Mellitus. A. B. Ward, and *J. E. Chambers*. Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.

#1491 **Poster Board Number 525**
Comparison of Responses of Primary Adrenocortical Cells from Rat and Dog to Staurosporine and the Adrenal Toxicant Lysodren. K. Kubek[1], M. Magnifico[1], A. Erickson[1], S. Chibout[2], *F. Pognan*[2], *J. Marlowe*[1], and *P. J. Devine*[1]. [1]Preclinical Safety, Novartis Institutes for BioMedical Research, Inc, Cambridge, MA; and [2]Preclinical Safety, Novartis Pharma, Basel, Switzerland.

#1492 **Poster Board Number 526**
Calcium Signaling Disruption As a Mechanism for Altered Hormone Secretion. *E. B. Fritsch*, *K. M. Walter*, C. Y. Fu, and *I. N. Pessah*. Molecular Biosciences, UC Davis, Davis, CA.

#1493 **Poster Board Number 527**
Development of a Tiered Screening Strategy for a Molecular-Initiating Event: Thyroperoxidase Inhibition. *K. B. Paul*[1,2], E. D. Watt[1,4], *J. M. Hedge*[2], *K. M. Crofton*[4], *M. W. Hornung*[3], and *S. O. Simmons*[4]. [1]Oak Ridge Institute for Science Education, Research Triangle Park, NC; [2]Integrated Systems Toxicology Division, NHEERL, ORD, US EPA, Research Triangle Park, NC; [3]Mid-Continent Ecology Division, NHEERL, ORD, US EPA, Duluth, MN; and [4]National Center for Computational Toxicology, ORD, US EPA, Research Triangle Park, NC.

#1494 **Poster Board Number 528**
The Tadpole Visual System As a Model for Assessing the Effects of Thyroid Hormone Disruption on Brain Development. *C. K. Thompson*[1], K. D. Medgyesy[2], and H. T. Cline[1]. [1]Department of Molecular and Cellular Neuroscience, The Scripps Research Institute, San Diego, CA; and [2]Division of Biological Sciences, University of California San Diego, San Diego, CA.

#1495 **Poster Board Number 529**
***Xenopus laevis* Müllerian Ducts Are Sensitive Indicators of Estrogenic or Androgenic Chemical Exposure *In Vivo*.** J. T. Haselman[1], P. Kosian[1], J. Korte[1], A. Olmstead[2], R. Johnson[1], and S. Degitz[1]. [1]ORD/NHEERL/MED, US EPA, Duluth, MN; and [2]Bayer Crop Science, Research Triangle Park, NC. Sponsor: *M. Hornung*.

Program Schedule (Continued)

Abstract #

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Neurotoxicology, Neurodegenerative Disease—Alzheimer's Disease and Others

Chairperson(s): *Syed F. Ali, Division of Neurotoxicology, NCTR, Jefferson, AR.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#1496 **Poster Board Number 531**
Inhibitory Effects of Metallothionein-III on Production of Amyloid-Beta and Induced Cytotoxicity in Neuronal Cells. B. Park, H. Kim, and *H. Jeong*. Pharmacy, Chungnam National University, Daejeon, Republic of Korea.

#1497 **Poster Board Number 532**
Sulforaphane Alleviates Scopolamine-Induced Memory Impairment in Mice. S. Lee[1], J. Kim[1], S. Seo[1], B. Choi[2], J. Han[2], K. Lee[1,3], and *J. Kim*[3,4]. [1]WCU Biomodulation Major, Department of Agricultural Biotechnology, Seoul National University, Seoul, Republic of Korea; [2]Department of Biological Sciences, Konkuk University, Seoul, Republic of Korea; [3]Center for Food and Bioconvergence, Seoul National University, Seoul, Republic of Korea; and [4]Laboratory of Toxicology, Research Institute for Veterinary Science, College of Veterinary Medicine, Seoul National University, Seoul, Republic of Korea.

#1498 **Poster Board Number 533**
Hyperphosphorylation of Tau in Brain of DAB-Treated Mice Is Associated with the Decreased Hippocampal Neurogenesis. M. Kim, K. Baek, and S. Kang. Pharmacy, Sunchon National University, Sunchon, Republic of Korea. Sponsor: *M. Cho*.

#1499 **Poster Board Number 534**
Mass Spectrometry Imaging: Linking Neurodegeneration with Environmental Exposure. J. Laskin, and *C. Timchalk*. Pacific Northwest National Laboratory, Richland, WA.

#1500 **Poster Board Number 535**
Tacrine Neurotoxicology and Proteome Pathway Analysis in Neuro-2a Cell Culture Model. R. E. Mahle[1,2], A. Hoffmann[3,4], M. L. Meade[3,4], *J. Schlager*[4], and *J. M. Gearhart*[3,4]. [1]University of Notre Dame, South Bend, IN; [2]ORISE, Belcamp, MD; [3]Henry M. Jackson Foundation, Dayton, OH; and [4]Molecular Bioeffects Branch, Bioeffects Division, 711th Human Performance Wing, Air Force Research Laboratory, Dayton, OH.

#1501 **Poster Board Number 536**
Characterization of the Alzheimer's Disease Risk Gene SORL1 in the Zebrafish: Assessment of Expression Differences by Sex, Age, and Influences of an Embryonic Lead (Pb) Exposure. *J. Lee*, *S. Peterson*, and *J. L. Freeman*. Purdue University, West Lafayette, IN.

Abstract #

#1502 **Poster Board Number 537**
Effect of APOE on DDT-Induced Amyloid Precursor Protein Levels and Aβ Secretion in Isogenic Neuro-2a Cells. *A. K. Tiethof*[1], R. P. Hart[2,3], and *J. R. Richardson*[1]. [1]Environmental and Occupational Health Sciences Institute and Department of Environmental and Occupational Medicine, Rutgers-Robert Wood Johnson Medical School, Piscataway, NJ; [2]Department of Cell Biology and Neuroscience, Rutgers University, Piscataway, NJ; and [3]The Human Genetics Institute of New Jersey, Rutgers University, Piscataway, NJ.

#1503 **Poster Board Number 538**
Novel Functions of PPARγ during Paroxon Exposure in Neuronal Cell Culture: Neurotoxicology and Proteome Pathway Analysis. M. K. Makley, A. Hoffmann, M. L. Meade, *J. J. Schlager*, and *J. M. Gearhart*. 711 HPW/RHDJ, Henry M. Jackson Foundation, Wright-Patterson Air Force Base, OH.

#1504 **Poster Board Number 539**
Diesel Exhaust Exposure Suppresses Adult Neurogenesis in Mice in a Sex- and Brain Region-Dependent Manner. J. L. Coburn[1], *T. B. Cole*[1,2], and *L. G. Costa*[1]. [1]Department of Environmental and Occupational Health Sciences, University of Washington, Seattle, WA; and [2]Center on Human Development and Disabilities, University of Washington, Seattle, WA.

#1505 **Poster Board Number 540**
Neurotoxic Effects of Ultrafine Particulate Matter Found in Ambient Air Pollution on Alzheimer's Disease Model Cells. *P. Solaimani*, and *A. Campbell*. Department of Pharmaceutical Sciences, Western University of Health Sciences, Pomona, CA.

#1506 **Poster Board Number 541**
Dual Actions of 3-Hydroxykynurenine in the Rat Striatum. A. Colin-Gonzalez[1], M. Maya-Lopez[1], *S. F. Ali*[2], and A. Santamaria[1]. [1]Laboratorio de Aminoacidos Excitadores, INNN, Mexico City, Mexico; and [2]Division of Neurotoxicology, NCTR, Jefferson, AR.

#1507 **Poster Board Number 542**
Developing a Mouse Model of Hydrogen Sulfide-Induced Neurotoxicity. *P. V. Anantharam*[1], *M. R. Langley*[3], E. Whitley[2], *V. Anantharam*[3], *A. Kanthasamy*[3], *A. Kanthasamy*[3], and *W. K. Rumbeiha*[1]. [1]Veterinary Diagnostic and Production Animal Medicine, Iowa State University, Ames, IA; [2]Veterinary Pathology, Iowa State University, Ames, IA; and [3]Dept. of Biomedical Sciences, Iowa State University, Ames, IA.

#1508 **Poster Board Number 543**
Investigating the Neurotoxic Effect of Agrochemicals (Dieldrin and Lindane) in Huntington's Disease Neuropathology. A. W. Chege. Oberlin College, Oberlin, OH. Sponsor: *G. Kwakye*.

#1509 **Poster Board Number 544**
The Commonly Used Agrochemical Chlorpyrifos Enhances Huntington's Disease Neuropathology via Oxidative Stress and Mitochondrial Dysfunction. G. A. Dominah, R. McMinimy, and *G. F. Kwakye*. Neuroscience, Oberlin College, Oberlin, OH.

Program Schedule (Continued)

Abstract #

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Neurotoxicology, Neurodegenerative Disease—Parkinson's Disease

Chairperson(s): *Lena Smirnova, Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#1510 **Poster Board Number 545**
Assessment of Neuroprotective Effect of Probiotic Bacteria in Rotenone Model of Parkinson's Disease in Sprague-Dawley Rats. *M. Elgamal*[1,2], *M. M. Salama*[1,2], A. Sakr[2], H. Elgamal[2], H. Sheashaa[2,3], M. Sobh[2,3], and R. Hegazi[4]. [1]Toxicology Department, Mansoura Medical School, Mansoura, Egypt; [2]Medical Experimental Research Center (MERC), Mansoura Medical School, Mansoura, Egypt; [3]Urology and Nephrology Center, Mansoura Medical School, Mansoura, Egypt; and [4]Abbott Nutrition, Columbus, OH.

#1511 **Poster Board Number 546**
Lysosomal Dysfunction Regulates the Release of α-Synuclein Protein Aggregates from Exosomes during Manganese-Induced Neurotoxic Insult. *D. Harischandra, V. Lawana*, D. Rokad, H. Jin, *V. Anantharam*, A. Kanthasamy, and *A. Kanthasamy*. Biomedical Science, Iowa State University, Ames, IA.

#1512 **Poster Board Number 547**
Drp1 Inhibition Attenuates Neurotoxicity and Dopamine Release Deficits *In Vivo.* *K. Tieu*. Clinical Neurobiology, Plymouth University, Plymouth, United Kingdom.

#1513 **Poster Board Number 548**
Novel Mitochondria-Targeted Drug Induces PKD1 Activation and Its Downstream Prosurvival Signaling to Promote Mitochondrial Biogenesis against Dopaminergic Neurotoxicity. *M. Ay*[1], *A. Charli*[1], *A. Kanthasamy*[1], *V. Anantharam*[1], H. Jin[1], *B. Kalyanaraman*[2], and *A. Kanthasamy*[1]. [1]Biomedical Sciences, Iowa State University, Ames, IA; and [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI.

#1514 **Poster Board Number 549**
Effects of *Fzo-1* and *Drp-1* Mutations on Dopaminergic Neurodegeneration in *Caenorhabditis elegans*. S. M. Hall, *C. P. Gonzalez*, and *J. Meyer*. Nicholas School of the Environment, Duke University, Durham, NC.

#1515 **Poster Board Number 550**
Preclinical Efficacy Testing of the Mitochondria-Targeted Antioxidant Mito-Apocynin in the Transgenic MitoPark Mouse Model of Chronic Dopaminergic Neurodegeneration. *M. R. Langley*[1], A. Ghosh[1], *M. Ay*[1], B. Dranka[2], H. Jin[1], *V. Anantharam*[1], B. Kalyanaraman[2], *A. Kanthasamy*[1], and *A. Kanthasamy*[1]. [1]Biomedical Sciences, Iowa State University, Ames, IA; and [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI.

Abstract #

#1516 **Poster Board Number 551**
Dopamine Metabolism, Oxidative Stress, and Reactive Oxygen Species As Key Contributors to Neurotoxicity. J. H. Schamp, V. Florang, and *J. A. Doorn*. Pharmaceutical Sciences and Experimental Therapeutics, University of Iowa, Iowa City, IA.

#1517 **Poster Board Number 552**
Diphenyleneiodonium at Low Dose Rescues Disease Phenotype in Models of Parkinson's Disease. Q. Wang, L. Qian, B. Wilson, and J. Hong. Laboratory of Neurobiology, NIEHS, Research Triangle Park, NC. Sponsor: *S. Hussain*.

#1518 **Poster Board Number 553**
Activation of the Nuclear Receptor Nur77 by a Novel Diindolylmethane Analog Suppresses Inflammatory Gene Expression in Primary Astrocytes. K. A. Popichak[1], *R. B. Tjalkens*[1], and *S. H. Safe*[2]. [1]Center for Environmental Medicine, Colorado State University, Fort Collins, CO; and [2]Veterinary Physiology and Pharmacology, Texas A&M, Houston, TX.

#1519 **Poster Board Number 554**
A Novel Small Molecule Activator of the Nuclear Receptor Nurr1 (NR4A2) Promotes a Dopaminergic Phenotype and Protects against 6-Hydroxydopamine Neurotoxicity in Cultured Neurons. S. Hammond[1], *R. B. Tjalkens*[1], and *S. H. Safe*[2]. [1]Center for Environmental Medicine, Colorado State University, Fort Collins, CO; and [2]Veterinarian Pharmacology and Physiology, Texas A&M, Houston, TX.

#1520 **Poster Board Number 555**
A Novel, Para-Substituted Diindolylmethane Inhibits Inflammatory Activation of Microglia through a Nurr1-Dependent Mechanism. *B. R. De Miranda*[1,2], *K. A. Popichak*[1], *S. H. Safe*[3], and *R. B. Tjalkens*[1]. [1]Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO; [2]Pittsburgh Institute of Neurodegenerative Diseases, Department of Neurology, University of Pittsburgh, Pittsburgh, PA; and [3]Center for Environmental and Genetic Medicine, Texas A&M Health Science Center, Houston, TX.

#1521 **Poster Board Number 556**
Protein Incorporation of β-N-methylamino-L-alanine (L-BMAA) in the Primate Brain. *C. Garner*[1], G. Kisby[2], and *P. S. Spencer*[3]. [1]Oso Corredor Scientific Consulting, Placitas, NM; [2]Western University of Health Sciences, Lebanon, OR; and [3]Oregon Health & Science University, Portland, OR.

#1522 **Poster Board Number 557**
2-Amino-1-methyl-6-phenylimidazo(4,5-B) pyridine (PhIP) Dopaminergic Neurotoxicity in Primary Midbrain Cultures and *In Vivo.* *Z. S. Agim*[1], *J. Lee*[1], J. Rochet[2], and *J. R. Cannon*[1]. [1]School of Health Sciences, Purdue University, West Lafayette, IN; and [2]Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN.

#1523 **Poster Board Number 558**
TIMP1 mRNA Expression Is a Biomarker of Astrogliosis: Evidence from Multiple Neurotoxicants and BAC-TRAP Technology. *J. P. O'Callaghan, K. A. Kelly, A. R. Revitsky*, and *D. B. Miller*. CDC-NIOSH, Morgantown, WV.

TUESDAY

Program Schedule (Continued)

Abstract #

#1524 **Poster Board Number 559**
***In Vitro* 3D Dopaminergic Model to Study (Developmental) Neurotoxicity and Parkinsonism.** L. Smirnova, *G. A. Harris*, J. Delp, *D. Pamies*, *H. T. Hogberg*, and *T. Hartung*. Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

#1525 **Poster Board Number 560**
Altered Optineurin Expression in Cellular and Rodent Models of Parkinson's Disease. *J. Wise*[1], *Z. S. Agim*[1], M. A. Tambe[2], V. Mishra[2], J. Rochet[2], and *J. R. Cannon*[1]. [1]Health Sciences, Purdue University, West Lafayette, IN; and [2]Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN.

#1526 **Poster Board Number 561**
Transcriptional Regulation of the Compensatory Signaling Molecule Prokineticin-2 during Neurotoxic Stress in Dopaminergic Neuronal Cells. J. Luo, H. Jin, M. Neal, *V. Anantharam*, *A. Kanthasamy*, and *A. Kanthasamy*. Biomedical Sciences, Iowa State University, Ames, IA.

#1527 **Poster Board Number 562**
Farnesoid X Receptor Deficiency in Mice Enhances MPTP-Induced Neuroinflammatory Response. *E. E. Beier*[1], *M. M. Hossain*[1], *B. Kong*[2], *G. Guo*[2], and *J. R. Richardson*[1]. [1]Department of Environmental and Occupational Medicine, Rutgers University, Piscataway, NJ; and [2]Department of Pharmacology and Toxicology, Rutgers Ernest Mario School of Pharmacy, Piscataway, NJ.

#1528 **Poster Board Number 563**
Systems Genetics Analysis of MPTP Neurotoxicity. G. Alam[3], *D. B. Miller*[2], *J. P. O'Callaghan*[2], L. Lu[1], R. W. Williams[1], and B. C. Jones[1,3]. [1]Genetics, Genomics and Informatics, University of Tennessee Health Science Center, Memphis, TN; [2]CDC-NIOSH, Morgantown, WV; and [3]Biobehavioral Health, The Pennsylvania State University, University Park, PA.

#1529 **Poster Board Number 564**
Molecular Mechanisms of Rotenone and MPP+ Damage to Dopaminergic Neurons in a Human Neuronal 3D Model. *G. A. Harris*, J. Delp, J. Smith, *D. Pamies*, *H. T. Hogberg*, *T. Hartung*, and L. Smirnova. Center for Alternatives to Animal Testing, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

#1530 **Poster Board Number 565**
Biochemical and Gene Expression Changes in Mice Exposed to Polychlorinated Biphenyls during Early Brain Development. S. Hampton[1], M. Kromme[1,2], M. Stegman[1,2], C. Bates[1], A. Lopez[2], and *C. P. Curran*[1]. [1]Biological Sciences, Northern Kentucky University, Highland Heights, KY; and [2]Cincinnati Children's Medical Center, Cincinnati, OH.

#1531 **Poster Board Number 566**
Polychlorinated Biphenyl Sulfates Are Toxic to Rat Neuronal N27 Cells. E. A. Rodriguez[1], H. Lehmler[2], *L. W. Robertson*[2], and M. W. Duffel[1]. [1]Department of Pharmaceutical Sciences and Experimental Therapeutics, College of Pharmacy, The University of Iowa, Iowa City, IA; and [2]Department of Occupational and Environmental Health, College of Public Health, The University of Iowa, Iowa City, IA.

Abstract #

#1532 **Poster Board Number 567**
Mitochondrial Dynamics in Environmental Pesticide-Induced Dopaminergic Neurotoxicity in Cell Culture Models of Parkinson's Disease. *A. Charli*[1], *H. Jin*[1], *A. Kanthasamy*[1], *V. Anantharam*[1], *B. Kalyanaraman*[2], and *A. Kanthasamy*[1]. [1]Toxicology, Iowa State University, Ames, IA; and [2]Biophysics, Medical College of Wisconsin, Milwaukee, WI.

#1533 **Poster Board Number 568**
Analysis of Cardiolipins in Substantia Nigra and Plasma of Rotenone-Treated Rats: Implication for Mitochondrial Dysfunction in Parkinson's Disease. *Y. Tyurina*[1], A. Polimova[1], E. Maciel[4], V. A. Tyurin[1], V. Kapralova[1], D. Winnica[1], A. Vikulina[1], R. Domingues[4], L. Sanders[2], H. Bayir[3], T. Greenamyre[2], and *V. E. Kagan*[1]. [1]EOH, University of Pittsburgh, Pittsburgh, PA; [2]Neurology, University of Pittsburgh, Pittsburgh, PA; [3]Critical Care Medicine, University of Pittsburgh, Pittsburgh, PA; and [4]Chemistry, University of Aveiro, Aveiro, Portugal.

#1534 **Poster Board Number 569**
C-Abl Tyrosine Kinase Is a Critical Mediator of Dichlorvos (DCV)-Induced Cell Death in Dopaminergic Neuronal Cells. *V. Lawana*, M. Neal, *V. Anantharam*, *H. Jin*, *A. Kanthasamy*, and *A. Kanthasamy*. Biomed Sci, Iowa State Univ, Ames, IA.

#1535 **Poster Board Number 570**
Aberrant Lipid Metabolism in Rotenone-Induced Mitochondrial Dysfunction. V. A. Tyurin[1], A. Polimova[1], L. Sanders[2], T. Greenamyre[2], *Y. Tyurina*[1], and *V. E. Kagan*[1]. [1]Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA; and [2]Neurology, University of Pittsburgh, Pittsburgh, PA.

#1536 **Poster Board Number 571**
Differential Effects of Hapten-Induced Experimental Colitis on G2019S LRRK2 Transgenic and Wild-Type Rats. *J. Lee*[1], J. Park[2], C. H. Kim[2], and *J. R. Cannon*[1]. [1]Health Sciences, Purdue University, West Lafayette, IN; and [2]Comparative Pathobiology, Purdue University, West Lafayette, IN.

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Cigarettes, E-Cigarettes, and Hookah

Chairperson(s): *Ilona Jaspers, University of North Carolina at Chapel Hill, Chapel Hill, NC.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#1537 **Poster Board Number 601**
Evaluation of Chromatographic Profiling Methods for E-Cigarette Aerosols. K. Kilby, C. G. Culbert, *E. H. Theophilus*, and *D. T. Szabo*. Research and Development, RJ Reynolds, Winston-Salem, NC.

#1538 **Poster Board Number 602**
Heated Tobacco Generates a Simplified Aerosol with Fewer Toxicants Than Smoke from Cigarettes. J. Collard, C. Budd, J. K. Scott, C. Rawlinson, and *C. Meredith*. Group Research and Development, British American Tobacco, Southampton, United Kingdom.

Program Schedule (Continued)

Abstract #

#1539 **Poster Board Number 603**
Disposable Electronic Cigarettes and Electronic Hookahs: Evaluation of Design, Performance, and Metal Emissions. *M. T. Williams*[1], S. Ghai[1], K. Bozhilov[2], and *P. Talbot*[1]. [1]Cell Biology and Neuroscience, University of California, Riverside, Riverside, CA; and [2]Central Facility for Advanced Microscopy, University of California, Riverside, Riverside, CA.

#1540 **Poster Board Number 604**
Characterization of Inhalation Exposure Atmosphere Generated from E-Cigarettes. *A. Gupta*, B. K. Hayden, M. K. Atkinson, S. Behringer, and *B. Westerberg*. Life Sciences Research, Battelle, West Jefferson, OH.

#1541 **Poster Board Number 605**
E-Cigarette Nicotine Pharmacokinetics and on Impact on Urge-to-Smoke Symptoms. *C. D. D'Ruiz*, and *X. Yan*. Scientific Affairs, Lorillard Tobacco Company, Inc., Greensboro, NC.

#1542 **Poster Board Number 606**
Effects on Nicotine Delivery and Cardiovascular Function and Assessment of Short-Term Tolerability of Using Electronic Cigarettes in Comparison with Regular Cigarettes. *X. Yan*, and *C. D. D'Ruiz*. Scientific Affairs, Lorillard Tobacco Company, Greensboro, NC.

#1543 **Poster Board Number 607**
Molecular Impact of Electronic Cigarette Exposure on *In Vitro* Human Airway Epithelium. E. Moses[1], T. Wang[1], E. Drizik[1], C. Perdomo[1], S. J. Park[2], T. C. Walser[2], D. Brooks[1], G. T. O'Connor[1], S. M. Dubinett[2], M. E. Lenburg[1], A. Spira[1], G. Jackson[3], J. DeBay[3], and *P. J. Hayden*[3]. [1]Boston University, Boston, MA; [2]UCLA, Los Angeles, CA; and [3]MatTek Corp., Ashland, MA.

#1544 **Poster Board Number 608**
Cytotoxicity of Electronic Cigarette Refill Fluid and Humectant Aerosols. *R. Z. Behar*, and *P. Talbot*. Cell Biology and Neuroscience, University of California, Riverside, Riverside, CA.

#1545 **Poster Board Number 609**
Effect of Cigarette Design Parameters on *In Vitro* Toxicity Profile. *M. Misra*, *R. D. Leverette*, M. B. Bennett, B. T. Cooper, and S. E. Brown. Lorillard Company, Greensboro, NC.

#1546 **Poster Board Number 610**
An Impact Assessment of Cigarette Smoke on Organotypic Models of Bronchial Epithelial Monoculture and Bronchial Epithelial/Fibroblast Coculture. S. Frentzel[1], A. Iskandar[1], Y. Xiang[1], C. Mathis[1], P. Leroy[1], D. Kuehn[1], S. Majeed[1], C. Merg[1], A. Elamin[1], E. Guedj[1], R. Dulize[1], F. Martin[1], M. Talikka[1], M. Peitsch[1], *A. Hayes*[2], and J. Hoeng[1]. [1]Research & Development, Philip Morris International, Neuchatel, Switzerland; and [2]Spherix Consulting, Rockville, MD.

Abstract #

#1547 **Poster Board Number 611**
Systems Toxicological-Based Assessment of Sex-Related Differences in Response to Cigarette Smoke Within an OECD Rat Inhalation Study. U. Kogel[1], S. Boue[1], M. Talikka[1], E. Wong[2], G. Vuillaume[1], P. Leroy[1], E. Guedj[1], *A. Hayes*[3], P. Vanscheeuwijck[1], J. Hoeng[1], and M. Peitsch[1]. [1]Philip Morris International R&D, Neuchatel, Switzerland; [2]Philip Morris International Research Laboratories Pte. Ltd., Singapore, Singapore; and [3]Spherix Consulting and Scientific Advisory Board PMI R&D, Rockville, MD.

#1548 **Poster Board Number 612**
Electronic Cigarette- and Hookah-Induced Changes on Nasal Epithelial Cell Gene Expression Profiles. *E. Glista-Baker*[1], E. Martin[2], J. J. Sollome[2], H. Wells[1], N. Alexis[1,3], R. Fry[2,4], and *I. Jaspers*[1,3,4]. [1]Center for Environmental Medicine, Asthma and Lung Biology, University of North Carolina, Chapel Hill, NC; [2]Department of Environmental Sciences and Engineering, Gillings School of Global Public Health, University of North Carolina, Chapel Hill, NC; [3]Department of Pediatrics, University of North Carolina, Chapel Hill, NC; and [4]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC.

#1549 **Poster Board Number 613**
The Adverse Health Effects of Mainstream and Secondhand Hookah Smoke in NYC Hookah Bars. *G. Pan*[1], M. Weitzman[2], S. Zhou[2], L. Behrooz[4], J. Chilana[2], S. AlFallay[4], A. Rule[3], *J. Mirowsky*[5], *I. Jaspers*[5], M. Zhong[1], and *T. Gordon*[1]. [1]Environmental Medicine, NYU School of Medicine, New York, NY; [2]NYU School of Medicine, New York, NY; [3]Bloomberg School of Public Health, Johns Hopkins, Baltimore, MD; [4]NYU SPH, New York, NY; and [5]UNC, Chapel Hill, NC.

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Inhalants and Cardiopulmonary

Advancing Clinical and Translational Toxicology

Chairperson(s): *Urmila Kodavanti, US EPA, Research Triangle Park, NC.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#1550 **Poster Board Number 616**
Acute Ozone Exposure Accelerates Diet-Induced Pulmonary Injury and Metabolic Alterations in a Rat Model of Type 2 Diabetes. *S. J. Snow*[1,3], *D. B. Miller*[2], *V. L. Bass*[2], *M. C. Schladweiler*[3], A. Ledbetter[3], J. Richards[3], D. Andrews[3], *C. J. Gordon*[3], and *U. P. Kodavanti*[3,2]. [1]ORISE, Research Triangle Park, NC; [2]UNC, Chapel Hill, NC; and [3]EPA, Research Triangle Park, NC.

TUESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#1551 **Poster Board Number 617**
An Animal Model of Active (ACT) versus Sedentary (SED) Lifestyle and Susceptibility to Air Pollution: Response to Ozone (O3) in Female Sprague-Dawley Rats Allowed to Train Chronically on Running Wheels. *C. J. Gordon*[1], P. Phillips[1], A. F. Johnstone[1], K. A. Jarema[1], A. Ledbetter[2], C. Aydin[3], M. C. Schladweiler[2], and *U. P. Kodavanti*[2]. [1]TAD, US EPA, Research Triangle Park, NC; [2]EPHD, US EPA, Research Triangle Park, NC; and [3]University of Uludag, Bursa, Turkey.

#1552 **Poster Board Number 618**
Impact of Diet on Ozone-Induced Pulmonary and Systemic Effects in Female Brown Norway (BN) Rats. *V. L. Bass*[1,5], M. C. Schladweiler[2], *S. J. Snow*[5], *C. J. Gordon*[4], K. A. Jarema[4], P. M. Phillips[4], A. Ledbetter[2], *D. B. Miller*[3], J. Richards[2], and *U. P. Kodavanti*[2]. [1]ESE, SPH, UNC, Chapel Hill, NC; [2]EPHD, NHEERL, USEPA, Research Triangle Park, NC; [3]CIT, UNC, Chapel Hill, NC; [4]TAD, NHEERL, USEPA, Research Triangle Park, NC; and [5]ORISE, Research Triangle Park, NC.

#1553 **Poster Board Number 619**
Morning NO2 Exposure Sensitizes Hypertensive Rats to the Cardiovascular Effects of O3 Exposure in the Afternoon. *A. K. Farraj*[1], F. Malik[1], N. Haykal-Coates[1], L. Walsh[1], D. Winsett[1], D. Terrell[1], *L. Thompson*[1,2], and *M. S. Hazari*[1]. [1]Environmental Public Health Division, NHEERL, US Environmental Protection Agency, Research Triangle Park, NC; and [2]Oak Ridge Institute for Science and Education, Oak Ridge, TN.

#1554 **Poster Board Number 620**
Effect of Same-Day Sequential Exposure to Nitrogen Dioxide and Ozone on Cardiac and Ventilatory Function in Mice. *K. Stratford*[1], K. Chessnutt[2], *N. Kurhanewicz*[1], *N. Coates*[2], *L. Walsh*[2], *D. Terrell*[2], *A. K. Farraj*[2], and *M. S. Hazari*[2]. [1]University of North Carolina-Chapel Hill, Chapel Hill, NC; and [2]Environmental Public Health Division, USEPA, Research Triangle Park, NC.

#1555 **Poster Board Number 621**
Exposure to Ozone Prior to Acrolein Primes Markers of Oxidative, but Not Proinflammatory, Stress in a *GSTM1*-Dependent Manner. *S. D. McCullough*[1], *E. C. Bowers*[2], D. S. Morgan[1], L. A. Dailey[1], D. Diaz-Sanchez[1], and *R. Devlin*[1]. [1]US Environmental Protection Agency, Chapel Hill, NC; and [2]University of North Carolina, Chapel Hill, NC.

#1556 **Poster Board Number 622**
Human Ozone (O3) Exposure Alters Serum Profile of Lipid Metabolites. *D. B. Miller*[1], *U. P. Kodavanti*[2], *E. D. Karoly*[3], *W. Cascio*[2], and *A. J. Ghio*[2]. [1]Curriculum in Toxicology, University of North Carolina-Chapel Hill, Chapel Hill, NC; [2]NHEERL, US EPA, Research Triangle Park, NC; and [3]METABOLON INC, Durham, NC.

#1557 **Poster Board Number 623**
Expression of Proinflammatory and Oxidative Stress Mediators Induced by Nitrogen Dioxide and Ozone in Primary Human Bronchial Epithelial Cells. *J. Mirowsky*[1,2], K. E. Duncan[2], *S. D. McCullough*[3], L. A. Dailey[3], D. S. Morgan[3], and *R. Devlin*[3]. [1]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC; [2]Center for Environmental Medicine, Asthma, and Lung Biology, University of North Carolina, Chapel Hill, NC; and [3]National Health and Environmental Effects Laboratory, US EPA, Chapel Hill, NC.

Abstract #

#1558 **Poster Board Number 624**
Ozone-Induced Eosinophilic Rhinitis and Nasal Epithelial Remodeling Are Dependent on Innate Lymphoid Cells in Mice. K. Kumagai, C. Ong, D. Jackson-Humbles, R. Lewandowski, *J. G. Wagner*, and *J. R. Harkema*. Great Lakes Air Center for Integrated Environmental Research, Michigan State University, East Lansing, MI.

#1559 **Poster Board Number 625**
Susceptibility of Diabetic Rats to Pulmonary and Systemic Effects of Inhaled Photochemically Aged Atmosphere and Ozone (O3). M. C. Schladweiler[1], *S. J. Snow*[2], T. Krantz[1], C. King[1], J. Krug[2], N. Modak[2], *A. Henriquez*[3], *V. L. Bass*[4], *D. B. Miller*[3], J. Richards[1], E. H. Boykin[1], R. Jaskot[1], *I. Gilmour*[1], and *U. P. Kodavanti*[1]. [1]EPHD, US EPA, Durham, NC; [2]ORISE, Oak Ridge, TN; [3]CIT, Chapel HIll, NC; and [4]SPH, Chapel Hill, NC.

#1560 **Poster Board Number 626**
Gender Differences in Ozone-Induced Pulmonary and Metabolic Health Effects. *U. P. Kodavanti*[1], *V. L. Bass*[2], M. C. Schladweiler[1], *C. J. Gordon*[3], K. A. Jarema[3], P. M. Phillips[3], A. Ledbetter[1], *D. B. Miller*[4], *S. J. Snow*[5], D. Andrews[6], and J. Richards[1]. [1]EPHD/NHEERL, US EPA, Research Triangle Park, NC; [2]SPH, UNC, Chapel Hill, NC; [3]TAD/NHEERL, USEPA, Research Triangle Park, NC; [4]CIT, UNC, Chapel Hill, NC; [5]ORISE, Oak Ridge, TN; and [6]RCU/NHEERL, US EPA, Research Triangle Park, NC.

#1561 **Poster Board Number 627**
Effect of PEEP on Phosgene-Induced Lung Edema: Pilot Study on Dogs Using Protective Ventilation Strategies. L. Wenli[2], C. Hai[2], and *J. Pauluhn*[1]. [1]Toxicology (retired), Bayer AG, Wuppertal, Germany; and [2]Toxicology, 4th Military Medical University, Xi'an, China.

#1562 **Poster Board Number 628**
Transient Receptor Potential Cation Channel A1 (TRPA1) Mediates Changes in Heart Rate Variability following a Single Exposure to Acrolein in Mice. *N. Kurhanewicz*[1], *R. McIntosh-Kastrinsky*[1], A. Ledbetter[2], L. Walsh[2], *A. K. Farraj*[2], and *M. S. Hazari*[2]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; and [2]Environmental Public Health Division, USEPA, Research Triangle Park, NC.

#1563 **Poster Board Number 629**
TRPV4 Inhibition Counteracts Edema and Inflammation and Improves Pulmonary Function and Oxygen Saturation in Chemically Induced Acute Lung Injury. S. Balakrishna[2], W. Song[3], *S. Achanta*[1], S. Doran[3], B. Liu[1], M. M. Kaelberer[1], Y. Zhihong[2], A. Sui[2], M. Cheung[4], E. Leishman[5], H. S. Eidam[4], G. Ye[4], R. N. Willette[4], K. S. Thorneloe[4], H. B. Bradshaw[5], *S. Matalon*[3], and *S. E. Jordt*[1]. [1]Anesthesiology, Duke University School of Medicine, Durham, NY; [2]Psychiatry, Yale School of Medicine, New Haven, CT; [3]Anesthesiology, University of Alabama at Birmingham, Birmingham, AL; [4]Heart Failure Discovery Performance Unit-Metabolic Pathways and Cardiovascular Therapy Unit, GlaxoSmithKline Pharmaceuticals, King of Prussia, PA; and [5]Psychological and Brain Sciences, Indiana University, Bloomington, IN.

Program Schedule (Continued)

Abstract #

#1564 **Poster Board Number 630**
Acrolein Inhalation Causes Myocardial Strain Delay and Decreases Cardiac Performance As Detected by High-Frequency Echocardiography in Mice. *L. C. Thompson*[1,2], A. Ledbetter[1], N. Coates[1], W. Cascio[1], *M. S. Hazari*[1], and *A. K. Farraj*[1]. [1]Environmental Public Health Division, US EPA, Research Triangle Park, NC; and [2]Oak Ridge Institute for Science and Education, Oak Ridge, TN.

#1565 **Poster Board Number 631**
Strain Differences in Ethylene-Induced Nasal Lesions in Rats. *S. M. Krieger*[1], *J. R. Harkema*[2], *M. I. Banton*[3], *K. Wise*[4], *L. H. Pottenger*[1], and *J. A. Hotchkiss*[1]. [1]The Dow Chemical Company, Midland, MI; [2]Michigan State University, East Lansing, MI; [3]LyondellBasell, Houston, TX; and [4]American Chemistry Council Olefins Panel, Washington, DC.

#1566 **Poster Board Number 632**
***In Vitro* Dissolution of Libby Amphibole, Amosite Asbestos, and MMVF Using Acid and Synthetic Lung Fluid Media.** *S. H. Gavett*[1], J. K. McGee[1], R. S. Pescador[2], D. J. Hoff[3], T. D. Dawson[4], *M. A. McGee*[5,1], and *A. M. Jarabek*[1]. [1]ORD, US EPA, Research Triangle Park, NC; [2]EMSL Analytical, Libby, MT; [3]ORD, US EPA, Duluth, MN; [4]Badger Technical Services, Duluth, MN; and [5]ORISE, Research Triangle Park, NC.

#1567 **Poster Board Number 633**
Effect of Metal Composition and the Use of Adhesive and Anti-Spatter Chemicals on Lung Responses in Rats after Inhalation during Spot Welding. *J. M. Antonini*, A. Afshari, W. McKinney, T. G. Meighan, M. Jackson, *B. T. Chen*, D. Schwegler-Berry, J. Thompson, J. Fedan, and *P. C. Zeidler-Erdely*. NIOSH, Morgantown, WV.

#1568 **Poster Board Number 634**
Comparison of Inhaled Dose vs. Postexposure Time Period in Silica-Induced Pulmonary Toxicity in the Rats. *P. Joseph*, *R. Sellamuthu*, *J. R. Roberts*, S. Young, D. Richardson, W. McKinney, B. T. Chen, D. G. Frazer, J. Gu, M. L. Kashon, and C. Umbright. Toxicology and Molecular Biology Branch, NIOSH, Morgantown, WV.

#1569 **Poster Board Number 635**
A Single Exposure to Photochemical Smog Causes Airway Irritation and Cardiac Dysrhythmia in Mice. *M. S. Hazari*[1], K. Chessnutt[1], *K. Stratford*[2], N. Haykal-Coates[1], T. Krantz[1], C. King[1], *A. K. Farraj*[1], and *M. I. Gilmour*[1]. [1]Environmental Public Health Division, NHEERL, US Environmental Protection Agency, Research Triangle Park, NC; and [2]University of North Carolina, Chapel Hill, NC.

#1570 **Poster Board Number 636**
The Role of Oxidized Low-Density Lipoprotein Receptors in Matrix Metalloproteinase Activity and Tight Junction Protein Expression in the Cerebral Microvasculature of Mice Exposed to Traffic-Generated Air Pollutants. *A. K. Lund*[1], J. Lucero[1], U. Suwannasual[1], and *J. D. McDonald*[2]. [1]Biological Sciences, University of North Texas, Denton, TX; and [2]Lovelace Respiratory Research Institute, Albuquerque, NM.

Abstract #

#1571 **Poster Board Number 637**
Development of an Inhalation Exposure System for Resistance Spot Welding Using an Anti-Spatter Spray. A. Afshari, B. T. Chen, M. Jackson, W. McKinney, D. Schwegler-Berry, J. Cumpston, A. Cumpston, H. D. Leonard, *P. C. Zeidler-Erdely*, D. G. Frazer, and *J. M. Antonini*. NIOSH, Morgantown, WV.

#1572 **Poster Board Number 638**
Acetaminophen Potentiates Acute Respiratory Responses to Oxidants and Environmental Tobacco Smoke. *G. J. Smith*, and *J. B. Morris*. Department of Pharmaceutical Sciences, University of Connecticut, Storrs, CT.

#1573 **Poster Board Number 639**
Preclinical Nebuliser Comparisons to Allow More Effective Decision-Making on Device Selection. S. A. Moore, J. Richardson, C. Gutteridge, and *D. J. Mitchell*. Inhalation, Huntingdon Life Sciences, Huntingdon, United Kingdom.

#1574 **Poster Board Number 640**
A Controlled Human Exposure System for Di-(n)-Butyl Phthalate (DBP) in the Vapor Phase. A. K. Bølling[1,2], Y. Wu[3], S. Cox[3], Q. Gu[2], J. Mankoo[2], J. Little[3], *U. C. Nygaard*[1], and C. Carlsten[2]. [1]Department of Air Pollution and Noise, Norwegian Institute of Public Health, Oslo, Norway; [2]Department of Medicine, University of British Columbia, Vancouver, BC, Canada; and [3]Environmental Engineering, Virginia Tech, Blacksburg, VA.

#1575 **Poster Board Number 641**
Precision-Cut Lung Slices As an Alternative Model for Repeated-Dose Inhalation Toxicity. V. Neuhaus, O. Danov, J. Witte, S. Romberg, S. Escher, A. Braun, and K. Sewald. Fraunhofer Institute for Toxicology and Experimental Medicine, Biomedical Research in Endstage and Obstructive Lung Disease Hannover (BREATH), Member of the German Centre for Lung Research (DZL), Hannover, Germany. Sponsor: *C. Dasenbrock*.

#1576 **Poster Board Number 642**
PCB-Mediated Estrogen Receptor-α-Dependent Histone Modifications: Possible Regulatory Link between PCB Exposure and Induction of Vascular Inflammation. D. Liu, and *B. Hennig*. Department of Animal and Food Sciences, University of Kentucky, Lexington, KY.

#1577 **Poster Board Number 643**
Real-Time Cell Analysis for Cytotoxicity Assessment of Coal Fly Ash for Air Quality Monitoring Applications. B. Moe[1], J. Li[1], C. Yuan[2], S. Gabos[1], and X. Li[1]. [1]Laboratory Medicine and Pathology, University of Alberta, Edmonton, AB, Canada; and [2]School of Environmental Sciences and Engineering, North China Electric Power University, Baoding, China. Sponsor: *D. Huang*.

#1578 **Poster Board Number 644**
Detection of Airway Microbiota by Next-Generation Sequencing following Burn and Inhalation Injury. *D. M. Walsh*[1], S. Yourstone[1], *S. D. McCullough*[2], J. J. Kahle[2], S. W. Jones[1], C. Jones[1], *I. Jaspers*[1], and D. Diaz-Sanchez[2]. [1]University of North Carolina Chapel Hill, Chapel Hill, NC; and [2]US Environmental Protection Agency, Chapel Hill, NC.

TUESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

Tuesday Afternoon, March 24
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Particulate Matter

Chairperson(s): *Jared Brown, University of Colorado Denver, Aurora, CO.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#1579 **Poster Board Number 647**
Air Pollution (PM 2.5) in Fresno County Leading to Shorter Life Spans. V. Avalos. Center for Advanced Research and Technology, Fresno, CA. Sponsor: *J. Avalos*.

#1580 **Poster Board Number 648**
Effects of Photochemically Aged Atmospheres on Allergic Responses in Mice. *M. A. McGee*[1], E. H. Boykin[2], T. Krantz[2], C. King[2], J. Krug[2], N. Modak[1], C. E. Wood[2], *I. Gilmour*[2], and *S. H. Gavett*[2]. [1]Oak Ridge Institute for Science and Education, Research Triangle Park, NC; and [2]Office of Research & Development, US EPA, Research Triangle Park, NC.

#1581 **Poster Board Number 649**
Distinct Cardiovascular Responses to Traffic and Urban Industrial Sources of Ambient Fine Particulate Matter in Rats on a High-Fructose Diet. *J. G. Wagner*[1], R. Das[2], M. Morishita[2], B. Nan[2], B. Mukherjee[2], and *J. R. Harkema*[1]. [1]Michigan State Univ., East Lansing, MI; and [2]Univ. Michigan, Ann Arbor, MI.

#1582 **Poster Board Number 650**
Exposure Levels and Characterization of PM2.5 and Black Carbon in New York City's Subway Stations. M. Vilcassim, G. D. Thurston, and *T. Gordon*. Environmental Medicine, New York University, Tuxedo, NY.

#1583 **Poster Board Number 651**
A Simplified and Rapid Screening Assay Using Zebrafish to Assess Cardiac Effects of Air Pollution-Derived Particulate Matter. J. S. Stevens[1], *S. Padilla*[2], *A. Tennant*[2], *R. B. Conolly*[2], *D. Demarini*[2], *M. I. Gilmour*[1], *W. LeFew*[2], N. Haykal-Coates[1], W. Linak[3], D. Winsett[1], W. Cascio[1], *M. S. Hazari*[1], and *A. K. Farraj*[1]. [1]Environmental Public Health Division, US EPA, Durham, NC; [2]Integrated Systems Toxicology Division, US EPA, Duham, NC; and [3]Air Pollution Prevention and Control Division, US EPA, Durham, NC.

#1584 **Poster Board Number 652**
Temporal Evaluation of Multicompartment Molecular Signaling following an Inhalation Exposure to Metal-Rich Particulate Matter. *A. Erdely*[1,3], *J. M. Antonini*[1,3], S. Tugendreich[2], S. Shah[2], *C. E. Nichols*[3], J. M. Hollander[3], R. Salmen[1], A. Liston[1], T. Eye[1], P. P. Simeonova[1], M. L. Kashon[1], S. Li[1], S. Stone[1], B. T. Chen[1], D. G. Frazer[1], and *P. C. Zeidler-Erdely*[1,3]. [1]NIOSH, Morgantown, WV; [2]QIAGEN, Redwood City, CA; and [3]West Virginia University, Morgantown, WV.

Abstract #

#1585 **Poster Board Number 653**
Toxicity of Mineral Dusts and a Proposed Mechanism for the Pathogenesis of Particle-Induced Lung Diseases. *C. Lam*[1,4], *P. C. Zeidler-Erdely*[3], R. R. Scully[1], *V. E. Meyers*[2], R. Hunter[4], *R. A. Renne*[6], R. McCluskey[5], *V. Castranova*[3], *M. Barger*[3], *T. G. Meighan*[3], W. Wallace[1], and *J. T. James*[2]. [1]NASA Toxicology Lab and Wyle, Houston, TX; [2]Toxicology, NASA, Houston, TX; [3]HELD, NIOSH, Morgantown, WV; [4]Pathology, U. Texas, Houston, TX; [5]Naval Hospital, Pensacola, FL; and [6]Roger Renne ToxPath Consulting, Summer, WA.

#1586 **Poster Board Number 654**
Fine Particles of Mexico City As a Potential Adjuvant in an Allergic Asthma Model. C. I. Falcon-Rodriguez[1,2], *A. De Vizcaya-Ruiz*[3], L. A. Jimenez-Alvarez[4], A. R. Osornio-Vargas[5], I. A. Rosas-Perez[6], and P. Segura-Medina[2]. [1]Posgrado en Ciencias Biológicas, UNAM, Distrito Federal, Mexico; [2]Dept Hiperreactividad Bronquial, INER, Distrito Federal, Mexico; [3]Dept de Toxicología, CINVESTAV, Distrito Federal, Mexico; [4]Dept Inmunobiología y Genética, INER, Distrito Federal, Mexico; [5]Dept of Pediatrics, University of Alberta, Edmonton, AB, Canada; and [6]Dept Aerobiologia, UNAM, Distrito Federal, Mexico.

#1587 **Poster Board Number 655**
Effects of Chemical Composition on the Activation of TRPA1 by Diesel Exhaust Particulate Materials. *C. Deering-Rice*, V. K. Mitchell, *E. Romero*, and *C. A. Reilly*. Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#1588 **Poster Board Number 656**
TRPM8 Is Activated by Coal Fly Ash in a Mechanical and Temperature Dependent Manner. *E. Romero*, *C. D. Rice*, and *C. A. Reilly*. Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#1589 **Poster Board Number 657**
Exposure to Combustion-Derived Particulate Matter Suppresses Pulmonary Host Defense. *S. Jaligama*, G. Lee, J. Saravia, N. Yadav, and S. Cormier. Pediatrics, University of Tennessee Health Sciences Center, Memphis, TN.

#1590 **Poster Board Number 658**
Particle Size Distributions of ENDS Aerosol at Various Voltages Utilizing 90 Degree White Light Spectroscopy. *K. Corbett*, and *T. Gordon*. Environmental Medicine, NYU School of Medicine, Tuxedo, NY.

#1591 **Poster Board Number 659**
Early Kidney Damage Induced by Continuous Exposure to Concentrated PM2.5. O. Aztatzi-Aguilar, *V. Escamilla*, M. Uribe-Ramirez, J. Narváez-Morales, *O. Barbier*, and *A. De Vizcaya Ruiz*. Toxicology, CINVESTAV-IPN, Mexico City, Mexico.

#1592 **Poster Board Number 660**
Vanadium Inhalation Effect on Lung Mast Cells in a Murine Model. *T. I. Fortoul*[1], S. L. López-Zepeda[1], S. Antuna-Bizarro[1], L. Colin-Barenque[2], P. Bizarro-Nevares[1], and R. Guerreo-Alquicira[1]. [1]Biologia Celular y Tisular, UNAM, Mexico City; and [2]Neuromorfologia, FES Iztacala, Edo. Mexico, Mexico.

TUESDAY

Program Schedule (Continued)

Abstract #

#1593 **Poster Board Number 661**
Characterization and Acute Toxicity of Airborne Particles in an Electronic Waste Recycling Facility. *I. Gilmour*[1], *Y. Kim*[2], A. Touati[3], T. Krantz[1], *J. A. Dye*[1], W. Linak[4], and B. Gullett[4]. [1]NHEERL, US Environmental Protection Agency, Research Triangle Park, NC; [2]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC; [3]ARCADIS, Durham, NC; and [4]NRMRL, US Environmental Protection Agency, Research Triangle Park, NC.

#1594 **Poster Board Number 662**
PM2.5 Exposure Results in Endothelial Damage and Altered Immune Cell Populations. *T. O'Toole*[1], *W. T. Abplanalp*[1], *D. J. Conklin*[1], A. Pope[2], and *A. Bhatnagar*[1]. [1]University of Louisville, Louisville, KY; and [2]Economics, Brigham Young University, Provo, UT.

#1595 **Poster Board Number 663**
Sepiapterin Supplementation Fails to Ameliorate Diesel Exhaust Particle Exposure-Related Erectile and Coronary Artery Dysfunction in Young Lewis Rats. *D. P. Becak*, E. D. Jones, R. M. Lust, and *C. J. Wingard*. Physiology, East Carolina University, Greenville, NC.

#1596 **Poster Board Number 664**
Mitochondrial microRNA Dysregulation Contributes to Acute Cardiac Dysfunction following Pulmonary Mountaintop Mining Particulate Matter Exposure. *C. E. Nichols*[1], D. Thapa[1], D. L. Shepherd[1], *T. L. Knuckles*[3], *A. Erdely*[4,3], *P. C. Zeidler-Erdely*[4,3], *T. R. Nurkiewicz*[2], and J. M. Hollander[1]. [1]Exercise Physiology, West Virginia University, Morgantown, WV; [2]Physiology and Pharmacology, West Virginia University, Morgantown, WV; [3]School of Public Health, West Virginia University, Morgantown, WV; and [4]National Institutes for Occupational Safety and Health, Morgantown, WV.

Tuesday Afternoon, March 24,
1:00 PM to 2:00 PM
CC Room 24A

E

Exhibitor-Hosted Session: Improved Methods for *In Vivo* and *In Vitro* Thrombogenicity Testing for Medical Devices

Presented by:
American Preclinical Services

Thrombogenicity testing is a critical component of the ISO 10993-4 testing required for medical devices. Refined methods for *in vivo* thrombogenicity assessment using fluoroscopic guidance and contrast-mediated flow visualization have been identified and will be discussed along with novel *in vitro* blood-loop methods that allow assessment of new materials.

Tuesday Afternoon, March 24,
1:00 PM to 2:00 PM
CC Room 22

E

Exhibitor-Hosted Session: Revised OECD Test Guidelines for Genetic Toxicology

Presented by:
BioReliance

On September 26, 2014, four revised and one new OECD Test Guidelines for Genetic Toxicology were officially adopted. This educational session will review each of these guidelines, showing the improved sensitivity of new assay requirements, and present how BioReliance has implemented these in a GLP setting.

Tuesday Afternoon, March 24,
1:00 PM to 2:00 PM
CC Room 24C

E

Exhibitor-Hosted Session: Usefulness of Biomarkers in Support of Preclinical Studies

Presented by:
Charles River

A host of new biomarker methods and platforms are being routinely developed and validated, increasing the reliance on biomarkers to evaluate the toxicity and/or efficacy of new drugs. This session will provide an overview of therapeutic area biomarkers and considerations for biomarker assay development in support of preclinical toxicology programs.

Tuesday Afternoon, March 24,
1:00 PM to 2:00 PM
CC Room 24B

E

Exhibitor-Hosted Session: Using DRAGON to Implement Systematic Review: Lessons Learned

Presented by:
ICF International

Implementing systematic review for broad environmental health assessments is challenging. With the right tools, scientists can effectively integrate data streams to manage the process including problem formation, literature screening, and risk of bias evaluation according to systematic review principles. ICF scientists will share lessons learned implementing these principles using DRAGON.

Program Schedule (Continued)

Abstract #

Tuesday Afternoon, March 24
1:30 PM to 4:15 PM
CC Ballroom 6D

S

Symposium Session: New Developments in the Management of Nerve Agent Poisoning

Advancing Clinical and Translational Toxicology

Jointly Provided by: *University of Arkansas for Medical Sciences College of Medicine and SOT Approved for AMA PRA Category 1 Credit™—See mobile app for details*

Chairperson(s): *Allister Vale, School of Biosciences and College of Medical and Dental Sciences, University of Birmingham, Birmingham, United Kingdom; and Horst Thiermann, Bundeswehr Institute of Pharmacology and Toxicology, Munich, Germany.*

Endorser(s):
Clinical and Translational Toxicology Specialty Section
Neurotoxicology Specialty Section
Occupational and Public Health Specialty Section

Nerve agents have been employed by Iraq and Syria and were released by terrorists in Japan on 11 occasions in 1994–1995. These releases indicate that countries must be prepared to treat civilian as well as military casualties. This requires an understanding of the mechanisms of toxicity of these agents, the factors that influence their clinical impact and knowledge of potential treatments. Much research is underway to improve the current treatment regimens, which include an anticholinergic drug (e.g., atropine) to antagonize the effects of excess acetylcholine (ACh) at muscarinic effector sites, the use of an oxime to reactivate nerve agent-inhibited acetylcholinesterase (AChE), and an anticonvulsant benzodiazepine to prevent or stop nerve agent-induced seizures. A series of novel phenoxyalkyl pyridinium oximes that show efficacy in the brain have been tested and found to reduce brain AChE inhibition and attenuate seizures. The in-service (military) medical countermeasure provision is based on carbamate pretreatment; such an approach is not possible in the case of a civilian population who are also not likely to be wearing personal protective equipment (PPE). The concept of employing physostigmine, hyoscine, and HI-6 in a single autoinjector in the absence of any form of pretreatment may reduce incapacitation significantly. In addition, the potential of human recombinant butyrylcholinesterase alone, and in combination with standard therapy, as a postexposure treatment, and the use of antinicotinic drugs to reduce the effects of accumulated ACh, could offer additional benefits. Finally, a beta-cyclodextrin with an attached oxime function may offer an alternative approach by enhancing detoxification of nerve agents.

#1597	1:30	**New Developments in the Management of Nerve Agent Poisoning.** *A. Vale*[1], *J. H. McDonough*[2], *J. E. Chambers*[3], *H. Thiermann*[4], and P. Rice[5]. [1]School of Biosciences, University of Birmingham, Birmingham, United Kingdom; [2]Research Division, US Army Medical Research Institute of Chemical Defence, Aberdeen Proving Ground, Aberdeen, MD; [3]Center for Environmental Health Sciences, Mississippi State University, Mississippi State, MS; [4]Bundeswehr Institute of Pharmacology and Toxicology, Munich, Germany; and [5]Biosciences, Dstl Porton Down, Salisbury, United Kingdom.
	1:30	**Introduction.** A. Vale. University of Birmingham, Birmingham, United Kingdom.
#1598	1:35	**Nerve Agents: An Introduction to Nomenclature, Mechanisms of Action, Clinical Features, Overview of Current Treatment, and Past Releases.** *A. Vale*. School of Biosciences and College of Medical and Dental Sciences, University of Birmingham, Birmingham, United Kingdom.
#1599	2:00	**Therapeutic Problems of Central Effects of Nerve Agents.** *J. H. McDonough*. Research Division, US Army Medical Research Institute of Chemical Defense, Aberdeen, MD.

Abstract #

#1600	2:30	**The Development of Novel Centrally Effective Oxime Reactivators for Organophosphate-Inhibited Acetylcholinesterase.** *J. E. Chambers*. Center for Environmental Health Sciences, Mississippi State University, Mississippi State, MS.
#1601	3:00	**Translation of Experimental Findings into Recommendations for the Treatment of Nerve Agent Poisoning.** *H. Thiermann*. Bundeswehr Institute of Pharmacology and Toxicology, Munich, Germany.
#1602	3:30	**New Approaches in the Therapy of Nerve Agent Poisoning.** P. Rice. Biosciences, Dstl Porton Down, Salisbury, United Kingdom. Sponsor: *A. Vale*.
	4:00	**Panel Discussion/Q&A.**

Tuesday Afternoon, March 24
1:30 PM to 4:15 PM
CC Ballroom 6B

S

Symposium Session: Incorporating *In Vitro* Pharmacokinetic Data and Tools into Toxicity Testing and Risk Assessments: State of the Science

Strategies for Exposure and Risk Assessments

Chairperson(s): *Barbara A. Wetmore, The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and Warren Casey, NIEHS, Durham, NC.*

Endorser(s):
Biological Modeling Specialty Section
***In Vitro* and Alternative Methods Specialty Section**
Risk Assessment Specialty Section

New technologies and *in vitro* testing approaches can be valuable additions to risk assessments that have historically relied on *in vivo* test results. Compared to animal testing, *in vitro* high-throughput screening (HTS) assays are efficient, less expensive, and provide insights into chemical mode of action. However, the relationship between the *in vitro* chemical concentration in the well to the chemical concentration in the target tissue or blood *in vivo* is dependent upon pharmacokinetic (PK) and other variables not captured in HTS assays. Incorporation of *in vitro* to *in vivo* extrapolation (IVIVE) modeling with HTS data provides a bridge to link *in vitro* concentrations eliciting activity out to external *in vivo* exposures required to achieve target tissue concentrations similar to those at which activity is observed. Since its introduction five years ago, several efforts have ensued to assess, utilize, and refine this strategy. A series of talks have been assembled that update on progress made and consider principles to guide data evaluation for reliability and utility in a risk assessment context. Correlation of *in vitro* estrogen receptor activity to *in vivo* exposures has provided promising risk predictions. Efforts to streamline clearance and PK predictions using *in silico*- and *in vitro*-derived parameter estimates have laid the groundwork for HT PK modeling. Incorporation of isozyme-specific clearance data with enzyme abundance data for sensitive populations during IVIVE has quantitated PK variability. Moreover, the European Union is taking steps to harmonize standards for *in vitro* human hepatic metabolic clearance measurement. While the progress made is promising, the ultimate challenge will be in its acceptance as an appropriate tool to inform chemical risk assessment.

#1603	1:30	**Incorporating *In Vitro* Pharmacokinetic Data and Tools into Toxicity Testing and Risk Assessments: State of the Science.** *B. A. Wetmore*[1], and *W. Casey*[2]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [2]NICEATM, NIEHS, Research Triangle Park, NC.
	1:30	**Introduction.** B. A. Wetmore. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

TUESDAY

Program Schedule (Continued)

Abstract #		
#1604	1:35	**A Rational Approach to Using *In Vitro* Data to Improve Health Risk Assessment.** *J. C. Lipscomb*. Office of Research and Development, National Center for Environmental Assessment, US EPA, Cincinnati, OH.
#1605	2:07	***In Vitro*-to-*In Vivo* Extrapolation (IVIVE) Modeling Tools to Inform Chemical Dosimetry and Population Pharmacokinetic Variability.** *B. A. Wetmore*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.
#1606	2:39	**Using Reverse Toxicokinetic Models to Correlate *In Vitro* and *In Vivo* Estrogen Receptor Activity.** *W. Casey*. NIEHS, Durham, NC.
#1607	3:11	**High-Throughput Toxicokinetics for Environmental Chemicals.** *J. F. Wambaugh*. National Center for Computational Toxicology, US EPA, Research Triangle Park, NC.
#1608	3:43	**Development of EURL ECVAM Harmonized Standards for *In Vitro* Human Hepatic Metabolic Clearance Methods.** S. Coecke, V. Gouliarmou, J. Bessems, A. P. Worth, and M. P. Whelan. EURL ECVAM, European Commission Joint Research Centre, Ispra, Italy. Sponsor: *B. Wetmore*.

Tuesday Afternoon, March 24
1:30 PM to 4:15 PM
CC Ballroom 6E

S

Symposium Session: Where the Metal Meets the Bone…

Advancing Clinical and Translational Toxicology

Chairperson(s): *Koren K. Mann, Oncology, Lady Davis Institute for Medical Research, McGill University, Montreal, QC, Canada; and Linda H. Nie, School of Health Sciences, Purdue University, West Lafayette, IN.*

Endorser(s):
Metals Specialty Section

Bone is well known for its function as a structural support; however, new evidence suggests that bone is important as the site for hematopoiesis, in regulating mineral metabolism, in controlling glucose levels, and as an internal source of toxic metal exposure. Furthermore, bone is a complex, multicellular tissue that evolves depending on age and gender. As we age, particularly among women, we are more prone to osteoporosis and bone fracture. Many metals accumulate within the bone. Such an accumulation can directly alter the structural architecture of the bone itself, while it also renders the bone a primary depot of toxic metals that can result in pathological effects in a variety of tissues. This symposium invites the researchers working on metals in bone to discuss the nonoverlapping mechanisms by which diverse metals accumulate and alter the bone, the local and systemic consequences of metals in bone, and how we can better assess bone metals in humans. After a brief introduction, the first speaker will discuss tributyltin-mediated activation of nuclear receptors and ensuing effects on osteogenesis. The second speaker will discuss how tungsten accumulation in the bone enhances adipogenesis at the expense of bone formation. The third speaker will address manganese accumulation in bone serving as an internal source that may contribute to manganese-induced Parkinsonian disorders. The fourth speaker will address the utility of bone lead as a reliable dosimeter for lead toxicity. Finally, the last speaker will discuss novel noninvasive technologies to define bone metal concentrations. The session will be of interest to a broader audience and, in particular, to those engaged in toxicological research related to bone diseases, osteoporosis, metal toxicities, neurotoxicology, and systems biology.

Abstract #		
#1609	1:30	**Where the Metal Meets the Bone…** *K. K. Mann*[1], and *L. H. Nie*[2]. [1]Oncology, Lady Davis Institute for Medical Research, McGill University, Montreal, QC, Canada; and [2]Purdue University, West Lafayette, IN.
	1:30	**Introduction.** K. K. Mann. McGill University, Montreal, QC, Canada.
#1610	1:35	**Suppression of Osteogenesis by Organotins. Is It All About PPARγ?** *J. J. Schlezinger*[1], *J. Watt*[1], and L. Gerstenfeld[2]. [1]Environmental Health, Boston University School of Public Health, Boston, MA; and [2]Orthopaedic Surgery, Boston University School of Medicine, Boston, MA.
#1611	2:04	**Tungsten Accumulates in the Bone and Enhances Adipogenesis, Potentially at the Expense of Bone Formation.** *A. M. Bolt*[1,2], and *K. K. Mann*[1,2]. [1]Lady Davis Institute for Medical Research, Montreal, QC, Canada; and [2]Oncology, McGill University, Montreal, QC, Canada.
#1612	2:33	**Manganese (Mn) Accumulation in Bone: Relationship to Mn-Induced Neurotoxicity.** *W. Zheng*. School of Health Sciences, Purdue University, West Lafayette, IN.
#1613	3:02	**Bone As a Target and Dosimeter for Lead Toxicity and Exposure.** *J. G. Pounds*. Pacific Northwest National Laboratory, Richland, WA.
#1614	3:31	**Noninvasive *In Vivo* Quantification of Metals in Human Bones.** *L. H. Nie*. Purdue University, West Lafayette, IN.
	4:00	**Panel Discussion/Q&A.**

Tuesday Afternoon, March 24
1:30 PM to 4:15 PM
CC Room 7

W

Workshop Session: An Ounce of Prevention Is Worth a Pound of Cure: How 21st Century Toxicology Can Transform Product Safety Assessments and Design of Lower Toxicity Products

Safety Assessment Approaches for Product Development

Chairperson(s): *Pamela J. Spencer, Toxicology & Environmental Research and Consulting, The Dow Chemical Company, Midland, MI; and Martin L. Stephens, Center for Alternatives to Animal Testing, Johns Hopkins University, Baltimore, MD.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Historically, early identification and characterization of adverse effects of industrial chemicals was difficult because conventional toxicological test methods did not meet R&D needs (e.g., methods that are rapid, relatively inexpensive, and amenable to small amounts of test material). Consequently, undesirable toxicological effects were identified closer to commercialization, when few options for design changes existed and after significant investment of time, resources, and money. For example a two-generation reproduction study costs more than $500,000, uses more than 3,000 rats, and takes 15 months to complete. Further time, money, and resources are consumed in efforts to "defend and save" products identified to have adverse effects. Today, rapidly evolving, next-generation safety assessment methodologies have the potential to transform how companies develop and commercialize new products and chemicals. New 21st century tools now make it feasible to incorporate toxicological assessments as early as the ideology stage of product development and to build in rules and criteria to guide the design of high-efficacy/low-toxicity compounds. Toxicology as a tool for innovation affords benefits for the company developing new products as well as for society. For companies, the earlier candidates with undesirable effects are identified and eliminated, the sooner finite resources can be redirected to those candidates with the highest likelihood of being a successful, sustainable alternative. The input of toxicologists early can inform test strategies and limit complex, costly, and lengthy studies to those few promising candidates, reducing postmarket defense of products targeted for future deselection. For society, safer, healthier alternatives are commercialized and the risk of

TUESDAY

Program Schedule (Continued)

Abstract #

unknown health and environmental effects surfacing after product launch are reduced. Using 21st century toxicology methods as a preventive strategy to design out undesired human health and environmental effects offers benefits to companies and society over the current paradigm. This session will provide a forum for collaboration among scientists working in complementary fields to discover common ground in the quest for safer chemicals by adopting an innovative, prevention-based framework to product safety assessment through strategic application of new 21st century methodologies. Case studies will be used to illustrate how to build successful strategies into product development.

#1615	1:30	**An Ounce of Prevention Is Worth a Pound of Cure: How 21st Century Toxicology Can Transform Product Safety Assessments and Design of Lower Toxicity Products.** *P. J. Spencer*[1], and *M. L. Stephens*[2]. [1]The Dow Chemical Company, Midland, MI; and [2]Johns Hopkins University, Baltimore, MD.
	1:30	**Introduction.** P. J. Spencer. The Dow Chemical Company, Midland, MI.
#1616	1:40	**A Framework for Designing Safer Chemicals.** N. Anastas. US EPA, Boston, MA. Sponsor: *P. Spencer*.
#1617	2:08	**Chemical Design Principles and Screening Methodologies in Predicting Toxicity Liability to Guide Drug Discovery Candidate Selection.** *N. Greene*. Pfizer Inc., Groton, CT.
#1618	2:36	**On the Design of Safer Commercial Chemicals: Moving Forward.** *S. DeVito*. Office of Environmental Information, US Environmental Protection Agency, Washington, DC.
#1619	3:04	**21st Century Toxicology: Tools for Innovation and Safer Chemical Design.** *T. Hartung*. CAAT, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD.
#1620	3:32	**Innovative Toxicology: Matching Tools to Product Development Stage to Assess the Toxicity and Environmental Impact of New Products.** *R. Deskin*[1], and *T. Petry*[2]. [1]Deskin Associates LLC, Fort Myers, FL; and [2]ToxMinds BVBA, Brussels, Belgium.
	4:00	**Panel Discussion/Q&A.**

Tuesday Afternoon, March 24
1:30 PM to 4:15 PM
CC Ballroom 6F

W

Workshop Session: Current Understanding of Immune-Mediated Adverse Drug Reactions

Advancing Clinical and Translational Toxicology

Chairperson(s): *Arno Siraki, University of Alberta, Edmonton, AB, Canada; and Alison Harrill, Environmental and Occupational Health, University of Arkansas for Medical Sciences, Little Rock, AR.*

Endorser(s):
Immunotoxicology Specialty Section

Immune-mediated adverse drug reactions (IM-ADRs) represent a significant incidence of patient morbidity and mortality, and they significantly add to the cost of drug development. The most affected organs include the skin, liver, and blood, and such organs are known to initiate and shape immune responses. Despite major recent attempts to investigate the mechanism behind IM-ADRs, our understanding of such reactions remains superficial. The role of drugs and how they are able to cause organ damage, whether by inducing or altering an immune response, is not well understood. At this workshop, research highlighting different mechanisms or how drugs initiate an immune response that leads to an IM-ADR will be discussed. This includes the formation of covalent adducts, the induction of danger signals to overcome immune tolerance, the "altered repertoire" hypothesis

Abstract #

based on which drugs change the repertoire of self-peptides presented by HLA molecules, and the heterologous immunity model, which provides an explanation for the low positive predictive value of most HLA associations of drug hypersensitivity. The presentations will highlight new advancements in the technology for early detection of IM-ADRs, *in vitro* assays, and the use of valid animal models.

#1621	1:30	**Current Understanding of Immune-Mediated Adverse Drug Reactions.** *A. Siraki*[2], *A. Harrill*[3], and *I. G. Metushi*[1]. [1]La Jolla Institute for Allergy and Immunology, San Diego, CA; [2]Pharmaceutical Sciences, University of Alberta, Edmonton, AB, Canada; and [3]Department of Environmental and Occupational Health, University of Arkansas, Fayetteville, AR.
	1:30	**Introduction.** A. Siraki. University of Alberta, Alberta, AB, Canada.
#1622	1:35	**Drug-Induced Events That Initiate an Adaptive Immune Attack on the Liver.** *P. B. Watkins*. Hamner-UNC Institute for Drug Safety Sciences, Research Triangle Park, NC.
#1623	2:04	**The Use of Animal Models in Investigating the Mechanism of Idiosyncratic Drug-Induced Hepatotoxicity.** *I. G. Metushi*. La Jolla Institute for Allergy and Immunology, San Diego, CA.
#1624	2:33	**Studies of the Role of Innate and Adaptive Immune Responses in Drug-Induced Liver Injury in Mice.** *C. Ju*[1,2], Q. You[2,1], and L. Cheng[3]. [1]Department of Medicine, University of Colorado, Aurora, CO; [2]Department of Biotherapy, University of Colorado, Aurora, CO; and [3]Nanjing Medical University, Jiangsu, China.
#1625	3:02	**Drug Hypersensitivity Caused by Alteration of the MHC-Presented Self-Peptide Repertoire.** B. Peters. La Jolla Institute for Allergy and Immunology, San Diego, CA. Sponsor: *I. Metushi*.
#1626	3:31	**Current Science and Translational Opportunities in the Prediction and Prevention of Immunologically Mediated Adverse Drug Reactions.** E. Phillips. Department of Medicine, Vanderbilt University Medical Center, Nashville, TN. Sponsor: *I. Metushi*.
	4:00	**Panel Discussion/Q&A.**

Tuesday Afternoon, March 24
1:30 PM to 4:15 PM
CC Ballroom 6C

W

Workshop Session: *In Vitro* Microphysiological Systems—Developing Confidence in Predictive Ability

Chairperson(s): *Suzanne C. Fitzpatrick, Center for Food Safety & Applied Nutrition, US Food and Drug Administration, College Park, MD; and Anthony Bahinski, Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, MA.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Regulatory and Safety Evaluation Specialty Section

Mechanically active "organ-on-a-chip" microdevices that reconstitute tissue-tissue interfaces critical to organ function can expand the capabilities of cell culture models and provide low-cost and more informative alternatives to animal toxicology studies. With simplified designs and careful choice of biocompatible device materials, they can be useful for high-content analysis and screening of cellular responses to drugs, chemicals, particulates, toxins, pathogens, or other environment stimuli relevant to pharmaceutical, cosmetic, and environmental applications. In 2011, President Obama

Program Schedule (Continued)

Abstract #

announced that the National Institutes of Health will collaborate with the Defense Advanced Research Projects Agency (DARPA), and the US Food and Drug Administration to develop a chip to screen for safe and effective drugs far more swiftly and efficiently than current methods, and before they are tested in humans. It was clear to both US FDA and NIH that these models have the potential for more accurate modeling of physiological situations to answer fundamental basic science questions. As the science of *in vitro* microphysiological systems develops, it is also imperative that regulators communicate what they need to demonstrate confidence in the predictive capacity of these new and promising models. This workshop presents a pathway to full acceptance and use by first developing confidence in each of the different integral parts of the model and then combining them for a "context-of-use" evaluation of overall predictive ability to answer critical regulatory questions.

#1627	1:30	***In Vitro* Microphysiological Systems—Developing Confidence in Predictive Ability.** *A. Bahinski*[1], and *S. C. Fitzpatrick*[2]. [1]Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, MA; and [2]Center for Food Safety & Applied Nutrition, US Food and Drug Administration, College Park, MD.
	1:30	**Introduction.** A. Bahinski. Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, MA.
#1628	1:35	**Human Organs on Chips.** *A. Bahinski*. Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, MA.
#1629	2:04	**Induced Pluripotent Stem Cells and Personalized Medicine: Are We Moving toward a "Patient on a Chip"?** C. Svendsen. Cedars Sinai Medical Center, Los Angeles, CA. Sponsor: *A. Bahinski*.
#1630	2:33	**Characterizing and Validating Biological and Physiological Relevance of an *In Vitro* Microphysiological System.** J. P. Wikswo. Vanderbilt Institute for Integrative Biosystems Research and Education, Vanderbilt University, Nashville, TN. Sponsor: *A. Bahinski*.
#1631	3:02	**Defining an Appropriate Testing Paradigm for *In Vitro* Microphysiological Systems.** *Y. Dragan*. DuPont, Newark, DE.
#1632	3:31	**Determining the Predictive Capability of *In Vitro* Microphysiological Systems to Answer Critical Regulatory Questions.** *S. C. Fitzpatrick*. Center for Food Safety & Applied Nutrition, US Food and Drug Administration, College Park, MD.
	4:00	**Panel Discussion/Q&A.**

Abstract #

Tuesday Afternoon, March 24
1:30 PM to 4:15 PM
CC Room 8

PL

Platform Session: Investigating Mode of Action in Chemical Carcinogenesis

Strategies for Exposure and Risk Assessments

Chairperson(s): *James E. Klaunig, Indiana University, Ellettsville, IN; and B. Bhaskar Gollapudi, Exponent, Inc., Midland, MI.*

#1633	1:30	**CAR Activation As the Mode of Action for Nitrapyrin-Induced Mouse Liver Tumors.** J. LaRocca[1], *M. J. LeBaron*[2], *L. A. Murphy*[2], *V. Marshall*[2], *M. R. Schisler*[2], *L. Kan*[2], and *R. J. Rasoulpour*[1]. [1]Dow AgroSciences, Indianapolis, IN; and [2]Dow Chemical, Midland, MI.
#1634	1:53	**Mouse Liver Tumors Induced by Prochloraz Have a CAR-Like Mode of Action and Are Not Relevant to Humans.** M. Göttel[1], S. Melching-Kollmuss[1], N. Honarvar[2], H. Marxfeld[2], C. R. Elcombe[3], and I. Fegert[1]. [1]Regulatory Toxicology Crop Protection, BASF SE, Ludwigshafen, Germany; [2]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen, Germany; and [3]CXR Biosciences, Dundee, United Kingdom. Sponsor: *C. Hastings*.
#1635	2:16	**Induction of Endogenous Retroelements As a Mechanism for Mouse-Specific Drug-Induced Carcinogenicity.** *M. Gosink*[1], Z. Jiang[2], *J. E. Klaunig*[3], D. L. Mager[4], N. Tsinoremas[2], and Z. Wang[3]. [1]Investigative Toxicology, Pfizer Inc., Groton, CT; [2]Center for Computational Science, University of Miami, Miami, FL; [3]Environmental Health, Indiana University, Bloomington, IN; and [4]Terry Fox Laboratory, British Columbia Cancer Agency, Vancouver, BC, Canada.
#1636	2:39	**Effect of Furan on Transcriptomic and Gene-Specific DNA Methylation Changes in the Livers of Fisher 344 Rats in a Two-Year Carcinogenicity Study.** *V. Tryndyak*[1], S. Ivanovsky[1], T. Han[2], J. C. Fuscoe[2], F. A. Beland[1], and I. Pogribny[1]. [1]Division of Biochemical Toxicology, FDA National Center for Toxicological Research, Jefferson, AR; and [2]Division of Systems Biology, FDA National Center for Toxicological Research, Jefferson, AR.
#1637	3:02	**Evaluation of a Potential Mechanism for Formaldehyde-Induced Leukemia in p53-Haploinsufficient Mice.** *D. L. Morgan*[1], *D. Dixon*[1], M. P. Jokinen[2], D. H. King[1], H. Price[3], G. Travlos[1], R. A. Herbert[1], J. E. French[1], and *M. P. Waalkes*[1]. [1]NTP, NIEHS, Research Triangle Park, NC; [2]ILS, Research Triangle Park, NC; and [3]Alion, Research Triangle Park, NC.
#1638	3:25	**Evaluating the MoA/Human Relevance Framework for F-344 Rat Liver Epithelioid Granulomas with Mineral Oil Hydrocarbons.** *M. D. Adenuga*[1], *K. O. Goyak*[1], and R. J. Lewis[2]. [1]Toxicology and Environmental Sciences, ExxonMobil Biomedical Sciences Inc., Annandale, NJ; and [2]Epidemiology & Health Surveillance, ExxonMobil Biomedical Sciences Inc., Annandale, NJ.
#1639	3:48	**Scalable Adverse Outcome Pathways for Evidence Organization in Cancer Mode-of-Action Analysis.** *J. M. Fritz*, A. M. Luke, H. Yang, B. S. Glenn, and *A. D. Kraft*. ORD/National Center for Environmental Assessment, US Environmental Protection Agency, Washington, DC.

TUESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

Tuesday Afternoon, March 24
1:30 PM to 4:15 PM
CC Room 1

PL

Platform Session: Prudent Animal Usage in Pharmaceutical Safety Testing

Safety Assessment Approaches for Product Development

Chairperson(s): *Qihong Huang, Toxicology and Safety Assessment, Boehringer Ingelheim, Ridgefield, CT; and Timothy Reilly, Bristol-Myers Squibb, Princeton, NJ.*

#1640 1:30 **For a More Prudent Use of Animals in General Toxicity Studies.** G. Schmitt, M. Festag, and M. De Vera Mudry. Toxicology, F. Hoffmann-La Roche, Basel, Switzerland. Sponsor: *T. Singer*.

#1641 1:53 **Quantifying the Pharmaceutical Industry's Contribution to Published 3Rs Research 2002-2012.** S. Cunningham[2], N. Partridge[2], and *R. Roberts*[1]. [1]AstraZeneca, Macclesfield, United Kingdom; and [2]The Association of the British Pharmaceutical Industry (ABPI), London, United Kingdom.

#1642 2:16 **Where Microsampling Meets the 3Rs: Implementation and Best Practices for Small Molecule Toxicokinetic Assessments in Rats to Fulfill GLP Regulatory Requirements.** *E. B. Harstad*, *J. A. Couch*, X. Ding, X. Liang, B. M. Liederer, K. Messick, T. Nyugen, J. Tarrant, M. Schweiger, and *B. J. Dean*. Genentech, South San Francisco, CA.

#1643 2:39 **Reducing Animal Numbers on Regulatory Toxicology Studies Using Microsampling and Sample-Sparing Techniques.** *D. J. Mitchell*[1], *L. Ramaiah*[3], D. Coleman[2], and R. Lawrence[2]. [1]Dept of Toxicology, Huntingdon Life Sciences, Eye, United Kingdom; [2]Dept of Toxicology, Huntingdon Life Sciences, Huntingdon, United Kingdom; and [3]Veterinary Clinical Pathology, Huntingdon Life Sciences, Princeton, NJ.

#1644 3:02 **What Constitutes Scientific Justification for Inclusion of Recovery Assessment in Preclinical Studies Supporting First Time in Man (FTIM)?** S. Robinson, and *R. Roberts*. AstraZeneca, Macclesfield, United Kingdom.

#1645 3:25 **Considerations for *In Vitro* Systems to Reflect *In Vivo* Toxicities to Facilitate Drug Development.** *T. Zabka*[1], *A. H. Kim*[1], *H. Uppal*[1], M. A. Kauss[1], P. Dhawan[1], B. Liederer[2], T. Lin[1], B. McCray[1], T. Nyugen[1], and C. Chou[1]. [1]Safety Assessment, Genentech, South San Francisco, CA; and [2]DMPK, Genentech, South San francisco, CA.

#1646 3:48 **Overcoming Barriers to Human Tissue Use for Safety Assessment.** A. Holmes[1], D. R. Jones[2], D. Bunton[3], J. Louttit[4], *H. M. Vargas*[5], and *J. Valentin*[6]. [1]National Centre for the Replacement, Refinement and Reduction of Animals in Research, London, United Kingdom; [2]Medicines and Healthcare Products Regulatory Agency, London, United Kingdom; [3]Biopta Ltd, Glasgow, United Kingdom; [4]GlaxoSmithKline, Stevenage, United Kingdom; [5]Amgen, Thousand Oaks, CA; and [6]UCB Pharma, Brussels, Belgium.

Tuesday Afternoon, March 24
2:15 PM to 3:30 PM
CC Room 14A

Undergraduate Educator Network Meeting

Chairperson(s): *Mindy F. Reynolds, Washington College, Chestertown, MD.*

Hosted by:
Education Committee
Undergraduate Education Subcommittee

The Education Committee and the Undergraduate Education Subcommittee are hosting the Undergraduate Educator Network Meeting for all faculty involved in the teaching of toxicology to undergraduates, as well as those interested in including toxicology at the undergraduate level. Hear an update on initiatives for undergraduate faculty, provide your input, and network.

Tuesday Afternoon, March 24,
2:30 PM to 3:30 PM
CC Room 24C

E

Exhibitor-Hosted Session: 3D Liver Models and Beyond: 3D Hepatic, Cardiac, Pancreatic, and Neural Microtissue Models for Toxicity Testing

Presented by:
InSphero Inc.

3D liver microtissue models have demonstrated significant value as more organotypic systems for assessment of toxicity. This session aims to cover the latest studies characterizing 3D InSight™ liver microtissues, and introduce novel 3D models for assessment of toxicity in non-liver organs, focusing on the heart, pancreas, and brain.

Tuesday Afternoon, March 24,
2:30 PM to 3:30 PM
CC Room 24A

E

Exhibitor-Hosted Session: Application Study: Human-Induced Pluripotent Stem (iPS) Cell Assay As a Tool for Compound Ranking Based on Human Developmental Toxicity Potential

Presented by:
Stemina Biomarker Discovery, Inc.

A human stem cell-based predictive model of human developmental toxicity can be applied to rank compounds by their relative teratogenic potency. Testing in a series of retinoids will provide an example. This approach can be applied to compound series in the discovery phase, or as a bridging study to enable read-across assessment.

Tuesday Afternoon, March 24,
2:30 PM to 3:30 PM
CC Room 24B

E

Exhibitor-Hosted Session: Reproductive and Juvenile Studies in Minipigs

Presented by:
CiToxLAB and Ellegaard Göttingen Minipigs

In this joint CiToxLAB/Ellegaard session we will present the basic reproductive biology of Göttingen minipigs, theory, and practice of embryofetal toxicology studies in minipigs, and theory and practice of juvenile toxicity studies in minipigs. The session, illustrated with case histories, should interest both specialists and generalists!

TUESDAY

Program Schedule (Continued)

Tuesday Afternoon, March 24,
2:30 PM to 3:30 PM
CC Room 22

E

Exhibitor-Hosted Session: The Path to Licensure: Ebola Vaccines

Presented by:
Battelle

The recent Ebola outbreak has highlighted the seriousness of emerging infectious diseases. As these diseases have garnered greater attention, it has also become apparent that there are challenges associated with the regulatory pathways required to ensure safe and efficacious treatments in order to meet the time-sensitive demands.

Tuesday Afternoon, March 24
4:00 PM to 5:00 PM
CC Room 14A

Undergraduate Student Meeting

Chairperson(s): *Mindy F. Reynolds, Washington College, Chestertown, MD.*

Hosted by:
Education Committee
Undergraduate Education Subcommittee

All Undergraduate students attending the meeting are encouraged to participate in an informal meeting to talk about shared interests related to career paths in toxicology, discuss undergraduate tox-related activities, clubs, and majors on their campuses, and to provide feedback to the Undergraduate Education Subcommittee.

Tuesday Afternoon, March 24,
4:00 PM to 5:00 PM
CC Room 22

E

Exhibitor-Hosted Session: Efficiently Integrating CMC and Preclinical Safety/DMPK to Streamline the Access to Phase I: Is the Balance between Speed, Cost, and Risk Management Possible?

Presented by:
APTUIT LLC

Integrated drug development is a complex endeavor and requires a combination of multiple scientific and strategic competencies. Scientific, technical, and regulatory elements supported by the right strategy drive the design of an optimal development plan, finding the right tailored balance between streamlining, risk, and potential investments.

Tuesday Afternoon, March 24,
4:00 PM to 5:00 PM
CC Room 24B

E

Exhibitor-Hosted Session: SEND Compliance with US FDA Guidance

Presented by:
PointCross LifeSciences, Inc

A readiness plan to comply with the US FDA's binding guidance for standardized SEND submissions will be presented. Impacts on study design, data collection and preparation, submission, and review will be discussed. Lessons learned from the US FDA's NIMS review tool and JumpStart Nonclinical Service and from sponsor implementations will be presented.

Tuesday Afternoon, March 24,
4:00 PM to 5:00 PM
CC Room 24C

E

Exhibitor-Hosted Session: Stem Cell-Derived Hepatocytes with Enhanced Drug Metabolizing Functions

Presented by:
Takara Bio Europe AB (formerly Cellartis)

Cellartis® Enhanced hiPS-HEP is a highly homogenous population of human iPSC-derived hepatocytes with significant activity levels of relevant CYPs. These cells are ideal for use in toxicology-related applications and drug metabolism studies that demand substantial expression of drug metabolism enzymes, a highly reproducible platform, and continuous supply of material from the same genetic background.

Tuesday Afternoon, March 24,
4:00 PM to 5:00 PM
CC Room 24A

E

Exhibitor-Hosted Session: Utilization of the Impedance-Based xCELLigence Real-Time Cell Analysis (RTCA) Technology for *In Vitro* Health Risk Assessment

Presented by:
Alberta Centre for Toxicology and The Hamner Institutes

There is an unmet need for *in vitro* toxicity bioassay with higher sensitivity, lower interference, and better predictive value. In this workshop, two institutions will share their experience with the impedance-based xCELLigence RTCA technology for the *in vitro* assessment of water and food safety.

Tuesday Afternoon, March 24
4:30 PM to 6:00 PM
CC Ballroom 6A
(All SOT Members Invited)

SOT Annual Business Meeting

Members are invited and encouraged to attend the 54th SOT Annual Business Meeting. The agenda includes discussion of plans for 2015–2016, a financial summary, a review of the 2014–2015 activities, and an introduction of the 2015–2018 Strategic Plan.

Program Schedule (Continued)

TUESDAY EVENING

Tuesday Evening, March 24
5:00 PM to 7:00 PM
Dussini's Loft Bar

Lone Star and South Central Regional Chapters Mixer

Tuesday Evening, March 24
6:00 PM to 9:00 PM
Museum of Photographic Arts

Mountain West and Southern California Regional Chapters Mixer

Tuesday Evening, March 24
6:00 PM to 7:30 PM
CC
See room listing below.

Specialty Section Meeting/Receptions: Drug Discovery Toxicology (27); Food Safety (31C); Immunotoxicology (29A); Medical Device and Combination Product (33A); Metals (30E); Nanotoxicology (30A); Neurotoxicology (25); Ocular Toxicology (32); Risk Assessment (28)

Tuesday Evening, March 24
6:30 PM to 9:30 PM
Cafe Sevilla

Hispanic Organization of Toxicologists Special Interest Group Reception and Awards Ceremony

Tuesday Evening, March 24
7:30 PM to 10:30 PM
Yard House

Northern California Regional Chapter Reception

Tuesday Evening, March 24
7:30 PM to 9:00 PM
Marriott Marquis Marina Ballroom D
(All Attendees Welcome)

Tox ShowDown

Chairperson(s): *Sue M. Ford, St. John's University, Jamaica, NY; and Phil Wexler, NIH-NLM, Bethesda, MD.*

Hosted by:
Graduate Student Leadership Committee

Join the Graduate Student Leadership Committee (GSLC) and your peers Tuesday night for the *Tox ShowDown*, an engaging quiz game patterned off of the popular long-running show *It's Academic*. Teams of three contestants will compete at answering questions concerning toxicology not only in its historical and scientific context, but as it relates to arts and culture. Supported by GSLC, this event is sure to be both informative and entertaining and a perfect way to celebrate the halfway point of the SOT Annual Meeting. The game will provide attendees with a break, albeit still toxicologically-oriented, from the more technical business of the meeting.

Program Schedule (Continued)

WEDNESDAY MORNING

Wednesday Morning, March 25
7:00 AM to 8:00 AM
CC Room 2

Global Hot Topics Event: Global Drug Development and Natural Products: End of an Era or an Endless Frontier?

Hosted by:
Special Interest Group Collaboration Group

For more information, see page 88.

Wednesday Morning, March 25
7:00 AM to 7:45 AM
CC Room 8

Toxic Substances Control Act Task Force Update: Strategy, Issues, and Outreach

SOT Toxic Substances Control Act (TSCA) Task Force members will take the lead during this special sunrise session to detail the Task Force's efforts this past year and plans for 2015 in the House of Representatives and the Senate to make SOT an important stakeholder in this ongoing legislative issue.

Wednesday Morning, March 25
8:00 AM to 9:00 AM
CC Ballroom 6A

FS

Keynote Medical Research Council (MRC) Lecture: Environmental Influences on the Immune System via the Aryl Hydrocarbon Receptor

Lecturer: *Brigitta Stockinger, MRC National Institute for Medical Research, London, United Kingdom.*

The aryl hydrocarbon receptor (AhR), well known in the pharmacology/toxicology field for its role in mediating the toxicity of xenobiotics, has more recently attracted the attention of immunologists. The evolutionary conservation of this transcription factor and its widespread expression in the immune system point to important physiological functions that are slowly being unravelled. In particular, the emphasis is now shifting from the role of AhR in the xenobiotic pathway toward its mode of action in response to physiological ligands. The current focus in the field is on understanding the molecular interactions and functions of AhR in the immune system in steady state and in presence of infection and inflammation, particularly in barrier organs such as the skin, the gut, and the lung.

Abstract #

Wednesday Morning, March 25
9:00 AM to 11:45 AM
CC Ballroom 6B

S

Symposium Session: Role of the Gut Microbiome in the Host Response to Xenobiotics

Chairperson(s): *Andrew Patterson, Veterinary and Biomedical Sciences, Pennsylvania State University, University Park, PA; and Gary H. Perdew, Veterinary and Biomedical Sciences, Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, University Park, PA.*

Endorser(s):
Mechanisms Specialty Section
Mixtures Specialty Section
Molecular and Systems Biology Specialty Section

A population of nearly 100 trillion dynamic and diverse microbiota inhabits the human gut. Unlike the genome of a single organism, the combined genomic content of the gut microbiome, known as the metagenome, can rapidly vary as a function of diet, location, host genetics, and a variety of other factors, including exposure to chemical toxicants. The gut microbiota is essential for normal immune system development, displacement of pathogens, extraction of additional energy, and can contribute significantly to metabolism of drugs, xenobiotics, and dietary bioactive chemicals. With these critical functions in mind, the gut microbiota might themselves be considered an additional, metabolically vital organ of the human body. Experts who are at the forefront of microbiome research will present their timely and innovative research that utilizes cutting-edge technology and systems approaches (e.g., high-throughput sequencing, mouse models, metabolomics) to explore topics ranging from inflammation and cancer to drug metabolism.

#1647	9:00	**Role of the Gut Microbiome in the Host Response to Xenobiotics.** A. Gewirtz[1], *F. Gonzalez*[2], *A. Patterson*[3], *G. H. Perdew*[3], and P. J. Turnbaugh[4]. [1]Center for Inflammation, Immunity, and Infection, Georgia State University, Atlanta, GA; [2]Laboratory of Metabolism, National Cancer Institute, National Institutes of Health, Bethesda, MD; [3]Veterinary and Biomedical Sciences, Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, University Park, PA; and [4]Department of Microbiology and Immunology, G.W. Hooper Foundation, University of California San Francisco, San Francisco, CA.
	9:00	**Introduction.** A. Patterson. Pennsylvania State University, University Park, PA.
#1648	9:05	**Impact of Dietary Persistent Organic Pollutants on the Host-Microbiome Interaction.** *A. Patterson*. Veterinary and Biomedical Sciences, Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, University Park, PA.
#1649	9:35	**Impact of Infection and Inflammation on Arsenic Toxicity.** C. G. Knutson[1], L. E. Cheaney[2], C. A. Kaufman[2], S. Muthupalani[2], *S. R. Tannenbaum*[1,3], and J. G. Fox[1,2]. [1]Department of Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA; [2]Division of Comparative Medicine, Massachusetts Institute of Technology, Cambridge, MA; and [3]Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA.
#1650	10:05	**Ah Receptor Contributes to Host-Microbiome Homeostasis.** *G. H. Perdew*. Veterinary and Biomedical Sciences, Center for Molecular Toxicology and Carcinogenesis, Pennsylvania State University, University Park, PA.

Program Schedule (Continued)

Abstract #

#1651 10:35 **Contributions of the Human Gut Microbiome to Drug Metabolism.** P. J. Turnbaugh. Department of Microbiology and Immunology, G.W. Hooper Foundation, University of California San Francisco, San Francisco, CA. Sponsor: *A. Patterson*.

#1652 11:05 **Gut Microbiota, Low-Grade Inflammation, and the Metabolic Syndrome.** A. Gewirtz. Center for Inflammation, Immunity, and Infection, Georgia State University, Atlanta, GA. Sponsor: *A. Patterson*.

11:35 **Panel Discussion/Q&A.**

Wednesday Morning, March 25
9:00 AM to 11:45 AM
CC Ballroom 6F

Workshop Session: An Experiment in Collective Wisdom Utilizing Real-Time Audience Input: Weight-of-Evidence Assessment for Chemical-Specific Modes of Action Utilizing Two Case Studies

Chairperson(s): *Sean Hays, Summit Toxicology LLP, Lyons, CO; and Bette Meek, McLaughlin Centre for Population Health Risk Asses, University of Ottawa, Ottawa, ON, Canada.*

Endorser(s):
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

This session is an exercise in using collective wisdom/audience participation to help inform the weight-of-evidence assessment for the mode of action (MOA) for two specific chemicals: 1,2,3-trichloropropane and tetrachloroethylene. The degree of confidence required for acceptance of a proposed MOA for a specific chemical will vary from individual to individual. As a result, chemical risk assessments that are published by regulatory agencies or individuals and MOA discussions are subject to criticism from individuals with a different viewpoint. Understanding this variation amongst individuals in the toxicology and risk assessment communities is an important factor for risk managers to understand and appreciate. This session will provide a forum to explore the degree of this variation in the level of confidence in chemical-specific MOA arguments. Using proven technology for audience participation during scientific sessions and real-time analyses of results, the audience and speakers will explore how collective wisdom can inform the process of how MOA decisions are made, and how differing expertise impacts decisions. The presenters will discuss the technology used in this session, how individuals can provide insights on their expertise and experience, and the extent of weight of evidence in support of and against proposed MOA for 1,2,3-trichloropropane and tetrachloroethylene. Finally, the results of the collective wisdom exercise will be presented and findings from the exercise will be discussed by a panel of experts. Audience members should bring wifi-enabled devices to participate in real-time interaction with the presentation.

#1653 9:00 **An Experiment in Collective Wisdom Utilizing Real-Time Audience Input: Weight-of-Evidence Assessment for Chemical-Specific Modes of Action Utilizing Two Case Studies.** *S. Hays*[1], and *B. Meek*[2]. [1]Summit Toxicology LLP, Lyons, CO; and [2]McLaughlin Centre for Population Health Risk Assessment, University of Ottawa, Ottawa, ON, Canada.

9:00 **Introduction.** S. Hays. Summit Toxicology LLP, Lyons, CO.

#1654 9:05 **Introduction to Collective Wisdom Technology.** C. R. Kirman. Summit Toxicology LLP, Orange, OH. Sponsor: *S. Hays*.

#1655 9:15 **Weight of Evidence in MOA/AOP Analysis.** *B. Meek*. McLaughlin Centre for Population Health Risk Assessment, University of Ottawa, Ottawa, ON, Canada.

Abstract #

#1656 9:35 **Proposed Mode of Action and Weight of Evidence for 1,2,3-Trichloropropane Carcinogenicity Using a Human Relevance Framework.** *C. M. North*, and *C. M. Palermo*. Toxicology & Environmental Sciences, ExxonMobil Biomedical Sciences, Inc., Annandale, NJ.

#1657 10:15 **Weight of Evidence of Proposed Modes of Action for Tetrachloroethylene-Induced Cancers.** M. Deveau. University of Ottawa, Ottawa, ON, Canada. Sponsor: *S. Hays*.

#1658 10:55 **Collective Wisdom Findings and Discussion.** *S. Hays*. Summit Toxicology LLP, Lyons, CO.

#1659 11:10 **Panel Discussion.** *A. M. Jarabek*[1], and *S. Hays*[2]. [1]US Environmental Protection Agency, Research Triangle Park, NC; and [2]Summit Toxicology, L.L.P., Lyons, CO.

Wednesday Morning, March 25
9:00 AM to 11:45 AM
CC Room 7

Workshop Session: Application of High-Throughput *In Vitro* Assays in Assessing Small Molecule Safety

Safety Assessment Approaches for Product Development

Chairperson(s): *Nigel Greene, Pfizer Inc., Groton, CT; and Russell S. Thomas, National Center for Computational Toxicology, US Environmental Protection Agency, Research Triangle Park, NC.*

Endorser(s):
Drug Discovery Toxicology Specialty Section
***In Vitro* and Alternative Methods Specialty Section**

Social demands to ensure both public health and environmental safety from either planned or accidental exposure to existing or new molecular entities whilst still maintaining a flow of new and more effective medicines or the necessary commercial advances in personal products, requires both industry and regulatory authorities to identify and manage the risks presented by an increasingly large number of novel compounds. Often these hazard and risk assessments are made in the absence of high-quality toxicology data, and generating this data would take many years and millions of dollars for each compound under review. As a result, the scientific community has been seeking ways to prioritize these new and existing chemical entities according to their potential for adverse effects to either humans or the environment. The use and application of high-throughput *in vitro* assays offers significant advantages for both industry and regulator alike, but their application is not without its drawbacks. On the positive side, these types of approaches to hazard assessment are often fast and relatively cheap to run once they have been successfully implemented. In addition, these approaches offer a highly attractive public relations solution in view of the increasing demands to refine, reduce, or replace animals in laboratory experiments. However, questions still exist about their ability to adequately distinguish between toxic and nontoxic molecules and their effectiveness in ensuring public safety. This workshop will highlight recent experiences and learnings in the practical application of high-throughput *in vitro* assays across a broad scope of industry and regulatory agencies. The presentations will illustrate how *in vitro* assays are being applied to gain an understanding of which chemicals have the highest level of concern and can lead to a greater understanding of the mechanisms of action that can ultimately result in toxicity.

#1660 9:00 **Application of High-Throughput *In Vitro* Assays in Assessing Small Molecule Safety.** *N. Greene*[1], and *R. S. Thomas*[2]. [1]Pfizer Inc., Groton, CT; and [2]US Environmental Protection Agency, Raleigh, NC.

9:00 **Introduction.** N. Greene. Pfizer, Inc., Groton, CT.

#1661 9:05 **Genetic Mapping of *In Vitro* Susceptibility to Cytotoxic Compounds—The 1000 Genomes High-Throughput Screening Study.** *I. Rusyn*. Texas A&M University, College Station, TX.

Program Schedule (Continued)

Abstract #		
#1662	9:35	**Application of High-Throughput *In Vitro* Assays for Risk-Based Chemical Safety Decisions of Environmental and Industrial Chemicals.** *R. S. Thomas*. US Environmental Protection Agency, Raleigh, NC.
#1663	10:05	**Predicting Systemic Toxicity Using Cheminformatics and High-Throughput Toxicogenomics.** *G. P. Daston*. Procter & Gamble, Cincinnati, OH.
#1664	10:35	**Higher-Throughput *In Vitro* Safety Assessment Screening, High-Content Functional Characterization, and *In Vivo* Preclinical Translation.** T. K. Baker. Lilly Corporate Center, Indianapolis, IN. Sponsor: *N. Greene*.
#1665	11:05	**Combining Chemical Properties and HT Safety Assays to Guide Early Drug Design: Lessons Learned.** *N. Greene*. Pfizer Inc., Groton, CT.
	11:30	**Panel Discussion/Q&A.**

Wednesday Morning, March 25
9:00 AM to 11:45 AM
CC Ballroom 6E

W

Workshop Session: Deciphering Clinical and Experimental Retinal Toxicology: An Eye on the Present and Future

Advancing Clinical and Translational Toxicology

Chairperson(s): *Edward Chow, Allergan, Irvine, CA; and Donald A. Fox, University of Houston, Houston, TX.*

Endorser(s):
Neurotoxicology Specialty Section
Ocular Toxicology Specialty Section
Toxicologic and Exploratory Pathology Specialty Section

The World Health Organization estimates that 285 million people worldwide are visually impaired or blind due to age-related macular degeneration (AMD), diabetic retinopathy, glaucoma, retinitis pigmentosa, or drug- and chemical-induced retinal degeneration. These retinopathies are characterized by progressive and regional/cell selective loss of anatomically or physiologically related neuronal function. Retinotoxicity is also an important issue during drug development as a result of both on- and off-target effects. New advances in noninvasive electrophysiological and imaging techniques at the cellular and micron level of resolution have enabled efficient time-course studies in man and animals and contributed to earlier detection/evaluation and increased understanding of retinal toxicology in them. Basic and clinical science studies, utilizing advanced electrophysiological and imaging techniques, in developing and adult organisms, have elucidated interspecies similarities and differences in retinal anatomy, cell/molecular biology, cell signaling, pharmacology, physiology, pharmacokinetics, and metabolism that enable a more precise translation of animal retinotoxicity to man. The first four speakers in this symposium will present the latest information about these areas while the final speaker will address recent developments in retinal pigmented epithelium stem cell basic and clinical/translational research, including the toxicology evaluation that is required before initiating human trials for this latest technological advancement. Together, these speakers will provide the latest comprehensive information about retinotoxicology and describe a framework for predictive retinotoxicity of new drugs and environmental/industrial chemicals.

Abstract #		
#1666	9:00	**Deciphering Clinical and Experimental Retinal Toxicology: An Eye on the Present and Future.** *E. Chow*[1], and *D. A. Fox*[2]. [1]Toxicology, Allergan, Irvine, CA; and [2]Pharmacology and Pharmaceutical Sciences, University of Houston, Houston, TX.
	9:00	**Introduction.** E. Chow. Allergan, Irvine, CA.
#1667	9:05	**New Insights in Retinal Structure and Function to Evaluate Toxicity of Ocular Drugs.** *B. G. Short*. Pathology, Allergan, Irvine, CA.
#1668	9:34	**The Role of Blood-Retina Barrier Transporters in Retinal Toxicity.** J. Chastain. Ocular Pharmacokinetics and Disposition, Alcon Research Ltd, Fort Worth, TX. Sponsor: *E. Chow*.
#1669	10:03	**Toxicant-Induced and Off-Target Drug-Induced Retinotoxicity: Selective Cellular and Compartmental Sites and Mechanisms of Action.** *D. A. Fox*. Pharmacology and Pharmaceutical Sciences, The University of Houston, Houston, TX.
#1670	10:32	**Retinal Pigment Epithelium: Disease and Drug-Induced Dysfunction.** *C. Crosson*. Ophthalmology, Medical University of South Carolina, Charleston, SC.
#1671	11:01	**Stem Cells in Retinal Repair and Regeneration.** D. Clegg. Molecular, Cellular, and Developmental Biology, University of California Santa Barbara, Santa Barbara, CA. Sponsor: *E. Chow*.
	11:30	**Panel Discussion/Q&A.**

Wednesday Morning, March 25
9:00 AM to 11:45 AM
CC Ballroom 6C

W

Workshop Session: Evaluating Similarity across Related Complex Mixtures: The Challenge of Herbal Supplements

Chairperson(s): *Cynthia V. Rider, NTP/NIEHS, Research Triangle Park, NC; and Joseph M. Betz, Office of Dietary Supplements, NIH, Bethesda, MD.*

Endorser(s):
Food Safety Specialty Section
Mixtures Specialty Section

Complex mixtures represent a significant public health concern and challenge to the risk assessment community. Whole mixture approaches are recommended by risk assessors because evaluating the "mixture-of-concern" necessarily accounts for the unidentified fraction and precludes the need to introduce the assumption of additivity among identified constituents (or define all interactions), as opposed to component-based approaches. However, assessing the safety or risk associated with every permutation of a complex mixture is an intractable problem. Therefore, methods for determining sufficient similarity of the mixture-of-interest to a well-characterized reference mixture are necessary. Herbal supplements provide a unique opportunity to make progress in this arena while addressing the important public health concern of herbal supplement safety. Herbal products on the marketplace often display a wide range of constituent concentrations that frequently differ from label claims. Significant research has been dedicated to characterizing the chemistry of these complex mixtures and comparing across related formulations using marker compounds and fingerprinting techniques in order to confirm appropriate source material and identify adulterated products. Progress has also been made in comparing similarity of biological responses across multiple herbal products and developing statistical methods for evaluating sufficient similarity. However, the whole picture—recommended approaches for evaluating chemical and biological sufficient similarity—has yet to emerge. In this session, speakers will discuss the latest science for evaluating chemical and biological similarity of related products with a focus on herbal supplements. Developing recommended methods for comparing across herbal products will help in the evaluation of herbal supplements in the marketplace and could be readily extrapolated to other complex mixture scenarios (e.g., commercial formulations, environmental contaminant mixtures).

Abstract #		
#1672	9:00	**Evaluating Similarity across Related Complex Mixtures: The Challenge of Herbal Supplements.** *C. V. Rider*[1], and *J. M. Betz*[2]. [1]NTP/NIEHS, Research Triangle Park, NC; and [2]ODS/NIH, Bethesda, MD.

Program Schedule (Continued)

Abstract #		
	9:00	**Introduction.** C. V. Rider. NTP/NIEHS, Research Triangle Park, NC.
#1673	9:05	**Framing the Issue: Is the Product You Are Consuming the Same As That Evaluated for Safety?** *J. M. Betz*. ODS/NIH, Bethesda, MD.
#1674	9:34	**Evaluation and Testing of Herbal Supplements: Lessons Learned.** *K. LeVanseler*. NSF International, Ann Arbor, MI.
#1675	10:03	**Fingerprinting Methods for Identification and Authentication of Botanical Supplements.** J. Harnly. USDA, Beltsville, MD. Sponsor: *C. Rider*.
#1676	10:32	**Moving forward on Complex Herbal Mixtures at the National Toxicology Program.** *C. V. Rider, B. Collins, S. S. Auerbach, M. DeVito, C. R. Blystone,* and *S. Waidyanatha*. NTP/NIEHS, Research Triangle Park, NC.
#1677	11:01	**Steps toward Using Statistical Approaches for Determining Sufficient Similarity.** *C. Gennings*[2], and *C. V. Rider*[1]. [1]NTP/NIEHS, Research Triangle Park, NC; and [2]Department of Preventive Medicine, Mount Sinai, New York, NY.
	11:30	**Panel Discussion/Q&A.**

Wednesday Morning, March 25
9:00 AM to 11:45 AM
CC Ballroom 6D

RI

Regional Interest Session: Some Like It Hot: Impacts of Wildfires on Human Health

Approaches for Protecting Vulnerable Populations

Chairperson(s): *Michael C. Madden, ORD/NHEERL/HSD, Clinical Research Branch, US EPA, Chapel Hill, NC; and Shelley DuTeaux, Emergency Preparedness Office, California Department of Public Health, Sacramento, CA.*

Endorser(s):
Occupational and Public Health Specialty Section
Southern California Regional Chapter

Wildfires have health impacts derived from combustion emissions and contribute 20%–30% of ambient particulate matter (PM). One recent report predicted longer wildfire seasons, smokier fires, and burning a larger area in the Western US. Elevated PM levels have been linked to increased deaths and hospitalizations for several morbidity outcomes. Different types of wildfire vary by the type of wood being burned (i.e., crown, brush, below ground); the fire type may induce different types of health effects. Using a primate model, monkeys exposed to Northern California wildfire had persistent changes in blood cell cytokine production. Additionally, gender-dependent changes in airway hyper-responsiveness and compliance were observed. Alterations in health effects observed in both Northern and Southern California communities from wildfires in the last ten years will be compared and contrasted to an Eastern US peat-fuelled wildfire. These studies examined susceptibility factors (e.g., socioeconomic, pre-existing cardiopulmonary disease) that modulated the observed health effects. Native tribes in Northern California were particularly susceptible to exposure due to the geography of tribal lands. The effectiveness regarding mitigation strategies (e.g., filters, face masks) within the affected communities will be described. The guidance for mitigating adverse health effects, developed by an international working group, will be presented and addresses the highly sensitive/susceptible populations. The identification of potentially susceptible individuals and effectiveness of intervention strategies have implications for preventing adverse outcomes and decline in public health. The observations from these studies will be integrated into the current knowledge of ambient PM-associated health effects as to the uniqueness of the findings. This session will be of great interest to public health specialists, inhalation and cardiovascular toxicologists, and those in the California area. [This abstract may not reflect official US EPA policy.]

Abstract #		
#1678	9:00	**Some Like It Hot: Impacts of Wildfires on Human Health.** *M. C. Madden*. ORD, NHEERL, HSD, Clinical Research Branch, US EPA, Chapel Hill, NC.
	9:00	**Introduction.** M. C. Madden. US EPA, Chapel Hill, NC.
#1679	9:02	**The Nature of Wildfire Smoke Impacts in California: Acute Effects, Interventions, and Long-Term Sequelae.** *S. DuTeaux*. Emergency Preparedness Office, California Department of Public Health, Sacramento, CA.
#1680	9:25	**Impact of Wildfires in San Diego County.** W. J. Wooten. Health and Human Services Agency, County of San Diego, San Diego, CA. Sponsor: *M. Madden*.
#1681	9:55	**Health Burden from Peat Wildfire in North Carolina.** A. G. Rappold. Environmental Public Health Division, US EPA, Chapel Hill, NC. Sponsor: *M. Madden*.
#1682	10:25	**Persistent Immune and Pulmonary Effects of Wildfire Smoke during Infancy: Findings from a Nonhuman Primate Cohort.** L. Miller[1,2], C. Black[2], J. Gerriets[2], J. Fontaine[2], E. Schelegle[1,2], and F. Tablin[1]. [1]Anatomy, Physiology & Cell Biology, University of California Davis School of Veterinary Medicine, Davis, CA; and [2]California National Primate Research Center, University of California Davis, Davis, CA. Sponsor: *M. Madden*.
#1683	10:55	**International Guidelines on Best Practices for Public Health Decision-Making during Wildfire Events.** S. Hoshiko[1], and *S. DuTeaux*[2]. [1]California Department of Public Health, Richmond, CA; and [2]California Department of Public Health, Sacramento, CA.
	11:25	**Panel Discussion/Q&A.** D. L. Costa. US EPA, Research Triangle Park, NC.

Wednesday Morning, March 25
9:00 AM to 11:45 AM
CC Room 1

PL

Platform Session: Applications of ToxCast/Tox21 Data: Confidence and Predictivity

Chairperson(s): *Warren Casey, NIEHS, Durham, NC; and Lisa M. Sweeney, NAMRU Dayton, Henry M. Jackson Foundation, Kettering, OH.*

#1684	9:00	**Using Bioactivity-Based Read-Across (BaBRA) to Characterize the ToxCast Library.** *W. Casey*[1], *D. G. Allen*[2], and *N. Kleinstreuer*[2]. [1]NIEHS/NTP, Research Triangle Park, NC; and [2]ILS/NICEATM, Research Triangle Park, NC.
#1685	9:23	**A Strategy to Distinguish Predicted Molecular-Initiating Events from Cell Stress Using ToxCast and Tox21 Data.** *A. M. Blacker*, and *K. B. Paul*. Human Safety Regulatory Toxicology, Bayer CropScience, Research Triangle Park, NC.
#1686	9:46	**Predicting Acute Toxicity Using *In Vitro* ToxCast™ HTS Mitochondrial Inhibition Assays.** B. Bhhatarai, *D. Wilson, P. S. Price, M. J. Bartels, S. Chaudhuri*, and *E. W. Carney*. TERC, The Dow Chemical Company, Midland, MI.

Program Schedule (Continued)

Abstract #

#1687 10:09 **Selective Biological Activity of ToxCast Chemicals in Mouse Embryonic Stem Cells Identifies *In Vivo* Teratogens.** *S. Hunter*[1], S. C. Jeffay[1], M. Hoopes[1], H. Nichols[1], M. B. Rosen[1], *K. Chandler*[1], *R. Judson*[2], and *T. B. Knudsen*[2]. [1]NHEERL, US EPA, Research Triangle Park, NC; and [2]NCCT, US EPA, Research Triangle Park, NC.

#1688 10:32 **Mammary Carcinogens in US EPA's ToxCast.** J. M. Ackerman[1], *R. Rudel*[1], and *C. Vulpe*[2]. [1]Silent Spring Institute, Newton, MA; and [2]Nutritional Science and Toxicology, University of California, Berkeley, Berkeley, CA.

#1689 10:55 **Using High-Content Imaging Data from ToxCast to Analyze Toxicological Tipping Points.** *I. Shah*[1], *W. Setzer*[1], J. Jack[4], *K. Houck*[1], *R. Judson*[1], *T. B. Knudsen*[1], J. Liu[2,3], *M. T. Martin*[1], D. Reif[3], A. M. Richard[1], *K. Crofton*[1], *D. J. Dix*[1], and *R. Kavlock*[1]. [1]National Center for Computational Toxicology, US EPA, Durham, NC; [2]ORISE, Oak Ridge, TN; [3]Information Science, University of Arkansas, Little Rock, AR; and [4]NCSU, Raleigh, NC.

#1690 11:18 **Assessing Confidence in Tox21.** *J. R. Bucher*, *R. R. Tice*, *R. S. Paules*, *W. Casey*, *A. A. Rooney*, K. Thayer, and *M. DeVito*. National Toxicology Program, NIEHS, Research Triangle Park, NC.

Wednesday Morning, March 25
9:00 AM to 11:45 AM
CC Room 8

PL

Platform Session: Emerging Concepts in Genotoxicity Assessment

Safety Assessment Approaches for Product Development

Chairperson(s): *Matthew J. LeBaron, The Dow Chemical Company, Midland, MI; and Pavan Gollapudi, University of California, Riverside, CA.*

#1691 9:00 **Reproducibility of the 3D Skin Comet Assay within and between Laboratories.** T. Downs[1], M. Bartel[2], V. Blatz[2], J. Brinkmann[3], U. Engels[4], A. Fischer[4], F. Henkler[3], S. Hoffmann[5], S. Jeschke[3], C. Krul[6], M. Liebsch[3], *A. Luch*[3], R. Pirow[3], A. Reus[7], M. Schulz[2], *S. Pfuhler*[1], and K. Reisinger[4]. [1]Procter & Gamble, Cincinnati, OH; [2]BASF SE, Ludwigshafen, Germany; [3]Federal Institute for Risk Assessment, Safety of Consumer Products, Berlin, Germany; [4]Henkel AG & KGaA, Düsseldorf, Germany; [5]seh consulting + services, Paderborn, Germany; [6]TNO, Zeist, Netherlands; and [7]TNO Triskelion, Zeist, Netherlands.

#1692 9:20 **Development of a Human Blood Mutation Assay Based on the Endogenous *PIG-A* Gene.** *S. D. Dertinger*[1], S. Avlasevich[1], *J. Bemis*[1], Y. Chen[2], and *J. T. MacGregor*[3]. [1]Litron Laboratories, Rochester, NY; [2]Department of Radiation Oncology, University of Rochester Medical Center, Rochester, NY; and [3]Toxicology Consulting Services, Bonita Springs, FL.

#1693 9:40 **Mutations in the *Pig-a* Gene of CD48-Deficient T-Lymphocytes from ENU- and DMBA-Treated Rats.** V. N. Dobrovolsky, J. Revollo, M. G. Pearce, R. A. Mittelstaedt, and M. Pacheco-Martinez. NCTR, Jefferson, AR. Sponsor: *B. Parsons*.

Abstract #

#1694 10:00 **Integration of Multiple Genetic Endpoints in a 28-Day Repeat-Dose Study: A Feasibility Study to Promote the "3R" Concepts.** *Z. Ji*, L. K. Sosinski, N. Visconti, M. Koehler, N. N. Ball, and *M. J. LeBaron*. Toxicology & Environmental Research & Consulting, The Dow Chemical Company, Midland, MI.

#1695 10:20 **Topoisomerase II Inhibitors and Clastogenic Responses in the Low-Dose Region Determined *In Vitro* Using Human TK6 Cells.** P. Gollapudi, *V. S. Bhat*, and *D. A. Eastmond*. Environmental Toxicology Graduate Program, University of California, Riverside, Riverside, CA.

#1696 10:40 **Potency Ranking of Seven Clastogenic Agents Based on Benchmark Dose Analysis of Data from *In Vivo* and *In Vitro* Micronucleus Studies.** *J. Bemis*, S. Bryce, D. K. Torous, S. Avlasevich, S. Phonethespwath, and *S. Dertinger*. Litron Laboratories, Rochester, NY.

#1697 11:00 **Evaluation of Dose-Dependent DNA Repair Center Kinetics and Micronucleus Induction in Chemicals Causing Different Types of DNA Damage.** *B. Sun*[1], *O. Trask*[1], S. Rowley[1], *P. L. Carmichael*[2], *Y. Adeleye*[2], and *R. A. Clewell*[1]. [1]The Hamner Institute, Durham, NC; and [2]SEAC, Unilever, Colworth Science Park, United Kingdom.

#1698 11:20 **Computational Systems Biology Modeling of DNA-Damage Stress Pathways for Assessing Mutation Rates at Low Doses.** *R. A. Clewell*[1], S. Pendse[1], *P. D. McMullen*[1], *B. Sun*[1], *P. L. Carmichael*[2], Y. Adeleye[2], and *M. E. Andersen*[1]. [1]Institute for Chemical Safety Science, The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [2]SEAC, Unilever, PLC, Colworth Science Park, United Kingdom.

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Fetal Basis of Adult Disease

Chairperson(s): *Sara Wirbisky, Purdue University, West Lafayette, IN.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#1699 **Poster Board Number 101**
An AOP Approach to Modeling Alterations in Axial Bone Development: A Case Study with TCDD and Japanese Medaka. A. T. Watson, and *S. W. Kullman*. Biological Sciences, North Carolina State University, Raleigh, NC.

#1700 **Poster Board Number 102**
Serotonin and Transcriptome Alterations in Brain Tissue of Adult Female Zebrafish Exposed to Atrazine During Embryogenesis. *S. Wirbisky*, *G. J. Weber*, M. M. Sepulveda, C. Xiao, *J. R. Cannon*, and *J. L. Freeman*. Purdue University, West Lafayette, IN.

#1701 **Poster Board Number 103**
Neuroendocrine Differentiation and Epigenetic Modulation of the Androgen Receptor *In Vitro.* *M. B. van Duursen*[1], R. Q. Vrolijk[1], M. M. Dingemans[1], S. Schulpen[2], and *A. H. Piersma*[2]. [1]IRAS, Utrecht University, Utrecht, Netherlands; and [2]National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands.

WEDNESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#1702 **Poster Board Number 104**
Neurotoxicological Disruption of Microglial Development and Early Vulnerabilities for Alzheimer's Disease. A. vonderEmbse, C. L. Boles, Q. Hu, and *J. DeWitt*. Pharmacology and Toxicology, East Carolina Univ, Greenville, NC.

#1703 **Poster Board Number 105**
Cardiomyocyte-Specific Ablation of the Aryl Hydrocarbon Receptor Rescues the Nkx2-5 Haploinsufficiency Cardiac Phenotype. *V. S. Carreira*[1], *H. Kurita*[1], *Y. Fan*[1], M. Jiang[2], S. Koch[2], M. Naticchioni[2], J. Rubinstein[2], and *A. Puga*[1]. [1]Environmental Health, University of Cincinnati, Cincinnati, OH; and [2]Internal Medicine/Cardiology, University of Cincinnati, Cincinnati, OH.

#1704 **Poster Board Number 106**
Neonatal Gene Expression: Marks of Prenatal Exposure to PFOA, PFOS, PCB153, and DDE. S. Remy[1,2], E. Govarts[2], E. Den Hond[2], P. De Boever[2], V. Nelen[3], J. Koppe[4], J. Legler[4], and G. Schoeters[1,2,5]. [1]University of Antwerp, Wilrijk, Belgium; [2]Flemish Institute of Technological Research, Mol, Belgium; [3]Provincial Institute for Hygiene, Antwerp, Belgium; [4]University of Amsterdam, Amsterdam, Netherlands; and [5]University of Southern Denmark, Odense, Denmark. Sponsor: *H. Van Loveren*.

#1705 **Poster Board Number 107**
Transgenerational Effects of Developmental Exposure to Low-Dose Zeranol on Sexual Development, Reproduction, and Mammary Carcinogenesis. *C. Lewis*[1], *J. T. Barrett*[1,2], *B. Estrella*[2], *A. L. Green*[1,2], *J. R. Richardson*[1,2], *K. R. Reuhl*[2], *M. A. Gallo*[1,2], and *H. Zarbl*[1,2]. [1]RWJMS-Rutgers University, Piscataway, NJ; and [2]Toxicology, Rutgers University, Piscataway, NJ.

#1706 **Poster Board Number 108**
A Novel Mitochondrial Complex between Δ3,5,Δ2,4-Dienoyl-CoA Isomerase and Uncoupling Protein 3: Mechanisms and Implications. C. Dao[1], S. Kohno[1,2], and *E. M. Mills*[1]. [1]Pharmacy, Division of Pharmacology/Toxicology, University of Texas at Austin College of Pharmacy, Austin, TX; and [2]Nutritional Physiology, University of Tokushimi, Tokushimi, Japan.

#1707 **Poster Board Number 109**
Environmental Exposure to Benzyl Butyl Phthalate Promotes Adipogenesis in the Preadipocyte 3T3-L1. L. Yin, S. K. Yu, *H. Wei*, and *X. Yu*. Environmental Health Science, University of Georgia, Athens, GA.

#1708 **Poster Board Number 110**
BDE99 (2,2',4,4',5-Pentabromodiphenyl Ether) Treatment Promotes Adipogenesis in 3T3-L1 Cells. S. Akinbo, *L. Armstrong*, and *A. Slitt*. University of Rhode Island, Kingston, RI.

#1709 **Poster Board Number 111**
Oculomotor Deficits in Aryl Hydrocarbon Receptor Null Mouse. X. D. Coumoul[1], A. Chevallier[1], A. Mialot[2], J. Petit[1], P. Fernandez-Salguero[3], *R. Barouki*[1], and M. Beraneck[2]. [1]INSERM UMR-S 1124, Université Paris Descartes, Sorbonne Paris Cité, Paris, France; [2]CNPP - Centre de Neurophysique, Physiologie et Pathologie UMR 8119, CNRS - Université Paris Descartes, Paris, France; and [3]Universidad de Extramadura, Extramadura, Spain.

Abstract #

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Developmental Toxicology I

Chairperson(s): *Christopher J. Bowman, Pfizer, Groton, CT; and Natasha R. Catlin, Pathobiology, Brown University, Providence, RI.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#1710 **Poster Board Number 113**
Background Data of Wistar Hannover Rats for Developmental Toxicity Study; Comparison of Two Substrain of Rats. S. Tanaka, K. Ito, K. Nanami, M. Sugi, Y. Ohta, H. Takehara, R. Tanaka, M. Tsuchiya, *M. Naya*, and *M. Hayashi*. Public Interest Incorporated Foundation, BioSafety Research Center, Shizuoka, Japan.

#1711 **Poster Board Number 114**
A Comparison of Rat and Rabbit Developmental Toxicity Study Outcomes of More Than 400 Pharmaceutical Compounds. A. H. Piersma[1,2], P. T. Theunissen[1], S. Beken[3], *G. D. Cappon*[4], C. L. Chen[5], W. A. Harrouk[6], *A. Hoberman*[7], J. van der Laan[8], and *J. Stewart*[9]. [1]RIVM, Bilthoven, Netherlands; [2]IRAS, Utrecht, Netherlands; [3]FAMHP, Brussels, Belgium; [4]Pfizer, Groton, CT; [5]ILSI-HESI, Washington, DC; [6]US FDA, Silver Spring, MD; [7]Charles River Laboratories, Horsham, PA; [8]MEB, Utrecht, Netherlands; and [9]AstraZeneca, Macclesfield, United Kingdom.

#1712 **Poster Board Number 115**
Nonclinical Embryo-Fetal Development Assessment of GLYX-13, an NMDAR Novel Modulator, in Rats and Rabbits. *G. W. Wolfe*[1], B. A. Atkinson[1], D. Houck[2], and J. Gidda[2]. [1]Smithers Avanza, Gaithersburg, MD; and [2]Naurex, Inc., Evanston, IL.

#1713 **Poster Board Number 116**
Pregnancy Outcomes following Short-Term Treatment of Mice with the Farnesoid X Receptor Agonist GW4064. *J. E. Moscovitz*[1,2], B. Kong[1], *G. Guo*[1,3], and *L. M. Aleksunes*[1,3]. [1]Department of Pharmacology and Toxicology, Rutgers University, Piscataway, NJ; [2]Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ; and [3]Environmental and Occupational Health Sciences Institute, Rutgers University, Piscataway, NJ.

#1714 **Poster Board Number 117**
Decreased Maternal and Fetal Cholesterol following Maternal Bococizumab (Anti-PCSK9 Monoclonal Antibody) Administration Does Not Affect Rat Embryo-Fetal Development. *C. J. Bowman*[1], *S. N. Campion*[1], *E. M. Lewis*[2], E. Kraynov[3], H. Liang[4], and *B. Han*[3]. [1]Pfizer, Groton, CT; [2]Charles River Laboratories Preclinical Services, Horsham, PA; [3]Pfizer, La Jolla, CA; and [4]Rinat, South San Francisco, CA.

#1715 **Poster Board Number 118**
CpG 7909/AS15 Adjuvanted Vaccine Development: Signal Management and Human Risk Assessment. F. Delannois[1], F. Tavares[1], J. Stegmann[1], D. Stanislaus[2], *E. Destexhe*[1], and *L. Segal*[1]. [1]GSK Vaccines, Wavre, Belgium; and [2]GlaxoSmithKline Pharma R&D, King of Prussia, PA.

Program Schedule (Continued)

Abstract #

#1716 **Poster Board Number 119**
Evaluation of the Developmental Toxicity of Methyl Anthranilate. *V. T. Politano*[1], *E. M. Lewis*[2], *A. Hoberman*[2], *R. M. Diener*[3], and *A. Api*[1]. [1]Research Institute for Fragrance Materials, Inc., Woodcliff Lake, NJ; [2]Charles River Laboratories, Preclinical Services, Horsham, PA; and [3]Argus International, Inc., Horsham, PA.

#1717 **Poster Board Number 120**
Maternal and Prenatal Dose Range-Finding Study of 4-Methylcyclohexanemethanol (MCHM) in Harlan Sprague-Dawley Rats. *C. R. Blystone*[1], *E. Mylchreest*[2], *H. C. Cunny*[1], *B. McIntyre*[1], *C. D. Hebert*[2], and *S. S. Auerbach*[1]. [1]Division of the National Toxicology Program, NIEHS, Research Triangle Park, NC; and [2]Southern Research Institute, Birmingham, AL.

#1718 **Poster Board Number 121**
Prenatal Developmental Toxicity of Tris(Chloropropyl)phosphate (TCPP) following Oral Exposure in Hsd:Sprague-Dawley SD Rats. *K. Ryan*[1], *M. D. Stout*[1], *K. J. Turner*[2], G. E. Kissling[3], M. Vallant[1], *P. M. Foster*[1], and *B. McIntyre*[1]. [1]NTP, NIEHS, Morrisville, NC; [2]RTI International, Research Triangle Park, NC; and [3]DIR, NIEHS, Research Triangle Park, NC.

#1719 **Poster Board Number 122**
***In Utero* Exposure to the Vinca Alkaloid Vinpocetine Is Associated with Rat Embryo-Fetal Toxicity.** *N. Catlin*[1], *I. Surh*[1], *P. M. Foster*[1], *E. Mylchreest*[2], *H. C. Cunny*[3], *M. Vallant*[3], and *B. McIntyre*[1]. [1]Toxicology Branch, DNTP, NIEHS, Research Triangle Park, NC; [2]Southern Research Institute, Birmingham, AL; and [3]Program Operations Branch, DNTP, NIEHS, Research Triangle Park, NC.

#1720 **Poster Board Number 123**
Developmental Toxicity Studies (OECD 414) with 6 Different Titanium Dioxide Materials (3 Pigment-Grade & 3 Nanostructured) Demonstrate Negative Effects in Orally-Exposed Rats. S. M. Munley[1], *R. J. Boatman*[2], P. Takawale[3], S. R. Holalagoudar[3], and *D. B. Warheit*[1]. [1]DuPont Haskell Lab, Newark, DE; [2]Boatman Toxicology Consulting LLC, Rochester, NY; and [3]BSL Bioservice, Munich, Germany.

#1721 **Poster Board Number 124**
Maternal Inhalation of $PM_{2.5}$ Alters Fetal Cardiac Function, Fetal Size, and Postnatal Body Weight in Mice. *K. Kaur*[1], C. Phoon[2], *J. L. Blum*[1], *S. P. Doherty-Lyons*[1], *C. Hoffman*[1], *P. B. Tijerina*[1], *S. E. Attreed*[1], A. Nadas[1], *L. Chen*[1], and *J. T. Zelikoff*[1]. [1]Environmental Medicine, NYUSOM, Tuxedo, NY; and [2]Pediatrics (Cardiology), NYULMC, New York, NY.

#1722 **Poster Board Number 125**
Effects of Maternal Hypoglycemia on Fetal Eye Development in Rats. C. Suzuki, T. Maejima, Y. Kato, S. Sato, T. Matsuoka, *K. Shimomura*, Y. Tsuchiya, and *W. Takasaki*. Medicinal Safety Research Laboratories, Daiichi Sankyo Co., Ltd., Edogawa-ku, Japan.

Abstract #

#1723 **Poster Board Number 126**
Maternal Bisphenol A Levels Have Gender-Specific Effects on Gestational Length and Birth Weight. *A. Veiga-Lopez*[1], *K. Kannan*[3], C. Liao[3], S. E. Domino[2], and *V. Padmanabhan*[1]. [1]Pediatrics, University of Michigan, Ann Arbor, MI; [2]Obstetrics and Gynecology, University of Michigan, Ann Arbor, MI; and [3]Wadsworth Center, New York State Department of Health, Albany, NY.

#1724 **Poster Board Number 127**
Developmental Toxicity Evaluation in the Cynomolgus Monkey (*Macaca fascicularis*): Does Mauritian Origin Matter? C. M. Luetjens, A. Fuchs, and *G. Weinbauer*. Covance Laboratories GmbH, Muenster, Germany.

#1725 **Poster Board Number 128**
MicroPET/CT Assessment of FDG Uptake in Brain after Long-Term Methylphenidate Treatment in Nonhuman Primates. X. Zhang[1], G. Newport[1], R. Callicott[1], S. Liu[1], J. Thompson[1], M. Berridge[2], S. Apana[2], *W. Slikker*[1], *C. Wang*[1], and *M. G. Paule*[1]. [1]NTOX, NCTR/FDA, Jefferson, AR; and [2]3D Imaging LLC, Little Rock, AR.

#1726 **Poster Board Number 129**
Evaluation of the Morris Water Maze Using ANY-maze™ Software Increases Consistency and Throughput of Learning and Memory Testing. *C. E. Grace*, and *M. O'Hara*. Early Development, Developmental and Reproductive Toxicology, Covance Laboratories, Inc., Greenfield, IN.

#1727 **Poster Board Number 130**
Temporal Sensitivity of the Developing Cardiovascular System to Nanoparticle-Derived Nitric Oxide and Nitrosylating Species. *J. A. Bonventre*[1], L. M. Denluck[1], A. Friedman[2], and *S. L. Harper*[1,3]. [1]Envir & Mol Tox, Oregon State University, Corvallis, OR; [2]Montefiore-Einstein College of Medicine, Bronx, NY; and [3]Chem, Bio, & Envir Engineering, Oregon State University, Corvallis, OR.

#1728 **Poster Board Number 131**
Epigenetic Modifications of Histone H3 in Brains and Livers of Fetal DNA Repair-Deficient Oxoguanine Glycosylase 1 (*OGG1*) Knockout Mice Exposed *In Utero* to Ethanol. S. Bhatia[1], and *P. G. Wells*[1,2]. [1]Pharmaceutical Sciences, University of Toronto, Toronto, ON, Canada; and [2]Pharmacology and Toxicology, University of Toronto, Toronto, ON, Canada.

#1729 **Poster Board Number 132**
Transcriptional Alterations of Cholinergic and Dopaminergic Genes in the CNS of Mice Neonatally Exposed to PFOS and PBDE 99. S. Hallgren, A. Fredriksson, and *H. Viberg*. Environmental Toxicology, Uppsala University, Uppsala, Sweden.

#1730 **Poster Board Number 133**
Hepatic Mitochondrial Alteration in CD1 Mice Associated with Prenatal Exposures to Low Doses of Perfluorooctanoic Acid (PFOA). *E. Quist*[1,2], *A. J. Filgo*[1,3], C. A. Cummings[6], *G. E. Kissling*[4], M. J. Hoenerhoff[5], and *S. E. Fenton*[1]. [1]NTP, NIEHS, Research Triangle Park, NC; [2]Comparative Biomedical Sciences, CVM, NCSU, Raleigh, NC; [3]Curriculum in Toxicology, UNC, Chapel Hill, NC; [4]DIR, NIEHS, Research Triangle Park, NC; [5]Unit for Laboratory Animal Medicine, University of Michigan, Ann Arbor, MI; and [6]Ultrapath Imaging, Durham, NC.

Program Schedule (Continued)

Abstract #

#1731 **Poster Board Number 134**
Brominated Diphenyl Ether-47 Stimulated Cell Migration with Differential Expression of Matrix Metalloproteinases in a Human First Trimester Trophoblast Cell Line. *H. Park*, and *R. Loch-Caruso*. Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

#1732 **Poster Board Number 135**
PCBs Decrease the Placental Syncytiotrophoblast Volume and Increase Placental Growth Factor in the Placenta of Normal Pregnancy. *M. Tsuji*[2], E. Shibata[3], Y. Aiko[3], T. Tsuchiya[2], and *T. Kawamoto*[1]. [1]University of Occupational and Environmental Health, Kitakyusyu, Japan; [2]Environmental Health, University of Occupational and Environmental Health, Kitakyusyu, Japan; and [3]Obstetrics and Gynecology, University of Occupational and Environmental Health, Kitakyusyu, Japan.

#1733 **Poster Board Number 136**
Impact of Placental Mdr1 on Fetal Drug Exposure in Sprague-Dawley Rats. *S. N. Campion*[1], M. Varma[1], *C. J. Bowman*[1], *G. D. Cappon*[1], and A. El-Kattan[2]. [1]Pfizer, Groton, CT; and [2]Pfizer, Cambridge, MA.

#1734 **Poster Board Number 137**
Genistein Impairs Human Placental BCRP/*ABCG2* Transporter Function: Potential Risk for Fetal Exposure to Chemicals. *K. M. Bircsak*[1,2], Y. Lin[1], and *L. M. Aleksunes*[1]. [1]Pharmacology and Toxicology, Rutgers University, Piscataway, NJ; and [2]Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ.

#1735 **Poster Board Number 138**
A Feto-Placental Coculture Model Shows the Complex Disruptive Effect of Antidepressant Fluoxetine and Metabolite Norfluoxetine on Estrogen Biosynthesis. A. Hudon Thibeault[1,2], C. Vaillancourt[1,2], and *T. Sanderson*[1,2]. [1]INRS-Institut Armand-Frappier, Laval, QC, Canada; and [2]BioMed Research Center, Laval, QC, Canada.

#1736 **Poster Board Number 139**
Dose-Dependent Effects of PBDE-47 on Human Primary Cytotrophoblasts. *J. F. Robinson*, M. Kapidzic, M. J. Gormley, T. Dent, M. McMaster, and S. J. Fisher. Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California, San Francisco, San Francisco, CA.

#1737 **Poster Board Number 140**
Neonatal Exposure to Lower Dose Decabromodiphenyl Ether Decreases Serum Testosterone Levels in Mouse. H. Miyaso[1,3], N. Nakamura[2], Y. Matsuno[1,3], and *C. Mori*[1,3]. [1]Center for Preventive Medical Science, Chiba University, Chiba, Japan; [2]Department of Pharmacology, Physiology and Toxicology, Marshall University, Huntington, WV; and [3]Department of Bioenvironmental Medicine, Graduate School of Medicine, Chiba University, Chiba, Japan.

Abstract #

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Developmental Toxicology II

Chairperson(s): *Mary Alice Smith, University of Georgia, Athens, GA.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#1738 **Poster Board Number 143**
Approach to the Reproduction/Developmental Toxicity Assessment for Cosmetic Ingredients Using *In Silico* Method. T. Hisaki, M. Aiba, T. Ashikaga, and H. Kouzuki. Shiseido Research Center, Yokohama, Japan. Sponsor: *J. Kanno*.

#1739 **Poster Board Number 144**
Arsenic Exposure Inhibits Gli2 Levels and Signaling during P19 Cell Differentiation. *J. Liu*, and *L. J. Bain*. Biological Sciences, Clemson University, Clemson, SC.

#1740 **Poster Board Number 145**
Characterization of Estrogenic Responses in Human Endometrial Primary Epithelial and Carcinoma Cell Lines. *P. Balbuena*, *R. Alyea*, S. Ross, S. Rowley, *M. E. Andersen*, and *R. A. Clewell*. The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#1741 **Poster Board Number 146**
Effects of Bisphenol A on Cytotoxicity Induction and DNA Methylation in a Bovine Endometrial Cell Line. S. Lee[1], Y. Lee[1], Y. Kim[2], and H. Chung[1]. [1]School of Public Health and Institute of Health and Environment, Seoul National University, Seoul, Republic of Korea; and [2]Da Vinci College of General Education, Chung-Ang University, Seoul, Republic of Korea. Sponsor: *J. Chung*.

#1742 **Poster Board Number 147**
Effect of Arsenic Compounds on the Mouse Embryonic Stem Cells Differentiation into Cardiomyocytes *In Vitro*. Q. Wang, Y. Fu, and *H. Narenmandula*. Toxicology, Zhejiang University, Hangzhou, China.

#1743 **Poster Board Number 148**
Complementary Detection of Embryotoxicity in the Osteogenic and Cardiac Embryonic Stem Cell Tests. *X. Chen*[1], *D. K. Hansen*[1], C. DeJarnette[2], *G. Nolen*[1], *J. Fisher*[3], *W. A. Harrouk*[3], *M. Tassinari*[3], and *A. Inselman*[1]. [1]Division of System Biology, NCTR/FDA, Jefferson, AR; [2]Lee University, Cleveland, TN; and [3]CDER/FDA, Silver Spring, MD.

#1744 **Poster Board Number 149**
The Use of Murine Embryonic Mesenchymal Stem Cells and Fetal Liver Homogenate for Correction of Toxic Lesions of Embryonic Vasculogenesis and Hematopoiesis in Rodents. I. Strekalovskiy, L. Shabasheva, T. Krylova, Y. Golubentseva, V. Popov, and A. S. Radilov. Department of Toxicology, Research Institute of Hygiene, Occupational Pathology and Human Ecology, St. Petersburg, Russian Federation. Sponsor: *K. Khamidulina*.

Program Schedule (Continued)

Abstract #

#1745 **Poster Board Number 150**
Thalidomide-Induced Early Gene Expression Perturbations Indicative of Human Embryopathy in Mouse Embryonic Stem Cells. *X. Gao, J. Yourick*, and R. Sprando. Division of Toxicology, Office of Applied Research and Safety Assessment, Center for Food Safety and Applied Nutrition, US Food and Drug Administration, Laurel, MD.

#1746 **Poster Board Number 151**
A Biomarker-Based Human Stem Cell Assay Applied for Ranking a Retinoid Series Based on Relative Developmental Toxicity Potential. L. A. Egnash, J. A. Palmer, A. Smith, K. R. Conard, R. E. Burrier, E. Donley, and F. R. Kirchner. Stemina Biomarker Discovery, Inc., Madison, WI. Sponsor: *T. Knudsen*.

#1747 **Poster Board Number 152**
Using Human-Derived Neural Cells As an *In Vitro* Model for Developmental Neurotoxicity following Exposure to Pesticides. *M. A. Smith*[1,2], *W. M. Henderson*[3], S. Wallace[4], A. Majumder[4], M. Amosu[1], X. Bian[1], K. Lu[1], and *S. Stice*[2,4]. [1]Department of Environmental Health Science, University of Georgia, Athens, GA; [2]Regenerative Bioscience Center, University of Georgia, Athens, GA; [3]ORD/NERL/ERD, US EPA, Athens, GA; and [4]ArunA Biomedical, Inc., Athens, GA.

#1748 **Poster Board Number 153**
Valproic Acid-Induced Alterations and CBP/P300 Activity in P19 Embryonal Carcinoma Cells. C. Lamparter[1], and *L. M. Winn*[1,2]. [1]Pharmacology and Toxicology, Queen's University, Kingston, ON, Canada; and [2]School of Environmental Studies, Queen's University, Kingston, ON, Canada.

#1749 **Poster Board Number 154**
Adriamycin Induces Growth Inhibition of Cells by Reduction of Intracellular Levels of HMG-CoA Synthase. J. Zhu, T. Takahashi, *G. Hwang*, and *N. Akira*. Laboratory of Molecular and Biochemical Toxicology, Graduate School of Pharmaceutical Sciences, Tohoku University, Sendai, Japan.

#1750 **Poster Board Number 155**
MRNAs As Tools for *In Vitro* Assessment of Developmental Toxicity of Chlorpyrifos. *E. Vilanova*, C. Estevan, E. Fuster, E. del Rio, J. Estévez, and M. A. Sogorb. Unit of Toxicology, Institute of Bioengineering, University Miguel Hernández, Elche, Spain.

#1751 **Poster Board Number 156**
Seleno-L-Methionine Affects Cartilage/Bone and Tooth Development in Embryos of Medaka. *W. Dong*[1,2], M. C. Arnolda[1], M. Chernick[1], N. Zheng[1], and *D. E. Hinton*[1]. [1]Nicholas School of the Environment, Duke University, Durham, NC; and [2]School of Animal Science and Technology, Inner Mongolia University for the Nationalities, Tongliao, China.

#1752 **Poster Board Number 157**
Considering Dechorination for Accurate Toxicity Evaluation in the Embryonic Zebrafish Assay. *K. Kim*[1], and *R. L. Tanguay*[2]. [1]Environmental Engineering, Seoul National University of Science and Technology, Seoul, Republic of Korea; and [2]Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.

Abstract #

#1753 **Poster Board Number 158**
Exposure to the Mycotoxin Zearalenone Impairs Embryo Development in Zebrafish. N. Sidebotham[1], *J. M. Duringer*[2], *M. T. Simonich*[2], *R. L. Tanguay*[2], and *A. M. Craig*[3]. [1]Biochemistry and Biophysics, Oregon State University, Corvallis, OR; [2]Environmental & Molecular Toxicology, Oregon State University, Corvallis, OR; and [3]Biomedical Sciences, Oregon State University, Corvallis, OR.

#1754 **Poster Board Number 159**
Effects of Bisphenol A (BPA) and Bisphenol S (BPS) on Glucose Metabolism in Zebrafish Embryos (*Danio rerio*). L. Romano, M. Ciesla, *T. S. Kung*, and *L. A. White*. Biochemistry and Microbiology, Rutgers Univ, New Brunswick, NJ.

#1755 **Poster Board Number 160**
Effects of Estrogenic Compounds on Cardiac Development in Zebrafish. *G. Diamante*, and *D. Schlenk*. University of California, Riverside, Riverside, CA.

#1756 **Poster Board Number 161**
Zebrafish PXR Inhibition *In Vivo* by Human PXR Agonists. *J. J. Stegeman*[1], B. Lemaire[1], A. Kubota[1,2], R. Harbeitner[1], and *J. V. Goldstone*[1]. [1]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA; and [2]Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan.

#1757 **Poster Board Number 162**
The Role of Nrf2a in the Transcriptional Response to PCB-126 in Zebrafish Embryos. M. E. Rousseau[1], *M. E. Hahn*[2], and *A. R. Timme-Laragy*[3,2]. [1]Commonwealth Honors College, University of Massachusetts, Amherst, MA; [2]Biology, Woods Hole Oceanographic Institution, Woods Hole, MA; and [3]Environmental Health Sciences, University of Massachusetts, Amherst, MA.

#1758 **Poster Board Number 163**
Developmental Exposure to Polycyclic Aromatic Hydrocarbons (PAHs) Affects Behavior and Energetics in Larval and Adult Zebrafish. *A. L. Knecht*[1,2], and *R. L. Tanguay*[1,2]. [1]Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR; and [2]Oregon State University Superfund Research Center, Oregon State University, Corvallis, OR.

#1759 **Poster Board Number 164**
Transcriptomic Changes in Zebrafish Embryos and Larvae following Benzo[a]pyrene Exposure. *T. Dhawan*[1], *X. Fang*[2], *J. Corrales*[1], C. Thornton[1], B. E. Scheffler[3], and *K. L. Willett*[1]. [1]BioMolecular Sciences, University of Mississippi, University, MS; [2]Department of Pediatrics, University of Florida, Gainsville, FL; and [3]Genomics Bioinformatics, USDA ARS, Stoneville, MS.

#1760 **Poster Board Number 165**
Morphological and Physiological Alterations during Early Zebrafish Development by Benzo[a] pyrene and CYP19B Knockdown. *K. M. Alharthy*, J. Corrales, C. Thornton, and *K. L. Willett*. Department of Biomolecular Sciences, University of Mississippi, University, MS.

WEDNESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#1761 **Poster Board Number 166**
Impacts of Total Particulate Matter from Cigarette Smoke on Early Development of Zebrafish (*Danio rerio*). A. Massarsky[1], N. Jayasundara[1], *J. M. Bailey*[2], *E. D. Levin*[2], *G. L. Prasad*[3], and *R. T. Di Giulio*[1]. [1]Nicholas School of the Environment, Duke University, Durham, NC; [2]Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC; and [3]R&D Department, R.J. Reynolds Tobacco Company, Winston-Salem, NC.

#1762 **Poster Board Number 167**
Toxicity of 3,4-Dichloroaniline on Zebrafish Embryo and Sac-Fry Stages. J. R. Rana[1], D. Patel[1], H. Parmar[1], M. V. Patel[1], N. Khan[1], *V. J. Piccirillo*[2], and C. Carles Callol[1]. [1]Department of Toxicology, Jai Research Foundation, Valvada, India; and [2]VJP Consulting, Ashburn, VA.

#1763 **Poster Board Number 168**
Effect of Chloraminated Drinking Water, X-Ray Contrast Media, or Their Combination on Zebrafish Embryo Development. J. M. Hedge[1], C. Postigo[2], S. Mosher[3], M. D. Armstrong[4], A. McDonald[1], Y. M. Sey[1], S. D. Richardson[5], *J. Simmons*[1], and S. Padilla[1]. [1]ISTD, NHEERL, US EPA, Research Triangle Park, NC; [2]IDAEA-CSIC, Barcelona, Spain; [3]Orise Fellow, NCCT, US EPA, Research Triangle Park, NC; [4]SCC, Cary, NC; and [5]Univ of South Carolina, Columbia, SC.

#1764 **Poster Board Number 169**
Comparative Survival of Zebrafish Whole Embryos to Embryonic Fibroblasts Exposed to PFOA and Its Derivatives. K. M. Thompson[1], Y. Gao[2], C. T. Mahaptra[2], M. M. Sepulveda[2], and *J. L. Freeman*[1]. [1]School of Health Sciences, Purdue University, Lafayette, IN; and [2]Department of Forestry and Natural Resources, Purdue University, West Lafayette, IN.

#1765 **Poster Board Number 170**
Zebrafish As a Model for Adult-Onset and Transgenerational Male Infertility Due to TCDD Exposure. *T. Baker*[1], D. Yang[1], *C. A. Bradfield*[2], and *R. E. Peterson*[1]. [1]Pharmacy School, University of Wisconsin-Madison, Madison, WI; and [2]Medical School Oncology, University of Wisconsin-Madison, Madison, WI.

#1766 **Poster Board Number 171**
Applying the Benchmark Dose Approach with High-Throughput Embryonic Zebrafish Screening Assays for Toxicity Hazard Identification and Ranking of Chemicals. D. Thomas[1], *F. Tilton*[2], *H. Shankaran*[3], *R. L. Tanguay*[2], and *K. M. Waters*[1]. [1]Pacific Northwest National Laboratory, Richland, WA; [2]Oregon State University, Corvallis, OR; and [3]AstraZeneca, Boston, MA.

Abstract #

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Developmental Neurotoxicology

Chairperson(s): *Mary E. Gilbert, Toxicity Assessment Division, US EPA, Research Triangle Park, NC.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#1767 **Poster Board Number 201**
Corpus Callosum Damage Induced by Early-Life Exposure to Ultrafine Particulate Matter: Echoes of Autism Spectrum Disorders. *J. L. Allen*[1], K. Morris-Schaffer[1], *M. Sobolewski*[1], D. Weston[1], *G. Oberdorster*[1], and *D. A. Cory-Slechta*[1,2]. [1]Environmental Medicine, University of Rochester, Rochester, NY; and [2]Department of Pediatrics, University of Rochester School of Medicine, Rochester, NY.

#1768 **Poster Board Number 202**
Association of Neuroantibodies (NAB) with Gluthathione-S-Transferase (GST) Isozyme Polymorphisms (SNP) in African-American Children with Metal Exposures. *A. Cichewicz*[1], D. Mason[1], *E. E. Hudgens*[2], J. E. Gallagher[2], and *H. A. El-Fawal*[1]. [1]Neurotoxicology Laboratory, Albany College of Pharmacy and Health Sciences, Albany, NY; and [2]NHEERL, EPA, Research Triangle Park, NC.

#1769 **Poster Board Number 203**
Neuroantibodies (NAB) in African-American (AA) Children with Metal Exposures Associate with Cytokine and Human Leukocyte Antigen (HLA) Polymorphisms (SNP). K. Dougherty[1], *A. Cichewicz*[1], *E. E. Hudgens*[2], J. E. Gallagher[2], and *H. A. El-Fawal*[1]. [1]Neurotoxicology Laboratory, Albany College of Pharmacy and Health Sciences, Albany, NY; and [2]NHEERL, EPA, Research Triangle Park, NC.

#1770 **Poster Board Number 204**
Early-Life TCDD Exposure Results in Persistent and Sex-Dependent Neurotoxicity in Mice. *C. R. Klocke*, *M. Sobolewski*, K. Conrad, *L. A. Opanashuk*, and *D. A. Cory-Slechta*. Environmental Medicine, University of Rochester Medical Center, Rochester, NY.

#1771 **Poster Board Number 205**
Perinatal TCDD Exposure Impairs Dendritic Growth of Granule Cells in the Mouse Olfactory Bulb during the Brain Development. *E. Kimura*[1], Y. Ding[1], M. Kakeyama[1,2], and *C. Tohyama*[1]. [1]Lab. Environ. Hlth. Sci., CDBIM, Grad. Sch. of Med., The Univ. of Tokyo, Tokyo, Japan; and [2]Grad. Sch. of Biomed. Sci., Nagasaki Univ., Kumamoto, Japan.

#1772 **Poster Board Number 206**
Exposure to 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (TCDD) in the Developing Anteroventral Periventricular Nucleus (AVPV) Induces Long-Term Expression of Spinophillin (SPN) and NMDA NR1 Genes at Postnatal Day 25. *J. Del Pino Sans*[1,2], and *S. Petersen*[2]. [1]Toxicology and Pharmacology, University Complutense of Madrid, Madrid, Spain; and [2]Veterinary and Sciences, University of Massachusetts, Amherst, MA.

Program Schedule (Continued)

Abstract #

#1773 **Poster Board Number 207**
Gene Expression of Thyroid Hormone Signaling Pathways during Neurodevelopment. *K. A. Hayakawa*, *K. M. Walter*, *G. W. Miller*, and *P. J. Lein*. Molecular Biosciences, University of California Davis, School of Veterinary Medicine, Davis, CA.

#1774 **Poster Board Number 208**
Mild Developmental Thyroid Hormone Insufficiency Results in a Persistent and Dose-Dependent Reduction in Expression of Plasticity-Related Genes Induced by Long-Term Potentiation (LTP). *M. E. Gilbert*[1], K. Sánchez-Huerta[2], and C. Wood[1]. [1]Toxicity Assessment Division, US EPA, Research Triangle Park, NC; and [2]Escuela Nacional de Ciencias Biológicas, Mexico City, Mexico.

#1775 **Poster Board Number 209**
Postnatal Day 15 Rats Display Greater Sensitivity to the Neurotoxic Rodenticide, Tetramethylenedisulfotetramine (TMDT), As Compared to Adults. M. P. Shakarjian[1], S. Y. Ferdows[2], J. Veliskova[3], and L. Velisek[3]. [1]Environmental Health Science, New York Medical College, Valhalla, NY; [2]Epidemiology & Community Health, New York Medical College, Valhalla, NY; and [3]Cell Biology & Anatomy, New York Medical College, Valhalla, NY. Sponsor: *D. Heck*.

#1776 **Poster Board Number 210**
Neurotoxicology and Repeated Measures Statistical Analysis Model Selection. W. Miner, T. Vidmar, R. Collins, and *L. L. Freshwater*. BioSTAT Consultants, Portage, MI.

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: General and Developmental Neurotoxicology of Therapeutic Agents and Drugs of Abuse

Chairperson(s): *Merle G. Paule, Division of Neurotoxicology, National Center for Toxicological Research, US FDA, Jefferson, AR.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#1777 **Poster Board Number 219**
Fluoroscopy-Guided Minimally Invasive Epidural or Intrathecal Injections for Repeat Dosing Toxicology Studies: Comparison of Beagle Dogs and Göttingen Minipigs. S. Authier[1,2], E. Troncy[2], A. S. Aslam[1], and *R. Forster*[1]. [1]CIToxLAB North America, Laval, QC, Canada; and [2]University of Montreal, St-Hyacinthe, QC, Canada.

#1778 **Poster Board Number 220**
Cognitive Effects of Simvastatin in the Rat. *D. L. Miller*, and *M. Genter*. Environmental Health, University of Cincinnati College of Medicine, Cincinnati, OH.

#1779 **Poster Board Number 221**
Relation of Neuron Counts in the Superior Cervical Ganglia and Urinary MHPG in Rats following Guanethidine Treatment. *C. Somps*, *C. V. Okerberg*, C. Liu, M. Boucher, I. Pardo, *J. Aubrecht*, C. Northcott, and M. Zahner. Drug Safety R&D, Pfizer Global R&D, Groton, CT.

Abstract #

#1780 **Poster Board Number 222**
Ketamine Modulates DISC1 Expression in a Rat Model of Anesthetic-Induced Developmental Neuroapoptosis. *J. Liu*, K. Yuki, X. Han, and S. D. Soriano. Anaesthesia, Harvard Medical School, Boston, MA.

#1781 **Poster Board Number 223**
General Anesthesia Induced with Isoflurane Plus Nitrous Oxide during the First Week of Life Can Cause Long-Lasting Cognitive Deficits in Rhesus Monkeys: Comparison with Ketamine. *M. G. Paule*[1], M. Li[1], *X. Zhang*[1], *S. Liu*[1], *J. P. Hanig*[2,1], *W. Slikker*[1], and *C. Wang*[1]. [1]Div Neurotox, Nat'l Ctr Toxicol Rsrch FDA, Jefferson, AR; and [2]Off Testing & Rsrch, Ctr Drug Eval & Rsrch FDA, Silver Spring, MD.

#1782 **Poster Board Number 224**
Serial Block Face-Scanning Electron Microscopy of the Developing Rat Brain Exposed to Ketamine Reveals Changes in Mitochondrial Ultrastructure. A. M. Paredes, T. Eustaquio, C. Dugard, N. George, *C. Wang*, *W. Slikker*, *P. C. Howard*, and *F. Liu*. Nanocore, NCTR/US FDA, Jefferson, AR.

#1783 **Poster Board Number 225**
MicroPET Imaging of Sevoflurane-Induced Neurotoxicity in Nonhuman Primate. *C. Wang*[1], G. Newport[1], *M. G. Paule*[1], R. Callicott[1], X. Zhang[1], S. Liu[1], M. Berridge[2], S. Apana[2], and *W. Slikker*[1]. [1]Division of Neurotoxicology, NCTR/FDA, Jefferson, AR; and [2]3D Imaging, LLC, Little Rock, AR.

#1784 **Poster Board Number 226**
Evaluation of Proconvulsant Risk Using Tests Evaluating Spontaneous and Provoked Convulsions. E. Esneault, G. Peyon, C. Froger-Colleuax, V. Castagné, and *G. Froget*. Porsolt SAS, Le Genest St Isle, France.

#1785 **Poster Board Number 227**
Substances with Analgesic Properties, Tetrahydrocannabinol (THC) and Ibuprofen, Affect Behavior and Cognitive Function Differently after Developmental Exposure. *H. Viberg*, G. Philippot, and A. Fredriksson. Environmental Toxicology, Uppsala University, Uppsala, Sweden.

#1786 **Poster Board Number 228**
Neonatal Paracetamol (Acetaminophen) Exposure, during a Defined and Critical Period of Brain Development, Causes Altered Spontaneous Behavior in Both Male and Female Adult Mice. G. Philippot, A. Fredriksson, and *H. Viberg*. Environmental Toxicology, Uppsala University, Uppsala, Sweden.

#1787 **Poster Board Number 229**
Inhibition of Prolactin with Bromocriptine Increases Blood-Brain Barrier Permeability *In Vivo*. C. Gonzalez[1,2], H. Rosas-Hernandez[1,2], M. Ramirez[1], and *S. F. Ali*[2]. [1]Facultad de Ciencias Quimicas, Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico; and [2]Division of Neurotoxicology, NCTR, Jefferson, AR.

#1788 **Poster Board Number 230**
Role of p21 in Cocaine-Induced Response *In Vivo*. *N. E. Scholpa*, S. Hammond, J. J. Wagner, and *B. S. Cummings*. University of Georgia, Athens, GA.

WEDNESDAY

Program Schedule (Continued)

Abstract #

#1789 **Poster Board Number 231**
Developmental Ethanol Exposure Alters Synaptic Plasticity and Dendritic Spine Turnover in the Absence of Microglial Activation in Adolescent Mice. *E. L. Wong*[1], G. O. Sipe[2], C. E. Lamantia[2], and A. K. Majewska[2]. [1]Environmental Medicine, University of Rochester Medical Center, Rochester, NY; and [2]Neurobiology and Anatomy, University of Rochester Medical Center, Rochester, NY.

#1790 **Poster Board Number 232**
Evaluation of Purkinje Neurons As Potential Target of Alcoholism Using Japanese Medaka (*Oryzias latipes*) As Animal Model. J. F. Franklin[2,1], I. A. Khan[1,4], and *A. K. Dasmahapatra*[1,3]. [1]National Center for Natural Product Research, University of Mississippi, University, MS; [2]Sally McDonnell-Barksdale Honors College, University of Mississippi, University, MS; [3]Department of BioMolecular Sciences, Division of Pharmacology, University of Mississippi, University, MS; and [4]Department of BioMolecular Sciences, Division of Pharmacognosy, University of Mississippi, University, MS.

#1791 **Poster Board Number 233**
Effects of Adolescent Treatment with Nicotine, Harmane, or Norharmane in Male Sprague-Dawley Rats. *S. F. Ali*, A. K. Goodwin, S. Lantz-McPeak, B. Robinson, C. Law, and S. A. Ferguson. Division of Neurotoxicology, NCTR, Jefferson, AR.

#1792 **Poster Board Number 234**
E-Cigarettes—A Global Challenge: Imprinting the Central Nervous System of the Next Generation. *D. E. Lauterstein*, *K. Corbett*, C. Klein, and *J. T. Zelikoff*. Environmental Medicine, New York University, Tuxedo, NY.

#1793 **Poster Board Number 235**
Early Developmental Exposure of Rats to Low-Dose Tobacco Smoke Extract or Nicotine Modeling Secondhand Smoke Produce Long-Term Behavioral Dysfunction. *B. J. Hall*, M. Cauley, D. Burke, A. Kiany, and *E. D. Levin*. Psychiatry and Behavioral Sciences, Duke University, Durham, NC.

#1794 **Poster Board Number 236**
GABAergic Involvement in the Hippocampal Development of the Basic Excitability and Feedback Inhibition in Juvenile Rats Prenatally Exposed to Valproic Acid. *Y. Fueta*[1], Y. Sekino[2], S. Yoshida[3], and S. Ueno[1]. [1]University of Occupational and Environmental Health, Kitakyushu, Japan; [2]National Institute of Health Sciences, Tokyo, Japan; and [3]Department of Environment and Life Science, Toyohashi University of Technology, Toyohashi, Japan.

Abstract #

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Cardiovascular Toxicity and Hemodynamics

Chairperson(s): *Xi Yang, National Center for Toxicological Research, US FDA, Jefferson, AR.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#1795 **Poster Board Number 239**
Lengthening of the Electro-Mechanical Window (EMw) in Dogs with Induced Left-Ventricular Diastolic Dysfunction. C. L. del Rio[1], B. L. Youngblood[1], K. Render[1], S. Sutayatram[1,2], Y. Ueyama[1], and *R. Hamlin*[1,2]. [1]QTest Labs, Columbus, OH; and [2]The Ohio State University, Columbus, OH.

#1796 **Poster Board Number 240**
Cardiac Safety of Lacosamide (Vimpat®): The Nonclinical Perspective. *M. Cornet*, A. Delaunois, A. Colomar, and *B. O. Depelchin*. Non-Clinical Safety Evaluation, UCB Biopharma SPRL, Braine-l'Alleud, Belgium.

#1797 **Poster Board Number 241**
Combining Invasive Cardiovascular Telemetry Assessment with Continuous Intravenous Infusion in Cynomolgus Monkey. M. Niehoff[1], M. Foley[2], T. Bartko[2], K. Ashcroft-Hawley[3], F. Ludwig[1], F. Runge[1], M. Holbrook[3], S. H. Korte[1], and B. Niggemann[1]. [1]Covance Laboratories GmbH, Muenster, Germany; [2]Covance Laboratories Inc, Madison, WI; and [3]Covance Laboratories Ltd., Harrogate, United Kingdom. Sponsor: *G. Weinbauer*.

#1798 **Poster Board Number 242**
Cardiovascular Consequences of Benzene Exposure. *W. T. Abplanalp*[1], X. Li[2], J. McCracken[2], *P. Haberzettl*[2], *D. J. Conklin*[2], *S. Srivastava*[2], *A. Bhatnagar*[1,2], and *T. O'Toole*[2]. [1]Physiology & Biophysics, University of Louisville, Louisville, KY; and [2]Diabetes and Obesity Center, University of Louisville, Louisville, KY.

#1799 **Poster Board Number 243**
Early Changes in Cytochrome P450 and Their Associated Arachidonic Acid Metabolites Play a Crucial Role in the Initiation of Cardiac Hypertrophy Induced by Isoproterenol. *H. N. Althurwi*, *O. H. Elshenawy*, and *A. O. El-Kadi*. Pharmacy and Pharmaceutical Science, University of Alberta, Edmonton, AB, Canada.

#1800 **Poster Board Number 244**
Cardiovascular Effects Induced by Higenamine Using Telemetry. *M. D. Furtado*, K. Bailey, Z. Keltner, V. Topping, K. Belgrave, *M. Kraeling*, N. Olejnik, T. Black, C. Tinaza, *J. Yourick*, and R. Sprando. CFSAN/OARSA/DT, FDA, Laurel, MD.

#1801 **Poster Board Number 245**
Characterization of the Methemoglobin-Forming Metabolites of Benzocaine and Lidocaine. N. R. Hartman[1], H. Zhou[1], J. Mao[1], M. Boyne[2], D. Mans[2], V. Patel[1], and T. Colatsky[1]. [1]CDER/OTS/OCP/DARS, Food and Drug Administration, Silver Spring, MD; and [2]CDER/OPS/OTR/DPA, Food and Drug Administration, Silver Spring, MD. Sponsor: *R. Rouse*.

Program Schedule (Continued)

Abstract #

#1802 **Poster Board Number 246**
Orotic Acid Induces Insulin Resistance and Hypertension Associated with Impaired Endothelial Nitric Oxide Synthesis. Y. Choi, Y. Yoon, S. Kwon, K. Kang, S. Lee, and *B. Lee*. Seoul National University, Seoul, Republic of Korea.

#1803 **Poster Board Number 247**
Left Ventricular Pressure (LVP) Assessment Screening Models: Comparison of High-Definition Telemetry in Free-Moving with Anesthetized Rats. S. Authier[1,2], A. Ascah[1], M. Pouliot[1], S. Abtout[1], E. Troncy[2], *R. Kubaszky*[1], and *R. Forster*[1]. [1]CIToxLAB North America, Laval, QC, Canada; and [2]University of Montreal, St-Hyacinthe, QC, Canada.

#1804 **Poster Board Number 248**
Cardiotoxic Effects of 1,1-Difluoroethane Due to Oxidative Stress and Electrolyte Changes. *K. P. Joshi*, M. C. Parikh, C. A. Lau-Cam, M. Barletta, and J. Wurpel. Toxicology, St. John's University, Queens, NY.

#1805 **Poster Board Number 249**
JET-BP in Socially Housed Nonhuman Primates: Comparison of Covance Sites and Study Considerations. *L. Kreckler*[1], J. Grosh[1], *M. Niehoff*[2], M. Foley[1], and M. Osinski[1]. [1]Covance Laboratories, Inc., Madison, WI; and [2]Covance Laboratories GmbH, Muenster, Germany.

#1806 **Poster Board Number 250**
Potent Inhibition of Cholesteryl Ester Transfer Protein (CETP) Activity in Monkeys following 2-MOE Antisense Oligonucleotide Administration. *T. Kim*[1], A. T. Bell[1], S. N. Kim[2], S. Han[2], S. Park[2], M. Graham[1], R. M. Crooke[1], and *S. Henry*[1]. [1]Isis Pharmaceuticals, Carlsbad, CA; and [2]Korea Institute of Toxicology, Jeongeup-si, Republic of Korea.

#1807 **Poster Board Number 251**
Effect of Moxifloxacin Hydrochloride on Cardiovascular Parameters Assessed via Jacketed External Telemetry (JET) in the Male Beagle Dog Co-Housed in European Caging. N. Sadekova, and K. Norton. Safety Pharmacology, Charles River, Montreal, QC, Canada. Sponsor: *M. Vezina*.

#1808 **Poster Board Number 252**
Cardiac Preclinical Safety Profile Review of Cetirizine and Levocetirizine. M. Rosseels, A. Delaunois, A. Colomar, and *J. Valentin*. Non-Clinical Safety Evaluation, UCB Biopharma Sprl, Court-Saint-Etienne, Belgium.

#1809 **Poster Board Number 253**
Zinc Rescues Arsenic-Mediated Impairment in Cardiac EMT during Coronary Vessel Development. T. Huang, and *T. D. Camenisch*. Department of Pharmacology & Toxicology, University of Arizona, Tucson, AZ.

#1810 **Poster Board Number 254**
A Comparison of Dynamic Beat-to-Beat and ECG Restitution Analyses vs. QTc Assessment of Proarrhythmic Potential. *M. Brockway*[1], A. Fossa[2], B. Brockway[1], *C. L. del Rio*[3], A. Martinez[3], and *R. Hamlin*[3,4]. [1]VivaQuant, St. Paul, MN; [2]Fossa Consulting, Mystic, CT; [3]QTest Labs, Columbus, OH; and [4]Ohio State University, Columbus, OH.

Abstract #

#1811 **Poster Board Number 255**
Kolaviron and *Garcinia kola* Attenuate Doxorubicin-Induced Cardiotoxicity in Wistar Rats. *A. A. Oyagbemi*[1], *T. O. Omobowale*[1,2], J. O. Olopade[1,3], and *E. O. Farombi*[1,4]. [1]Department of Veterinary Physiology, Biochemistry and Pharmacology, University of Ibadan, Ibadan, Nigeria; [2]Veterinary Medicine, University of Ibadan, Ibadan, Nigeria; [3]Biochemistry, College of Medicine, University of Ibadan, Ibadan, Nigeria; and [4]Veterinary Anatomy, University of Ibadan, Ibadan, Nigeria.

#1812 **Poster Board Number 256**
Sex-Related Differential Susceptibility to Doxorubicin-Induced Cardiotoxicity in B6C3F1 Mice. *V. Desai*[1], C. Moland[1], *V. Vijay*[1], E. Herman[2], S. Lewis[3], K. J. Davis[4], S. Kerr[5], and *J. C. Fuscoe*[1]. [1]Personalized Medicine Branch, Division of Systems Biology, NCTR/US FDA, Jefferson, AR; [2]Toxicology and Pharmacology Branch, Developmental Therapeutic Program, Division of Cancer Treatment and Diagnosis, NCI, Rockville, MD; [3]Office of Scientific Coordination, NCTR/US FDA, Jefferson, AR; [4]Toxicologic Pathology Associates, NCTR/US FDA, Jefferson, AR; and [5]Arkansas Heart Hospital, Little Rock, AR.

#1813 **Poster Board Number 257**
Gene Expression Changes in the Hearts of Mice Chronically Exposed to Doxorubicin. *J. C. Fuscoe*, *V. Vijay*, T. Han, and *V. Desai*. Division of Systems Biology, FDA-NCTR, Jefferson, AR.

#1814 **Poster Board Number 258**
Early Transcriptional Changes in Genes Associated with Calcium Homeostasis in Hearts of Mice Treated with Doxorubicin. *V. Vijay*, T. Han, C. Moland, *J. C. Fuscoe*, and *V. G. Desai*. Division of Systems Biology, National Center for Toxicological Research, FDA, Jefferson, AR.

#1815 **Poster Board Number 259**
Early Molecular Changes Related to Cardiac Hypertrophy in the Hearts of Doxorubicin-Treated Mice. J. C. Kwekel[1], *V. Vijay*[1], T. Han[1], Z. Cao[2], *L. Yu*[2], C. Moland[1], *J. C. Fuscoe*[1], and *V. G. Desai*[1]. [1]Systems Biology/Personalized Medicine Branch, FDA/National Center for Toxicological Research, Jefferson, AR; and [2]Systems Biology/Biomarkers and Alternative Models Branch, FDA/National Center for Toxicological Research, Jefferson, AR.

#1816 **Poster Board Number 260**
Identification of Novel Biomarkers for Doxorubicin-Induced Toxicity in Human Pluripotent Stem Cell-Derived Cardiomyocytes. G. Holmgren[2,3], J. Synnergren[2], Y. Bogestal[2], C. Améen[1], K. Akesson[1], S. Holmgren[1], A. LIndahl[3], and P. Sartipy[1,4]. [1]Cellartis, Takara Bio Europe AB, Gothenburg, Sweden; [2]Systems Biology Research Center, School of Bioscience, University of Skovde, Skovde, Sweden; [3]Department of Clinical Chemistry and Transfusion Medicine, Institute of Biomedicine, The Sahlgrenska Academy at University of Gothenburg, Gothenburg, Sweden; and [4]GMD CVMD GMed, AstraZeneca R&D, Molndal, Sweden. Sponsor: *J. Edsbagge*.

Program Schedule (Continued)

Abstract #

#1817 **Poster Board Number 261**
Vascular Changes following Secondhand Cigarette Smoke Exposure: Mechanistic Study in a Male Mouse Model. M. A. El-Mahdy[1], R. Ismail[2], T. Abdelghany[2], A. Mansour[2], and J. L. Zweier[1]. [1]Center for Environmental & Smoking Induced Disease, The Ohio State University, Columbus, OH; and [2]Pharmacology & Toxicology, College of Pharmacy, Al-Azher University, Cairo, Egypt. Sponsor: *F. Lowe*.

#1818 **Poster Board Number 262**
Role of the Ubiquitin Proteasome System in Endothelial Nitric Oxide Synthase Dysfunction: Potential Biomarkers of Cigarette Smoking-Induced Vascular Endothelial Damage. R. Ismail[3], M. A. El-Mahdy[1,2], T. Abdelghany[1,2], D. Breheny[3], F. J. Lowe[1,2], and J. L. Zweier[1,2]. [1]The Ohio State University, Columbus, OH; [2]Ohio Smoking Research Center, Columbus, OH; and [3]British American Tobacco, Southampton, United Kingdom. Sponsor: *F. Cunningham*.

#1819 **Poster Board Number 263**
Smoking-Induced Atherosclerosis via Impairment of Endothelial Progenitor Cell Function. S. Ichihara[1], Y. Suzuki[1], S. Tada-Oikawa[1], C. Zong[2,3], and *G. Ichihara*[3]. [1]Mie University, Tsu, Japan; [2]Nagoya University Graduate School of Medicine, Nagoya, Japan; and [3]Tokyo University of Science, Nada, Japan.

#1820 **Poster Board Number 264**
A Novel *In Vitro* Assay for Assessing the Effects of Cigarette Smoke on Endothelial Cell Migration. *H. Chen*, S. Han, T. Liu, Y. Fu, C. Ren, H. Hou, and Q. Hu. China National Tobacco Quality Supervision and Test Center, Zhengzhou, China.

#1821 **Poster Board Number 265**
Environmentally Persistent Free Radicals (EPFRs) Degrade Left Ventricular Function during Ischemia/Reperfusion Injury. *B. R. Burn*, and *K. J. Varner*. LSU HSC, New Orleans, LA.

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Animal Models of Disease

Chairperson(s): *William J. Brock, Brock Scientific Consulting, Montgomery Village, MD; and Sven H. Korte, Covance Laboratories GmbH, Muenster, Germany.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#1822 **Poster Board Number 301**
Prevalence and Incidence of Cataracts in a Population of Yucatan Miniswines after Induction of Type 1 Diabetes. B. C. Hanks[1], A. Stricker-Krongrad[1], A. Ingerson[1], M. Freeman[1], S. Schlink[1], L. Delaney[1], S. Renna[1], C. Horton[1], J. Liu[1], A. T. Cruz[2], S. Rousselle[2], J. Wicks[2], and *G. Bouchard*[1]. [1]Sinclair Research, Auxvasse, MO; and [2]Alizee Pathology, Thurmont, MD.

#1823 **Poster Board Number 302**
Induction and Long-Term Management of Type 1 Diabetes in Göttingen Minipigs. *T. N. Merriman*, J. A. Cornicelli, *J. W. Smedley*, and L. Lucke. Toxicology, Charles River, Spencerville, OH.

Abstract #

#1824 **Poster Board Number 303**
Generation of a Mammalian Achondroplasia Model in Micropigs. S. Peng[1], E. Rom[2], M. Malka[2], F. Ang[1], T. P. Wu[1], A. Goh[1], J. Lee[1], *S. L. Park*[1], and A. Yayon[2]. [1]GLP Center, PWG Genetics, Singapore; and [2]ProCore Ltd, Nes-Ziona, Israel.

#1825 **Poster Board Number 304**
Noninvasive Vascular Imaging of Atherosclerotic Lesions in Peripheral and Coronary Arteries in ExeGen LDLr Miniswine after Arterial Injury: Correlation with Histopathological Assessment. J. Swart[2], M. E. Smith[1], T. Arends[2], C. Rogers[2], and E. Steinmetz[1]. [1]American Preclinical Services, Minneapolis, MN; and [2]Exemplar Genetics, Sioux City, IA. Sponsor: *K. Grove*.

#1826 **Poster Board Number 305**
A Mass Casualty Swine Model for Therapeutic Efficacy Studies for Cyanide. *M. K. Brittain*[1], *M. C. Babin*[1], V. S. Bebarta[2], G. R. Boss[3], D. Jett[4], G. Platoff[5], and D. T. Yeung[4]. [1]Biomedical Research Center, Battelle Memorial Institute, Columbus, OH; [2]San Antonio Military Medical Center, San Antonio, TX; [3]University of California San Diego, San Diego, CA; [4]National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD; and [5]National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD.

#1827 **Poster Board Number 306**
Characterization of Monkeypox Infection in Cynomolgus Macaques Using Four Routes of Exposure. *L. Lanning*[1], M. Challberg[3], J. Hewitt[2], and B. Osborn[1]. [1]Office of Regulatory Affairs, NIH/NIAID/DMID, Bethesda, MD; [2]OBRRTR, NIH/NIAID/DMID, Bethesda, MD; and [3]Virology Branch, NIH/NIAID/DMID, Bethesda, MD.

#1828 **Poster Board Number 307**
Pathological and Clinical Pathological Detection of Age-Related Liver and Kidney Malfunction in the Polycystic Kidney (PCK) Rat: An Animal Model of Polycystic Kidney Disease. Y. Shimomura[1], Y. Ito[1], J. Kino[1], R. Kawata[1], K. Morishita[1], and *W. J. Brock*[2]. [1]Otsuka Pharmaceutical Co., Ltd., Tokushima Research Institute, Tokushima, Japan; and [2]Otsuka Pharmaceuticals, Rockville, MD.

#1829 **Poster Board Number 308**
Role of Myeloid-Derived Suppressor Cells in a Murine Model of Drug-Induced Liver Injury Mediated by the Adaptive Immune System. M. Chakraborty[1], *K. Semple*[1], *A. M. Fullerton*[1], J. Berkson[1], L. S. Chea[1], *W. R. Proctor*[2,1], and *L. R. Pohl*[1]. [1]NHLBI\NIH, Bethesda, MD; and [2]Safety Assessment, Genentech, South San Francisco, CA.

#1830 **Poster Board Number 309**
Two Alleles of Med31 Provide a Model to Study Delayed Fetal Growth Endochondral Ossification and Placental Development. K. Wolton[1], *J. Wright*[2], E. Barnes[2], S. Lovell[1], and K. Hentges[1]. [1]University of Manchester, Manchester, United Kingdom; and [2]Syngenta UK, Jealotts Hill, United Kingdom.

#1831 **Poster Board Number 310**
Mitigation of Colitis with NovaSil Clay Therapy. *A. A. Romoser*, *K. Zychowski*, *S. Elmore*, *H. J. Ly*, *F. Pierezan*, *A. Isaiah*, *J. S. Suchodolski*, *A. Rodrigues Hoffmann*, and *T. D. Phillips*. College of Veterinary Medicine and Biomedical Sciences, Texas A&M University, College Station, TX.

Program Schedule (Continued)

Abstract #

#1832 **Poster Board Number 311**
Characterization of a Model of Murine Gammaherpesvirus for Immunotoxicological Evaluations Reveals No Horizontal Transmission. J. Aligo[1], K. Brosnan[1], *M. R. Walker*[1], E. Emmell[1], *R. Mikkelsen*[2], *G. Burleson*[2], *F. G. Burleson*[2], A. Volk[1], and *D. Weinstock*[1]. [1]Biologics Toxicology, Janssen Research and Development, Spring House, PA; and [2]Burleson Research Technologies, Inc., Morrisville, NC.

#1833 **Poster Board Number 312**
Animal Models for Cholangiocarcinoma Induced by Chemicals Associated with the Offset Printing. *L. Zhang*[1], S. Kumagai[2], S. Toyokuni[3], H. Naito[3], S. Ichihara[4], and *G. Ichihara*[1,2,3]. [1]Occupational and Environmental Health, Tokyo University of Science, Noda, Japan; [2]University of Occupational and Environmental Health, Kitakyushu, Japan; [3]Nagoya University, Nagoya, Japan; and [4]Mie University, Tsu, Japan.

#1834 **Poster Board Number 313**
Combination of Mitomycin C and Low Dose Suramin Increases Survival in an Optimized Orthotopic Model of Urinary Bladder Carcinoma in Mice. J. Tremblay, C. Glover, L. Kolodzieyski, D. Lacroix, S. Thébaud, J. Godin-Ethier, A. Nelson, and V. Dimitriadou. ITR Laboratories Canada Inc., Montreal, QC, Canada. Sponsor: *W. Lee*.

#1835 **Poster Board Number 314**
PPARγ Stops Her2+ Breast Tumor Metastasis. E. D. Lightbody[1], R. E. Rubino[2], *A. J. Apostoli*[1,2], M. M. Schneider[1], S. K. SenGupta[1], and *C. J. Nicol*[1,2,3]. [1]Pathology and Molecular Medicine, Queen's University, Kingston, ON, Canada; [2]Cancer Biology and Genetics, Queen's University Cancer Research Institute, Kingston, ON, Canada; and [3]Biomedical and Molecular Sciences, Queen's University, Kingston, ON, Canada.

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Animal Models: Measurements, Validations, and Historical Data

Chairperson(s): *Matthew K. Brittain, Biomedical Research Center, Battelle Memorial Institute, Columbus, OH.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#1836 **Poster Board Number 319**
Survey Results on Clinical Pathology Volume Requirements in Preclinical Toxicological Studies. A. Aulbach[1], *L. Ramaiah*[2], N. Tripathi[3], and F. Poitout[4]. [1]MPI Research, Mattawan, MI; [2]Huntingdon Life Sciences, Princeton, NJ; [3]Covance Laboratories Inc, Madison, WI; and [4]Charles River Laboratories, Montreal, QC, Canada.

Abstract #

#1837 **Poster Board Number 320**
Characterization of Epithelial Proliferation in the Small Intestine of Treatment-Naïve 8-Month-Old CByB6F1-Tg(HRAS)2Jic Transgenic Mice. S. Fossey[1], M. Klapczynski[1], M. Brej[2], A. Krempley[2], T. Turner[3], B. Bird[3], J. O'Connor[2], and *R. Yeager*[3]. [1]Cellular, Molecular, & Exploratory Toxicology, Preclinical Safety, AbbVie, Inc, North Chicago, IL; [2]Pathology, Preclinical Safety, AbbVie, Inc, North Chicago, IL; and [3]Toxicology, Preclinical Safety, AbbVie, Inc, North Chicago, IL.

#1838 **Poster Board Number 321**
The Predictive Value of the Rodent Neurofunctional Assessment for Central Nervous System Events in Phase I Clinical Trials. K. Chapman[1], *H. R. Amouzadeh*[2], *L. Ewart*[3], A. Giarola[4], S. J. Jackson[1], P. Jarvis[5], P. Jordaan[5], W. S. Redfern[6], M. Traebert[5], *J. Valentin*[7], H. M. Vargas[2], and A. Mead[8]. [1]NC3Rs, London, United Kingdom; [2]Amgen Inc., Thousand Oaks, CA; [3]AstraZeneca, Mölndal, Sweden; [4]Glaxosmithkline, Ware, United Kingdom; [5]Novartis, Basel, Switzerland; [6]AstraZeneca, Macclesfield, United Kingdom; [7]UCB Biopharma, Braine l'Alleud, Belgium; and [8]Pfizer Inc., Groton, CT.

#1839 **Poster Board Number 322**
Comparison of Physiologic and Pharmacologic Parameters in Asian and Mauritius Cynomolgus Macaques. *J. C. Kozlosky*[1], J. Mysore[1], *S. Clark*[2], H. N. Burr[1], *W. J. Freebern*[1], *N. Aranibar*[3], R. Vuppugalla[4], R. C. West[5], *R. Mangipudy*[1], and *M. J. Graziano*[5]. [1]Drug Safety Evaluation, Bristol-Myers Squibb Company, New Brunswick, NJ; [2]Drug Safety Evaluation, Bristol-Myers Squibb Company, Mount Vernon, IN; [3]Discovery Toxicology, Bristol-Myers Squibb Company, Princeton, NJ; [4]Metabolism and Pharmacokinetics, Bristol-Myers Squibb Company, Princeton, NJ; and [5]Drug Safety Evaluation, Bristol-Myers Squibb Company, Princeton, NJ.

#1840 **Poster Board Number 323**
Diagnostic Magnetic Resonance Imaging in the Scope of Biologics Safety Assessment in Nonhuman Primates—A Case of Spontaneous Pyloric Stenosis in a Cynomolgus Monkey. *S. H. Korte*[1], M. Wozniak[2], F. Runge[1], J. Kaspareit[1], and L. Mecklenburg[1]. [1]Covance Laboratories GmbH, Muenster, Germany; and [2]Department of Pediatric Radiology, Medical University of Lublin, Lublin, Poland.

#1841 **Poster Board Number 324**
Comparison of Routine Clinical Pathology Parameters in the Göttingen and Chinese Bama Minipig. S. McPherson[1], M. Chen[2], and *C. Zheng*[1]. [1]Toxicology, WuXi AppTec, Suzhou, China; and [2]Analytical Chemistry, WuXi AppTec, Suzhou, China.

#1842 **Poster Board Number 325**
Comparative Photomicrographic Examination of Integument in Eight Species of Mammals Including Two Lineages of Research Miniswine. C. Horton[1], D. Y. Kim[3], B. C. Hanks[1], S. Schnapp[1], D. Brocksmith[2], D. White[1], J. Liu[1], A. Stricker-Krongrad[2], and *G. Bouchard*[1]. [1]Sinclair Research, Auxvasse, MO; [2]Sinclair BioResources, Auxasse, MO; and [3]Veterinary Medical Diagnostic Laboratory, University of Missouri, Columbia, MO.

WEDNESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#1843 **Poster Board Number 326**
Comparison of Routine Clinical Pathology Parameters in 8-Month-Old Beagle Dogs from Different Geographical Regions. Y. Zhang, *C. Zheng*, and S. McPherson. Toxicology, WuXi AppTec, Suzhou, China.

#1844 **Poster Board Number 327**
Background Data of Two Sub-Strains of Wistar Hannover Rats for Long-Term Toxicity Study; Comparison with SD and Fisher Rats. T. Aoshima[1], K. Ohishi[1], M. Tsuboi[1], Y. Ohta[1], K. Nanami[1], H. Takehara[1], R. Tanaka[1], M. Tsuchiya[1], *M. Naya*[1], *M. Hayashi*[1], and J. Yamate[2]. [1]Public Interest Incorporated Foundation BioSafety Research Center, Iwata, Japan; and [2]Osaka Prefecture University, Osaka, Japan.

#1845 **Poster Board Number 328**
Spontaneous Pathology of the Athymic Rowett Nude Rat. A. Rowles, D. Bell, K. Liu, and *V. Mowat*. Department of Pathology, Huntingdon Life Sciences, Alconbury, United Kingdom.

#1846 **Poster Board Number 329**
Survey of Spontaneous Clinical Observations in the Sprague-Dawley Rat (*Rattus norvegicus*). *C. Zheng*, and S. McPherson. Toxicology, WuXi AppTech, Suzhou, China.

#1847 **Poster Board Number 330**
Historical Control Data Including Spontaneous Tumors in CB6F1-Tg rasH2 Mice. K. Okazaki, Y. Masubuchi, Y. Yamaguchi, Y. Kuroiwa, S. Yamamoto, K. Tamura, and S. Okazaki. Gotemba Laboratory, BoZo Research Center Inc, Shizuoka, Japan. Sponsor: *W. Lee*.

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Animal Models: Methods

Chairperson(s): *Sue McPherson, WuXi App Tech, Suzhou, China.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#1848 **Poster Board Number 335**
Dermal Dose Administration: Points to Consider. *C. S. Auletta*, *T. Ramani*, *J. Lin*, C. Savidge, and T. Jones. Huntingdon Life Sciences, East Millstone, NJ.

#1849 **Poster Board Number 336**
Anesthesia-Free, Repeated Blood Sampling Every 30 Minutes in Freely Moving Catheter-Implanted Rats. U. Wirnitzer. Toxicology, Bayer HealthCare AG, Wuppertal, Germany. Sponsor: *H. Ellinger-Ziegelbauer*.

#1850 **Poster Board Number 337**
Development of an Epaxial Intramuscular Injection Technique in Juvenile Rats. L. Croft, J. Callahan, G. Baxter, and *R. M. Parker*. DART, Huntingdon Life Sciences, East Millstone, NJ.

Abstract #

#1851 **Poster Board Number 338**
Establishment of a Saline Lavage Model in the Isolated Perfused Rat Lung. D. Walter[1], M. Fischer[1], G. Pohlmann[1], J. Kemkowski[2], C. De Muynck[2], and *C. Dasenbrock*[1]. [1]Fraunhofer Institute for Toxicology and Experimental Medicine ITEM, Hannover, Germany; and [2]Takeda Pharmaceuticals, Singen, Germany.

#1852 **Poster Board Number 339**
The Inhibition of the Intestinal Absorption of Vitamin K by a Medium-Chain Chlorinated Paraffin (MCCP) in an *In Vitro* Everted Rat Intestinal Sac Model. R. H. Powrie[2], *C. R. Elcombe*[2], and D. G. Farrar[1]. [1]CCERT Ltd, Congleton, United Kingdom; and [2]CXR Biosciences Ltd, Dundee, United Kingdom.

#1853 **Poster Board Number 340**
Intra-Articular Injections into Stifle Joint of Sprague-Dawley Rats and Beagle Dogs: Feasibility, Tolerated Volumes, and Synovial Fluid Sampling. J. Douville, C. Massicotte, F. Emond, C. Foucault, R. St-Jacques, and C. Copeman. Toxicology, Charles River, Montreal, QC, Canada. Sponsor: *M. Vezina*.

#1854 **Poster Board Number 341**
Development of a Chronic Pulmonary Arterial Pressure Model in the Beagle Dog. J. Sheehan, A. Lelkes, and A. Curran. Huntingdon Life Sciences, East Millstone, NJ. Sponsor: *C. Auletta*.

#1855 **Poster Board Number 342**
A Novel Approach for Assessing Drug-Induced QT Interval Prolongation in Beagle Dogs. H. Hori[1], E. Suganuma[1], K. Sugimoto[1], T. Komatsu[1], K. Shiota[1], D. Watanabe[1], and M. Kuwahara[2]. [1]Kannami Laboratory, BoZo Research Center Inc., Kannami-cho, Japan; and [2]Graduate School of Agricultural and Life Sciences, The University of Tokyo, Tokyo, Japan. Sponsor: *W. Lee*.

#1856 **Poster Board Number 343**
Pupillary Light Response in Guinea Pigs and Swine Exposed to Organophosphate Agents. *E. D. Clarkson*[1], J. E. Schwartz[1], K. H. Smith[1], S. M. Schulz[1], C. L. Rousayne[1], and C. Kolanko[2]. [1]Analytical Toxicology Division, US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Grounds, MD; and [2]EyeMarker Systems, Inc, Morgantown, WV.

#1857 **Poster Board Number 344**
Development of a Guinea Pig Model for Cardiopulmonary Function Assessment. M. Horsmon, N. M. Vincelli, and R. Kristovich. US Army ECBC, Gunpowder, MD. Sponsor: *H. Salem*.

#1858 **Poster Board Number 345**
Surgical and Nonsurgical Drug Delivery Methods in Miniswine Models. K. Buckman[1], C. Horton[1,2], B. C. Hanks[1], M. Sword[1], T. Madsen[1], C. Lawson[1], D. Brocksmith[2], J. Liu[1], A. Stricker-Krongrad[1], and *G. Bouchard*[1,2]. [1]Sinclair Research, Auxvasse, MO; and [2]Sinclair BioResources, Auxvasse, MO.

Program Schedule (Continued)

Abstract #

#1859 **Poster Board Number 346**
Methods for the Implantation and Maintenance of Separate Intrathecal Catheters for Dose Administration and CSF Sampling in Cynomolgus Monkeys. *N. Lalayeva*, N. Bailey, G. DeLosSantos, K. Crowder, *S. M. Glaza*, *J. B. Morris*, and *R. Nagata*. Safety Assessment, SNBL USA, Ltd., Everett, WA.

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Risk Assessment III

Strategies for Exposure and Risk Assessments

Chairperson(s): *Judith A. MacGregor, Toxicology Consulting Services, Bonita Springs, FL.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#1860 **Poster Board Number 401**
Toxicological Abstracts Classification Using Natural Language Processing and Supervised Machine Learning Algorithms. A. Varghese, and M. Cawley. ICF International, Durham, NC. Sponsor: *M. Selgrade*.

#1861 **Poster Board Number 402**
Tools to Identify and Manage Mechanistic Data to Support Human Health Risk Assessment. A. Turley[1], M. Cawley[1], and P. Bradley[2]. [1]ICF International, Durham, NC; and [2]InStem Scientific, Cambridge, United Kingdom. Sponsor: *J. Wignall*.

#1862 **Poster Board Number 403**
Using DRAGON to Organize Data and Decisions for AOP Development: An Example with Inorganic Arsenic. *J. Wignall*, *W. M. Mendez*, *P. Ross*, and A. Turley. ICF International, Fairfax, VA.

#1863 **Poster Board Number 404**
Problem Formulation of Complex Environmental Health Questions: Utilizing Text Mining to Address Challenges of a Literature-Based Evaluation of Transgenerational Health Effects. V. R. Walker[1], S. Holmgren[2], *K. E. Pelch*[1], B. Howard[3], R. Shah[3,4], *K. Thayer*[1], and *A. A. Rooney*[1]. [1]DNTP, NIEHS, Research Triangle Park, NC; [2]NIEHS, Research Triangle Park, NC; [3]Sciome LLC, Research Triangle Park, NC; and [4]SSS, Durham, NC.

#1864 **Poster Board Number 405**
Incorporating Transgenerational Testing and Epigenetic Mechanisms into Chemical Testing and Risk Assessment: A Survey of Transgenerational Responses in Environmental Chemical Studies. *S. L. Makris*, and *S. Y. Euling*. ORD, NCEA, US EPA, Washington, DC.

#1865 **Poster Board Number 406**
Evaluation of Study Quality Criteria Frameworks. *R. L. Prueitt*[1], *H. N. Lynch*[2], J. A. Tabony[1], *N. B. Beck*[3], *J. E. Goodman*[2], and *L. R. Rhomberg*[2]. [1]Gradient, Seattle, WA; [2]Gradient, Cambridge, MA; and [3]American Chemistry Council, Washington, DC.

Abstract #

#1866 **Poster Board Number 407**
Potential Risk of Unidentified Mixture Toxicities in Natural Source Waters. N. H. Orak, and M. J. Small. Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA. Sponsor: *J. Lipscomb*.

#1867 **Poster Board Number 410**
Categorization of Petroleum Substances through High-Content Screening of Induced Pluripotent Stem Cell (iPSC)-Derived Cardiomyocytes and Hepatocytes. *F. A. Grimm*[1], Y. Iwata[1], O. Sirenko[2], C. Crittenden[2], T. A. Roy[3], *P. J. Boogaard*[4], H. Ketelslegers[5], *A. M. Rohde*[6], and *I. Rusyn*[1]. [1]Texas A&M University, College Station, TX; [2]Molecular Devices, LLC., Sunnyvale, CA; [3]University of South Carolina, Beaufort, SC; [4]Shell International BV, The Hague, Netherlands; [5]ExxonMobil Petroleum and Chemicals, Machelen, Belgium; and [6]CONCAWE, Brussels, Belgium.

#1868 **Poster Board Number 411**
Risk Assessment of Inhalable Read-Across Chemicals with Different Mode of Action Showed Great Differences in Cytotoxicity in Rat and Human Precision-Cut Lung Slices. O. Danov[1], K. Schroeder[1], P. Braubach[2], D. Jonigk[2], G. Warnecke[2], A. Braun[1], S. Escher[1], and K. Sewald[1]. [1]Fraunhofer Institute for Toxicology and Experimental Medicine, Biomedical Research in Endstage and Obstructive Lung Disease Hannover (BREATH), Member of the German Centre for Lung Research (DZL), Hannover, Germany; and [2]Hannover Medical School, Hannover, Germany. Sponsor: *C. Dasenbrock*.

#1869 **Poster Board Number 412**
A Systematic Review of Asbestos-Induced Pleural Plaques and Lung Function. *L. E. Kerper*[1], *H. N. Lynch*[1], K. Zu[1], G. Tao[1], M. J. Utell[2], and *J. E. Goodman*[1]. [1]Gradient, Cambridge, MA; and [2]University of Rochester School of Medicine, Rochester, NY.

#1870 **Poster Board Number 413**
Evaluation of Cancer and Noncancer Effects of Cumene. N. Keshava, and B. R. Sonawane. National Center for Environmental Assessment, US-EPA, Research Triangle Park, NC. Sponsor: *C. Keshava*.

#1871 **Poster Board Number 414**
Feasibility of Conducting a Human Health Risk Assessment for 3-MCPD Esters and Glycidyl Esters in Food. *D. C. Smegal*, G. Kim, J. Spungen, S. MacMahon, *C. D. Carrington*, and *B. Flannery*. CFSAN, FDA, College Park, MD.

#1872 **Poster Board Number 415**
Utility of Short-Term Assays for Assessing Carcinogenic Potency of PAHs. *B. H. Magee*, N. Forsberg, and C. Hamadji. ARCADIS, Chelmsford, MA.

#1873 **Poster Board Number 418**
Application of QSAR Models to Support the Carcinogenicity and Mutagenicity of Dibenzanthracenes. G. Osborne, *C. Hsieh*, F. C. Tsai, and *M. S. Sandy*. Cal/EPA, Sacramento, CA.

Program Schedule (Continued)

Abstract #

#1874 **Poster Board Number 419**
Evaluation of the Experimental Support for Assessment Factors to Protect Asthmatic Subjects during Short-Term Exposure to Airborne Chemicals. *M. Johansson*[1], *G. Johanson*[1], and *M. Öberg*[1,2]. [1]Work Environment Toxicology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden; and [2]Swedish Toxicology Sciences Research Center, Södertälje, Sweden.

#1875 **Poster Board Number 420**
The Carcinogenicity of Dibenzanthracenes. F. C. Tsai, *C. Hsieh*, G. Osborne, R. Cendak, J. D. Budroe, and *M. S. Sandy*. Cal/EPA, Sacramento, CA.

#1876 **Poster Board Number 421**
***In Vitro* Toxicological Assessment of Industrial Chemicals Spilled into the Elk River in Charleston, West Virginia.** *A. A. Han*, *J. A. Vrana*, and *J. W. Boyd*. Chemistry, West Virginia University, Morgantown, WV.

#1877 **Poster Board Number 422**
A Global Animal-Free Approach Integrating Studies in Cosmetic Industry: A Practical Example of the Safety Assessment of a Baby Shampoo. *H. Ficheux*[2], F. Lopez[1], and S. Catoire[2]. [1]Thor Quimicos de Mexico SA de CV, Queretaro, Mexico; and [2]Thor Personal Care, Compiegne, France.

#1878 **Poster Board Number 423**
A Framework for Assessing Chemical/Nonchemical Interactions: A Case Study of Lead and Psychosocial Stress. D. Segal[1], Y. Lin[1], *G. Ginsberg*[2], and B. R. Sonawane[1]. [1]US EPA, Washington, DC; and [2]Connecticut Department of Public Health, Hartford, CT.

#1879 **Poster Board Number 426**
Assignment of Hazard Specific Notations for Occupational Health Purposes in the Pharmaceutical Industry. M. Glogovac[1], G. Winkler[2], and E. Lovsin Barle[1]. [1]Novartis Pharma AG, Basel, Switzerland; and [2]Novartis Institutes for BioMedical Research, Basel, Switzerland. Sponsor: *E. Faustman*.

#1880 **Poster Board Number 427**
The Use of Glial Changes in Neurotoxicity Risk Assessments. *A. D. Kraft*. National Center for Environmental Assessment, US EPA, Washington, DC.

#1881 **Poster Board Number 428**
Evaluating the Evidence for Developing Categorical Occupational Exposure Limits for Nanomaterials. E. Kuempel[1], *G. Oberdorster*[2], and *V. Castranova*[3]. [1]National Institute for Occupational Safety and Health, Cincinnati, OH; [2]University of Rochester, Rochester, NY; and [3]West Virginia University, Morgantown, WV.

#1882 **Poster Board Number 429**
Characterizing Factors That Modify Chemical Exposure or Response: Application of a Susceptibility Framework to Inorganic Arsenic Hazard Identification. *J. S. Lee*, *C. Powers*, L. Joca, J. Cowden, and R. Sams. US EPA, Research Triangle Park, NC.

Abstract #

#1883 **Poster Board Number 430**
Nanoparticles from Municipal Waste Incinerators: Real Risk or a Sheep in Wolf's Clothing? *D. R. Johnson*[1], *A. Pawlisz*[1], and S. Harris[2]. [1]Conestoga-Rovers and Associates, Dallas, TX; and [2]Conestoga-Rovers and Associates, Waterloo, ON, Canada.

#1884 **Poster Board Number 431**
Increased Susceptibility to Chemical Toxicity Associated with Pre-Existing Diseases: Framework and Case Studies. B. R. Sonawane[1], Y. Lin[1], *R. R. Dietert*[2], and *G. L. Ginsberg*[3]. [1]NCEA/ORD, US EPA, Washington, DC; [2]College of Veterinary Medicine, Cornell University, Ithaca, NY; and [3]Connecticut Dept. of Public Health, Hartford, CT.

#1885 **Poster Board Number 434**
An Approach to Standardize the Concepts of "Low-Dose" and Nonmonotonic Dose Response in Toxicological Research and Regulatory Science. *J. M. Vaughan*[1,2], and *A. Kretser*[2]. [1]Environmental Health Science, New York University, New York, NY; and [2]Food and Chemical Safety, International Life Sciences Institute of North America, Washington, DC.

#1886 **Poster Board Number 435**
A Rules Engine Approach to Supporting Adverse Outcome Pathway-Based Rapid Toxicological Assessment. K. L. Painter[1], *I. L. Druwe*[1], E. E. Yost[1], and *L. D. Burgoon*[2]. [1]Oak Ridge Institute for Science and Education/Environmental Protection Agency, Research Triangle Park, NC; and [2]NCEA, US Environmental Protection Agency, Research Triangle Park, NC.

#1887 **Poster Board Number 436**
New *In Vitro* Gastrointestinal Model Accurately Predicts Arsenic Bioavailability in Soils. *V. L. Mitchell*[1], S. Whitacre[2], *S. W. Casteel*[3], P. A. Myers[1], and N. T. Basta[2]. [1]Department of Toxic Substances Control, Cal EPA, Sacramento, CA; [2]Ohio State University, Columbus, OH; and [3]University of Missouri, Columbia, MO.

#1888 **Poster Board Number 437**
A Proposed Adverse Outcome Pathway for Uranium-Induced Osteotoxicity. *X. Arzuaga*, M. Gehlhaus, *J. B. Strong*, *J. S. Lee*, and *J. M. Fritz*. National Center for Environmental Assessment, US Environmental Protection Agency, Washington, DC.

#1889 **Poster Board Number 438**
Bioavailability of Polycyclic Aromatic Hydrocarbons from Different Soils in Swine: Does Soil Concentration Matter? *R. E. Peters*[1,2], K. James[1,2], M. Wickstrom[2], and *S. D. Siciliano*[1,2]. [1]Soil Science, University of Saskatchewan, Saskatoon, SK, Canada; and [2]Toxicology Centre, University of Saskatchewan, Saskatoon, SK, Canada.

#1890 **Poster Board Number 439**
Adverse Outcome Pathway (AOP) for a Mutagenic Mode of Action for Cancer: AFB1 and Hepatocellular Carcinoma (HCC). *L. H. Pottenger*[1], *M. M. Moore*[2], *T. Simon*[3], *R. A. Becker*[4], *K. Wise*[4], and *R. Schoeny*[5]. [1]The Dow Chemical Company, Midland, MI; [2]ENVIRON International Corp, Little Rock, AR; [3]Ted Simon LLC, Winston, GA; [4]American Chemistry Council, Washington, DC; and [5]USEPA, Washington, DC.

Program Schedule (Continued)

Abstract #

#1891 **Poster Board Number 442**
Developing a Framework for Integrating Toxicokinetics into Human Health Risk Assessment for Chemicals. L. G. McFadden[3], A. T. McCoy[3], *S. Hays*[2], *M. Aggarwal*[1], *M. J. Bartels*[3], R. Billington[1], and *C. Terry*[1]. [1]Human Health Assessment, Dow AgroSciences, Oxfordshire, United Kingdom; [2]Summit Toxicology, Superior, CO; and [3]TERC, Midland, MI.

#1892 **Poster Board Number 443**
Identification of the Molecular Initiating Event (MIE) for TBBPA-Induced Uterine Tumors in the Framework of an Adverse Outcome Pathway (AOP). *S. Borghoff*[1], *D. Wikoff*[2], *M. C. White*[2], *C. M. Thompson*[3], and *L. C. Haws*[2]. [1]ToxStrategies, Inc., Cary, NC; [2]ToxStrategies, Inc., Austin, TX; and [3]ToxStrategies, Inc., Katy, TX.

#1893 **Poster Board Number 444**
Data-Derived Extrapolation Factors: Improving the Quantitative Basis for Health Risk Assessment. *J. C. Lipscomb*[1], *A. B. Lowit*[2], *E. M. Kenyon*[2], *V. C. Moser*[3], B. P. Foos[2], A. Galizia[2], M. Broder[2], and *R. Schoeny*[2]. [1]US EPA, Cincinnati, OH; [2]US EPA, Washington, DC; and [3]US EPA, Research Triangle Park, NC.

#1894 **Poster Board Number 445**
Health Impact Due to the Use of Agrochemicals in the Periurban Area Gran Buenos Aires (Argentina). D. J. Mara[1], G. Sternik[2], and S. O. Demichelis[1]. [1]Productive Development and Technology, National University of Lanús, Lanús, Argentina; and [2]Scientia Biolabs, San Diego, CA. Sponsor: *G. Castro*.

#1895 **Poster Board Number 446**
Evaluating and Expressing Uncertainty in Dose-Response Assessment: A New WHO/IPCS Guidance Incorporating Probabilistic Approaches. W. A. Chiu. US Environmental Protection Agency, Washington, DC. Sponsor: *K. Guyton*.

#1896 **Poster Board Number 447**
Artifactual Positive Urine Reagent Test-Strip Reactions Caused by Common Contaminants in Laboratory-Housed Nonhuman Primates, Beagle Dogs, and Sprague-Dawley Rats. W. Siska[1], *D. J. Meyer*[1], *A. E. Schultze*[2], C. Brandoff[1], J. West[1], and S. Wirth[1]. [1]Charles River Laboratories, Reno, NV; and [2]Department of Pathology, Lilly Research Laboratories, A Division of Eli Lilly and Company, Indianapolis, IN.

#1897 **Poster Board Number 450**
Potential Mode of Action for Noncancer Effects following Exposure to Libby Amphibole Asbestos. *M. R. Gwinn*, and *A. M. Jarabek*. Office of Research & Development, US Environmental Protection Agency, Washington, DC.

#1898 **Poster Board Number 451**
Reference Intervals and Comparison of Clinical Pathology Parameters in Cynomolgus Monkeys of Chinese, Mauritian, and Cambodian Origin. A. Wilcox, D. E. Wilkins, *S. J. Bulera*, B. Russell, and G. Elliott. Charles River Laboratories, Reno, NV.

Abstract #

#1899 **Poster Board Number 452**
The Occurrence of Chemically Induced Lung Tumors in Rodents As an Outcome in NTP Chronic Bioassays and the Impact on Cancer Classifications. *J. A. MacGregor*[1], *A. Santamaria*[2], J. Plunkett[3], and *L. M. Plunkett*[3]. [1]Toxicology Consulting Services, Bonita Springs, FL; [2]Exponent, Houston, TX; and [3]Integrative Biostrategies, Houston, TX.

#1900 **Poster Board Number 453**
Multicolor, Multiparameter High-Throughput Flow Cytometry for Candidate Compound Screening. *T. V. Shankey*[1], A. Bieberich[1], A. Irvine[1], R. Fatg[1], and B. Rajwa[2]. [1]R&D, AsedaSciences, West Lafayette, IN; and [2]Purdue University, West Lafayette, IN.

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Regulation/Policy

Strategies for Exposure and Risk Assessments

Chairperson(s): *Katy O. Goyak, ExxonMobil Biomedical Sciences, Inc., Annandale, NJ.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#1901 **Poster Board Number 501**
Assessment of the Potential Human Health Risks from Exposure to Complex Substances in Accordance with REACH Requirements: "White Spirit" As a Case Study. *R. H. McKee*[1], R. Tibaldi[1], *M. D. Adenuga*[1], and *J. Carrillo*[2]. [1]Toxicology and Environmental Sciences, ExxonMobil Biomedical Sciences Inc., Annandale, NJ; and [2]Shell Health, Shell International B.V., The Hague, Netherlands.

#1902 **Poster Board Number 502**
What Is an Acceptable Risk of Cancer Due to Occupational Exposure to a Carcinogen? *D. A. Dankovic*, and C. Whittaker. Risk Evaluation Branch, CDC/NIOSH, Cincinnati, OH.

#1903 **Poster Board Number 503**
Comparison of Inhalation Occupational Exposure Limits (OELs) and European Worker's Inhalation-Derived No-Effect Levels (DNELs) for Volatile Organic Compounds. *M. Jackson*[1], *R. Lemus*[2], and L. Fell[1]. [1]Haley & Aldrich, Ann Arbor, MI; and [2]ATL, Cincinnati, OH.

#1904 **Poster Board Number 504**
Characterizing Risks from Exposure to Hazardous Air Pollutants: Consideration of Health Risks from Acute Exposure. I. Pagan[1], and *G. M. Woodall*[2]. [1]OAQPS, US EPA, Research Triangle Park, NC; and [2]NCEA, US EPA, Research Triangle Park, NC.

#1905 **Poster Board Number 505**
Reanalysis of Angina Study Cited by US Environmental Protection Agency As Primary Basis for National Ambient Air Quality Standards on Carbon Monoxide. *A. Donnay*. Consultant, Hyattsville, MD.

WEDNESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#1906 **Poster Board Number 506**
Assessing Acute Exposures to Hazardous Air Pollutants to Inform Regulatory Decisions under Section 112 of the Clean Air Act: Challenges and Potential Improvements. M. J. Stewart, J. Hirtz, and I. Pagan. OAQPS, US EPA, Research Triangle Park, NC. Sponsor: *D. Murphy*.

#1907 **Poster Board Number 507**
Design of Experiments Aligned with Benchmark Dose Analyses Reveals Significant Reduction and Refinement in the Use Laboratory Animals. *M. Öberg*[1,2], J. Ringblom[1], F. Kalantari[1], and *G. Johanson*[1]. [1]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden; and [2]Swedish Toxicology Sciences Research Center, Södertälje, Sweden.

#1908 **Poster Board Number 508**
Use and Development of 24-Hour, Health-Protective Ambient Air Comparison Values in Texas. *R. L. Grant*, and *J. T. Haney*. Toxicology Division, Texas Commission on Environmental Quality, Austin, TX.

#1909 **Poster Board Number 509**
Adjustment of the US EPA Draft Oral Slope Factor for Hexavalent Chromium to Be More Predictive of Risk at Lower Exposure Levels Based upon Dose-Dependent Differences in the Fraction of Dose Absorbed into Target Tissues. *J. T. Haney*. Toxicology Division, Texas Commission on Environmental Quality, Austin, TX.

#1910 **Poster Board Number 510**
Assessing NTP's Effectiveness: A Case Study on Hexavalent Chromium. Y. Xie[1], S. Holmgren[2], D. Andrews[1], and M. S. Wolfe[1]. [1]DNTP, NIEHS, Research Triangle Park, NC; and [2]OD, NIEHS, Research Triangle Park, NC. Sponsor: *J. Bucher*.

#1911 **Poster Board Number 511**
Using Acute Oral Toxicity Data to Estimate Acute Dermal Hazard Classification and Labeling of Pesticides. M. Paris[1], *J. Strickland*[1], *D. G. Allen*[1], and *W. Casey*[2]. [1]ILS/NICEATM, Research Triangle Park, NC; and [2]NTP/NICEATM, Research Triangle Park, NC.

#1912 **Poster Board Number 512**
A Global Initiative to Refine Acute Inhalation Studies through the Use of "Evident Toxicity" As an Endpoint: Toward Adoption of the Fixed Concentration Procedure. *F. Sewell*[1], T. Marczylo[2], and G. Horgan[3]. [1]National Centre for the Replacement, Refinement & Reduction of Animals in Research (NC3Rs), London, United Kingdom; [2]Public Health England, Didcot, United Kingdom; and [3]Biomathematics and Statistics Scotland (BioSS), Aberdeen, United Kingdom.

#1913 **Poster Board Number 513**
Read-Across of Existing Hazard Data Fulfills HPV Chemical Program Requirements and Avoids Unnecessary Chemical Testing. *F. H. Kruszewski*, K. Stanton, P. DeLeo, and R. Sedlak. Technical and Regulatory Affairs, American Cleaning Institute, Washington, DC.

Abstract #

#1914 **Poster Board Number 514**
Toxicology Databases: Aggregating Human Food Safety Toxicology Information for Veterinary Drugs in Food-Producing Animals. *M. Cecco*[1], and T. Zhou[2]. [1]University of South Carolina, Columbia, SC; and [2]Center for Veterinary Medicine, US FDA, Rockville, MD.

#1915 **Poster Board Number 515**
Effectiveness of Toxicology-Based Webinars in Promoting Nonstandard Methods Using REACH As a Case Study. J. Brown[1], J. Barroso[3], H. Penrose[4], G. Patlewicz[2], J. Baines[1], *A. Clippinger*[1], and G. Stoddart[1]. [1]PETA International Science Consortium, Ltd., Oakland, CA; [2]DuPont Haskell Global Centers, Newark, DE; [3]Systems Toxicology Unit, EURL ECVAM, Ispra, Italy; and [4]Chemical Watch, Shrewsbury, United Kingdom.

#1916 **Poster Board Number 516**
The Role of the Toxicologist in Required Food Safety Plans: A Case Study of Ochratoxin A (OTA) in Coffee. C. L. Doepker[1], and *G. Brorby*[2]. [1]ToxStrategies, Inc., Fort Thomas, KY; and [2]ToxStrategies, Inc., Richmond, CA.

#1917 **Poster Board Number 517**
EU Cosmetics Regulation Driving Acceptance of *In Vitro* Alternatives. C. Cordon, and P. Aikens. Huntingdon Life Sciences, Huntingdon, Cambridgeshire, United Kingdom. Sponsor: *C. Auletta*.

#1918 **Poster Board Number 518**
Cosmetic Safety Testing Roadmap to Regulatory Approval in North America, Europe, and Japan. B. J. Varsho[1], *E. L. Roggen*[2], *B. De Wever*[3], and *G. L. DeGeorge*[1]. [1]MB Research Laboratories, Spinnerstown, PA; [2]3RsMC, Copenhagen, Denmark; and [3]ALTEXA Development, Monte Carlo, Monaco.

#1919 **Poster Board Number 519**
Interaction between GHS and Chemical Registrations in the EU. *S. Warren*[1], and *E. Freeman*[2]. [1]Centre for Chemical Regulation and Food Safety, Exponent International, Harrogate, United Kingdom; and [2]Center for Chemical Regulation and Food Safety, Exponent Inc, Washington, DC.

#1920 **Poster Board Number 520**
The Harmony and Dissonance of Harmonization: A Comparison of Four Globally Harmonized System (GHS) Carcinogen Categorizations with NTP, US EPA, and IARC Classifications. C. Whittaker. National Institute for Occupational Safety and Health, Cincinnati, OH. Sponsor: *D. Dankovic*.

#1921 **Poster Board Number 521**
Impact of Different Criteria for Identifying Endocrine-Disrupting Substances under the EU Biocidal Products Regulation. *V. Mostert*[1], R. Bruyndonckx[2], and A. Adams[2,3]. [1]extera, Langenfeld, Germany; [2]European Biocidal Products Forum, CEFIC, Brussels, Belgium; and [3]Bayer S.A.S., Lyon, France.

#1922 **Poster Board Number 522**
Threshold of Toxicological Concern and Its Use in Agrochemical and Chemical Risk Assessment. G. Dean, and P. Aikens. Huntingdon Life Sciences, Huntingdon, Cambridgeshire, United Kingdom. Sponsor: *C. Auletta*.

Program Schedule (Continued)

Abstract #

#1923 **Poster Board Number 523**
Evaluating and Providing Risk Context for Water Contaminants with Minimal or No Toxicity Data. *H. M. Goeden*[1], A. Suchomel[1], N. Gavrelis[2], and *W. J. Heiger Bernays*[3]. [1]Minnesota Department of Health, Saint Paul, MN; [2]Eastern Research Group, Lexington, MA; and [3]Boston University, Boston, MA.

#1924 **Poster Board Number 524**
Mode of Action and Adverse Outcome Pathways: Distinguishing a Difference via Case Study Analysis. *K. Goyak*, and *C. Palermo*. ExxonMobil Biomedical Sciences Inc., Annandale, NJ.

#1925 **Poster Board Number 525**
A Systematic Review of the Toxicological Hazards of the Waterpipe. *M. E. Kushman*. CTP, US FDA, Silver Spring, MD.

#1926 **Poster Board Number 526**
A Pilot Project Reveals Prominent Hazard Screening Tools Fall Short on Performance Expections. A. M. Mason[1], *P. J. Spencer*[2], and J. M. Panko[3]. [1]American Chemistry Council, Washington, DC; [2]Toxicology & Environmental Research and Consulting, The Dow Chemical Company, Midland, MI; and [3]Cardno Chemrisk, Pittsburgh, PA.

#1927 **Poster Board Number 527**
US EPA Environmental Justice Research Roadmap: Cross-Agency Research Priority. *M. K. Manibusan*[1], *A. M. Jarabek*[2], *M. R. Gwinn*[1], *S. P. Darney*[2], J. Quackenboss[3], and F. Hauchman[1]. [1]Office of Research and Development, US-EPA, Washington, DC; [2]Office of Research and Development, US-EPA, Research Triangle Park, NC; and [3]Office of Research and Development, US-EPA, Las Vegas, NV.

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Nanotoxicology, *In Vitro*

Chairperson(s): *Girish Kumar, US FDA, Silver Spring, MD; and Kevin Dreher, US EPA, Research Triangle Park, NC.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#1928 **Poster Board Number 535**
Manufactured Metal Oxide Nanoparticles *In Vitro* Vascular Toxicity: Role of Size Profile and Cellular Specificity on Delivered Dose and Cytotoxicity. *W. W. Polk*[1], M. Odegaard[2], K. Cleveland[4], N. Coates[3], and *K. Dreher*[3]. [1]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC; [2]Monsanto, St. Louis, MO; [3]National Health and Environmental Effects Research Laboratory, US Environmental Protection Agency, Research Triangle Park, NC; and [4]Contractor, National Health and Environmental Effects Research Laboratory, US Environmental Protection Agency, Research Triangle Park, NC.

#1929 **Poster Board Number 536**
Potential Toxicity of Titanium Dioxide Nanoparticles in Cultured Rat Pleural Mesothelial Cells. Y. Chen, and *J. M. Cerreta*. PHS, St. John's University, Queens, NY.

Abstract #

#1930 **Poster Board Number 537**
Tungsten (IV) Oxide Nanoparticles Induce Apoptosis in Rat Pleural Mesothelial Cells. S. P. Kondapalli, and *J. M. Cerreta*. PHS, St. John's University, Queens, NY.

#1931 **Poster Board Number 538**
Investigation of the Endocytosis of Gold Nanoparticles into the Human Bronchial Epithelial Cell Line BEAS-2B. M. Vetten[1,2], and *M. Gulumian*[1,2]. [1]Toxicology and Biochemistry Section, National Institute for Occupational Health, Johannesburg, South Africa; and [2]School of Pathology, University of the Witwatersrand, Johannesburg, South Africa.

#1932 **Poster Board Number 539**
Ligand-Dependent Uptake of 14 nm Gold Nanoparticles in BEAS-2B Cells. *M. Gulumian*[1,2], and M. Vetten[1,2]. [1]Toxicology and Biochemistry Section, National Institute for Occupational Health, Johannesburg, South Africa; and [2]School of Pathology, University of the Witwatersrand, Johannesburg, South Africa.

#1933 **Poster Board Number 540**
***In Vitro* Assessment of Vascular Nanoparticle-Induced Toxicity: Implications for a Susceptible Human Subpopulation.** *J. Shannahan*, and *J. M. Brown*. Pharmaceutical Sciences, University of Colorado, Aurora, CO.

#1934 **Poster Board Number 541**
Small Airway Epithelial Cells Exposure to Printer-Emitted Engineered Nanoparticles Induces Cellular Effects on Human Microvascular Endothelial Cells in an Alveolar-Capillary Coculture Model. Y. Qian[1], J. Sisler[1], *A. A. Shvedova*[1], S. Friend[1], D. Schwegler-Berry[1], M. Farcas[1], *P. Demokritou*[2], *V. Castranova*[3], and S. V. Pirela[2]. [1]PPRB, NIOSH, Morgantown, WV; [2]Center for Nanotechnology and Nanotoxicology, Harvard School of Public Health, Boston, MA; and [3]School of Pharmacy, West Virginia University, Morgantown, WV.

#1935 **Poster Board Number 542**
Nanoparticle Ingestion Alters Nutrient Absorption in a Physiologically Based *In Vitro* Model of the Gastrointestinal Tract. Z. Guo[1], E. Tako[2], and G. Mahler[1]. [1]Department of Bioengineering, Binghamton University, Binghamton, NY; and [2]Plant, Soil and Nutrition Laboratory, Agricultural Research Services, US Department of Agriculture, Ithaca, NY. Sponsor: *J. Bonner*.

#1936 **Poster Board Number 543**
Evaluation of an *In Vitro* Assay for Nanoparticle-Induced Complement Activation. J. E. Leakey, M. E. Collins, A. Patri, and *P. C. Howard*. Office of Scientific Coordination, NCTR, Jefferson, AR.

#1937 **Poster Board Number 544**
Effect of Nanoscale Surface Features of TiO2 Implant Coatings on Biological Activity of Human Bone Marrow-Derived Stromal Cells. *S. Skoog*[1,2], *G. Kumar*[2], C. Donahue[2], M. Shah[2], J. Zheng[2], *P. L. Goering*[2], and R. Narayan[2]. [1]Joint Dept. of Biomedical Engineering, Univ. of North Carolina and NC State Univ., Raleigh, NC; and [2]CDRH, USFDA, Silver Spring, MD.

Program Schedule (Continued)

Abstract #

#1938 **Poster Board Number 545**
Cytotoxicity of Titanium and Cerium Dioxide Nanoparticles in HaCaT Cells. *M. F. Hughes*[1], and V. Miyani[2]. [1]ORD/NHEERL, US EPA, Research Triangle Park, NC; and [2]Student Services Contractor, Morrisville, NC.

#1939 **Poster Board Number 546**
***In Vitro* Cardiotoxicity Screening of Silver and Metal Oxide Nanoparticles Using Human-Induced Pluripotent Stem Cell-Derived Cardiomyocytes.** *K. Dreher*[1], *J. D. Strickland*[2], *W. W. Polk*[3], and *T. J. Shafer*[1]. [1]National Health and Environmental Effects Research Laboratory, US EPA, Research Triangle Park, NC; [2]Contractor, US EPA, Research Triangle Park, NC; and [3]University of North Carolina at Chapel Hill, Chapel Hill, NC.

#1940 **Poster Board Number 547**
Tracking Translocation of Industrially Relevant Engineered Nanomaterials across Alveolar Epithelial Monolayers *In Vitro*. *J. Cohen*[1,2], R. Derk[3], L. Wang[3], J. J. Godleski[1], J. Brain[1], and P. Demokritou[1]. [1]Department of Environmental Health, Harvard School of Public Health, Boston, MA; [2]Gradient, Seattle, WA; and [3]Health Effects Laboratory Division, National Institute of Occupational Safety and Health, Morgantown, WV.

#1941 **Poster Board Number 548**
Effects of Metal Oxide Nanomaterials on Cytotoxicity and Immune Response in THP-1 Cells. A. Miyajima-Tabata, T. Kawakami, K. Komoriya, R. Kato, S. Niimi, and K. Isama. National Institute of Health Sciences, Tokyo, Japan. Sponsor: *A. Hirose*.

#1942 **Poster Board Number 549**
Nanoparticles Exacerbate Drug-Induced Phospholipidosis. *L. Zhang*[1,2], *N. A. Monteiro-Riviere*[3], J. Li[1], and L. Yang[1]. [1]School of Radiation Medicine and Protection, Suzhou, China; [2]Collaborative Innovation Center of Radiation Medicine of Jiangsu Higher Education Institutions, Suzhou, China; and [3]Nanotechnology Innovation Center of Kansas State University, Manhattan, KS.

#1943 **Poster Board Number 550**
Proteome Alteration and Toxicity Induced by Ag Nanoparticles in an Intestinal Coculture Model. T. Serchi[1], A. Georgantzopoulou[1], C. C. Leclercq[1], J. Renaut[1], M. Kruszewski[2], A. Lankoff[2], E. Lentzen[1], J. Audinot[1], J. Ziebel[1], C. Guignard[1], L. Hoffmann[1], and A. C. Gutleb[1]. [1]Environment and Agrobiotechnologies, Luxembourg Institute for Science and Technology, Belvaux, Luxembourg; and [2]Institute of Nuclear Chemistry and Technology, Centre for Radiobiology and Biological Dosimetry, Warszawa, Poland. Sponsor: *B. Brunhilde*.

#1944 **Poster Board Number 551**
Silica Nanoparticle-Induction of CXCL8 and IL-6 in BEAS-2B Cells via Activation of NF-κB and a p38/TACE/TGF-α/EGFR-Pathway: Role of ROS. M. Refsnes, T. Skuland, and M. Låg. Department of Air Pollution and Noise, Norwegian Institute of Public Health, Oslo, Norway. Sponsor: *B. Granum*.

Abstract #

#1945 **Poster Board Number 552**
Preliminary Validation Study of a 3D *In Vitro* Inhalation Model, Using Cytokine and Gene Expression Responses of Copper Oxide Nanoparticles. I. M. Kooter[1], M. Grollers-Mulderij[1], E. Duistermaat[2], Y. Staal[2], F. Kuper[1], E. van Someren[1], and E. Schoen[1]. [1]TNO, Utrecht, Netherlands; and [2]TNO Triskelion BV, Zeist, Netherlands. Sponsor: *R. Wouters*.

#1946 **Poster Board Number 553**
The Role of Valence State in Cerium Oxide Nanoparticle Toxicity. *K. M. Dunnick*[1,2], E. M. Sabolsky[3], and S. S. Leonard[1,2]. [1]Health Effects Laboratory Division, NIOSH, Morgantown, WV; [2]Department of Pharmaceutical and Pharmacological Sciences, West Virginia University, Morgantown, WV; and [3]Benjamin M. Statler College of Engineering and Mineral Resources, West Virginia University, Morgantown, WV.

#1947 **Poster Board Number 554**
Proinflammatory Potential of Silica- and Silver-Nanoparticles in Different Epithelial Lung Cell Cultures. M. Låg, T. Skuland, T. H. Nguyen, H. Pham, and M. Refsnes. Department of Air Pollution and Noise, Norwegian Institute of Public Health, Oslo, Norway. Sponsor: *B. Granum*.

#1948 **Poster Board Number 555**
Physicochemical Properties of Gold Nanomaterial Affect Content Binding and Adherence Dynamics of their Serum Plasma Protein Corona. N. M. Schaeublin, M. L. Meade, R. L. Pitsch, P. Shiyanov, *C. A. Mauzy*, *J. Schlager*, and *S. M. Hussain*. 711 HPW; RHDJ, Air Force Research Labs, Wright-Patterson, OH.

#1949 **Poster Board Number 556**
Impact of Silver Nanoparticle—Ovalbumin Protein Corona on Antigen Presentation. W. Bai, *J. Shannahan*, and *J. M. Brown*. Department of Pharmaceutical Sciences, University of Colorado-Anschutz Medical Campus, Aurora, CO.

#1950 **Poster Board Number 557**
Extended and Repeat-Dose Percutaneous Penetration of Dendrimers into Pig and Human Skin. *M. Kraeling*[1], K. Belgrave[1], V. Topping[1], K. Bailey[1], *X. Gao*[1], K. Schlick[2], E. Simanek[2], S. Man[3], A. K. Patri[3], R. Sprando[1], and *J. Yourick*[1]. [1]Office of Applied Research and Safety Assessment, USFDA, Laurel, MD; [2]Department of Chemistry, Texas Christian University, Fort Worth, TX; and [3]Nanotechnology Characterization Laboratory, Leidos Biomedical Research, Inc., Frederick, MD.

#1951 **Poster Board Number 558**
Cellular Uptake and Clearance of TiO2 Nanoparticles. *J. N. Ortenzio*[2], L. L. Degn[1], D. Abdulhadi[2], R. Zucker[1], and *W. K. Boyes*[1]. [1]USEPA, Research Triangle Park, NC; and [2]Student Contractor to EPA, Research Triangle Park, NC.

#1952 **Poster Board Number 559**
Inflammatory Potential of Iron Oxide Nanoparticles. S. Grosse[1], R. Vik[1,2], *S. F. Ali*[3], J. Stenvik[1,2], and *A. M. Nilsen*[1]. [1]Department of Cancer Research and Molecular Medicine, Norwegian University of Science and Technology (NTNU), Trondheim, Norway; [2]CEMIR, NTNU, Trondheim, Norway; and [3]Neurochemistry Laboratory, Division of Neurotoxicology, NCTR, Jefferson, AR.

Program Schedule (Continued)

Abstract #

#1953 **Poster Board Number 560**
The "Spot Test": A Novel Assay for the Analysis of Biocidal Properties of Nanomaterials. K. Kasemets, S. Suppi, and A. Kahru. Laboratory of Environmental Toxicology, National Institute of Chemical Physics and Biophysics, Tallinn, Estonia. Sponsor: *K. Savolinen*.

#1954 **Poster Board Number 561**
Synthesis, Characterization, and Antimicrobial Activity of Drug-Loaded Calcium Alginate Nanocapsules: Perspectives on Their Potential Biomedical Use. A. Anaya-Sanchez[1], A. Aburto-Platas[1], M. A. Mendez[1], M. C. Miranda[3], R. E. Cachau[2], J. F. Delgado-Jimenez[1], and *T. D. Palacios-Hernandez*[1,3]. [1]Universidad de las Americas Puebla, Cholula, Mexico; [2]Frederick National Laboratory for Cancer Research, Frederick, MD; and [3]Biological Sciences, Universidad Popular Autonoma del Estado de Puebla, Puebla, Mexico.

#1955 **Poster Board Number 562**
Effects of Dose, Dissolution, and Ion Aging on Silver Nanotoxicity *In Vitro*. H. D. Jolley, *V. K. Kodali*, *J. G. Teeguarden*, *B. D. Thrall*, *J. G. Pounds*, and *J. N. Smith*. Center for Nanotoxicology, Pacific Northwest National Laboratory, Richland, WA.

#1956 **Poster Board Number 563**
Distinct Patterns of Apoptosis and Necrosis in A549 Cells by Fourth-Period Transition Metal Oxide Nanoparticles. L. M. Tolliver[1], F. S. Hou[2], H. Lee[3], R. S. Aronstam[1], and *Y. Huang*[1]. [1]Biological Sciences, Missouri University of Science and Technology, Rolla, MO; [2]Department of Clinical Laboratory Science, Marquette University, Milwaukee, WI; and [3]Department of Natural Resources and Environmental Studies, National Dong Hwa University, Taipei, Taiwan.

#1957 **Poster Board Number 564**
Effects of Cu Nanoparticles to *E. coli* and *L. brevis* Compared to Their Micron-Sized and Ionic Analog. *C. Kaweeteerawat*[1,2], *C. Chang*[2], and *H. Godwin*[1,2]. [1]Molecular Toxicology, UCLA, Los Angeles, CA; and [2]UC Center for Environmental Implications of Nanotechnology, Los Angeles, CA.

#1958 **Poster Board Number 565**
Toxicogenomics Evaluation of Fumed Silica Nanoparticles in Human Lung Cells Reveals a Hierarchical Stress Response. O. Prat, C. Pisani, J. Gaillard, V. Nouvel, M. Odorico, and J. Armengaud. DSV, CEA, Bagnols sur Cèze, France. Sponsor: *K. Krishnan*.

#1959 **Poster Board Number 566**
***In Vitro* Penetration of Branched Polyethyleneimine (bPEI)-Coated Silver Nanoparticles into Human Skin.** V. Topping[1,2], K. Belgrave[1,2], Z. Keltner[1], R. Sprando[1], *J. Yourick*[1], and *M. Kraeling*[1]. [1]Division of Toxicology, Office of Applied Research and Safety Assessment, US FDA, Laurel, MD; and [2]ORISE, Oak Ridge, TN.

Abstract #

#1960 **Poster Board Number 567**
The ToxTracker Reporter System Enables Rapid Screening with Mechanistic Insight into the Genotoxicity of Metal Oxide Nanoparticles. A. R. Gliga[1], H. L. Karlsson[1], F. Calléja[2], C. Goncalves[2], I. Odnevall Wallinder[3], H. Vrieling[2], *B. Fadeel*[1], and *G. Hendriks*[2]. [1]Division of Molecular Toxicology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden; [2]Department of Toxicogenetics, Leiden University Medical Center, Leiden, Netherlands; and [3]Division of Surface and Corrosion Science, School of Chemical Science and Engineering, Royal Institute of Technology, Stockholm, Sweden.

#1961 **Poster Board Number 568**
Toxicity Evaluation of Raw and Thermally Degraded Nanoclays on Human Lung Cells. A. Wagner, R. Eldawud, S. Agarwal, R. Gupta, and *C. A. Dinu*. West Virginia University, Morgantown, WV.

#1962 **Poster Board Number 569**
Surface Manipulation of Gold Nanorods: Toxicity Analysis of Chemical Modifications to Provide High Biocompatibility, Enhanced Uptake, and Unique Intracellular Distribution Pattern. A. B. Polito, E. I. Maurer, and *S. M. Hussain*. 711 HPW; RHDJ, Air Force Research Labs, Wright-Patterson, OH.

#1963 **Poster Board Number 570**
Identifying Novel Gene Expression Targets following Metallic Nanomaterial Exposures Using Next-Generation Sequencing: A Comparison of Mouse and Human *In Vitro* Neuronal Models. *M. Grogg*[1], K. R. Naik[1], M. P. Kadakia[2], *L. K. Braydich-Stolle*[1], and *S. M. Hussain*[1]. [1]711 HPW; RHDJ, Air Force Research Labs, Wright-Patterson, OH; and [2]Biochemistry and Molecular Biology, Boonshoft School of Medicine, Dayton, OH.

Program Schedule (Continued)

Abstract #

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Metals—As, Cd, Hg

Chairperson(s): *Karin Broberg, Karolinska Institutet, Stockholm, Sweden; and Amber M. Nagy, Biomaterials and Environmental Surveillance, Naval Medical Research Unit San Antonio, Fort Sam Houston, TX.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *9:00 AM–11:00 AM*

#1964 **Poster Board Number 601**
Identification of Novel Gene Targets and Putative Regulators of Arsenic-Associated DNA Methylation in Human Urothelial Cells and Bladder Cancer. *J. E. Rager*[1], S. K. Miller[1], L. Smeester[1], *J. Currier*[2], M. Ishida[3], M. del Carmen González-Horta[3], B. E. Sánchez Ramírez[3], L. Ballinas-Casarrubias[3], D. S. Gutiérrez-Torres[3], *Z. Drobna*[4], L. M. Del Razo[5], G. G. Garcia-Vargas[6], W. Y. Kim[7], *M. Styblo*[2,4], and *R. Fry*[1,2]. [1]Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC; [2]Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC; [3]Facultad de Ciencias Químicas, Universidad Autónoma de Chihuahua, Chihuahua, Mexico; [4]Department of Nutrition, University of North Carolina, Chapel Hill, NC; [5]Departamento de Toxicología, Centro de Investigación, Mexico City, Mexico; [6]Facultad de Medicina, Universidad Juárez del Estado de Durango, Gómez Palacio, Mexico; and [7]Lineberger Comprehensive Cancer, University of North Carolina, Chapel Hill, NC.

#1965 **Poster Board Number 602**
Modulation of AhR-Regulated Genes by Trimethyl Arsine Oxide in the Lung, Kidney, and Heart of C57BL/6 Mice. *O. H. Elshenawy*, and *A. O. El-Kadi*. Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, AB, Canada.

#1966 **Poster Board Number 603**
Arsenite- and Cadmium-Transformed Human Bladder Cancer Cells and Tumor Transplants Contain Elevated Levels of Gap Junctional Protein Connexin 43. *J. R. Dunlevy*[1], R. Zhang[2], *S. Somji*[2], *S. H. Garrett*[2], X. Zhou[2], S. Cyr[2], and *D. A. Sens*[2]. [1]Basic Sciences, University of North Dakota, Grand Forks, ND; and [2]Pathology, University of North Dakota, Grand Forks, ND.

#1967 **Poster Board Number 604**
Gestational Arsenic Exposure Affects Gene Expression in the Kidney and Lung in the F1 and F2 Mice. S. Takumi[1], K. Okamura[2], T. Suzuki[2], H. Hano[1], *K. Nohara*[2], and H. Yanagisawa[1]. [1]Department of Public Health and Environmental Medicine, The Jikei University School of Medicine, Tokyo, Japan; and [2]National Institute for Environmental Studies, Tsukuba, Japan.

#1968 **Poster Board Number 605**
Arsenic Methylation Is Required for Arsenic-Induced Atherosclerosis. *L. Negro Silva*[1], *M. Lemaire*[1], M. Flores Molina[1], D. Plourde[1], V. N. Slavkovich[2], *J. H. Graziano*[2], C. A. Lemarié[1], S. Lehoux[1], and *K. K. Mann*[1]. [1]Lady Davis Institute for Medical Research, McGill University, Montreal, QC, Canada; and [2]Mailman School of Public Health, Columbia University, New York, NY.

Abstract #

#1969 **Poster Board Number 606**
Activity of the Zinc Finger Transcription Factor HNF-4α Is Inhibited by Arsenic in the Livers of Mice with Diet-Induced Nonalcoholic Fatty Liver Disease. *W. H. Watson*[1,2], T. J. Burke[1], V. L. Massey[2], *G. E. Arteel*[2], and M. L. Merchant[1,2]. [1]Medicine, University of Louisville, Louisville, KY; and [2]Pharmacology and Toxicology, University of Louisville, Louisville, KY.

#1970 **Poster Board Number 607**
Metabolomic Signature Associated with Knockout of Arsenic (+3 Oxidation State) Methyltransferase in C57B6 Mice. M. Huang[1], C. Douillet[2], M. Su[3], K. Zhou[3], T. Wu[3], W. Chen[3], W. Jia[3], and *M. Styblo*[2]. [1]Curriculum in Toxicology, University of North Carolina Chapel Hill, Chapel Hill, NC; [2]Nutrition, University of North Carolina Chapel Hill, Chapel Hill, NC; and [3]Cancer Center, University of Hawaii at Mānoa, Honolulu, HI.

#1971 **Poster Board Number 608**
Metabolism and Disposition of Arsenic in Acute Promyelocytic Leukemia Patients Treated with Arsenic Trioxide (ATO). *M. Styblo*[1], A. R. Calabro[2], R. S. Saunders[1], *Z. Drobna*[1], D. R. Budman[2], C. Devoe[2], S. Allen[2], and C. M. Ghiuzeli[2]. [1]Nutrition, University of North Carolina Chapel Hill, Chapel Hill, NC; and [2]Monter Cancer Center of North Shore, LIJ Health Systems, Lake Success, NY.

#1972 **Poster Board Number 609**
Maternal Genotype for Arsenic (+3 Oxidation State)-Methyltransferase Influences Inorganic Arsenic Metabolism and Newborn Birth Outcomes in a Pregnancy Cohort in Mexico. *Z. Drobna*[2], *E. Martin*[1], *M. Rubio-Andrade*[4], *G. G. Garcia-Vargas*[4], *M. Styblo*[2], *K. Kim*[3], *F. Zou*[3], and *R. Fry*[1]. [1]ESE, UNC-Chapel Hill, Chapel Hill, NC; [2]Nutrition, UNC-Chapel Hill, Chapel Hill, NC; [3]Biostatistics, UNC-Chapel Hill, Chapel Hill, NC; and [4]Facultad de Medicina, Universidad Juárez del Estado de Durango, Gómez Palacio, Mexico.

#1973 **Poster Board Number 610**
MicroRNA Profile Changes in Immortalized Human Keratinocytes after Low Arsenic Exposure. *L. Al-Eryani*[1], J. Pan[2], S. N. Rai[2,3], and *J. C. States*[1]. [1]Pharmacology & Toxicology, Univ Louisville, Louisville, KY; [2]Biostatistics Shared Facility, Brown Cancer Center, Univ Louisville, Louisville, KY; and [3]Bioinformatics & Biostatistics, Univ Louisville, Louisville, KY.

#1974 **Poster Board Number 611**
Relationship between mRNA Expression Level and SNPs of As3MT in Residents from Arsenic-Contaminated Areas in Vietnam. T. Agusa[1], T. Kunito[2], N. M. Tue[1], V. T. Lan[3], T. B. Minh[4], P. T. Trang[3], J. Fujihara[5], H. Takeshita[5], S. Takahashi[6], P. H. Viet[3], S. Tanabe[1], and *H. Iwata*[1]. [1]Ehime University, Center for Marine Environmental Studies (CMES), Matsuyama, Japan; [2]Faculty of Science, Shinshu University, Matsumoto, Japan; [3]Center for Environmental Technology and Sustainable Development (CETASD), Vietnam National University, Hanoi, Vietnam; [4]Faculty of Chemistry, Vietnam National University, Hanoi, Vietnam; [5]Department of Legal Medicine, Shimane University Faculty of Medicine, Izumo, Japan; and [6]Faculty of Agriculture, Ehime University, Matsuyama, Japan.

Program Schedule (Continued)

Abstract #

#1975 **Poster Board Number 612**
Yes-Associated Protein Expression in Neoplastic and Non-Neoplastic Breast Tissue of Women Living in an Area with Hydroarsenicism. G. Michel-Ramírez[1], G. Ocampo-Gomez[1], R. Recio-Vega[1], E. Palacios-Sánchez[1], M. Delgado-Macías[1], M. Delgado-Gaona[1], and *A. J. Gandolfi*[2]. [1]Environmental Health, University of Coahuila, Torreon, Mexico; and [2]College of Pharmacy, University of Arizona, Tucson, AZ.

#1976 **Poster Board Number 613**
Remodeling of Mitochondrial Network Topology Defines Myogenesis Progression: Insights from Low-Dose Arsenite Exposure. A. Cheikhi[1], F. Ambrosio[3], and *A. Barchowsky*[1,2]. [1]Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA; [2]Pharmacology and Chemical Biology, University of Pittsburgh, Pittsburgh, PA; and [3]Physical Medicine & Rehabilitation, University of Pittsburgh, Pittsburgh, PA.

#1977 **Poster Board Number 614**
Activating Transcription Factor 4 (ATF4) Regulates Arsenic Trioxide-Mediated Impairment of Macrophage Innate Immune Functions. *R. K. Srivastava*, C. Li, Y. Wang, C. Elmets, J. Deshane, and M. Athar. University of Alabama at Birmingham, Birmingham, AL.

#1978 **Poster Board Number 615**
Mechanism of Arsenic Synergistic Effect on Hexavalent Chromium-Induced Metaphase Damage in Human Lung Cells. *H. Xie*, *J. P. Wise*, J. Stewart, L. Yang, and N. Nutter. University of Southern Maine, Portland, ME.

#1979 **Poster Board Number 616**
Low-Dose Arsenite during Fetal Development Alters Energy Metabolism and Increases Susceptibility to Cardiovascular and Fatty Liver Disease. *E. J. Ditzel*[1], H. Nyugen[1], P. Parker[1], and *T. D. Camenisch*[1,2,3]. [1]Pharmacology and Toxicology, University of Arizona, Tucson, AZ; [2]Steele Children's Research Center, Tucson, AZ; and [3]Southwest Environmental Health Sciences Center, Tucson, AZ.

#1980 **Poster Board Number 617**
Identifying N-6 Adenine-Specific DNA Methyltransferase 1 (N6AMT1) Polymorphisms Associated with Arsenic Methylation in Two Population Studies. R. M. de la Rosa[1], N. K. Akers[1], L. Conde[2], C. Steinmaus[1], D. Kalman[3], A. Smith[1], L. Zhang[1], C. F. Skibola[2], and *M. T. Smith*[1]. [1]Superfund Research Program, School of Public Health, University of California, Berkeley, Berkeley, CA; [2]Department of Epidemiology, Comprehensive Cancer Center, University of Alabama, Birmingham, AL; and [3]School of Public Health, University of Washington, Seattle, WA.

#1981 **Poster Board Number 618**
Inorganic and Organic Arsenic Inhibit CFTR Cl Secretion by Human Bronchial Epithelial Cells. *B. C. Goodale*, R. Barnaby, and *B. Stanton*. Microbiology and Immunology, Geisel School of Medicine at Dartmouth, Hanover, NH.

Abstract #

#1982 **Poster Board Number 619**
Coexposure to Fluoride and Inorganic Arsenic in Drinking Water May Decrease the Capacity to Methylate and Detoxify Arsenic. *L. M. Del Razo*[1], C. González-Horta[2], R. Saunders[3], B. E. Sánchez Ramírez[2], L. Ballinas-Casarrubias[2], M. C. Ishida[2], D. S. Gutiérrez-Torres[2], A. Barrera-Hernández[1], *Z. Drobná*[3], *G. G. Garcia-Vargas*[4], M. Mendez[3], and *M. Stýblo*[3]. [1]Toxicologia, Cinvestav-IPN, Mexico City, Mexico; [2]Ciencias Quimicas, Universidad Autónoma de Chihuahua, Chihuahua, Mexico; [3]University of North Carolina, Chapel Hill, NC; and [4]Universidad Juárez del Estado de Durango, Gómez Palacio, Mexico.

#1983 **Poster Board Number 620**
N-Cadherin Upregulation and EMT Progression in As^{3+}- and Cd^{2+}-Transformed Urothelial Cells. *E. Sandquist*, *S. Somji*, *D. A. Sens*, and *S. H. Garrett*. Pathology, University of North Dakota, Grand Forks, ND.

#1984 **Poster Board Number 621**
Anterior Gradient 2 Expression in MCF-10A and UROtsa Cells Exposed to Arsenite and Cadmium. *J. Van Gieson*, *S. H. Garrett*, *D. A. Sens*, and *S. Somji*. Pathology, University of North Dakota, Grand Forks, ND.

#1985 **Poster Board Number 622**
Potential Involvement of Cadmium in the Induction of the Polyol Pathway of Hyperglycemic Glucose Metabolism in Human Proximal Tubule Cells. *B. Davis*, *S. H. Garrett*, *D. A. Sens*, and *S. Somji*. Pathology, University of North Dakota, Grand Forks, ND.

#1986 **Poster Board Number 623**
Exposure of V79 Cells to Cadmium Chloride Results in the Production of Single-Strand Breaks, Double-Strand Breaks, and Cell Cycle Changes. J. Gobrecht, P. Kube, and *M. Reynolds*. Washington College, Chestertown, MD.

#1987 **Poster Board Number 624**
Changes of Gene Expression in Human Proximal Tubular Cells Treated with Cadmium. *M. Satoh*[1], *J. Lee*[1], *M. Tokumoto*[1], and Y. Fujiwara[1,2]. [1]School of Pharmacy, Aichi Gakuin University, Nagoya, Japan; and [2]Tokyo University of Pharmacy and Life Sciences, Hachioji, Tokyo, Japan.

#1988 **Poster Board Number 625**
Involvement of FOXF1 Transcription Factor in Cadmium-Induced Suppression of UBE2D4 Gene Expression. *J. Lee*[1], *M. Tokumoto*[1], Y. Fujiwara[1,2], and *M. Satoh*[1]. [1]School of Pharmacy, Aichi Gakuin University, Nagoya, Japan; and [2]School of Pharmacy, Tokyo University of Pharmacy and Life Sciences, Tokyo, Japan.

#1989 **Poster Board Number 626**
Pleiotropic Roles of Calmodulin-Dependent Pathways Regulating Cadmium Toxicity in Human Osteoblast-Like Cell Lines. M. L. Goodwin, T. T. Ha, S. T. Burwell, and *S. J. Heggland*. Biology, The College of Idaho, Caldwell, ID.

Program Schedule (Continued)

Abstract #

#1990 **Poster Board Number 627**
Comprehensive Analysis of Transcription Factors Involved in Rat Proximal Tubular Cells Exposed to Cadmium. *M. Tokumoto*[1], *J. Lee*[1], Y. Fujiwara[1,2], and *M. Satoh*[1]. [1]School of Pharmacy, Aichi Gakuin University, Nagoya, Japan; and [2]School of Pharmacy, Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan.

#1991 **Poster Board Number 628**
Effect of Injection Timing of Cadmium on Severity of Testicular Toxicity. *N. Miura*, and K. Ohtani. National Institute of Occupational Safety and Health (JNIOSH), Kawasaki, Japan.

#1992 **Poster Board Number 629**
Exposure to Cadmium Causes Changes in Gene Expression in *In Vivo* and *In Vitro* Rat Liver and Kidney Models. M. Permenter[1], *M. S. Madejczyk*[2], D. Kumsher[1], C. E. Baer[1], J. Lewis[3], and J. D. Stallings[3]. [1]Excet, Inc, Fort Detrick, MD; [2]ORISE, Fort Detrick, MD; and [3]USACEHR, Fort Detrick, MD.

#1993 **Poster Board Number 630**
Role of Metallothionein in Modifying the Toxicological Response to Cadmium in Humans. *G. F. Nordberg*[1], T. Jin[1,2], and *M. M. Nordberg*[3]. [1]Public Health and Clinical Medicine, Umea University, Umea, Sweden; [2]Occupational Health and Toxicology, School of Public Health, Fudan University, Shanghai, China; and [3]Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden.

#1994 **Poster Board Number 631**
Cadmium Effect on Lipids Accumulation in Mouse Primary Culture. *M. C. Gutierrez Ruiz*, M. Dominguez Perez, D. P. Rosales Cruz, E. Reyes Zarate, L. Gomez-Quiroz, R. U. Miranda, L. Bucio, and V. Souza. Health Science, Universidad Autonoma Metropolitana-Iztapalapa, Mexico City, Mexico.

#1995 **Poster Board Number 632**
Environmental Metabolomics of Low-Dose Cadmium (Cd) in Nonalcoholic Fatty Liver Disease. *Y. Go*, *J. D. Chandler*, M. Orr, and *D. P. Jones*. Medicine, Emory University, Atlanta, GA.

#1996 **Poster Board Number 633**
The Human Exposome: Environmental Metabolomics of Low-Dose Cadmium (Cd). *D. P. Jones*[1], K. Uppal[1], *J. D. Chandler*[1], *D. Walker*[1,3], *K. D. Pennell*[3], R. Bostick[2], V. Fedirko[2], and *Y. Go*[1]. [1]Medicine, Emory University, Atlanta, GA; [2]Epidemiology, Emory University, Atlanta, GA; and [3]Environmental Engineering, Tufts University, Boston, MA.

#1997 **Poster Board Number 634**
Cadmium Accumulates within Pancreatic Islets at Levels Similar to the Renal Cortex in an Experimental Model of Long-Term Exposure. *J. Edwards*[1], and M. El Muayed[2]. [1]Pharmacology, Midwestern University, Downers Grove, IL; and [2]Endocrinology, Metabolism, and Molecular Medicine, Northwestern University, Chicago, IL.

#1998 **Poster Board Number 635**
Environmental Low-Dose Cadmium Exposure Inhibits Pulmonary Expression of Gene Pathways Including Mitochondrial Energetics, Muscle Function, Cell Cycle Regulation and Wnt Signaling. *J. D. Chandler*, S. Banton, S. Li, M. Orr, B. Kang, C. Wongtrakool, *Y. Go*, and *D. P. Jones*. Medicine, Division of Pulmonary, Allergy and Critical Care, Emory University, Atlanta, GA.

Abstract #

#1999 **Poster Board Number 636**
Lead and Mercury Species Cause Adverse Cardiovascular Effects via Different Mechanisms Depending on Metal and Mixture Ratio. *L. P. Weber*[1,2], *S. D. Siciliano*[1,3], and *T. Wildemann*[1,3]. [1]Toxicology Graduate Program, University of Saskatchewan, Saskatoon, SK, Canada; [2]Veterinary Biomedical Sciences, University of Saskatchewan, Saskatoon, SK, Canada; and [3]Soil Science, University of Saskatchewan, Saskatoon, SK, Canada.

#2000 **Poster Board Number 637**
Renal Accumulation of Mercury in Male Sprague-Dawley Rats Resulting from Oral Gavage with Ras Sindoor. *N. Sadekar*, and *L. D. Trombetta*. Pharmaceutical Sciences, St. John's University, Queens, NY.

#2001 **Poster Board Number 638**
Methylmercury Induces Abnormal Vacuolar Morphology through the Dissociation of EGO Complex in Yeast. *G. Hwang*, Z. Zhang, and *A. Naganuma*. Graduate School of Pharmaceutical Sciences, Tohoku University, Sendai, Japan.

#2002 **Poster Board Number 639**
Activation of IL-6 and IL-8 Expression by Methylmercury through NF-κB in Human U937 Macrophages. *M. Yamamoto*[1], M. Muniroh[2], N. Khan[2], E. Motomura[1], R. Yanagisawa[3], T. Matsuyama[2], and *C. F. Vogel*[4]. [1]Department of Basic Medical Science, National Institute for Minamata Disease, Minamata, Japan; [2]Graduate School of Medical and Dental Sciences, Kagoshima University, Kagoshima, Japan; [3]Center for Environmental Health Sciences, National Institute for Environmental Studies, Tsukuba, Japan; and [4]Department of Environmental Toxicology, University of California, Davis, CA.

#2003 **Poster Board Number 640**
***In Vitro* Studies to Characterize the Bioaccessibility and Bioavailability of Methylmercury from Seafood.** M. A. Bradley[1], M. Siedlikowski[1], and *N. Basu*[1,2]. [1]School of Dietetics and Human Nutrition, McGill University, Sainte-Anne-de-Bellevue, QC, Canada; and [2]Department of Natural Resource Sciences, McGill University, Sainte-Anne-de-Bellevue, QC, Canada.

Wednesday Morning, March 25
9:00 AM to 12:30 PM
CC Exhibit Hall

PS

Poster Session: Medical Devices: Risk Assessment and Test Methods

Safety Assessment Approaches for Product Development

Chairperson(s): *Ron P. Brown, US FDA, Silver Spring, MD; and Lori H. Moilanen, Corporate Toxicology and Regulatory Services, 3M, Saint Paul, MN.*

Displayed: *9:00 AM–12:30 PM*

Author-Attended: *11:00 AM–12:30 PM*

#2004 **Poster Board Number 645**
Conversion Factors to Estimate Oral NOAEL Values from LD50 Values: Implications for Medical Device Toxicology. N. Young, S. Pollock, and *R. P. Brown*. US FDA, Silver Spring, MD.

WEDNESDAY

Program Schedule (Continued)

Abstract #

#2005 **Poster Board Number 646**
Computational Toxicology Evaluation of DESMA: Challenges in Evaluating a Complex Reaction Product Mixture Used in Dental Devices. *B. D. Bagley*, C. P. Owens, *L. M. Milchak*, and *L. H. Moilanen*. Medical Department, 3M Company, St. Paul, MN.

#2006 **Poster Board Number 647**
Toxicology-Based Cancer Causation Analysis of CoCr-Containing Hip Implants: A Quantitative Assessment of Genotoxicity and Tumorigenicity Studies. *W. V. Christian*[1], *L. D. Oliver*[2], *M. Kreider*[1], *D. J. Paustenbach*[3], and *B. L. Finley*[4]. [1]Cardno ChemRisk, Pittsburgh, PA; [2]Cardno ChemRisk, Boulder, CO; [3]Cardno ChemRisk, San Francisco, CA; and [4]Cardno ChemRisk, Brooklyn, NY.

#2007 **Poster Board Number 648**
Risk Assessment of Cyclic Siloxanes (D3 to D19) As Extractables from Polymeric Components in Biopharmaceutical Manufacturing. *K. L. Li*[1], *D. Dolan*[1], and L. Nagao[2]. [1]Environment, Health, Safety and Sustainability, Amgen Inc, Thousand Oaks, CA; and [2]Drinker Biddle & Reath LLP, Washington, DC.

#2008 **Poster Board Number 649**
Safety Assessment of a Cadmium-Containing Pigment in a Limited, Mucosal Membrane-Contacting Surface Device. *F. K. Hsia*, *E. E. Reverdy*, and R. J. Simas. Global Toxicology and Biocompatibility Services, Boston Scientific, Marlborough, MA.

#2009 **Poster Board Number 650**
Assessment of the Safety of Coexposure to Dental Device Extractables Using the Maximum Cumulative Ratio Approach. *L. H. Moilanen*, and *B. D. Bagley*. Medical Department, 3M Company, St. Paul, MN.

#2010 **Poster Board Number 651**
An Alternative Method to the Canine NAVI Model to Evaluate the Thrombogenicity of Medical Devices. *E. E. Reverdy*[1], R. R. Tunstall[2], *F. K. Hsia*[1], and E. A. Stejskal[2]. [1]Global Toxicology and Biocompatibility, Boston Scientific Corporation, Marlborough, MA; and [2]Preclinical Division, Boston Scientific Corporation, Marlborough, MA.

#2011 **Poster Board Number 652**
Utilization of Fluoroscopy and Contrast-Assisted Blood Flow Assessment in Evaluating the Acute *In Vivo* Thrombogenicity of Blood-Contacting Medical Devices. *K. Grove*, M. Jorgenson, M. Frie, M. E. Smith, and M. Conforti. American Preclinical Services, Minneapolis, MN.

#2012 **Poster Board Number 653**
Development of a Minimally Heparinized Circulating Ovine Blood-Loop Model for *In Vitro* Thrombogenicity Testing of Medical Devices. M. E. Smith, S. Deline, S. Howard, and *K. Grove*. American Preclinical Services, Minneapolis, MN.

#2013 **Poster Board Number 654**
Minimizing Systemic Toxicity via Catheter-Directed Thrombolytic Drug Delivery in a Porcine Model of Deep Vein Thrombosis. R. Rajoria, S. E. Montgomery, A. Barcenas, D. Gutierrez, and V. Naageshwaran. Medical Device, Absorption Systems, San Diego, CA. Sponsor: *R. Bawa*.

Abstract #

#2014 **Poster Board Number 655**
Development of a Standard Test Method and Positive Control Materials for the Platelet Leukocyte Count: An *In Vitro* Assay for Hemocompatibility Assessment of Blood Contacting Medical Devices. J. Pomonis, M. E. Smith, S. Deline, *K. Grove*, and S. Howard. American Preclinical Services, Minneapolis, MN.

#2015 **Poster Board Number 656**
Evaluation of an *In Vitro* Human Dermal Sensitization Test for Use with Medical Device Extracts. *K. P. Coleman*[1], L. R. McNamara[1], T. P. Grailer[1], J. A. Willoughby[2], D. Keller[2], and C. Dilworth[3]. [1]Medtronic, Inc., Minneapolis, MN; [2]Cyprotex, US LLC, Kalamazoo, MI; and [3]Cyprotex PLC, Macclesfield, United Kingdom.

#2016 **Poster Board Number 657**
Extractable Positive Control for *In Vitro* Skin Irritation Testing of Medical Devices. D. S. Olsen[1], M. Lee[1], A. Turley[1], S. Sasaki[2], K. Yamasaki[2], C. Fukui[3], Y. Nomura[3], R. Kato[3], S. Niimi[3], T. Yuba[4], K. Sakaguchi[5], and Y. Haishima[3]. [1]Nelson Laboratories, Inc., Salt Lake City, UT; [2]Public Welfare Institute of Scientific Research Foundation, Tokyo, Japan; [3]National Institute of Health Sciences, Tokyo, Japan; [4]Kawasumi Laboratories, Inc., Tokyo, Japan; and [5]Terumo Corporation, Kanagawa, Japan. Sponsor: *K. Coleman*.

#2017 **Poster Board Number 658**
Development, Optimization, and Standardization of an *In Vitro* Skin Irritation Test for Medical Devices Using the Reconstructed Human Tissue Model EpiDerm. *H. Kandarova*[1,4], J. A. Willoughby[2], W. H. de Jong[3], M. A. Bachelor[4], S. Letasiova[1], T. Milasova[1], B. Breyfogle[4], L. de la Fonteyne[3], and *K. P. Coleman*[5]. [1]MatTek IVLSL, Bratislava, Slovakia; [2]Cyprotex US LLC, Kalamazoo, MI; [3]RIVM, Bilthoven, Netherlands; [4]MatTek Corporation, Ashland, MA; and [5]Medtronic, Inc, Minneapolis, MN.

#2018 **Poster Board Number 659**
Comparison of Results from *In Vitro* and *In Vivo* Sensitization and Irritation Tests Used in the Evaluation of Medical Devices. *Y. Zhou*[3], *D. E. Malek*[2], and *R. T. Przygoda*[1]. [1]Life Cycle Materials, Johnson & Johnson, Cincinnati, OH; [2]Malek Toxicology Delaware LLC, Greenville, DE; and [3]Advanced Testing Laboratory, Cincinnati, OH.

#2019 **Poster Board Number 660**
Effect of Extract Media Serum Concentration on Cytotoxicity of Polymeric Materials. N. Mahashetty, *G. Kumar*, *C. Ghosh*, J. Goode, *P. L. Goering*, and *R. P. Brown*. CDRH, US FDA, Silver Spring, MD.

#2020 **Poster Board Number 661**
Comparison of Results from Two *In Vitro* Cytotoxicity Tests Used in the Evaluation of Medical Devices. *D. E. Malek*[1], *Y. Zhou*[2], and *R. T. Przygoda*[3]. [1]Malek Toxicology Delaware LLC, Greenville, DE; [2]Advanced Testing Laboratory, Cincinnati, OH; and [3]Life Cycle Materials, Johnson & Johnson, Cincinnati, OH.

Program Schedule (Continued)

Abstract #

#2021 **Poster Board Number 662**
EVA Foamed Excipient: Novel Way to Deliver Stem Cells, Growth Factors, and Biologics for Controlled-Release Applications. J. Reyes, E. A. Choudhury, J. Haley, C. Schneider, K. Enters, D. Hair, K. Coggon, and *M. S. Stavanja*. Celanese International, Dallas, TX.

#2022 **Poster Board Number 663**
NTP Studies of N,N-Dimethyl-p-toluidine (DMPT), a Component in Medical Devices and Gental Material. K. R. Shockley[1], D. L. Morgan[1], A. Brix[1], G. Flake[1], J. Foley[1], Y. Wang[1], *A. R. Pandiri*[2], B. Mahler[2], O. Lyght[3], K. Gerrish[1], and *J. K. Dunnick*[1]. [1]National Institute of Environmental Health Sciences, Research Triangle Park, NC; [2]Experimental Pathology Laboratories, Inc., Durham, NC; and [3]Integrated Laboratory Systems, Research Triangle Park, NC.

Wednesday Morning, March 25,
9:15 AM to 10:15 AM
CC Room 24A

E

Exhibitor-Hosted Session: Application of Molecular Imaging and Radiochemistry in Drug Development

Presented by:
MPI Research

Contemporary drug development is a lengthy process. Molecular imaging (MI) has become a solution to decrease development time via assessment of specific molecular targets. MI is a multidisciplinary field evaluating biological processes at the molecular and cellular levels *in vivo*. This session focuses on application of molecular imaging drug development.

Wednesday Morning, March 25,
9:15 AM to 10:15 AM
CC Room 24C

E

Exhibitor-Hosted Session: Consequences of Immunogenicity in Nonclinical Safety Studies

Presented by:
Charles River

In nonclinical safety testing, biotherapeutics have the potential to induce an immune response. This session will cover the effects of immunogenicity responses to biotherapeutics, including the approach taken to determine immunogenicity involvement and the methods for predicting clinical immunogenicity. Nonclinical case studies on adverse immunogenicity events will be presented.

Wednesday Morning, March 25,
9:15 AM to 10:15 AM
CC Room 24B

E

Exhibitor-Hosted Session: Metabolites in Safety Testing—A Novel Key to Turn for Your 3Rs Initiatives

Presented by:
Covance

The changing pharmaceutical environment is delaying definitive nonclinical and clinical testing to after Phase IIB. Yet increasing regulatory requirements force organizations to look for alternative development plans. Utilizing connections between toxicology and metabolism can help to de-risk programs and help to blaze a path forward.

Wednesday Morning, March 25
9:30 AM to 4:30 PM
CC Room 11A

Research Funding Information Room

Hosted by:
Career Resource and Development Committee

SOT places a strong emphasis on the development of opportunities for research support and funding. As a service to its members and new investigators, SOT offers the Research Funding Information Room so that members and attendees may network and learn more about the various opportunities available to them. Program and review agency staff from federal agencies that fund research, including NIH, US FDA, NIEHS, CDC, and US EPA will be available in the Research Funding Information Room (Room 11A) for individual conversations. Attendees may check the posted schedule for specific times staff members will be available during the week to answer questions about the scientific review process or various grant opportunities. The schedule will be available in the Registration area and the Research Funding Information Room.

Wednesday Morning, March 25
9:30 AM to 10:30 AM
CC Room 5B

(Ticket Required; SOT Student and Postdoctoral Members Only, Limited Seating)

Trainee Discussion with Medical Research Council (MRC) Lecturer: Dr. Stockinger

Chairperson(s): *Kathryn E. Page, University of California Berkeley, Berkeley, CA.*

Lecturer: Brigitta Stockinger, MRC National Institute for Medical Research, London, United Kingdom.

Graduate students and postdoctoral scholars have the special opportunity of meeting for informal discussion with Dr. Stockinger after her Keynote MRC Lecture (see page 269). The limited tickets for this event could be obtained with your Annual Meeting registration.

Wednesday Morning, March 25,
10:45 AM to 11:45 AM
CC Room 24C

E

Exhibitor-Hosted Session: Blending Biocompatibility and Pharmaceutical Testing Processes to Obtain Sub-Acute, Sub-Chronic, and Chronic Toxicity Evaluations of Medical Devices

Presented by:
Toxikon Corporation

Certain medical devices require systemic toxicity tests. Addressing the requirements of ISO 10993-11 and regulators abroad requires an understanding of the requirements as well as the limitations of the animal models. Utilizing requirements required of pharmaceuticals and adjusting them to the application of ISO 10993-11 provides for a robust study.

Program Schedule (Continued)

Wednesday Morning, March 25,
10:45 AM to 11:45 AM
CC Room 24B

E

Exhibitor-Hosted Session: HμREL: "Plug-and-Play" Primary Hepatic Models for a Variety of Definitive Hepatotoxicity Applications

Presented by:
Hμrel Corporation

Hμrel's primary hepatic co-cultures maintain hepatic functions over time,making Hμrel's co-culture models ideal for extended *in vitro* hepatotoxicity monitoring. Our symposium will demonstrate Hμrel's co-culture system for a variety of *in vitro* toxicity applications, including high content analysis, "real-time" hepatotoxicity monitoring (ACEA Biosciences), and Hμrel's microfluidic Hμrelflow™.

Wednesday Morning, March 25,
10:45 AM to 11:45 AM
CC Room 24A

E

Exhibitor-Hosted Session: Unraveling the Gordian Knot of Predictive Toxicology: Can Next-Gen Culture Systems Solve the Puzzle?

Presented by:
Organovo

How well do your preclinical models translate to the clinic? Better prediction of human outcomes will require new strategies that accurately model human tissue complexity. Join us for a thought-provoking panel discussion on the opportunities and challenges created in the application of next-gen culture systems to the drug development process.

Wednesday Morning, March 25
11:00 AM to 2:30 PM
Balboa Park, Downtown San Diego

San Diego Regional Science Fair Judging

Chairperson(s): *Virunya Bhat, NSF International, San Diego, CA.*

Hosted by:
Southern California Regional Chapter

Endorser(s): :
Education Committee
K–12 Subcommittee

Meet at the San Diego Convention Center to travel to the nearby Greater San Diego Science and Engineering Fair to assist the Southern California Regional Chapter in their annual tradition of selecting awards for students with outstanding projects related to toxicology.

Abstract #

WEDNESDAY AFTERNOON

Wednesday Afternoon, March 25
12:00 Noon to 1:20 PM
CC Ballroom 6E

R

Roundtable Session: Should Respiratory Sensitizers Be Listed As Substances of Very High Concern (SVHC) under REACH?

Chairperson(s): *Jon A. Hotchkiss, Toxicology and Environmental Research and Consulting, The Dow Chemical Company, Midland, MI; and David Basketter, DABMEB Consultancy Ltd, Sharnbrook, United Kingdom.*

Endorser(s):
Immunotoxicology Specialty Section
Inhalation and Respiratory Specialty Section
Regulatory and Safety Evaluation Specialty Section

There is increasing regulatory pressure in Europe to list respiratory sensitizers as substances of very high concern (SVHC) based on "equivalent level of concern" criteria set out in REACH Article 57(f). This approach assumes that in certain cases, the negative impacts caused by sensitizers on the health and quality of life of affected individuals and on society as a whole are comparable to those elicited by carcinogens, mutagens, and reproductive toxicants (CMRs). Potential factors for comparison include seriousness of the effect, delayed onset and/or irreversibility of effects, potency, mode of action, impairment of life quality, or uncertainty about the dose-response relationships. As there are currently no applicable guidelines or generally accepted assays that can accurately identify respiratory sensitizers nor distinguish between respiratory and dermal sensitizers, all materials with sensitizing potential may be considered for inclusion as SVHC. While all respiratory sensitizers may test positive in animal-based dermal sensitization assays, skin sensitizing agents do not elicit respiratory effects under normal circumstances and respiratory sensitizers are generally considered to pose a greater health concern. Current guidance recommends a weight-of-evidence approach based on human and animal data to identify a potential respiratory sensitizer; however, some regulatory authorities may accept any positive indication of sensitizing potential as evidence for inclusion as a SVHC. A SVHC is subject to authorization within the EU and may not be used unless an authorization is granted for their specific use. These proposed regulatory actions will likely have a profound impact on the sale and use of materials due to regulatory authorization and/or deselection of products containing a SVHC. The goal of this roundtable is to promote a free and open discussion of the rationale and scientific basis for handling chemical sensitizers as SVHC under REACH.

#2023	12:00	**Should Respiratory Sensitizers Be Listed As Substances of Very High Concern (SVHC) under REACH?** *J. A. Hotchkiss*[1], *D. Basketter*[2], *J. M. Matheson*[3], and *J. Pauluhn*[4]. [1]The Dow Chemical Company, Midland, MI; [2]DABMEB Consultancy Ltd., Sharnbrook, United Kingdom; [3]US Consumer Product Safety Commission, Bethesda, MD; and [4]Bayer Pharma AG (Retired), Wuppertal, Germany.
	12:00	**Introduction.** J. A. Hotchkiss. The Dow Chemical Company, Midland, MI.
	12:05	**Why Are Respiratory Sensitizers a Significant Health Concern?** J. M. Matheson. US Consumer Product Safety Commission, Bethesda, MD.
	12:15	**Respiratory Sensitizers Should Be Listed As SVHC Based on an Equivalent Level of Concern to CMR Substances.** D. Basketter. DABMEB Consultancy Ltd., Shambook, United Kingdom.
	12:25	**Respiratory Sensitizers Are Not Equivalent to CMR Substances and Should Be Evaluated on a Case-by-Case Basis.** J. A. Hotchkiss. The Dow Chemical Company, Midland, MI.

Program Schedule (Continued)

Abstract #

12:35 **Respiratory Sensitizers Have Measurable Response Thresholds upon Which Safe Exposure Levels May Be Based.** J. Pauluhn. Bayer Pharma AG, Wuppertal, Germany.

12:45 **Panel Discussion.** Panel Discussion/Q&A

Wednesday Afternoon, March 25
12:00 Noon to 1:20 PM
CC Ballroom 6F

R

Roundtable Session: Will Generally Recognized As Safe (GRAS) Become an Endangered Species?

Safety Assessment Approaches for Product Development

Chairperson(s): *Ray A. Matulka, Burdock Group, Orlando, FL; and Emilia Lonardo, Grocery Manufacturers Association, Washington, DC.*

Endorser(s):
Ethical, Legal, and Social Issues Specialty Section
Food Safety Specialty Section
Regulatory and Safety Evaluation Specialty Section

The current legislative and regulatory framework provides for self-determination of Generally Recognized As Safe (GRAS) ingredients in food products, with voluntary notification of the GRAS determination to the US FDA. Recent reports by the federal General Accountability Office, the Pew Institute, and the Natural Resources Defense Council have been critical of the Generally Recognized As Safe (GRAS) process for use of food ingredients. Specifically, GRAS has come under fire as not having adequate safeguards in place to protect the public from inadequate safety behind a decision of GRAS, specifically as being susceptible to conflicts of interest and generally, too far outside of regulatory oversight, which might otherwise provide a higher degree of assurance of public safety. More recently, the GRAS status of partially hydrogenated oils (aka trans fats) has been revoked. Does this mark the start of a new era where the US FDA will have more oversight of the GRAS process? Will GRAS notification be required? Would this requirement increase the safety of food ingredients? This roundtable will provide an in-depth look at the history and future of GRAS determinations, where the GRAS process has worked, why the GRAS status of a few ingredients has been revoked, and how the process can be improved. Principles followed in the self-determination and notification processes of GRAS ingredients, safeguards that are in place to ensure the safety of GRAS ingredients, and proposed steps to increase transparency and rigor of the assessments will be discussed.

#2024 12:00 **Will Generally Recognized As Safe (GRAS) Become an Endangered Species?** A. Mattia[2], *E. Lonardo*[3], D. B. McColl[4], and *R. A. Matulka*[1]. [1]Burdock Group, Orlando, FL; [2]Division of Biotechnology and GRAS Notice Review, FDA, College Park, MD; [3]Grocery Manufacturers Association, Washington, DC; and [4]Hyman, Phelps & McNamara, Washington, DC.

12:00 **Introduction.** E. Lonardo. Grocery Manufacturers Association, Washington, DC.

12:05 **US FDA's GRAS Notification Program: Considerations Regarding Oversight of Food Ingredient Safety.** A. Mattia. US FDA, College Park, MD.

12:17 **The GRAS Process: An Industry Perspective.** E. Lonardo. Grocery Manufacturers Association, Washington, DC.

12:29 **The GRAS Process: A Legal Perspective.** D. B. McColl. Hyman, Phelps & McNamara, P.C., Washington, DC.

12:41 **The GRAS Process for Food Ingredient Safety Analysis: Case Studies.** R. A. Matulka. Burdock Group, Orlando, FL.

12:53 **Panel Discussion.** Panel Discussion/Q&A

Abstract #

Wednesday Afternoon, March 25
12:00 Noon to 1:20 PM
CC Room 1

IS

Informational Session: Risk Communication and Management in the Era of Social Media and the Internet: Serving Society's Needs with Accurate Information

Chairperson(s): *Steven J. Hermansky, ConAgra Foods, Omaha, NE; and Suzanne C. Fitzpatrick, Center for Food Safety & Applied Nutrition, US Food and Drug Administration, College Park, MD.*

Endorser(s):
Food Safety Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Ample evidence exists that the source of chemical safety information for people today has shifted, at least in part, from traditional sources of textbooks, academia, and government authorities to bloggers, websites, and email. This has multiple implications for society as well as our science. Adapting to this new world of communication is critical. Unfortunately, communicating and engaging with the lay public is not addressed as part of graduate training, and, therefore, even accomplished toxicologists who are effective scientific communicators find themselves underprepared. The good news is that tools and guidance to help communicate in this new world are rapidly evolving. Expanding the use of these tools and developing new methods requires effort by the risk assessment and risk communication communities. This begins by understanding the tools, learning the methods, and, occasionally, taking a risk by trying out these new communication techniques. Sharing experiences cross functionally will enable communication across the risk management community. Four individuals with varying risk management roles across society come together in this informational session to share their experience and insight into the new world of risk communication. A discussion panel will follow the completion of the formal presentations.

#2025 12:00 **Risk Communication and Management in the Era of Social Media and the Internet: Serving Society's Needs with Accurate Information.** *S. J. Hermansky*[1], *S. C. Fitzpatrick*[2], *R. Canady*[3], and U. Rangan[4]. [1]ConAgra Foods, Omaha, NE; [2]US FDA, Washington, DC; [3]International Life Sciences Institute, Washington, DC; and [4]Consumer Reports, Yonkers, NY.

12:00 **Introduction.** S. C. Fitzpatrick. US FDA, College Park, MD.

12:10 **Using Social Media to Communicate Science and Risk: An Industry Perspective.** S. J. Hermansky. ConAgra Foods Inc., Omaha, NE.

12:25 **The Risk of Risk Perception—Helping Consumers Understand the Difference between Fact and Fiction: A Science Consortium Perspective.** R. Canady. ILSI Research Foundation, Washington, DC.

12:40 **Developing a Successful Risk Communication Program by Leveraging Social Media—Consumer Reports: An NGO Perspective.** U. Rangan. Consumer Reports, Yonkers, NY.

12:55 **Panel Discussion.** Panel Discussion/Q&A

Program Schedule (Continued)

Abstract #

Wednesday Afternoon, March 25
12:00 Noon to 1:20 PM
CC Room 7

EC

Education-Career Development Session: What Toxicologist Do You Wanna Be? The Role of Toxicologists across Diverse Organizations

Chairperson(s): *Sudheer Beedanagari, Bristol-Myers Squibb, East Brunswick, NJ; and Erica D. Bruce, Baylor University, Waco, TX.*

Endorser(s):
Association of Scientists of Indian Origin Special Interest Group
Career Resource and Development Committee
Graduate Student Leadership Committee

Participants across SOT, namely students and postdocs, who are geared up to transition into their full-time career paths of choice as toxicologists do not have a good understanding of what toxicologists do on a day-to-day basis while working in diverse industries/organizations. Although academic toxicology training programs across the globe are training the students well in the principles and concepts of toxicology, they come short in educating the students/postdocs on the role they play as toxicologists in real-world job scenarios across diverse industries/organizations. Based on these needs and to better equip our young toxicologists, an informational session/education-career development session that highlights or summarizes the different roles toxicologists play in the real-world job settings would be of immense value to students/postdocs in evaluating weather their training/personality suits them better in a specific industry/organization over the others. Although it is impossible to cover all the organizations where toxicologists play an important role in one CRAD/informational session, we attempted to represent the major organizations where toxicologists are hired predominantly in the recent years. Each of the five speakers will be covering the following general topics as part of their 15-minute presentations: (1) How and why the speaker ended up with their respective current affiliated organizations; (2) How they went about securing their first job; (3) The kinds of training/soft skills/interpersonal skills needed to find a job in their respective organizations; (4) The kind of career-growth opportunities an entry-level toxicologist will have with the organization or respective industry; (5) The ONE thing the speaker most likes about their job; (6) The ONE thing the speaker most hates about their job.

#2026	12:00	**What Toxicologist Do You Wanna Be? The Role of Toxicologists across Diverse Organizations.** *S. Beedanagari*[1], *B. Mahadevan*[5], *T. A. Re*[3], *R. Mangipudy*[1], *C. Ghosh*[4], and *E. D. Bruce*[2]. [1]Bristol-Myers Squibb, New Brunswick, NJ; [2]Baylor University, Waco, TX; [3]L'Oreal, Clark, NJ; [4]US FDA, Silver Spring, MD; and [5]Abbott Nutrition, Columbus, OH.
	12:00	**The Role of Toxicologists in the Pharmaceutical/Biotechnology Industry.** R. Mangipudy. Bristol-Myers Squibb Company, New Brunswick, NJ.
	12:16	**The Role of Toxicologists in an Academic and/or Research Institute.** E. D. Bruce. Baylor University, Waco, TX.
	12:32	**The Role of Toxicologists in the Cosmetic Industry.** T. A. Re. L'Oreal USA, Clark, NJ.
	12:48	**The Role of Toxicologists in a Federal Organization.** C. Ghosh. US FDA, Silver Spring, MD.
	1:04	**The Role of Toxicologists in the Nutrition Industry.** B. Mahadevan. Abbott Nutrition, Columbus, OH.

Wednesday Evening, March 25
12:00 Noon to 1:30 PM
CC Room 12

Regional Chapter Collaboration and Communications Committee Meeting

Wednesday Afternoon, March 25
12:00 Noon to 1:30 PM
CC
See room listing below.

Specialty Section Meeting/Luncheons: Ethical, Legal, and Social Issues (31A); *In Vitro* and Alternative Methods (28A)

Wednesday Afternoon, March 25,
12:15 PM to 1:15 PM
CC Room 24C

E

Exhibitor-Hosted Session: Advances in *In Vitro* and *In Silico* Techniques: Regulatory Acceptance Worldwide

Presented by:
Huntingdon Life Sciences/Harlan Laboratories

Advances in *in vitro* and *in silico* estimation of toxicological endpoints have challenged traditional approaches to safety assessment. The acceptability of these new methodologies has been acknowledged by regulatory authorities worldwide. We discuss our experiences in using these techniques to achieve regulatory success in a range of product types.

Wednesday Afternoon, March 25,
12:15 PM to 1:15 PM
CC Room 24A

E

Exhibitor-Hosted Session: Kidney Toxicity Biomarker Analysis Tips from the Experts: Why Just Multiplex When You Can MILLIPLEX?

Presented by:
EMD Millipore

In collaboration with Pfizer, EMD Millipore's assay developers designed a bead-based multiplex assay to simultaneously measure multiple PSTC-qualified kidney injury biomarkers in dog urine. Join us to participate in an interactive demonstration of MILLIPLEX® MAP Canine Kidney Toxicity assays to simultaneously detect low-level biomarkers using the Luminex MAGPIX® instrument.

Program Schedule (Continued)

Abstract #

Wednesday Afternoon, March 25
12:30 PM to 1:20 PM
CC Ballroom 6B

FS

Distinguished Toxicology Scholar Award Lecture: Allergic Sensitization: Defining Molecular Mechanisms and Characterizing Hazard and Risk

Lecturer: *Ian Kimber, University of Manchester, Manchester, Cheshire, United Kingdom.*

Allergic sensitization and allergic disease induced by both chemical and proteins is an important health issue, and has posed—and continues to pose—toxicologists with some intriguing challenges. The most common form of chemical allergy, and the most common manifestation of immunotoxicity in humans, is allergic contact dermatitis resulting from skin sensitization. There has been considerable progress in defining the cellular and molecular mechanisms that drive the acquisition of skin sensitization, and this has translated into the development of new paradigms for hazard identification and characterization. Nevertheless, important challenges remain, not least of which is addressing the objective of defining alternative approaches to safety assessment that obviate the need for experimental animals.

Other forms of allergy, and specifically allergic sensitization of the respiratory tract to chemicals resulting in occupational asthma, and sensitization induced by effect proteins and food proteins associated with local or systemic allergic reactions, have continued to test the ingenuity of toxicologists. In both cases there remains a need to unravel the events and processes that lead to the development of sensitization, and to exploit an understanding of the relevant molecular mechanisms to inform the design of workable methods for improved hazard identification and risk assessment.

Progress in these areas will be discussed, highlighting some achievements and considering the hurdles that still have to be negotiated.

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: RNA-Based Biomarkers

Epigenomic Influences in Toxicological Responses

Chairperson(s): *Jamie Mirowsky, University of North Carolina at Chapel Hill, Chapel Hill, NC.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#2027 **Poster Board Number 101**
Liver-Specific mRNAs in Human Plasma As Potential Clinical Biomarkers for Liver Injury. S. Okubo[1], M. Miyamoto[1], D. Ito[2], *K. Takami*[1,3], and K. Ashida[2,4]. [1]Drug Safety Research Laboratories, Takeda Pharmaceutical Company Limited, Fujisawa, Japan; [2]Department of Gastroenterology and Hepatology, Osakafu Saiseikai Nakatsu Hospital, Osaka, Japan; [3]Center for Innovative Drug Discovery and Development, National Institute of Biomedical Innovation, Osaka, Japan; and [4]Center of Gastroenterology, Rakuwakai Otowa Hospital, Kyoto, Japan.

Abstract #

#2028 **Poster Board Number 102**
Serum miR-206 As a Useful Biomarker of Skeletal Muscle Injury Compared with Conventional Biomarkers. Y. Yamaura, M. Kanki, K. Nagata, D. Sasaki, M. Ono, A. Unami, and S. Nakagawa. Drug Safety Research Labs., Astellas Pharma Inc., Osaka, Japan. Sponsor: *J. Yanase*.

#2029 **Poster Board Number 103**
MicroRNAs: Potential Tissue and Circulating Biomarkers of Structural Cardiotoxicity. *G. Falls*, *H. M. Colton*, and *A. H. Stokes*. Safety Assessment, GSK, Research Triangle Park, NC.

#2030 **Poster Board Number 104**
Evaluation of a Panel of miRNAs As Biomarkers of Cardiac and Skeletal Muscle Toxicity in Rats. *J. Calvano*[1], *W. E. Achanzar*[1], B. Murphy[1], J. DiPiero[2], C. Hixon[1], C. Parrula[1], *R. Mangipudy*[1], and *M. Tirmenstein*[1]. [1]DSE, Bristol-Myers Squibb, New Brunswick, NJ; and [2]Discovery Toxicology, Bristol-Myers Squibb, Lawrenceville, NJ.

#2031 **Poster Board Number 105**
MicroRNA As Biomarkers for Mitochondrial Toxicity. B. Baumgart, K. Burton, *T. R. Van Vleet*, T. Sanderson, and *R. Bunch*. Toxicology, Bristol-Myers Squibb, Mt. Vernon, IN.

#2032 **Poster Board Number 106**
Time-Dependent Release and Expression of microRNAs Occurs following A-Naphthylisothiocyanate Exposure in the Rat. *R. J. Church*[1], *M. Otieno*[2], *J. E. McDuffie*[3], *M. Sonee*[2], L. Hall[2], *M. Singer*[2], *P. B. Watkins*[1], and *A. Harrill*[1,4]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; [2]Janssen Research and Development, LLC, Spring House, PA; [3]Janssen Research and Development, San Diego, CA; and [4]UAMS, Little Rock, AR.

#2033 **Poster Board Number 107**
Tools for microRNA Discovery: Design and Testing of Controls for Profiling Platforms. *K. Thompson*[1], B. Rosenzweig[1], and P. Pine[2]. [1]DARS, CDER, FDA, Silver Spring, MD; and [2]NIST-JIMiB, Stanford, CA.

#2034 **Poster Board Number 108**
Evaluation of Plasma microRNAs As Potential Early Biomarkers for Acute Cardiac Injury in Rats. S. Glineur, P. De Ron, *J. Valentin*, and A. Nogueira da Costa. UCB BioPharma SPRL, Braine-L'Alleud, Belgium.

#2035 **Poster Board Number 109**
Improving Power to Detect Changes in Blood miRNA Expression by Accounting for Sources of Variability in the Experimental Design. *S. Daniels*, F. C. Sillé, A. Goldbaum, B. Yee, E. F. Key, *L. Zhang*, *M. T. Smith*, and R. Thomas. UC Berkeley, Berkeley, CA.

#2036 **Poster Board Number 110**
Urinary microRNAs As Potential Biomarkers of Pesticide Exposure. B. A. Weldon[1,2], S. Pacheco[1,2], T. Workman[1,2], *B. Thompson*[3], and *E. M. Faustman*[1,2]. [1]Environmental and Occupational Health Sciences, University of Washington, Seattle, WA; [2]Institute for Risk Analysis and Risk Communication, Seattle, WA; and [3]Fred Hutchinson Cancer Research Center, Seattle, WA.

Program Schedule (Continued)

Abstract #

#2037 **Poster Board Number 111**
Glutamate Dehydrogenase and microRNA-122 Are More Sensitive Liver Injury Markers Than Alanine Aminotransferase in Acetaminophen-Treated Rats. P. Thulin[1], M. Auli[2], H. Robert[3], G. Nordahl[4], C. E. Goldring[3], N. Prats[2], B. Glinghammar[1], and I. Schuppe-Koistinen[4]. [1]Drug Safety and Metabolism, Discovery Safety, AstraZeneca, Mölndal, Sweden; [2]Pathology and Predictive Toxicology Section, Almirall, Barcelona, Spain; [3]MRC Centre for Drug Safety Science, Department of Molecular & Clinical Pharmacology, University of Liverpool, Liverpool, United Kingdom; and [4]Former Global Safety Assessment, Molecular Toxicology, AstraZeneca, Södertälje, Sweden. Sponsor: *P. Newham*.

#2038 **Poster Board Number 112**
The microRNA miR-708 Affects FXR-Dependent Regulation of Cholesterol Efflux in Hepatocytes, Macrophages, and Intestinal Cells. J. A. Garban, and *J. Vanden Heuvel*. Veterinary and Biomedical Sciences, Pennsylvania State University, University Park, PA.

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Carcinogenesis II

Chairperson(s): *Helmut Zarbl, Environmental and Occupational Health Sciences Institute, Robert Wood Johnson Medical School, Piscataway, NJ; and Judith A. MacGregor, Toxicology Consulting Services, Bonita Springs, FL.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#2039 **Poster Board Number 115**
Comparison of Historical Control Data in Two Strains of Rat in Different Cage Environments Used in Carcinogenicity Studies. P. Mansell, G. Hennig, and C. Copeman. General Toxicology, Charles River, Montreal, QC, Canada. Sponsor: *M. Vezina*.

#2040 **Poster Board Number 116**
A Comparison of Negative and Positive Control Tumor Incidence in RasH2 Mice with Previously Published Data. *M. A. Morse*[1], *B. Jacob*[2], A. M. Sargeant[2], and *K. Bonnette*[1]. [1]Toxicology, Charles River Laboratories, Spencerville, OH; and [2]Pathology, Charles River, Spencerville, OH.

#2041 **Poster Board Number 117**
False Positive Rates in National Toxicology Program Rodent Carcinogenicity Studies. G. E. Kissling[1], J. K. Haseman[2], and *E. Zeiger*[3]. [1]Biostatistics Branch, NIEHS, Research Triangle Park, NC; [2]J.K. Haseman Consulting, Raleigh, NC; and [3]Errol Zeiger Consulting, Chapel Hill, NC.

#2042 **Poster Board Number 118**
Parametrial Fat Tissue from High-Fat Diet-Treated SKH-1 Mice Stimulates Transformation of Mouse Epidermal JB6 Cells. *J. J. Bernard*, Y. Lou, Q. Peng, T. Li, A. H. Conney, and Y. Lu. Chemical Biology, Rutgers University, Piscataway, NJ.

Abstract #

#2043 **Poster Board Number 119**
Pterostilbine, an Active Component of Blueberries, Sensitizes Colon Cancer Cells to Chemotherapy: Potential Role of Estrogen Receptor Beta. *M. F. Tolba*[1], and *S. Abdel-Rahman*[2]. [1]Pharmacology and Toxicology, Faculty of Pharmacy, Ain Shams University, Cairo, Egypt; and [2]Obstetrics and Gynecology, The University of Texas Medical Branch, Galveston, TX.

#2044 **Poster Board Number 120**
Cytotoxic Activities of Three Phenolics Against Human Breast Adenocarcinoma Cells (MDA MB-231): Comparison of Two *In Vitro* Assays. H. G. Goktas[1], N. Basaran[1], and A. Basaran[2]. [1]Toxicology, Hacettepe University Faculty of Pharmacy, Ankara, Turkey; and [2]Pharmacognosy, Hacettepe University Faculty of Pharmacy, Ankara, Turkey. Sponsor: *A. Karakaya*.

#2045 **Poster Board Number 121**
Biotransformation of Dietary Heterocyclic Amines Mediated by Dominant Gut Microbial Species. S. J. Sturla. Department of Health Sciences & Technology, ETH Zurich, Zurich, Switzerland. Sponsor: *J. Klaunig*.

#2046 **Poster Board Number 122**
Sodium Bicarbonate-Mediated Alkalization Affects Cancer Invasion and Metastasis by Suppressing Proliferation and Causing Apoptosis in Cancer Cells. T. Dwivedi[1,2], S. Bhetanabhotla[1,2], N. Jain[1,2], K. Mulam[1,2], N. Roomi[1], and *M. Roomi*[1]. [1]Dr. Rath Research Institute, Santa Clara, CA; and [2]The Harker School, San Jose, CA.

#2047 **Poster Board Number 123**
Encapsulation of Raloxifene in Styrene Co-Maleic Acid Micelles Suppresses the Growth of Castrate Resistant Prostate Cancer *In Vivo*. T. Pritchard, S. Taurin, K. Greish, and *R. J. Rosengren*. Pharmacology & Toxicology, University of Otago, Dunedin, New Zealand.

#2048 **Poster Board Number 124**
Encapsulation of Raloxifene in a Nanocarrier Increases the Drug's Cytotoxicity toward Triple-Negative Breast Cancer Cells. S. Taurin, T. Pritchard, H. Nehoff, K. Greish, and *R. J. Rosengren*. Pharmacology & Toxicology, University of Otago, Dunedin, New Zealand.

#2049 **Poster Board Number 125**
Investigating the Effects of the Dietary Carcinogens Benzo(a)pyrene and PhIP in LNCaP Prostate Cancer Cells. *O. Graham*, *R. David*, and *N. J. Gooderham*. Surgery and Cancer, Imperial College London, London, United Kingdom.

#2050 **Poster Board Number 126**
Diindolylmethane and Its Halogenated Derivatives Induce ER Stress and Autophagy in Human Prostate Cancer Cells. H. Draz[1], *A. Goldberg*[1], *S. H. Safe*[2], and *T. Sanderson*[1]. [1]INRS Institut Armand Frappier, Laval, QC, Canada; and [2]Texas A&M University, College Station, TX.

Program Schedule (Continued)

Abstract #

#2051 **Poster Board Number 127**
Antiproliferative and Antioxidant Activities of Fruit Methanol Extract from *Xylopia aethiopica* on Prostate Cancer Cells. O. A. Adaramoye[1,2], B. Erguen[2], B. Nitzsche[3], M. Höpfner[3], *S. E. Owumi*[1], K. Jung[2], and A. Rabien[2]. [1]Biochemistry, University of Ibadan, Ibadan, Nigeria; [2]Urology, University Hospital Charite, Berlin, Germany; and [3]Institut für Physiologie, Charité-Universitätsmedizin, Berlin, Germany.

#2052 **Poster Board Number 128**
Apocynin, an NADPH Oxidase Inhibitor, Suppresses Rat Prostate Carcinogenesis. *S. Suzuki*[1,2], S. Sato[1], A. Naiki-Ito[1], H. Kato[1], T. Kuno[1], and S. Takahashi[1]. [1]Experimental Pathology and Tumor Biology, Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan; and [2]Pathology Division, Nagoya City East Medical Center, Nagoya, Japan.

#2053 **Poster Board Number 129**
Penfluridol, an Antipsychotic Drug: A Treatment Option for Pancreatic Cancer. *A. Ranjan*, and *S. K. Srivastava*. Texas Tech University Health Science Center, Amarillo, TX.

#2054 **Poster Board Number 130**
Chronic Oxidative Stress Induces Malignant Transformation of Human Kidney Epithelial Cells with Acquisition of Stem Cell Characteristics and EMT. *P. S. Mahalingaiah*, *L. Ponnusamy*, and *K. P. Singh*. The Institute of Environmental and Human Health (TIEHH), Texas Tech University, Lubbock, TX.

#2055 **Poster Board Number 131**
Exploration of Type I Interferon As a Novel Therapeutic Agent for Alveolar Rhabdomyosarcoma. *K. M. Nieves*, I. Henrich, R. Young, L. Quick, K. Bledsoe, and M. Chou. University of Pennsylvania, Philadelphia, PA.

#2056 **Poster Board Number 132**
Diet Supplementation with Soy, but Not the Isoflavone Genistein, Protects against Alcohol-Induced Tumor Progression in DEN-Treated Male Mice. K. E. Mercer[1,3], C. F. Pulliam[3], L. Hennings[1], K. Lai[1], M. Cleves[1,3], E. E. Jones[2], R. R. Drake[2], and *M. J. Ronis*[1,3]. [1]Pediatrics, UAMS, Little Rock, AR; [2]Proteomic Center, Medical University, Charleston, SC; and [3]Arkansas Children's Nutrition Center, Little Rock, AR.

#2057 **Poster Board Number 133**
Sunitinib Induces Growth Inhibition, Cell Cycle Arrest, Apoptosis, and Oxidative Stress in Human Breast Cancer MCF7 Cells. H. M. Korashy[1], M. A. Ansari[1], Z. H. Maayah[1], S. A. Ahmad[1], M. A. Assiri[1], and A. Al-Shamasan[2]. [1]Department of Pharmacology & Toxicology, King Saud University, Riyadh, Saudi Arabia; and [2]Department of Pharmaceutics, King Saud University, Riyadh, Saudi Arabia. Sponsor: *A. El-Kadi*.

#2058 **Poster Board Number 134**
Diindolylmethane Analogs Are NR4A2 Antagonists in Colon Cancer Cells. *X. Li*[1], and *S. H. Safe*[1,2]. [1]Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX; and [2]Institute of Biosciences & Technology, Texas A&M University Health Science Center, Houston, TX.

Abstract #

#2059 **Poster Board Number 135**
Impact of Long-Term Cigarette and Shisha (Water Pipe) Smoking on the Expression of Oxidative Stress and DNA Repair Genes in Healthy Subjects. M. N. Al-Arifi[2], Z. H. Maayah[1], I. M. Attafi[1], and H. M. Korashy[1]. [1]Department of Pharmacology & Toxicology, King Saud University, Riyadh, Saudi Arabia; and [2]Department of Clinical Pharmacy, King Saud University, Riyadh, Saudi Arabia. Sponsor: *A. El-Kadi*.

#2060 **Poster Board Number 136**
Exposure to Low-Dose Cadmium Enhances FL83B Cells Proliferation through Down-Regulation of Caspase-8 by DNA Hypermethylation. *J. L. Gu*. Pediatrics, University of Louisville, Louisville, KY.

#2061 **Poster Board Number 137**
Penfluridol, an Antipsychotic Drug-Mediated Suppression of Triple-Negative Breast Cancer Metastasis to Brain through Inhibition of Integrinα6β4. *A. Ranjan*, *P. Gupta*, and *S. K. Srivastava*. Texas Tech University Health Science Center, Amarillo, TX.

#2062 **Poster Board Number 138**
Effects of Crocetin and Safranal, Constituents of Saffron, Using *In Vitro* and *In Vivo* Models of Human Prostate Cancer. *F. F. Albaqami*[1], M. A. Ibrahim[2], I. Muhammad[2], and *K. L. Willett*[1]. [1]BioMolecular Sciences, Division of Environmental Toxicology and Research Program, University of Mississippi, University, MS; and [2]The National Center for Natural Products Research, University of Mississippi, University, MS.

#2063 **Poster Board Number 139**
Modulating Growth Signaling Pathways in Prostate Cancer: Improving Diagnostics via 2+2 Fixation and Pentoxifylline As an Adjunct Therapy. *R. D. Canatsey*[1], G. Le[1], *N. Mastrandrea*[1], D. Chafin[2], R. Nagle[3], *T. Monks*[1], and *S. S. Lau*[1]. [1]Southwest Environmental Health Sciences Center, Dept. of Pharmacology and Toxicology, Univ. of Arizona, Tucson, AZ; [2]Ventana Medical Systems, Inc., Tucson, AZ; and [3]College of Med., Univ. of Arizona, Tucson, AZ.

#2064 **Poster Board Number 140**
Novel Phosphodiesterase 10 Inhibitor with Antitumor Activity in an Orthotopic Mouse Model of Lung Cancer. *V. Ramirez-Alcantara*[1], M. Schuler[2], B. Zhu[1], N. Li[3], E. Gurpinar[3], J. Canzoneri[1], A. Keeton[1], B. Gary[1], S. Russo[1], L. Coward[4], G. Gorman[4], W. Grizzle[3], X. Chen[1], and G. Piazza[1]. [1]Drug Discovery Research Center, University of South Alabama Mitchell Cancer Institute, Mobile, AL; [2]Department of Comparative Medicine, University of South Alabama, Mobile, AL; [3]Department of Pathology, University of Alabama at Birmingham, Birmingham, AL; and [4]McWhorter School of Pharmacy, Samford University, Pharmaceutical Sciences Research Institute, Birmingham, AL.

#2065 **Poster Board Number 141**
Evidence on the Carcinogenicity of N-Nitrosomethyl-n-alkylamines. *K. E. Ricker*, K. Li, G. Osborne, *M. Sun*, R. Cendak, R. Tomar, *M. S. Sandy*, and *L. Zeise*. OEHHA, Cal/EPA, Oakland, CA.

Program Schedule (Continued)

Abstract #

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Chemical and Biological Weapons

Chairperson(s): *Ernest H. Braue, Analytical Toxicology, USAMRICD, Whiteford, MD.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#2066 **Poster Board Number 145**
Thioredoxin Cross-Linking by the Sulfur Mustard Analog Mechlorethamine (Methylbis(2-chloroethyl)amine) in Lung Epithelial Cells. *Y. Jan*[1], *D. E. Heck*[2], *R. P. Casillas*[3], *D. L. Laskin*[4], and *J. D. Laskin*[1]. [1]Environmental & Occupational Medicine, Rutgers Robert Wood Johnson Medical School, Piscataway, NJ; [2]Environmental Health Science, New York Medical College, Valhalla, NY; [3]MRI Global, Kansas City, MO; and [4]Pharmacology & Toxicology, Rutgers University, Piscataway, NJ.

#2067 **Poster Board Number 146**
Inhibition of Efflux Transporters Suppresses Nrf2-Mediated Protection of Mouse Keratinocytes from Vesicant-Induced Growth Inhibition. *R. G. Udasin*[1,2], *K. M. Bircsak*[1,2], *L. M. Aleksunes*[1,2], M. P. Shakarjian[3], V. Mishin[2], *D. E. Heck*[3], *D. L. Laskin*[1,2], and *J. D. Laskin*[1,4]. [1]Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ; [2]Pharmacology & Toxicology, Rutgers University, Piscataway, NJ; [3]Environmental Health Science, New York Medical College, Valhalla, NY; and [4]Environmental & Occupational Medicine, Rutgers University Robert Wood Johnson Medical School, Piscataway, NJ.

#2068 **Poster Board Number 147**
Assessment of Oxime Therapies Against Percutaneous Pesticide and Nerve Agent Challenges in the Hartley Guinea Pig. *T. H. Snider*[1], *C. Wilhelm*[1], *M. C. Babin*[1], D. Jett[2], G. Platoff[3], and D. T. Yeung[2]. [1]Biomedical Research Center, Battelle, Columbus, OH; [2]National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD; and [3]National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD.

#2069 **Poster Board Number 148**
Brain Lesions Detected by 7T Magnetic Resonance Imaging (MRI) Are Highly Correlated with Histological Indices of Neuronal Necrosis in a Rat Model of Acute Organophosphate Intoxication. *B. A. Hobson*[1], S. Siso[2], D. Rowland[3], *D. Bruun*[1], D. Tancredi[4], S. Cherry[3], J. Garbow[5], and *P. Lein*[1]. [1]Molecular Biosciences, University of California Davis, Davis, CA; [2]Pathology, Microbiology & Immunology, University of California Davis, Davis, CA; [3]Center for Molecular and Genomic Imaging, University of California Davis, Davis, CA; [4]Pediatrics, University of California Davis, Davis, CA; and [5]Radiology, Washington University, St. Louis, MO.

Abstract #

#2070 **Poster Board Number 149**
***In Vivo* Efficacy of Novel Oxime Acetylcholinesterase Reactivators Is Not Completely Explained by P-glycoprotein Affinity.** *M. Dail*[1], *E. C. Meek*[1], *H. W. Chambers*[2], and *J. E. Chambers*[1]. [1]Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS; and [2]Biochemistry, Molecular Biology, Entomology, and Plant Pathology, Mississippi State University, Mississippi State, MS.

#2071 **Poster Board Number 150**
Novel Nucleophiles As Enhancers of Detoxication of Nerve Agent Surrogates by Serum Paraoxonase 1 (PON1). *E. C. Meek*[1], *R. Pringle*[1], H. W. Chambers[2,1], and *J. E. Chambers*[1]. [1]Center for Environmental Health Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS; and [2]Biochemistry, Molecular Biology, Entomology, and Plant Pathology, Mississippi State University, Mississippi State, MS.

#2072 **Poster Board Number 151**
Novel Pyridinium Oxime Reactivators of Organophosphate-Inhibited Acetylcholinesterase Afford Neural Protection in the Central Nervous System. *R. Pringle*[1], *E. C. Meek*[1], H. W. Chambers[2], and *J. E. Chambers*[1]. [1]CEHS, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS; and [2]CEHS, Department of Biochemistry, Molecular Biology, Entomology and Plant Pathology, Mississippi State University, Mississippi State, MS.

#2073 **Poster Board Number 152**
Mechanisms Related to Efficacy of AEOL 10150 in Reversing Skin Toxicity from Topical Nitrogen Mustard Exposure. *A. K. Jain*[1], *N. Tewari-Singh*[1], *D. Kumar*[1], R. Kant[1], D. G. Goswami[1], *C. Agarwal*[1], D. Orlicky[2], *C. White*[3], *B. J. Day*[4], and *R. Agarwal*[1]. [1]Skaggs School of Pharmacy and Pharmaceutical Sciences, University of Colorado Denver, Aurora, CO; [2]Pathology, University of Colorado Denver, Aurora, CO; [3]Pediatrics, University of Colorado Denver, Aurora, CO; and [4]Medicine, National Jewish Health, Denver, CO.

#2074 **Poster Board Number 153**
Lewisite Exposure Causes Histopathological Changes Related to Inflammation, Cell Death, and Neovascularization in the Rabbit Ocular Model. D. G. Goswami[1], *N. Tewari-Singh*[1], R. Kant[1], A. Nagvekar[1], C. Agarwal[1], *C. R. Croutch*[2], *R. P. Casillas*[2], *D. A. Ammar*[3], *J. Petrash*[3], and *R. Agarwal*[1]. [1]Department of Pharmaceutical Sciences, University of Colorado Denver, Aurora, CO; [2]MRIGlobal, Kansas, MO; and [3]Department of Ophthalmology, University of Colorado Denver, Aurora, CO.

#2075 **Poster Board Number 154**
Stability of Chloroethyl Ethyl Sulfide (CEES) and Mechlorethamine Hydrochloride (HN2) in DMSO, DMSO/Water Mixtures, and Complete Media. B. C. Gismervik, Z. D. Wells, T. V. Withers, T. E. Zaccano, and *J. P. Gray*. Science, US Coast Guard Academy, New London, CT.

Program Schedule (Continued)

Abstract #

#2076 **Poster Board Number 155**
Potential Therapeutic Targets of Silibinin in Attenuating Nitrogen Mustard-Induced Skin Injury. *D. Kumar*[1], *N. Tewari-Singh*[1], *A. K. Jain*[1], R. Kant[1], D. G. Goswami[1], *C. Agarwal*[1], D. Orlicky[2], *C. White*[3], and *R. Agarwal*[1]. [1]Pharmaceutical Sciences, University of Colorado Anschutz Medical Campus, Aurora, CO; [2]Pathology, University of Colorado Anschutz Medical Campus, Aurora, CO; and [3]Pediatrics, University of Colorado Anschutz Medical Campus, Aurora, CO.

#2077 **Poster Board Number 156**
Connexin 43 Antisense Therapy Using a Nitrogen Mustard Hairless Mouse Skin Model. *Y. Chang*[1], H. Chang[1], *R. A. Hahn*[1], E. E. Lee[1], *R. P. Casillas*[2], *M. K. Gordon*[1], and *D. R. Gerecke*[1]. [1]Dept of Pharm and Tox, Rutgers University, Piscataway, NJ; and [2]MRIGlobal, Kansas City, MO.

#2078 **Poster Board Number 157**
ROS-Mediated Induction of UPR Signaling Underlies Pathogenesis of Lewisite-Induced Skin Lesions. C. Li, *R. K. Srivastava*, Z. Weng, S. C. Chaudhary, F. Afaq, and M. Athar. University of Alabama at Birmingham, Birmingham, AL.

#2079 **Poster Board Number 158**
Efficacy and Pharmacokinetic Studies of New Potential Cyanide Countermeasures in a Mouse Model. *I. Petrikovics*[1], D. E. Thompson[1], S. A. Lee[1], C. Chou[1], D. De Silva[1], E. A. Stephens[1], J. T. Ross[1], B. Logue[2], G. R. Boss[3], and *G. A. Rockwood*[4]. [1]Chemistry, Sam Houston State University, Huntsville, TX; [2]Chemistry, South Dakota State University, Brookings, SD; [3]Medicine, University of California at San Diego, Huntsville, CA; and [4]US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD.

#2080 **Poster Board Number 159**
Hazard Assessment of VX Contaminated Remains. *J. Harvilchuck*[1], P. DeArmond[1], L. Wanamaker[1], J. Majocha[1], T. Homan[1], and *A. E. Director-Myska*[2]. [1]Battelle, Columbus, OH; and [2]Defense Threat Reduction Agency, Fort Belvoir, VA.

#2081 **Poster Board Number 160**
Improved Methodology of Determination of Protein Adducts of Nerve Agents in Blood Plasma. N. Koryagina, E. Savelieva, V. Babakov, Y. Dubrovskiy, G. V. Karakashev, E. Murashko, E. S. Ukolova, V. Kopeykin, V. Koneva, N. S. Khlebnikova, and A. S. Radilov. Department of International Projects, Research Institute of Hygiene, Occupational Pathology and Human Ecology, St. Petersburg, Russian Federation. Sponsor: *K. Khamidulina*.

#2082 **Poster Board Number 161**
Clinical Manifestations of Soman (GD) Poisoning following Dermal Exposure in the Large White Pig. *C. Dalton*[1], *J. Jenner*[1], J. K. Chipman[2], and R. P. Chilcott[3]. [1]Biomedical Sciences, Dstl, Salisbury, United Kingdom; [2]School of Biosciences, University of Birmingham, Birmingham, United Kingdom; and [3]Department of Pharmacy, University of Hertfordshire, Hatfield, United Kingdom.

#2083 **Poster Board Number 162**
Reversing Acute Cyanide Lethality by Intranasal Delivery of Stabilized Isoamyl Nitrite. N. Cantu, G. E. Gutierrez, L. Cabell, A. P. Clark, and J. McDonough. Microencapsulation and Nanomaterials, Southwest Research Institute, San Antonio, TX. Sponsor: *J. Blank*.

Abstract #

#2084 **Poster Board Number 163**
Guinea Pig Cortex Proteome Pathway Analysis after Atropine and Pralidoxime Use Can Counteract Effects to Acute Sarin Exposure. M. L. Meade[1,2], A. Hoffmann[1,2], M. K. Makley[1,2], *J. J. Schlager*[2], *T. H. Snider*[3], and *J. M. Gearhart*[1,2]. [1]Henry M Jackson Foundation, Wright-Patterson Air Force Base, OH; [2]Molecular Bioeffects Branch, Bioeffects Division, 711th Human Performance Wing, Air Force Research Laboratory, USAF, Wright-Patterson Air Force Base, OH; and [3]Battelle Biomedical Research Center, West Jefferson, OH.

#2085 **Poster Board Number 164**
Inflammatory Cell Accumulation in Mouse Skin following Exposure to Sulfur Mustard. *L. B. Joseph*[1], G. M. Composto[1], S. Kim[1], *C. R. Croutch*[2], *R. P. Casillas*[2], *D. R. Gerecke*[1], P. J. Sinko[1], *D. L. Laskin*[1], *J. D. Laskin*[3], and *D. E. Heck*[4]. [1]Rutgers Univ, Piscataway, NJ; [2]MRIGlobal, Kansas City, MO; [3]Rutgers Univ-RW Johnson Med School, Piscataway, NJ; and [4]New York Medical College, Valhalla, NY.

#2086 **Poster Board Number 165**
Attenuation of Nitrogen Mustard (NM)-Induced Pulmonary Injury, Inflammation, and Fibrosis by Anti-Tumor Necrosis Factor (TNF) Alpha Antibody. *R. Malaviya*[1], *A. Venosa*[1], V. R. Sunil[1], K. Vayas[1], L. Hall[2], *J. D. Laskin*[1], and *D. Laskin*[1]. [1]Pharmacology and Toxicology, Rutgers University, Piscataway, NJ; and [2]Janssen Research and Development, Spring House, PA.

#2087 **Poster Board Number 166**
Confocal Raman Microspectroscopy: The Measurement of VX Depth Profiles in Hairless Guinea Pig Skin and the Evaluation of RSDL. *E. H. Braue*, B. F. Doxzon, H. L. Lumpkin, J. D. Boecker, R. E. Sweeney, and J. I. Azeke. Analytical Toxicology, USAMRICD, Aberdeen Proving Ground, MD.

#2088 **Poster Board Number 167**
Evaluation of the Catalytic Antioxidant AEOL10150 As a Medical Countermeasure Against Lethal Sulfur Mustard Inhalation. *C. McElroy*[1,2], E. Min[2], J. Huang[2], J. Loader[1], T. Hendry-Hofer[1], R. Garlick[1], J. Rioux[1], L. Veress[1], R. Smith[1], C. Osborne[1], D. Anderson[3], W. Holmes[3], D. Paradiso[3], C. White[1], and *B. J. Day*[1,2]. [1]University of Colorado, Aurora, CO; [2]Medicine, National Jewish Health, Denver, CO; and [3]USAMRICD, Aberdeen, MD.

#2089 **Poster Board Number 168**
Lethal Oral Cyanide Poisoning Reversed by Intramuscular Cobinamide in a Rabbit Model. Y. David[1], S. Mahon[1], J. Lee[1], T. Burney[1], *I. Petrikovics*[2], A. Chan[3], G. R. Boss[3], and M. Brenner[1]. [1]Beckman Laser Institute, University of California, Irvine, Irvine, CA; [2]Chemistry, Sam Houston State University, Huntsville, TX; and [3]Medicine, University of California, San Diego, La Jolla, CA.

Program Schedule (Continued)

Abstract #

#2090 **Poster Board Number 169**
Phosphoproteomic Analysis Reveals Compensatory Effects in the Piriform Cortex of VX Nerve Agent-Exposed Rats. J. W. Sekowski[1], R. Nirujogi[2,3], J. D. Wright[1], J. Meyerhoff[4], K. Willis[1,5], B. Benton[1], R. E. Jabbour[1], A. Pandey[2,3], S. Manda[2], J. Zhong[2], C. Na[2], and M. Kim[2]. [1]Biosciences Division, US Army ECBC, Gunpowder, MD; [2]Department of Neuroscience, JHU School of Medicine, Baltimore, MD; [3]Departments of Biological Chemistry, Pathology and Oncology, JHU School of Medicine, Baltimore, MD; [4]Oak Ridge Institute for Science and Engineering, Oak Ridge, TN; and [5]Defense Threat Reduction Agency, Ft Belvoir, VA. Sponsor: *H. Salem*.

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Disposition and Pharmacokinetics: Drugs, Chemicals, and Transporters

Chairperson(s): *Timothy Fennell, RTI International, Research Triangle Park, NC; and Abdel M. Kadry, Office of Research and Development, National Center for Environmental Assessment, US EPA, Washington, DC.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#2091 **Poster Board Number 201**
***In Silico* Modeling to Assess Impact of Different Dissolution Profiles in Doxycycline Tablets (Ronaxan®) and the Justification for a Bioequivalence Study.** J. A. Yanez, J. Fischer, L. Letendre, and *J. M. Gerhart*. Drug Safety and Disposition (DS&D)/Pharmacokinetics and Drug Metabolism (PKDM), Merial, a Sanofi Company, North Brunswick, NJ.

#2092 **Poster Board Number 202**
Pharmacokinetics of 7-O-Succinyl Macrolactin A in Mice, Rats, and Dogs. W. Kang[2], K. Noh[1], K. Jeong[1], M. R. Nepal[1], D. Kim[3], E. Kim[2], S. Song[2], J. Ryu[2], H. Lee[2], and *T. Jeong*[1,2]. [1]College of Pharmacy, Yeungnam University, Gyeongsan; [2]College of Pharmacy, Chung-Ang University, Seoul, Republic of Korea; and [3]R&D Center, Daewoo Pharm. Co., Busan, Republic of Korea.

#2093 **Poster Board Number 203**
Pharmacokinetics and Pharmacodynamics of Capecitabine in Preclinical Mouse Model of Brain Metastases of Breast Cancer. *R. Balyan*, H. R. Thorsheim, R. Samala, and Q. R. Smith. Texas Tech University Health Science Center, Amarillo, TX.

#2094 **Poster Board Number 204**
Pharmacokinetics of Metformin and R,S-Verapamil in Four Lineages of Miniswine. A. Stricker-Krongrad[1], N. Patel[2], S. Renna[1], H. Huang[2], N. Yumibe[2], K. Ruterbories[2], J. Tan[2], D. White[1], C. Horton[1], J. Liu[1], and *G. Bouchard*[1]. [1]Sinclair Research, Auxvasse, MO; and [2]Eli Lilly and Company, Indianapolis, IN.

#2095 **Poster Board Number 205**
Biological Fate of the Emerging Brominated Flame Retardant, Decabromodiphenyl Ethane, in Female Sprague-Dawley Rats. E. P. Hull, *G. A. Knudsen*, *J. M. Sanders*, and *L. S. Birnbaum*. NCI/NIEHS, Research Triangle Park, NC.

Abstract #

#2096 **Poster Board Number 206**
Dose-Dependent Disposition of ^{14}C-Decamethylcyclopentasiloxane (D_5) following Oral Gavage to Fischer 344 Rats. *J. Y. Domoradzki*[1], J. Sushynski[1], M. Jovanovic[1], D. McNett[1], and C. Van Landingham[2]. [1]Dow Corning Corporation, Auburn, MI; and [2]ENVIRON International Corp., Monroe, LA.

#2097 **Poster Board Number 207**
Pharmacokinetic Comparison of 2 Titanium Dioxide (1 Pigment & 1 Nanostructured) Materials Demonstrate Absence of Systemic Exposure in Orally Exposed Rats. *M. W. Himmelstein*[1], J. B. Ramsey[2], *R. J. Boatman*[3], and *D. B. Warheit*[4]. [1]DuPont Haskell, Newark, DE; [2]DuPont Corporate Center for Analytical Sciences, Wilmington, DE; [3]Boatman Toxicology Consultant LLC, Rochester, NY; and [4]DuPont Haskell, Newark, DE.

#2098 **Poster Board Number 208**
Administration and Elimination of Perfluorobutanesulfonamide (FBSA) in Sprague-Dawley Rats. J. A. Hart[1], A. Eveland[2], *D. J. Ehresman*[1], J. Bonk[1], K. Andres[1], *J. L. Butenhoff*[1], and *S. Chang*[1]. [1]Medical Department, 3M, Saint Paul, MN; and [2]Pace Analytical, Minneapolis, MN.

#2099 **Poster Board Number 209**
An Approach for Investigating the Toxicity of 2,2'–Dimorpholinodiethyl Ether (DMDEE) in Mice and Rats. *G. K. Hinkley*[1], *J. D. McDonald*[2], *M. Doyle-Eisele*[2], *M. DeVito*[1], *P. M. Foster*[1], and *S. Waidyanatha*[1]. [1]Division of the National Toxicology Program, National Institutes of Environmental Health Sciences, Research Triangle Park, NC; and [2]Lovelace Respiratory Research Institute, Albuquerque, NM.

#2100 **Poster Board Number 210**
The Disposition of 2-Ethylhexyl Tetrabromobenzoate (TBB) in Female Sprague-Dawley Rats after Administration of Single or Repeated Doses by Gavage. *J. M. Sanders*, *G. A. Knudsen*, and *L. S. Birnbaum*. NCI, Research Triangle Park, NC.

#2101 **Poster Board Number 211**
Interspecies Pharmacokinetics for Atrazine and Its Chlorotriazine Metabolites. *P. M. Hinderliter*[1], *J. Campbell*[2], *M. E. Andersen*[2], *H. J. Clewell*[2], *K. D. Yi*[1], *T. Pastoor*[1], and C. B. Breckenridge[1]. [1]Toxicology & Health Sciences, Syngenta, Greensboro, NC; and [2]Center for Human Health Assessment, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#2102 **Poster Board Number 212**
Using Toxicokinetic Data to Set Dose Levels for Regulatory Testing. *S. Papineni*[1], *A. T. McCoy*[2], *L. A. Murphy*[2], *R. Billington*[1], and *R. J. Rasoulpour*[1]. [1]Dow AgroSciences LLC, Indianapolis, IN; and [2]The Dow Chemical Company, Midland, MI.

#2103 **Poster Board Number 213**
Relative Oral Bioavailability of Radiolabeled Benzo(a)pyrene from Constructed Soils: Effect of PAH Source, Concentration, and Soil Characteristics. *J. W. Munson*[1], *Y. W. Lowney*[2], *M. Ruby*[3], and *S. M. Roberts*[1]. [1]Unversity of Florida, Gainesville, FL; [2]Exponent, Boulder, CO; and [3]Integral Consulting, Louisville, CO.

Program Schedule (Continued)

Abstract #

#2104 **Poster Board Number 214**
Experimental Nonalcoholic Steatohepatitis Increases Exposure to Simvastatin Hydroxy Acid by Decreasing Hepatic Organic Anion Transporting Polypeptide Expression. *J. Clarke*, *R. N. Hardwick*, *A. D. Lake*, *M. Canet*, and *N. J. Cherrington*. Pharm/Tox, University of Arizona, Tucson, AZ.

#2105 **Poster Board Number 215**
Impact of Major Efflux Transporters on the Disposition of Irinotecan in Rats in Different Metabolic Organs: An *In Vivo* Study. S. Basu, and M. Hu. PPS, University of Houston, Houston, TX. Sponsor: *M. Hu*.

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Neurotoxicology, General

Chairperson(s): *Vijay R. More, Laboratory of Toxicology and Pharmacology, National Institute of Environmental Health Sciences, Durham, NC.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#2106 **Poster Board Number 219**
Electroencephalography (EEG) in Sprague-Dawley Rats and Cynomolgus Monkeys: Super-Intervals to Increase Model Sensitivity. S. Authier[1,2], M. Pouliot[1], E. Troncy[2], R. Mikaelian[1], and *R. Forster*[1]. [1]CIToxLAB North America, Laval, QC, Canada; and [2]University of Montreal, St-Hyacinthe, QC, Canada.

#2107 **Poster Board Number 220**
Jacketed External Electroencephalographic (EEG) Telemetry Monitoring in Conscious Beagle Dogs and Cynomolgus Monkeys: Qualification of a Central Nervous System Safety Testing Model. S. Authier[1,2], M. Pouliot[1], E. Troncy[2], and *R. Forster*[1]. [1]CIToxLAB North America, Laval, QC, Canada; and [2]University of Montreal, St-Hyacinthe, QC, Canada.

#2108 **Poster Board Number 221**
An *In Vitro* Model for Probing Species-Dependent Microglial Activation and Toxicity. N. M. Claudio[1], S. Voytek[1], K. Kubek[1], *P. J. Devine*[1], *J. Marlowe*[1], and *F. Pognan*[2]. [1]Novartis Institutes for Biomedical Research, Cambridge, MA; and [2]Novartis Institutes for Biomedical Research, Basel, Switzerland.

#2109 **Poster Board Number 222**
Microglia Mediate Diesel Exhaust Particle-Induced Cerebellar Neuronal Death. P. J. Roque[1], P. Bommarito[2,1], and *L. G. Costa*[1,3]. [1]DEOHS, University of Washington, Seattle, WA; [2]University of Michigan, Ann Arbor, MI; and [3]University of Parma, Parma, Italy.

#2110 **Poster Board Number 223**
Gender-Specific Multidrug-Resistance Transporter Expression in Choroid Plexus. K. M. Flores, and J. Renfro. Physiology and Neurobiology, University of Connecticut, Storrs, CT. Sponsor: *J. Manautou*.

Abstract #

#2111 **Poster Board Number 224**
Differential Impact of Tobacco Smoke Exposure at the Blood-Brain Barrier Endothelium: A Special Focus on the Nrf2-Dependent Antioxidant Mechanisms. *P. Naik*, and *L. Cucullo*. Pharmaceutical Sciences, Texas Tech University Health Sciences Center, Amarillo, TX.

#2112 **Poster Board Number 225**
Lipid-Sensing Transcription Factor Peroxisome Proliferator-Activated Receptor Alpha (PPAR-α) Regulates Blood-Brain Barrier Efflux Transporter Expression. *V. R. More*, C. Campos, and D. Miller. Laboratory of Toxicology and Pharmacology, National Institute of Environmental Health Sciences, Durham, NC.

#2113 **Poster Board Number 226**
Why Does Blockade of Ancillary Transporters of Serotonin in SERT Knockout Mice Promote Sociability Instead of 5-HT Syndrome? C. Moten[1], *C. Smolik*[3], W. Q. Zhang[2,3], T. Pham[3], M. Vitela[3], L. C. Daws[3], and *G. G. Gould*[3]. [1]Voelcker Biomedical Academy, Univ. of Texas Health Science Center at San Antonio, San Antonio, TX; [2]Lovett RC, Rice University, Houston, TX; and [3]Center for Biomedical Neuroscience, Univ. of Texas Health Science Center at San Antonio, San Antonio, TX.

#2114 **Poster Board Number 227**
Effects of Immersion Fixation on the Post-Mortem Rat Brain. M. Acciani[1], C. Kopp[2], J. Palmer[2], T. Davis[2], and *C. A. Picut*[1]. [1]Pathology, WIL Research, LLC, Hillsborough, NC; and [2]Pathology, WIL Research, LLC, Ashland, OH.

#2115 **Poster Board Number 228**
Toluene Dose-Response and Proteomics Study of Neuronal Cell Lines. *K. O. Yu*, M. L. Meade, A. Hoffmann, L. K. Braydich-Stolle, D. A. Dixon, M. K. Makley, N. M. Schaeublin, C. Hack, *J. Schlager*, and *D. R. Mattie*. Air Force Research Laboratory, US Air Force, Wright-Patterson AFB, OH.

#2116 **Poster Board Number 229**
Establishment of Mouse Model for Neurotoxicity of 1-Bromopropane, an Alternative to Ozone-Depleting Solvents. C. Zong[1,3], *E. Garner*[2], C. Huang[3], *L. Zhang*[1], X. Zhang[1,3], S. Toyokuni[3], S. Ichihara[4], and *G. Ichihara*[1]. [1]Occupational and Environmental Health, Tokyo University of Science, Noda, Japan; [2]Lovelace Respiratory Research Institute, Albuquerque, NM; [3]Nagoya University, Nagoya, Japan; and [4]Mie University, Tsu, Japan.

#2117 **Poster Board Number 230**
Comparative Evaluation of Motor Activity, Grip Strength, and Foot Splay following 90-Day Oral Gavage Studies with Various Vehicles in Wistar Rats. D. Gohel[1], M. V. Patel[1], P. Mehta[1], S. Jadhav[1], K. Shah[1], M. Pandya[1], and *V. J. Piccirillo*[2]. [1]Department of Toxicology, Jai Research Foundation, Valvada, India; and [2]VJP Consulting, Ashburn, VA.

#2118 **Poster Board Number 231**
Comparative Assessment of Growth and Feed-Consumption Pattern of Wistar Rats following Gavage Administration of Different Vehicles in 90-Day Studies. P. Mehta[1], D. Gohel[1], M. V. Patel[1], S. Jadhav[1], M. Pandya[1], K. Shah[1], and *V. J. Piccirillo*[2]. [1]Department of Toxicology, Jai Research Foundation, Valvada, India; and [2]VJP Consulting, Ashburn, VA.

Program Schedule (Continued)

Abstract #

#2119 **Poster Board Number 232**
Assessing the Effects of Adolescent Taurine Consumption on Adult Brain Function in a Mouse Model. J. Brown, J. Weimer, C. Ludwig, B. Hays, and *C. P. Curran*. Biological Sciences, Northern Kentucky University, Highland Heights, KY.

#2120 **Poster Board Number 233**
Persistent Neuroinflammation in a Mouse Model of Tetramethylenedisulfotetramine (TETS)-Induced Status Epilepticus. *D. Bruun*[1], D. Zolkowska[2], C. Boosalis[1], M. Rogawski[2], and *P. Lein*[1]. [1]VM Molecular Bioscience, UC-Davis, Davis, CA; and [2]Neurology, School of Medicine, UC-Davis, Sacramento, CA.

#2121 **Poster Board Number 234**
An Experimental Study on the Effects of Low-Level Fluoride Exposure on Memory and Learning Ability of Rats. M. Hosokawa[1], H. Akita[2], *M. Tsunoda*[3], and K. Yokoyama[1]. [1]Epidemiology and Environmental Health, Juntendo University, Tokyo, Japan; [2]Physiology, Kitasato University School of Allied Health Sciences, Sagamihara, Japan; and [3]Hygiene, Kitasato University School of Medicine, Sagamihara, Japan.

#2122 **Poster Board Number 235**
Exposure to Fine Particulate Matter Reduces Glutamate Uptake in Cerebellar Bergmann Glia Cells through a src/MAPK Pathway. *A. De Vizcaya Ruiz*, N. Alamillo, M. Uribe-Ramirez, and A. Ortega. Toxicology, CINVESTAV-IPN, Mexico City, Mexico.

#2123 **Poster Board Number 236**
***In Vitro* and *Ex Vivo* Neurotoxicity Assessment of Brominated- and Halogen-Free Flame Retardants.** H. S. Hendriks[1], R. van Kleef[1], *M. M. Dingemans*[1], M. Meijer[1], M. Muilwijk[1], *M. Van den Berg*[1], G. M. Ramakers[2], L. A. Koolen[2], P. Leonards[3], *H. Viberg*[4], I. Lee[4], and *R. H. Westerink*[1]. [1]Neurotoxicology Research Group, Institute for Risk Assessment Sciences (IRAS) - Utrecht University, Utrecht, Netherlands; [2]Brain Center Rudolf Magnus, University Medical Center Utrecht, Utrecht, Netherlands; [3]Institute for Environmental Studies, VU University Amsterdam, Amsterdam, Netherlands; and [4]Department of Environmental Toxicology, Uppsala University, Uppsala, Sweden.

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Neurotoxicology, Pesticides

Chairperson(s): *Arturo Anadon, Universidad Complutense de Madrid, Madrid, Spain.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#2124 **Poster Board Number 239**
Chronic Glucocorticoid and Nerve Agent DFP Exposures Produce a Neuroinflammatory Model of Gulf War Illness without Neurodegeneration. *K. A. Kelly*[1], *A. R. Revitsky*[1], *D. B. Miller*[1], *S. M. Lasley*[2], and *J. P. O'Callaghan*[1]. [1]CDC-NIOSH, Morgantown, WV; and [2]U Ill Coll of Med, Peoria, IL.

Abstract #

#2125 **Poster Board Number 240**
Pyridostigmine Bromide Suppresses Neuroinflammation Induced by DFP. *A. R. Revitsky*[1], *K. A. Kelly*[1], *D. B. Miller*[1], *S. M. Lasley*[2], and *J. P. O'Callaghan*[1]. [1]CDC-NIOSH, Morgantown, WV; and [2]U Ill Coll of Med, Peoria, IL.

#2126 **Poster Board Number 241**
Altered Emotional Reactivity and Dopamine Turnover in Juvenile Rats Exposed Developmentally to Chlorpyrifos. A. N. Mohammed, N. H. Armstrong, A. T. Buchanan, J. B. Eells, *M. K. Ross*, C. A. Nail, and *R. L. Carr*. Center for Environmental Health Sciences, Mississippi State University, Mississippi State, MS.

#2127 **Poster Board Number 242**
Neurotoxic Effects of Tri-Cresyl Phosphates (TCPs) and Cresyl Saligenin Phosphate (CBDP) *In Vitro*. *C. van Thriel*, J. Sisnaiske, and V. Hausherr. Neurotoxicology and Chemosensation, IfADo - Leibniz Research Centre for Working Environment and Human Factors, Dortmund, Germany.

#2128 **Poster Board Number 243**
Characterization of a Rat Model of Acute Diisopropylflurophosphate (DFP) Intoxication. *K. Dhakal*, *B. Flannery*, *B. A. Hobson*, *D. Bruun*, and *P. Lein*. Department of Molecular Biosciences, University of California, Davis, Davis, CA.

#2129 **Poster Board Number 244**
***In Vitro* Study of the Neuropathic Potential of the Organophosphorus Compounds Fenamiphos and Profenofos: Comparison with Mipafox and Paraoxon.** *G. L. Emerick*[1,2], L. S. Fernandes[2], E. S. de Paula[2], F. Barbosa Jr[2], N. G. dos Santos[2], and A. C. dos Santos[2]. [1]Instituto de Ciências da Saúde, Universidade Federal de Mato Grosso, Sinop, Brazil; and [2]DACTB, FCFRP-USP, Ribeirão Preto, Brazil.

#2130 **Poster Board Number 245**
Chlorpyrifos Oxon (CPFO) and 2,2',3,5',6-Pentachlorobiphenyl (PCB 95) Modulate Fc-Gamma Receptor Expression in Developing Neurons. *M. Stamou*, and *P. Lein*. Molecular Biosciences, University of California, Davis, Davis, CA.

#2131 **Poster Board Number 246**
A Fraction of the Organophosphorus-Sensitive Phenylvalerate Esterase Activity Shows Acetylcholine Hydrolyzing Activity in Soluble Fraction of Chicken Brain. J. Estévez, *E. Vilanova*, M. Benabent, *I. Mangas*, and M. A. Sogorb. Unit of Toxicology, Institute of Bioengineering, University Miguel Hernández, Elche, Spain.

#2132 **Poster Board Number 247**
LC-MS/MS Proteomics Analysis Identifies Butyrylcholinesterase As a Protein with Phenylvalerate Esterase Activity. *I. Mangas*[1,2], P. Taylor[2], Z. Radic[2], *E. Vilanova*[1], and J. Estévez[1]. [1]Unit of Toxicology, Institute of Bioengineering, University Miguel Hernández, Elche, Spain; and [2]Skaggs School of Pharmacy and Pharmaceutical Science, University of California-San Diego, San Diego, CA.

Program Schedule (Continued)

Abstract #

#2133 **Poster Board Number 248**
Novel Functions of Klotho during Paraoxon Exposure in Neuronal Cell Culture: Neurotoxicology and Proteome Pathway Analysis. A. Hoffmann[1,2], M. L. Meade[1,2], M. K. Makley[1,2], *J. Schlager*[2], and *J. M. Gearhart*[1,2]. [1]Henry M. Jackson Foundation, Dayton, OH; and [2]Molecular Bioeffects Branch, Bioeffects Division, 711th Human Performance Wing, Air Force Research Laboratory, Dayton, OH.

#2134 **Poster Board Number 249**
Characterization and Inhibition of Guinea Pig Acetylcholinesterase. *C. D. Ruark*[1,2], R. R. Chapleau[1], *D. A. Mahle*[3], and *J. M. Gearhart*[1,2]. [1]Henry M. Jackson Foundation for the Advancement of Military Medicine, Wright-Patterson Air Force Base, OH; [2]Department of Biomedical Sciences, Wright State University, Dayton, OH; and [3]711 HPW/RHDJ, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH.

#2135 **Poster Board Number 250**
Neuroprotective Effect of Calcium Channel Blockers on Organophosphorus-Induced Delayed Neuropathy (OPIDN) in SH-SY5Y Cells. L. S. Fernandes[1], *G. L. Emerick*[2], A. C. dos Santos[1], and N. A. Santos[1]. [1]DACTB, Universidade de São Paulo, Ribeirão Preto, Brazil; and [2]Instituto de Ciências da Saúde, Universidade Federal do Mato Grosso – UFMT, Sinop, Brazil.

#2136 **Poster Board Number 251**
Subchronic and Repeated Exposure to Insecticides Inhibits the Depolarization-Evoked Increase in Intracellular Calcium Concentration in PC12 Cells. *M. Meijer*, *M. M. Dingemans*, and *R. H. Westerink*. Neurotoxicology Research Group, Institute for Risk Assessment Sciences (IRAS) - Utrecht University, Utrecht, Netherlands.

#2137 **Poster Board Number 252**
Actions of a Type II Pyrethroid Mixture on Oxidative Stress Could Be Predicted by a Dose-Additive Using an *In Vitro* Model. *A. Anadon*, M. A. Martínez, I. Ares, E. Ramos, V. Castellano, M. Martínez, M. R. Martínez-Larrañaga, and A. Romero. Department of Toxicology and Pharmacology, Faculty of Veterinary Medicine, Complutense University, Madrid, Spain.

#2138 **Poster Board Number 253**
Nerve Growth Factor Protects against Deltamethrin-Induced Apoptosis in Primary Hippocampal Neurons. *M. M. Hossain*, and *J. R. Richardson*. Department of Environmental and Occupational Medicine, Rutgers-Robert Wood Johnson Medical School, Piscataway, NJ.

#2139 **Poster Board Number 254**
Influence of Stressors in Lambda-Cyhalothrin-Induced Brain Dopaminergic Dysfunctions in Rats. R. K. Shukla[1], L. P. Chandravanshi[1], Y. Dhuriya[1], R. Gupta[1], P. Srivastava[1], *A. B. Pant*[2], and *V. K. Khanna*[1]. [1]Developmental Toxicology Division, CSIR - Indian Institute of Toxicology Research, Lucknow, India; and [2]*In Vitro* Toxicology Division, CSIR - Indian Institute of Toxicology Research, Lucknow, India.

Abstract #

#2140 **Poster Board Number 255**
Responses of Invertebrate Crayfish to Systemic Insecticide Fipronil. J. A. Jenkins, and R. A. Draugelis-Dale. National Wetlands Research Center, US Geological Survey, Lafayette, LA. Sponsor: *A. Bowman*.

#2141 **Poster Board Number 256**
Dysregulated Glucose Homeostasis and Impaired Locomotor Activity of Male C57BL/6 Mice Caused by Acute Oral Atrazine Treatment. *N. M. Filipov*[1,2], and S. Krishna[1]. [1]Physiology and Pharmacology, University of Georgia, Athens, GA; and [2]Interdisciplinary Toxicology Program, University of Georgia, Athens, GA.

#2142 **Poster Board Number 257**
Mancozeb-Induced Cell Cycle Arrest and Senescence via RTP801. J. Seo, C. Ta, and *S. Cheng*. Sciences, John Jay College, New York, NY.

#2143 **Poster Board Number 258**
Manganese-Containing Dithiocarbamates Increase the Expression of Amyloid Precursor Protein and the Level of Phosphorylated PKR. Y. Lopez, J. Montes, and *S. Cheng*. Sciences, John Jay College, New York, NY.

#2144 **Poster Board Number 259**
Developmental Coexposure to γ-Radiation and Paraquat Can Exacerbate Cognitive Dysfunction in Adult Mice. *S. Buratovic*[1], B. Stenerlöw[2], S. Sundell-Bergman[3], and *P. Eriksson*[1]. [1]Environmental Toxicology, Uppsala University, Uppsala, Sweden; [2]Radiology, Oncology and Radiation Science, Uppsala University, Uppsala, Sweden; and [3]Soil and Environment, Swedish University of Agricultural Sciences, Uppsala, Sweden.

#2145 **Poster Board Number 260**
Assessment of Cross-Chemical Predictability for Changes in Blood Clinical Bioindicators and EEG Produced by Pesticides with Different Modes of Action. D. F. Freeborn, K. L. McDaniel, *V. C. Moser*, and *D. W. Herr*. TAD/NB, US EPA, Durham, NC.

#2146 **Poster Board Number 261**
Neuroprotective Effect of Acetyl-L-Carnitine in Peripheral Nervous System (PNS) following a Prolonged Exposure to Rotenone. Z. Binienda[1], B. Gough[1], *S. F. Ali*[1], and M. A. Beaudoin[2]. [1]Neurotoxicology, NCTR/FDA, Jefferson, AR; and [2]NCTR/FDA, Jefferson, AR.

Program Schedule (Continued)

Abstract #

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Pesticides

Chairperson(s): *Raja S. Settivari, Predictive Toxicology, The Dow Chemical Company, Midland, MI; and Karyn L. Hentz, Exponent, Alexandria, VA.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#2147 **Poster Board Number 301**
Toxicity and Safety Assessment of Fipronil, S-Methoprene, and Amitraz in Dogs following Topical Certifect® Application. *R. C. Gupta*[1], H. Nichols[1], R. B. Doss[1], S. D. Bland[1], T. D. Canerdy[1], and J. Zieren[2]. [1]Toxicology, Murray State University, Hopkinsville, KY; and [2]Carmi Veterinary Clinic, Carmi, IL.

#2148 **Poster Board Number 302**
Abstract Withdrawn.

#2149 **Poster Board Number 303**
Safety Evaluation of Permethrin and Indoxacarb in Dogs Treated with Activyl® Tick Plus. H. Litchfield, *R. C. Gupta*, R. B. Doss, and T. D. Canerdy. Toxicology, Murray State University, Hopkinsville, KY.

#2150 **Poster Board Number 304**
Chemoproteomic and Metabolomics Platforms Reveal Organophosphorus Flame Retardants Inhibit Liver Carboxylesterases and Cause Metabolic Alterations. D. Medina-Cleghorn, A. M. Heslin, and D. K. Nomura. Nutritional Science and Toxicology, UC Berkeley, Berkeley, CA. Sponsor: *C. Vulpe*.

#2151 **Poster Board Number 305**
Birth Defect Rates in High and Low Atrazine-Use States. *M. Seeley*[1], S. Thakali[2], and *J. E. Goodman*[1]. [1]Gradient, Cambridge, MA; and [2]URS Corporation, Fort Washington, PA.

#2152 **Poster Board Number 306**
Mammalian Immunotoxicity of Imidacloprid: Review and Weight-of-Evidence Evaluation. *H. M. Bolstad*, and A. Arcus-Arth. Office of Environmental Health Hazard Assessment, California Environmental Protection Agency, Oakland, CA.

#2153 **Poster Board Number 307**
Pesticide Residues in Strawberries of Nepal 2014. D. Dhakal. Chemistry, Patan Multiple Campus, Institute of Science & Technology, Tribhuvan University, Lalitpur, Nepal. Sponsor: *A. Barchowsky*.

#2154 **Poster Board Number 310**
Exposure to Permethrin Alters Glucose Metabolism in Response to High-Fat Diet in Female C57BL/6J Mice. X. Xiao[1], Y. Kim[1], D. Kim[2], K. Yoon[3], *J. M. Clark*[4], and Y. Park[1]. [1]Department of Food Science, University of Massachusetts, Amherst, MA; [2]Department of Mathematics and Statistics, University of Massachusetts, Amherst, MA; [3]Department of Biological Sciences and Environmental Sciences Program, Southern Illinois University, Edwardsville, IL; and [4]Department of Veterinary and Animal Sciences, University of Massachusetts, Amherst, MA.

Abstract #

#2155 **Poster Board Number 311**
Chlorpyrifos Promotes the Growth of Colorectal Adenocarcinoma H508 Cells through the Activation of EGFR/ERK1/2 Signaling Pathway. T. Suriyo[1,3], P. Tachachartvanich[1,2], P. Watcharasit[1,2,3], and J. Satayavivad[1,2,3]. [1]Laboratory of Pharmacology, Chulabhorn Research Institute, Bangkok, Thailand; [2]Environmental Toxicology Program, Chulabhorn Graduate Institute, Bangkok, Thailand; and [3]Center of Excellence on Environmental Health and Toxicology, Office of Higher Education, Ministry of Education, Bangkok, Thailand. Sponsor: *H. Autrup*.

#2156 **Poster Board Number 312**
Short-Time Exposure to Thiram Induces Developmental Toxicity and Affects Deiodinase3 Gene Expression in Zebrafish Embryos. X. Chen[1], M. Fang[2], F. Wang[1], J. Yang[1], Y. Yu[1], N. Zheng[2], *D. E. Hinton*[2], and *W. Dong*[1,2]. [1]School of Animal Science and Technology, Inner Mongolia University for the Nationalities, Tongliao, China; and [2]Nicholas School of the Environment, Duke University, Durham, NC.

#2157 **Poster Board Number 313**
The Toxicity of Mancozeb in Human Colon Cells May Be Related to an Alteration of Metal Homeostasis. *L. M. Hoffman*, *L. D. Trombetta*, and *D. Hardej*. Pharmaceutical Sciences, St. John's University, Queens, NY.

#2158 **Poster Board Number 314**
Assessment of Oxidative Stress and Genotoxic Potential of Triazophos in *Lamellidens marginalis*. S. V. Pandit, and A. Y. Mundhe. Zoology, Savitribai Phule Pune University, Pune, India. Sponsor: *R. Agarwal*.

#2159 **Poster Board Number 315**
Health Evaluation of the Consumption of Citrus Fruit, Leaves, and Flowers from Trees Treated with Imidacloprid for Asian Citrus Psyllid Control at Residential Sites in California. A. Arcus-Arth, and D. Ting. Office of Environmental Health Hazard Assessment, Cal/EPA, Oakland, CA. Sponsor: *L. Lim*.

#2160 **Poster Board Number 316**
Microarray Analysis of Gene Expression in Mouse Midbrain following Developmental Deltamethrin Exposure Reveals Sex-Specific Changes Associated with Behavior, Cognition, and Movement Disorders. D. You[1,3], and *J. R. Richardson*[2,3]. [1]Joint Graduate Program of Toxicology, Rutgers University, Piscataway, NJ; [2]Environmental and Occupational Medicine, Robert Wood Johnson Medical School, Piscataway, NJ; and [3]Environmental and Occupational Health Sciences Institute, Rutgers University, Piscataway, NJ.

#2161 **Poster Board Number 317**
Urinary Metabolite 3,5,6-Trichloro-2-pyridinol (TCPy) and Child Neurodevelopment at Two Years of Age in an Agricultural Population in China. *Z. Zhou*, P. Liu, C. Wu, and X. Chang. School of Public Health, Fudan University, Shanghai, China.

#2162 **Poster Board Number 318**
Simultaneous Determination of Pesticides in Tobacco Using Liquid Chromatography—Tandem Mass Spectrometry and Multiwalled Carbon Nanotubes As a Reversed-Dispersive Solid Phase Extraction Sorbent. L. Chen, F. Yu, B. Hu, L. Pan, and H. Liu. Zhengzhou Tobacco Research Institute of CNTC, Zhengzhou, China. Sponsor: *R. Krieger*.

Program Schedule (Continued)

Abstract #

#2163 **Poster Board Number 319**
Multiresidue Analysis of Pesticides in Urine of Healthy Adult Companion Dogs. G. M. Forster[2], D. Brown[1], *G. P. Dooley*[1], R. L. Page[2], and *E. P. Ryan*[1,2]. [1]ERHS, Colorado State University, Fort Collins, CO; and [2]Clinical Sciences, Colorado State University, Fort Collins, CO.

#2164 **Poster Board Number 320**
Differential Protein Expression of CaMKinase (CaMK) II α and β Subunits As Well As Tau mRNA Expression Contribute to the Development of OPIDN. *T. V. Damodaran*[1,2], A. MK[2], and *M. B. Abou-Donia*[2]. [1]Biology, North Carolina Central University, Durham, NC; and [2]Pharmacology and Cancer Biology, Duke University, Durham, NC.

#2165 **Poster Board Number 321**
Application of an *In Vitro* Tiered Testing Approach for Predicting Eye Irritation Potential of Agrochemical Formulations. *E. W. Carney*[1], *R. S. Settivari*[1], *S. C. Gehen*[2], R. Acosta Amado[2], N. Visconti[1], *M. Corvaro*[2], and L. Kan[1]. [1]Predictive Toxicology, The Dow Chemical Company, Midland, MI; and [2]Dow AgroSciences LLC, Indianapolis, IN.

#2166 **Poster Board Number 322**
Endosulfan Exposure Is Associated with Prostate Cancer in Mexico. E. A. Villeda-Gutierrez[2], R. A. Vazquez-Salas[3], L. E. Torres-Sánchez[3], L. T. Lopez-Carrillo[3], and *M. E. Cebrian*[1]. [1]Department of Toxicology, CINVESTAV IPN, Mexico City, Mexico; [2]Universidad Tecnologica de Tecama, Tecama, Mexico; and [3]Instituto Nacional de Salud Pública, Cuernavaca, Mexico.

#2167 **Poster Board Number 323**
Determination of Blood-Brain-Barrier (BBB) Permeability and Uptake of Deltamethrin (DLM) in Adult Male Sprague-Dawley Rats Using an *In Situ* Brain Perfusion Technique. M. Amaraneni[1], S. Muralidhara[1], J. Zastre[1], *T. G. Osimitz*[2], *S. Anand*[3], *D. W. Gammon*[4], *C. White*[1], *J. V. Bruckner*[1], and *B. S. Cummings*[1]. [1]University of Georgia, Athens, GA; [2]Science Strategies, Charlottesville, VA; [3]DuPont Haskell, Newark, DE; and [4]FMC, Ewing, NJ.

#2168 **Poster Board Number 326**
Toxicokinetics (TK) of Cis-Permethrin (CIS) in Adult and Weanling Sprague-Dawley (SD) Rats. T. Mortuza[1], J. Pang[1], S. Muralidhara[1], C. Chen[1], M. Amaraneni[1], *T. G. Osimitz*[2], *D. W. Gammon*[3], *S. Anand*[4], *B. S. Cummings*[1], *J. V. Bruckner*[1], and *C. White*[1]. [1]University of Georgia, Athens, GA; [2]Science Strategies LLC, Charlottesville, VA; [3]FMC Co., Ewing, NY; and [4]DuPont Haskell Labs, Newark, DE.

#2169 **Poster Board Number 327**
Age-Dependence of Toxicokinetics of Deltamethrin in Sprague-Dawley Rats. C. Chen[1], S. Muralidhara[1], D. Gullick[1], M. Amaraneni[1], T. Mortuza[1], *T. G. Osimitz*[2], D. Minnema[5], *D. W. Gammon*[3], *S. Anand*[4], *B. S. Cummings*[1], *J. V. Bruckner*[1], and *C. White*[1]. [1]PBS, University of Georgia, Athens, GA; [2]Science Strategies, LLC, Charlottesville, VA; [3]FMC Co., Ewing, NJ; [4]Dupont Haskell Labs, Newark, DE; and [5]Syngenta Crop Protection Inc., Greensboro, NC.

Abstract #

#2170 **Poster Board Number 328**
Inhibition of Alpha-Cypermethrin Metabolism by Chlorpyrifos-Oxon and Profenofos in Human Liver Microsomes. *S. T. Singleton*, *J. B. Knaak*, and *J. R. Olson*. Pharmacology and Toxicology, University at Buffalo, Buffalo, NY.

#2171 **Poster Board Number 329**
Biomarker Analysis of American Toad (*Anaxyrus americanus*) and Grey Tree Frog (*Hyla versicolor*) Tadpoles following Exposure to Atrazine. M. Snyder[1], *W. M. Henderson*[2], D. A. Glinski[1], and S. T. Purucker[2]. [1]Ecosystems Research Division, ORISE/EPA, Athens, GA; and [2]Ecosystems Research Division, EPA, Athens, GA.

#2172 **Poster Board Number 330**
Longitudinal Assessment of Exposures to Chlorpyrifos and Profenofos in Adolescent Egyptian Agriculture Workers. *J. R. Olson*[1], G. A. Rasoul[2], A. A. Ismail[2], O. Hendy[2], L. Hamad[1], *S. T. Singleton*[1], M. R. Bonner[1], K. Khan[3], and *D. Rohlman*[3,4]. [1]University at Buffalo, Buffalo, NY; [2]Menoufia University, Shebin El-Kom, Egypt; [3]University of Iowa, Iowa City, IA; and [4]OHSU, Portland, OR.

#2173 **Poster Board Number 331**
Weight-of-Evidence Evaluation of 1,3-Dichloropropene Tumorigenesis Supports Application of a Threshold-Based Risk Assessment. *Z. Yan*[1], *S. C. Gehen*[1], and *R. Sura*[2]. [1]Dow AgroSciences, Indianapolis, IN; and [2]The Dow Chemical Company, Midland, MI.

#2174 **Poster Board Number 332**
Formulations of Seeds from Cannabaceae Inhibit Feeding, Reproduction, and Normal Development of Tenebrio Beetles. N. Grant, C. Baldwin, and *S. Chao*. Fayetteville State University, Fayetteville, NC.

#2175 **Poster Board Number 333**
Genotoxicity and Mutagenicity Study of the Herbicides Trifluralin and Tebuthiuron. M. F. Franco Bernardes, L. C. Pereira, M. J. Tasso, and *D. J. Dorta*. Departamento de Química, Universidade de São Paulo (USP), Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto (FFCLRP), Ribeirão Preto, Brazil.

#2176 **Poster Board Number 334**
Predictive MOAs of Uterine Adenocarcinoma Development Induced by Pesticides in Rats. *M. Yoshida*, K. Inoue, and M. Takahashi. Department of Pathology, National Institute of Health Sciences, Tokyo, Japan.

#2177 **Poster Board Number 335**
Extraction of Highly Lipophilic Pyrethroid Insecticides from Adipose Tissue for Analysis by GC-MS. H. Young[1], D. Gullick[1], *J. V. Bruckner*[1], *B. S. Cummings*[1], *C. White*[1], M. Krolski[2], and M. Bartlett[1]. [1]Pharmaceutical and Biomedical Sciences, University of Georgia, Athens, GA; and [2]Bayer CropScience LP, Research Triangle Park, NC.

#2178 **Poster Board Number 336**
Using California Pesticide Information Portal (Cal/PIP) to Assess Use Patterns: Four Applications, with Caveats. *C. N. Aldous*, and P. Leung. Pesticide Regul., Cal-EPA, Sacramento, CA.

Program Schedule (Continued)

Abstract #

#2179 **Poster Board Number 337**
Effects of Organophosphorus Pesticides (OPs) on Airway Physiology. *F. Shaffo*[1], *A. C. Grodzki*[1], W. Walby[2], *E. Schelegle*[2], and *P. Lein*[1]. [1]Molecular Biosciences, University of California, Davis, Davis, CA; and [2]Anatomy, Physiology & Cell Biology, University of California, Davis, Davis, CA.

#2180 **Poster Board Number 338**
Analysis of Acetonitrile/Hexane-Extracted Biological Samples for Multiple Pesticides by HPLC Uv-Vis. J. Tran[1], N. Naidu[2], and *M. A. Yakubu*[1]. [1]Environmental Science & Technology, Texas Southern University, Houston, TX; and [2]Environmental Services, Expertox Laboratory, Houston, TX.

#2181 **Poster Board Number 339**
Bacterial Biodegradation of Organophosphorus Plaguicides in Agricultural Soils Contaminated. B. E. Jaramillo[1], L. Marin-Lopez[1], and E. Duarte-Restrepo[1,2]. [1]Agrochemical Research Group, Chemistry Program, University of Cartagena, Cartagena, Colombia; and [2]Doctoral Student in Environmental Toxicology PhD, University of Cartagena, Cartagena, Colombia. Sponsor: *B. Jaramillo*.

#2182 **Poster Board Number 342**
Some Toxicological Studies on Two Commercial Herbicides from the Egyptian Market on Catfish (*Clarias gariepinus*). A. A. Abou-Hadeed, F. E. Shaaban, G. G. Mostafa, and W. M. Elhady. Forensic Medicine & Toxicology, Faculty of Veterinary Medicine, Zagazig University, Zagazig, Egypt. Sponsor: *A. Kadry*.

#2183 **Poster Board Number 343**
Biochemical Effects of Some Commercial Pediculicides on Some Mammalian Targets. N. S. Ahmed[1], A. K. Osman[2], and *K. A. Osman*[1]. [1]Pesticide Chemistry & Toxicology, Faculty of Agriculture, El-Shatby, Alexandria University, Alexandria, Egypt; and [2]Faculty of Pharmacy, Alexandria University, Alexandria, Egypt.

#2184 **Poster Board Number 344**
Subchronic Exposure of Dicrotophos Worsens Hepatic Injury in Diabetic Rats. S. K. Ojha[1], *S. M. Nurulain*[1], J. Yasin[2], T. Saeed[3], M. Shafiullah[1], C. Sharma[2], and E. Adeghate[3]. [1]Pharmacology and Therapeutics, UAE University, Al Ain, United Arab Emirates; [2]Internal Medicine, UAE University, Al Ain, United Arab Emirates; and [3]Anatomy, UAE University, Al Ain, United Arab Emirates.

#2185 **Poster Board Number 345**
Terbufos Sulfone Toxicity Is More Severe in Diabetic Rats. *S. M. Nurulain*[1], S. Ojha[1], M. Shafiullah[1], M. Oz[1], J. Yasin[2], T. Saeed[3], T. Kornelia[4], and E. Adeghate[3]. [1]Pharmacology and Therapeutics, UAE University, Al Ain, United Arab Emirates; [2]Internal Medicine, UAE University, Al Ain, United Arab Emirates; [3]Anatomy, UAE University, Al Ain, United Arab Emirates; and [4]Pharmacodynamics, Semmelweis University, Budapest, Hungary.

Abstract #

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Bioinformatics

Chairperson(s): *Janet Moser, Chemical Security Analysis Center, Aberdeen Proving Ground, MD.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#2186 **Poster Board Number 401**
LactMed: A Critical Online Resource on Drugs and Breastfeeding. *P. Wexler*[1], P. O. Anderson[2], and J. Knoben[1]. [1]Toxicology and Environmental Health Information Program, National Library of Medicine, Bethesda, MD; and [2]University of California, San Diego, CA.

#2187 **Poster Board Number 402**
MyAlternaMed: Digital Aggregation and Organization of Phytochemical Data from Traditional Medicines and Dietary Supplements and Potential Interactions with Western Therapeutics. H. Irimagawa[1,2], B. Ford[1,2], and *D. Johnson*[1,2]. [1]Nutrition Science & Toxicology, UC Berkeley, Berkeley, CA; and [2]Emiliem, Inc., Berkeley, CA.

#2188 **Poster Board Number 403**
A Bioinformatics Pipeline—ArrayTrack for Genomics-Based Molecular Characterization of Foodborne Pathogens. H. Fang[1], J. Xu[2], I. Patel[3], J. Gangiredla[3], K. Lampel[3], C. Elkins[3], G. Zhou[2], B. Gong[2], F. Qian[2], S. C. Harris[2], J. Meehan[2], S. Jackson[4], *P. C. Howard*[1], and *W. Tong*[2]. [1]Office of Scientific Coordination, NCTR/FDA, Jefferson, AR; [2]Division of Bioinformatics and Biostatistics, NCTR/FDA, Jefferson, AR; [3]Office of Applied Research and Safety Assessment, CFSAN/FDA, Laurel, MD; and [4]National Institute of Standards and Technology, Gaithersburg, MD.

#2189 **Poster Board Number 404**
Screening of Information on Drug-Induced Liver Injury from the US FDA-Approved Drug Labels. K. Yu, Z. Liu, Y. Ding, M. Chen, J. Xu, and *W. Tong*. Division of Bioinformatics and Biostatistics, National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR.

#2190 **Poster Board Number 405**
An Integrated Analysis of Gene and microRNA Expression Profiles in the Rat Liver Exposed to Two Structurally Similar Drugs: Amiodarone and Benzbromane. H. Bisgin, *Y. Wang*, B. Gong, and *W. Tong*. NCTR/FDA, Jefferson, AR.

#2191 **Poster Board Number 406**
Molecular Determinants of Pulmonary Lesions. H. Assaggaf[1], T. Aljifri[1], C. Yoo[2], and *Q. H. Felty*[1]. [1]Environmental & Occupational Health, Florida International University, Miami, FL; and [2]Biostatistics, Florida International University, Miami, FL.

#2192 **Poster Board Number 407**
StemCellQC™: A Smart Detection Multiplexing Toolkit for Toxicological Evaluation of Stem Cell Processes and Health. *A. Zahedi*, V. On, *S. C. Lin*, B. Bays, B. Bhanu, and *P. Talbot*. University of California Riverside, Riverside, CA.

Program Schedule (Continued)

Abstract #

#2193 **Poster Board Number 408**
A Comparative Analysis of Estradiol and PPT Treatment Effects in MCF7 Cells As Part of the Human Toxome Project Using Agilent's Genespring Multi-Omics Analysis and Integration Solution. C. B. Livi[1], R. Fasani[1], M. Rosenberg[1], R. Chen[2], H. Li[2], A. Fornace[2], *J. D. Yager*[3], S. Odwin-DaCosta[3], *K. Boekelheide*[4], *M. M. Vantangoli*[4], *M. E. Andersen*[5], *P. D. McMullen*[5], S. Pendse[5], A. Maertens[3], T. Luechtefeld[3], A. Kleensang[3], M. Bouhifd[3], and *T. Hartung*[3]. [1]Agilent Technologies, Santa Clara, CA; [2]Georgetown University, Washington, DC; [3]Johns Hopkins University, Baltimore, MD; [4]Brown University, Providence, RI; and [5]Hamner Institutes for Health Sciences, Research Triangle Park, NC.

#2194 **Poster Board Number 409**
Flavonoids As Chemopreventive Agents by Interacting with ERBB Receptors. *W. Maldonado-Rojas*, M. Olivero-Acosta, and *J. Olivero-Verbel*. Environmental and Computational Chemistry Group, University of Cartagena, Cartagena, Colombia.

#2195 **Poster Board Number 410**
Chemical Effects in Biological Systems (CEBS) Database: Advanced Histopathology Search Applications. I. Lea[1], A. Rashid[1], C. Favaro[1], and J. Fostel[2]. [1]Vistronix, Durham, NC; and [2]NIEHS, Research Triangle Park, NC. Sponsor: *M. Hooth*.

#2196 **Poster Board Number 411**
Exposure Science Data and the Comparative Toxicogenomics Database. *C. J. Grondin*, *A. P. Davis*, J. Wiegers, T. C. Wiegers, and *C. J. Mattingly*. Biological Sciences, NC State University, Raleigh, NC.

#2197 **Poster Board Number 412**
The Comparative Toxicogenomics Database: Ten Years in the Making. *C. J. Mattingly*[1], *C. J. Grondin*[1], K. Lennon-Hopkins[1], C. Saraceni-Richards[1], D. Sciaky[1], J. Wiegers[1], R. McMorran[2], B. L. King[2], T. C. Wiegers[1], and *A. P. Davis*[1]. [1]Biological Sciences, NC State University, Raleigh, NC; and [2]Mount Desert Island Biological Laboratory, Salisbury Cove, ME.

#2198 **Poster Board Number 413**
ToxEvaluator: An Integrated Computational Platform to Aid the Interpretation of Study-Related Findings. *D. Pelletier*[1], T. C. Wiegers[2], *A. Enayetallah*[3], C. Kibbey[1], *M. Gosink*[1], *P. Koza-Taylor*[1], *C. J. Mattingly*[2], and *M. P. Lawton*[1]. [1]Pfizer Drug Safety R&D, Groton, CT; [2]North Carolina State University, Raleigh, NC; and [3]Biogen Idec, Cambridge, MA.

#2199 **Poster Board Number 414**
Big Data to Knowledge (BD2K)—A Graphical Approach for Data Coordination and Integration. *J. F. Reichard*[1], M. Medvedovic[2], and S. Sivagas[2]. [1]Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH; and [2]Department of Environmental Health, University of Cincinnati, Cincinnati, OH.

#2200 **Poster Board Number 415**
A ToxBank Integrated Data Analysis of SEURAT-1 Reference Compounds. G. J. Myatt[1], P. Kohonen[2], R. C. Grafström[2], N. Jeliazkova[3], M. Hegi[4], and *B. Hardy*[4]. [1]Leadscope, Columbus, OH; [2]Karolinska Instituet, Stockholm, Sweden; [3]Ideaconsult, Sofia, Bulgaria; and [4]Douglas Connect, Basel, Switzerland.

Abstract #

#2201 **Poster Board Number 416**
Development of a Framework for an Environmental Health Science Language. C. Lawler[1], A. Haugen[1], *R. R. Boyles*[1], A. Dearry[1], *C. J. Mattingly*[2], and M. Haendel[3]. [1]NIEHS, Research Triangle Park, NC; [2]North Carolina State University, Raleigh, NC; and [3]Oregon Health Sciences University, Portland, OR.

#2202 **Poster Board Number 417**
Using the Reactome Pathway Database and Bioinformatics Tools for the Visualization, Interpretation, and Analysis of Toxicogenomic Data. *M. E. Gillespie*. PHS, St. John's University, Queens, NY.

#2203 **Poster Board Number 418**
Chemical Security Analysis Center: Predictive Toxicology Program. *J. Moser*[1,2], R. Jablonski[1], W. Ashman[1,2], and P. Grasso[1]. [1]Chemical Security Analysis Center, Aberdeen Proving Ground, MD; and [2]Battelle Memorial Institute, Columbus, OH.

#2204 **Poster Board Number 419**
Scientific Text Extraction Using FIDDLE: A Foundation for Accurate Literature Mining. *R. Shah*, J. Phillips, and B. Howard. Sciome LLC, Research Triangle Park, NC.

#2205 **Poster Board Number 420**
Compound-Induced Hepatocarcinogenesis: The Role of Feed-Forward Loops. T. M. Souza, D. Jennen, and J. Kleinjans. Toxicogenomics, Maastricht University, Maastricht, Netherlands. Sponsor: *H. van Loveren*.

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Computational Toxicology and Data Integration II

Chairperson(s): *Susan C. Tilton, Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#2206 **Poster Board Number 423**
Quantitative Nanostructure Toxicity Relationship: Developing Predictive Cell Recognition Models for Gold Nanoparticles. W. Wang[1], A. Sedykh[2], B. Yan[3], and *H. Zhu*[1,2]. [1]Center for Computational and Integrative Biology, Rutgers University, Camden, NJ; [2]Department of Chemistry, Rutgers University, Camden, NJ; and [3]School of Chemistry and Chemical Engineering, Shandong University, Jinan, China.

#2207 **Poster Board Number 424**
Developing Quantitative Structure Activity Relationship (QSAR) Models for Effects on Nematode Larval Growth and Zebrafish Embryonic Development. *J. Hsieh*[1], *A. Sedykh*[3], *N. Kleinstreuer*[2], *J. Franzosa*[4], *W. A. Boyd*[1], and *R. R. Tice*[1]. [1]DNTP, NIEHS, Research Triangle Park, NC; [2]Integrated Laboratory Systems, Inc, Morrisville, NC; [3]MultiCASE Inc., Beachwood, OH; and [4]NCCT, US EPA, Research Triangle Park, NC.

Program Schedule (Continued)

Abstract #

#2208 **Poster Board Number 425**
Using Professional Judgment to Validate Structural Alert-Based Predictive Toxicity. *J. Zhang*, and J. Kneeland. Gradient Corp, Cambridge, MA.

#2209 **Poster Board Number 426**
Comparative Assessment of Several *In Silico* Systems and Models to Predict the Outcome of the Ames Mutagenicity Assay. A. Brigo, W. Muster, and *T. Singer*. Pharmaceutical Sciences, Roche Innovation Center Basel, Basel, Switzerland.

#2210 **Poster Board Number 427**
Statistically Derived (Q)SAR Alerts vs. Expert Rule Alerts: Redundant or Complementary? *R. Benz*[1], S. Chakravarti[2], R. D. Saiakhov[2], and A. Sedykh[2]. [1]OmnyCorp, Rockville, MD; and [2]MultiCASE, Inc., Beachwood, OH.

#2211 **Poster Board Number 428**
Improving QSAR Models of A/T Base Pair Mutation by Using Only *E. coli* Tests. R. D. Saiakhov, S. Chakravarti, and A. Sedykh. MultiCASE Inc, Beachwood, OH. Sponsor: *R. Benz*.

#2212 **Poster Board Number 429**
Construction and Application of (Q)SAR Models to Predict *In Vitro* Chromosome Aberrations. K. P. Hewes, L. Stavitskaya, B. L. Minnier, and N. L. Kruhlak. CDER, US FDA, Silver Spring, MD. Sponsor: *M. Powley*.

#2213 **Poster Board Number 430**
Comparative Analysis of Quantitative Structure Activity Relationship Approaches: A Polychlorinated Biphenyls Study. *S. M. Bobst*[1], *P. Ruiz*[2], and *M. Vracko*[3]. [1]University of Houston-Victoria, Victoria, TX; [2]Division of Toxicology and Human Health Sciences, Agency for Toxic Substances and Disease Registry, Atlanta, GA; and [3]Laboratory of Chemometrics, National Institute of Chemistry, Ljubljana, Slovenia.

#2214 **Poster Board Number 431**
3D-SDAR Analysis of PLD and hERG. Are They Related? I. Slavova[1], S. H. Slavov[1], D. A. Buzatu[1], N. L. Kruhlak[2], J. M. Willard[2], *J. P. Hanig*[2], J. G. Wilkes[1], and *R. D. Beger*[1]. [1]NCTR, Jefferson, AR; and [2]CDER, Silver Spring, MD.

#2215 **Poster Board Number 432**
Genome-Wide Comparison of Four Toxicogenomics Assay Systems. Z. Liu, H. Fang, J. Xu, and *W. Tong*. National Center for Toxicological Center, FDA, Jefferson, AR.

#2216 **Poster Board Number 433**
Building Predictive Gene Signatures through Simultaneous Assessment of Transcription Factor Activation and Gene Expression. *N. M. VanDuyn*[1,2], *J. Franzosa*[1], *K. Houck*[1], W. Ward[1], *A. Medvedev*[3], *S. S. Makarov*[3], B. N. Chorley[1], and *C. Corton*[1]. [1]US EPA, Durham, NC; [2]ORISE, Durham, NC; and [3]Attagene, Inc., Morrisville, NC.

Abstract #

#2217 **Poster Board Number 434**
Comparison of L1000 and Affymetrix Microarray for *In Vitro* Concentration-Response Gene Expression Profiling. *M. T. Martin*[1], *A. Karmaus*[1,3], *M. B. Black*[2], *G. P. Daston*[4], *J. M. Naciff*[5], *E. W. Carney*[5], *B. A. Wetmore*[2], *R. S. Thomas*[1], and *M. E. Andersen*[2]. [1]USEPA, Research Triangle Park, NC; [2]Hamner Institutes, Durham, NC; [3]ORISE, Research Triangle Park, NC; [4]Procter and Gamble, Cincinnati, OH; and [5]Dow Chemical Company, Midland, MI.

#2218 **Poster Board Number 435**
Integration into Big Data: First Steps to Support Reuse of Comprehensive Toxicity Model Modules. S. Watford[1,3], E. Jeff[2], *I. Rusyn*[5], *D. Reif*[4], *R. Judson*[3], and *M. T. Martin*[3]. [1]Environmental Science and Engineering, UNC Chapel Hill, Durham, NC; [2]ICF International, Durham, NC; [3]USEPA/ORD/NCCT, Research Triangle Park, NC; [4]Statistics, NCSU, Raleigh, NC; and [5]Texas A&M, College Station, TX.

#2219 **Poster Board Number 436**
Data Integration and Visualization for Transparent Communication of the Category Read-Across Using ToxPi (Toxicological Priority Index) Tool: P-series Glycol Ethers Case Study. M. R. Wilson[1], N. N. Ball[2], *E. W. Carney*[2], *J. Rowlands*[2], and *I. Rusyn*[1]. [1]Texas A&M University, College Station, TX; and [2]The Dow Chemical Company, Midland, MI.

#2220 **Poster Board Number 437**
Comparative Analysis between ToxCast and US FDA Databases Shows Potential of Applications of ToxCast in Safety Evaluation of US FDA-Regulated Products. H. Hong, and *W. Tong*. National Center for Toxicological Research, Jefferson, AR.

#2221 **Poster Board Number 438**
An Integrative Approach for Predicting PAH Toxicity in Environmental Mixtures. *S. C. Tilton*[1], D. Thomas[2], E. S. Peterson[2,1], K. Anderson[1], *R. L. Tanguay*[1], and *K. M. Waters*[2,1]. [1]Superfund Research Program, Oregon State University, Corvallis, OR; and [2]Pacific Northwest National Laboratory, Richland, WA.

#2222 **Poster Board Number 439**
Converging Bioinformatics Evidence Implicates Endocrine-Disrupting Pesticide Mixture Exposure on Epigenetic Regulation of KISS1-GnRH Control on Precocious or Delayed Puberty. *A. Deoraj*, and *D. Roy*. Environmental & Occupational Health, Florida International University, Miami, FL.

#2223 **Poster Board Number 440**
HTS and SAR Analysis of Chemicals from the Elk River Spill. *S. S. Auerbach*[1], N. Y. Choksi[2], *S. Ferguson*[1], *J. Hsieh*[1], D. L. Svoboda[3], G. J. Myatt[4], M. Wampole[5], A. Sedykh[6], M. Lawless[7], J. Prous[8], *N. J. Walker*[1], *S. Masten*[1], M. S. Wolfe[1], *R. R. Tice*[1], and *J. R. Bucher*[1]. [1]NIEHS/DNTP, Research Triangle Park, NC; [2]ILS, Inc, Research Triangle Park, NC; [3]SSS, Inc., Durham, NC; [4]Leadscope, Inc., Columbus, OH; [5]Thompson Reuters, New York, NY; [6]MultiCASE, Inc., Beachwood, OH; [7]Simulations Plus, Inc., Lancaster, CA; and [8]Prous Institute for Biomedical Research, Barcelona, Spain.

Program Schedule (Continued)

Abstract #

#2224 **Poster Board Number 441**
Making Sense of the New ToxCast Data: A Case Study with PPARγ D. L. Filer, *K. Houck*, *M. T. Martin*, and *R. Judson*. US EPA NCCT, Research Triangle Park, NC.

#2225 **Poster Board Number 442**
Bioinformatic Analysis of Epigenome Response to Environmental Pollutants. D. Mitic Potkrajac[1], V. Veljovic[1], *G. Apic*[1], and R. B. Russell[2]. [1]Cambridge Cell Networks Ltd, Cambridge, United Kingdom; and [2]Cell Networks, University of Heidelberg, Heidelberg, Germany.

#2226 **Poster Board Number 443**
Comparative Data-Mining Across Multiple Toxicity Databases Harmonized by eTOX Ontology to Test Hypotheses. T. Steger-Hartmann[1], *F. Pognan*[2], F. Sanz[3], K. Briggs[4], S. Escher[5], T. Kleinoeder[6], C. Schwab[6], J. Wichard[1], and *C. Yang*[6]. [1]Bayer HealthCare, Berlin, Germany; [2]Novartis, Basel, Switzerland; [3]IMIM-UPF, Barcelona, Spain; [4]Lhasa Ltd., Leeds, United Kingdom; [5]Fraunhofer ITEM, Hanover, Germany; and [6]Molecular Networks GmbH, Erlangen, Germany.

#2227 **Poster Board Number 444**
Relating Adverse Events to Contraindications: A New Window into Drug Toxicity. *C. Hasselgren*[1], O. Ursu[1], J. Bhate[2], U. Mahadevan[2], and T. Oprea[1]. [1]Department of Internal Medicine, University of New Mexico, Albuquerque, NM; and [2]Molecular Connections Pvt. Ltd, Bangalore, India.

#2228 **Poster Board Number 445**
Fish Connectivity Mapping: A Transcriptomics-Based Tool for Ecotoxicology. R. Wang. NERL, US EPA, Cincinnati, OH. Sponsor: *D. Villeneuve*.

#2229 **Poster Board Number 446**
Structure-Activity Model for Temporal Scaling Factors of Inhaled Hazardous Chemicals. A. Prussia, J. S. Snyder, and E. Demchuk. Division of Toxicology and Human Health Sciences, Agency for Toxic Substances and Disease Registry, Atlanta, GA. Sponsor: *J. Wheeler*.

#2230 **Poster Board Number 447**
Assessment of the Predictive Use of the ECOSAR *In Silico* Modeling Program in Comparison to Experimental Data for the Fish Aquatic Toxicity Test Study Endpoint. K. Fitzpatrick, and P. Aikens. Huntingdon Life Sciences, Huntingdon. Sponsor: *C. Auletta*.

#2231 **Poster Board Number 448**
A Framework for Rapid Hazard Assessment of Chemicals Using Quantitative Adverse Outcome Pathways. *E. J. Perkins*[1], N. G. Reyero Vinas[2], K. Gust[1,2], F. C. Hill[1], M. Mayo[1], and *J. K. Stanley*[1]. [1]Environmental Laboratory, US Army, Engineer Research & Development Center, Vicksburg, MS; and [2]Institute for Digital Biology, Mississippi State University, Starkville, MS.

#2232 **Poster Board Number 449**
Chemical Structural Profiling of ToxCast II Compounds Predicted Lack of Reactivity in Nrf2, MTF2, and CREB3, Hallmarks for Nonspecific Cellular Stress. B. Bhhatarai, *D. Wilson*, *S. Marty*, R. Hunziker, *P. S. Price*, and *E. W. Carney*. TERC, The Dow Chemical Company, Midland, MI.

Abstract #

#2233 **Poster Board Number 450**
Development of a Conceptual Module to Investigate Pharmacokinetic Influences When Evaluating Chemicals in Adverse Outcome Pathways. J. A. Leonard[1], *C. Grulke*[2], *M. Goldsmith*[3], *D. T. Chang*[3], *M. B. Phillips*[1], and *Y. C. Tan*[1]. [1]National Exposure Research Laboratory, US Environmental Protection Agency, Research Triangle Park, NC; [2]Lockheed Martin, Durham, NC; and [3]Chemical Computing Group, Montreal, QC, Canada.

#2234 **Poster Board Number 451**
An *In Silico* Skin Absorption Model for Fragrance Materials. *J. Shen*[1], *L. Kromidas*[1], *T. W. Schultz*[2], and *S. Bhatia*[1]. [1]RIFM, Inc., Woodcliff Lake, NJ; and [2]The University of Tennessee, Knoxville, TN.

#2235 **Poster Board Number 452**
A Pilot Study of Clustering-Based Safety Assessment for Fragrance Ingredients. *J. Shen*, *L. Kromidas*, D. Wilcox, *A. Api*, and *S. Bhatia*. RIFM, Inc., Woodcliff Lake, NJ.

#2236 **Poster Board Number 453**
Development of Chemical Categories by Optimized Clustering Strategies. A. Bitsch[1], M. Batke[1], *U. Gundert-Remy*[2], M. Gütlein[3], S. Kramer[4], F. Partosch[2], and M. Seeland[5]. [1]Chemical Risk Assessment, Fraunhofer Institute of Toxicology and Experimental Medicine, Hannover, Germany; [2]Institute for Clinical Pharmacology and Toxicology, Charité, Berlin, Germany; [3]FDM, University of Freiburg, Freiburg, Germany; [4]Institute of Computer Science, University Mainz, Mainz, Germany; and [5]Institute of Computer Science, Information Systems, Technical University of Munich, Munich, Germany.

#2237 **Poster Board Number 454**
***In Silico* Prediction of Physicochemical Properties of Environmental Chemicals in Combination of Molecular Fingerprints and Machine Learning Approaches.** *Q. Zang*[1], *K. Mansouri*[2], *D. G. Allen*[1], *N. Kleinstreuer*[1], *W. Casey*[3], and *R. Judson*[2]. [1]ILS/NICEATM, Research Triangle Park, NC; [2]EPA/ORD/NCCT, Research Triangle Park, NC; and [3]NTP/NICEATM, Research Triangle Park, NC.

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Epigenetics

Epigenomic Influences in Toxicological Responses

Chairperson(s): *Tao Chen, School of Public Health, SooChow University, SuZhou, China; and Asok K. Dasmahapatra, National Center for Natural Product Research, University of Mississippi, University, MS.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#2238 **Poster Board Number 501**
Changes of DNA Methylation Patterns in Subjects Exposed to Polycyclic Aromatic Hydrocarbon. H. Duan[1], Z. He[2], P. Bin[1], Y. Niu[1], *W. Chen*[2], and *Y. Zheng*[1]. [1]Key Laboratory of Chemical Safety and Health, National Institute of Occupational Health and Poison Control, Chinese Center for Disease Control and Prevention, Beijing, China; and [2]Faculty of Preventive Medicine, School of Public Health, Sun Yat-sen University, Guangzhou, China.

Program Schedule (Continued)

Abstract #

#2239 **Poster Board Number 502**
HDAC Inhibition by Sodium Butyrate Reduces Insulin Resistance and Fat Deposition and Protects Beta Cell Dysfunction in Type 2 Diabetic Rat: Investigation on Chromatin-Dependent Mechanisms. S. Khan, and *G. Jena*. Department of Pharmacology and Toxicology, National Institute of Pharmaceutical Education and Research (NIPER), Mohali, India.

#2240 **Poster Board Number 503**
The Steroidal Saponin, Dioscin, Isolated from Wild Yam (*Dioscorea villosa*) Root Extract, Has the Potential to Modulate Human Breast Cancer Metastasis. *P. Aumsuwan*[2,1], S. I. Khan[1,3], I. A. Khan[1,3], L. A. Walker[1,2], Z. Ali[1], B. Avula[1], and *A. K. Dasmahapatra*[1,2]. [1]National Center for Natural Product Research, University of Mississippi, University, MS; [2]Department of BioMolecular Sciences, Pharmacology Division, University of Mississippi, University, MS; and [3]Department of BioMolecular Sciences, Pharmacognosy Division, University of Mississippi, University, MS.

#2241 **Poster Board Number 504**
Examining Environmental Effects on the Epigenome. *J. A. Camacho*, *P. Allard*, S. Kreik, and Z. Lundby. Molecular Toxicology, UCLA, Los Angeles, CA.

#2242 **Poster Board Number 505**
Epigenetic Regulation of miR-182-5p Overexpression Contributes to the Hepatocarcinogenicity of Trichloroethylene in B6C3F1 Mice. Y. Jiang, J. Chen, J. Tong, and *T. Chen*. School of Public Health, SooChow University, SuZhou, China.

#2243 **Poster Board Number 506**
MicroRNAs and Their Potential Involvement in Arsenic-Induced Oxidative Stress. *X. Ren*[1], Z. Gong[1], C. Hang[2], H. Yan[2], *J. R. Olson*[1], *T. Kavanagh*[3], and *H. Wu*[2]. [1]University at Buffalo, Buffalo, NY; [2]Wenzhou Medical University, Wenzhou, China; and [3]Environmental and Occupational Health Sciences, University of Washington, Seattle, WA.

#2244 **Poster Board Number 507**
Aluminum Maltolate Alters Cell Cycle Progression and Histone Modifications in Mouse Embryonic Stem Cells. *S. R. Gadhia*, and *F. A. Barile*. Department of Pharmaceutical Sciences, St. John's University, Queens, NY.

#2245 **Poster Board Number 508**
Does the Epigenome Predispose for Susceptibility to DNA Damage? M. Jetten[1], S. Claessen[1], H. Gmuender[2], J. van Delft[1], T. Wittenberger[2], and J. Kleinjans[1]. [1]Toxicogenomics, Maastricht University, Maastricht, Netherlands; and [2]Genedata AG, Basel, Switzerland. Sponsor: *H. van Loveren*.

Abstract #

#2246 **Poster Board Number 509**
Reveratrol Treatment Results in a miRNA-Regulatory Network in Renal Cancer Cells and Suppresses Cancer Growth and Metastasis by Therapeutically Targeting miR-181d, miR-21, miR-10a, miR-17, BCL-2, CDC25a, MCL-1, and STAT3. *H. Guan*[1,2], L. Chen[3], S. Yang[3], *P. S. Nagarkatti*[1], and *M. Nagarkatti*[1,2]. [1]Pathology, Microbiology and Immunology, University of South Carolina School of Medicine, Columbia, SC; [2]WJB Dorn Veterans Affairs Medical Center, Columbia, SC; and [3]Urology, Renmin Hospital of Wuhan University, Wuhan, China.

#2247 **Poster Board Number 510**
Persistence of Genomic Effects following Early-Life Exposure to a Nongenotoxic Carcinogen in Mice. B. N. Chorley[1], G. Carswell[1], *S. D. Hester*[1], *H. Mortensen*[1], *A. D. Lake*[2], A. B. DeAngelo[1], and C. E. Wood[1]. [1]National Health and Environmental Effects Research Laboratory, US Environmental Protection Agency, Research Triangle Park, NC; and [2]Oakridge Institute for Science and Education, Research Triangle Park, NC.

#2248 **Poster Board Number 511**
Dioxin (TCDD) Induces Epigenetic Transgenerational Inheritance through Alterations in DNA Methylation, Histone Modifications, and microRNA Profile. *N. P. Singh*[1], *X. Yang*[1], U. P. Singh[1], *M. Nagarkatti*[1,2], and *P. S. Nagarkatti*[1]. [1]Pathology, Microbiology, and Immunology, University of South Carolina School of Medicine, Columbia, SC; and [2]WJB Dorn Veterans Affairs Medical Center, Columbia, SC.

#2249 **Poster Board Number 512**
MicroRNA hsa-miR-128-3p Reduced CYP2C9 Expression in Human Liver Cells. *B. Ning*[1], D. Yu[1], B. Green[1], A. K. Marrone[1], Y. Guo[2], *S. Kadluabr*[3], *J. C. Fuscoe*[1], and *I. Pogribny*[1]. [1]NCTR/FDA, Jefferson, AR; [2]Beijing Children's Hospital, Beijing, China; and [3]University of Arkansas for Medical Sciences, Little Rock, AR.

#2250 **Poster Board Number 513**
DNA Methylation Profiles in Liver and Kidney during the Rat Life Span Show Age, Sex, and Tissue Differences. T. Han, V. Vijay, C. Moland, J. C. Kwekel, *V. G. Desai*, and *J. C. Fuscoe*. Division of Systems Biology, USFDA/NCTR, Jefferson, AR.

#2251 **Poster Board Number 514**
Epigenetic Markers of B Cell Differentiating Transcription Factor Genes in Mice Exposed to Dust from Nellis Dunes Recreational Area, Clark County, Nevada. L. Murphy[1], C. E. Banister[2], B. J. Buck[3], D. Goossens[3], *J. DeWitt*[4], and *D. E. Keil*[1]. [1]Microbiology and Immunology, Montana State University, Bozemen, MT; [2]Drug Discovery and Biomedical Sciences, South Carolina College of Pharmacy, University of South Carolina, Columbia, SC; [3]Geoscience, University of Nevada Las Vegas, Las Vegas, NV; and [4]Pharmacology and Toxicology, East Carolina University, Greenville, NC.

Program Schedule (Continued)

Abstract #

#2252 **Poster Board Number 515**
DDT Exposure Reduces DNA Global Methylation in Susceptible MTHFR 677 C>T Pregnant Mexican Women. *R. Ruiz-Ramos*[1], L. E. Torres-Sánchez[2], *M. La Merrill*[3], L. López-Carrillo[2], J. Chen[3,4], and *M. E. Cebrian*[5]. [1]Institute of Forensic Medicine, Universidad Veracruzana, Boca del Rio, Mexico; [2]Reproductive Health, INSP, Cuernavaca, Mexico; [3]Department of Preventive Medicine, Mount Sinai School of Medicine, New York, NY; [4]Department of Pediatrics, Mount Sinai School of Medicine, New York, NY; and [5]Department of Toxicology, CINVESTAV, Mexico City, Mexico.

#2253 **Poster Board Number 516**
DNA Methylation Modifies Urine Biomarker Levels in 1,6-Hexamethylene Diisocyanate Exposed Workers: A Pilot Study. *L. A. Nylander-French*[1], M. C. Wu[2], *J. E. French*[3], J. Boyer[1], *L. Smeester*[1], *A. Sanders*[4], and *R. Fry*[1]. [1]Environmental Sciences & Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]Public Health, Fred Hutchinson Cancer Research Center, Seattle, WA; [3]TOXGEN/TOXicoGENetics, Chapel Hill, NC; and [4]Preventive Medicine, Icahn School of Medicine at Mount Sinai, New York, NY.

#2254 **Poster Board Number 517**
Furan Induces Long-Term Persistent Epigenetic Alterations in the Livers of Fisher 344 Rats. *A. de Conti*[1], *T. Kobets*[1], S. D. Burnett[1], *V. Tryndyak*[1], *T. Han*[2], *J. C. Fuscoe*[2], *F. A. Beland*[1], *D. R. Doerge*[2], and *I. Pogribny*[1]. [1]Division of Biochemical Toxicology, National Center for Toxicological Research, Jefferson, AR; and [2]Division of Systems Biology, National Center for Toxicological Research, Jefferson, AR.

#2255 **Poster Board Number 518**
Methylation Profiles in Chronic Smokers and Moist Snuff Consumers. *G. L. Prasad*, and M. F. Borgerding. R & D, RJ Reynolds Tobacco Co, Winston-Salem, NC.

#2256 **Poster Board Number 519**
Biological Impact of Repetitive Element-Mediated Changes in Transcription after Exposure to Cocaine. T. Wang[1], J. Feng[2], J. Santos[1], M. Cahill[2], L. Shen[2], D. Fargo[1], E. Nestler[2], and *R. Woychik*[1]. [1]NIEHS, Durham, NC; and [2]Mount Sinai School of Medicine, New York, NY.

#2257 **Poster Board Number 520**
DNA Methylation and Hydroxymethylation As Biomarkers for Chemical Allergy. V. Chapman[1,2], T. Zollinger[1], R. Terranova[2], *J. Moggs*[2], *I. Kimber*[1], and *R. J. Dearman*[1]. [1]Manchester University, Manchester, United Kingdom; and [2]Discovery and Investigative Safety, Novartis Institutes for Biomedical Research, Basel, Switzerland.

#2258 **Poster Board Number 521**
DNA Methylation: A Role in *In Vivo* T Cell Polarization? *I. Kimber*[1], V. Chapman[1,2], T. Zollinger[2], R. Terranova[2], *J. Moggs*[2], and *R. J. Dearman*[1]. [1]Manchester University, Manchester, United Kingdom; and [2]Discovery and Investigative Safety, Novartis Institutes for Biomedical Research, Basel, Switzerland.

Abstract #

#2259 **Poster Board Number 522**
Use of an *In Vitro* Stem Cell-Based Model of Early Mammalian Germ Cell Development to Investigate the Effects of Environmental Chemicals on Epigenetic DNA Marks during Gamete Formation. E. L. Marczylo[1], J. Janus[2], and *T. W. Gant*[1,2]. [1]Toxicology, Public Health England, Didcot, United Kingdom; and [2]Systems Toxicology Group, Medical Research Council, Leicester, United Kingdom.

#2260 **Poster Board Number 523**
A Mechanistic Study of Cigarette Smoke-Induced COPD in C57BL/6 Mice: The Changes in Lung Epigenome following Smoking Cessation or Switching to Aerosol from a Prototypic Modified-Risk Tobacco Product. N. Sierro[1], M. Talikka[1], J. Hoeng[1], M. Peitsch[1], *A. Hayes*[2,3], and N. Ivanov[1]. [1]Philip Morris International R&D, Neuchatel, Switzerland; [2]Spherix Consulting, Rockville, MD; and [3]Scientific Advisory Board, Philip Morris International R&D, Neuchatel, Switzerland.

#2261 **Poster Board Number 524**
***In Utero* Lead (Pb) Exposure and Neuron-Specific DNA Methylation Changes in Mice.** Z. Farooqui[1], K. Bakulski[2], *C. Faulk*[1], A. K. Barks[3], and *D. Dolinoy*[1]. [1]Environmental Health Sciences, University of Michigan, Ann Arbor, MI; [2]Johns Hopkins University, Baltimore, MD; and [3]University of Minnesota, Minneapolis, MN.

#2262 **Poster Board Number 525**
Impact of Transplacental Polycyclic Aromatic Hydrocarbon Exposure on the Epigenome. T. Fish, D. Larson, and *A. D. Benninghoff*. Department of Animal, Dairy and Veterinary Science, Utah State University, Logan, UT.

#2263 **Poster Board Number 526**
Epigenome-Wide Effects of Perinatal Bisphenol A Exposure in Adult Mice with Hepatic Tumors. *C. Weinhouse*, *C. Faulk*, *K. E. Sant*, *O. S. Anderson*, M. A. Sartor, and *D. Dolinoy*. University of Michigan, Ann Arbor, MI.

#2264 **Poster Board Number 527**
Toxic and Essential Metals, the Epigenome, and Placental Toxicity: Examining the Preeclamptic DNA Methylome. P. D. Ray[1], *E. Martin*[2], *J. E. Laine*[2], M. Grace[3], P. Cable[2], W. Bodnar[2], K. Boggess[3], and *R. Fry*[1,2]. [1]Toxicology, University of North Carolina at Chapel Hill, Fuquay Varina, NC; [2]Gillings School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC; and [3]UNC Hospitals, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#2265 **Poster Board Number 528**
Epigenetics and Air Pollution: Adaptation to Daily Ozone Exposure Is Mediated through Chromatin Modifications. *E. C. Bowers*[1,2], *S. D. McCullough*[2], L. A. Dailey[2], J. J. Kahle[2], and D. Diaz-Sanchez[2]. [1]UNC Chapel Hill, Chapel Hill, NC; and [2]US Environmental Protection Agency, Research Triangle Park, NC.

Program Schedule (Continued)

Abstract #

#2266 **Poster Board Number 529**
Sex-Specific Effects of Arsenic on Global Levels of Histone Mark H3K36me2 in Peripheral Blood Mononuclear Cells from Bangladeshi Adults. C. G. Howe[1], M. Hall[2], V. Ilievski[1], V. N. Slavkovich[1], F. Parvez[1], A. B. Siddique[3], M. H. Shahriar[3], M. N. Uddin[3], T. Islam[3], *J. H. Graziano*[1], and M. Gamble[1]. [1]Environmental Health Sciences, Columbia University, New York, NY; [2]Epidemiology, Columbia University, New York, NY; and [3]Columbia University Arsenic Project in Bangladesh, Dhaka, Bangladesh.

#2267 **Poster Board Number 530**
Nickel Induces Epigenetic Dysregulation through Repressive Chromatin Domain Disruption. S. Cuddapah[1], C. C. Jose[1], B. Xu[2], L. Jagannathan[1], C. Trac[2], R. K. Mallela[1], T. Hattori[3], D. Lai[3], S. Koide[3], and D. E. Schones[2]. [1]Department of Environmental Medicine, NYU School of Medicine, Tuxedo, NY; [2]Department of Cancer Biology, City of Hope, Duarte, CA; and [3]Department of Biochemistry and Molecular Biology, The University of Chicago, Chicago, IL. Sponsor: *M. Costa*.

#2268 **Poster Board Number 531**
Effect of Prenatal Environmental Tobacco Smoke Exposure on Promoter Methylation and Asthma. S. Christensen[1], Z. Jaffar[1], *K. E. Pinkerton*[3], M. Ferrini[1], V. Porter[1], B. Postma[1], *A. Holian*[1,2], and Y. Cho[1,2]. [1]Center for Environmental Health Sciences, University of Montana, Missoula, MT; [2]Biomedical and Pharmaceutical Sciences, University of Montana, Missoula, MT; and [3]Center for Health and the Environment, University of California-Davis, Davis, CA.

#2269 **Poster Board Number 532**
Early Epigenetic Modulation of Nrf2 and Lipogenic Genes by PNPP Exposure of Bisphenol A Is Associated with Hepatic Steatosis in Female Mice. *P. Shimpi*[1], B. Rubin[2], *A. Slitt*[1], and M. K. Skinner[3]. [1]University of Rhode Island, Kingston, RI; [2]Tufts University, Boston, MA; and [3]Washington State University, Pullman, WA.

#2270 **Poster Board Number 533**
High-Fat Diet Modifies the Effect of Perinatal Bisphenol A Exposure on the Epigenome. K. M. Collison, *L. Marchlewicz*, *C. Faulk*, and *D. Dolinoy*. Environmental Health Sciences, University of Michigan, Ann Arbor, MI.

#2271 **Poster Board Number 534**
Comparison of NAC and CAPE in Modulating H2O2-Induced Alterations in Cytotrophoblast Cell Survival, Apoptosis and miRNA Expression. *C. E. Cross*[1,2], *M. F. Tolba*[3], *J. T. Speidel*[1], *M. Xu*[1], and *S. Abdel-Rahman*[1]. [1]Obstetrics and Gynecology, University of Texas Medical Branch, Galveston, TX; [2]School of Osteopathic Medicine, A.T. Still University, Mesa, AZ; and [3]Pharmacology and Toxicology, Ain Shams University, Cairo, Egypt.

#2272 **Poster Board Number 535**
Sulforaphane Protection from Diabetic Nephropathy Is Possibly Mediated by Increasing Nrf2 Transcriptional Regulation of Metallothionein via Inhibition of HDAC2 Activity. *L. Kong*[1,2], *H. Wu*[1,2], L. Miao[2], and *L. Cai*[1]. [1]Pediatrics, University of Louisville, Louisville, KY; and [2]Nephrology, 2nd Hospital of Jilin University, Changchun, China.

Abstract #

#2273 **Poster Board Number 536**
Genetic Damage Is Associated with the DNA Methylation in Cord Blood from a Population Highly Exposed to Air Pollutants. N. Montes[1], *I. Alvarado-Cruz*[1], I. García-Aguiar[1], M. J. Solís-Heredia[1], M. Rangel-Calvillo[2], E. López-Bayghen[1], and *B. Quintanilla-Vega*[1]. [1]Toxicology, CINVESTAV, Ciudad de México, Mexico; and [2]General Hospital Dr. José María Rodríguez, Mexico City, Mexico.

#2274 **Poster Board Number 537**
Integrated Bioinformatics Analysis of microRNA and mRNA Expression Profiles in the Liver of Rats Treated with a Nongenotoxic Hepatocarcinogen, Thioacetamide. Y. Morikawa[1], T. Uehara[1], *Y. Wang*[2], C. Castro[2,3], B. Gong[2], J. Yan[2], T. Chen[2], M. Kaneto[2], and *W. Tong*[2]. [1]Shionogi & Co., Ltd., Osaka, Japan; [2]National Center for Toxicological Research, US FDA, Jefferson, AR; and [3]University of North Carolina, Charlotte, NC.

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Kidney

Chairperson(s): *Monica Valentovic, Pharmacology, Physiology and Toxicology, Marshall University School of Medicine, Huntington, WV.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#2275 **Poster Board Number 539**
Renal Tubular Pigmentation Associated with Senna Administration. G. A. Willson[1], D. Malarkey[2], N. Allison[1], J. K. Dunnick[2], *J. F. Hardisty*[1], and R. A. Miller[1]. [1]Experimental Pathology Laboratories, Inc., Durham, NC; and [2]NIEHS, NIH/DHHS, Research Triangle Park, NC.

#2276 **Poster Board Number 540**
Comparison of the Expression of Stem Cell Markers in Monolayer and Spheroid Cell Cultures of Human Renal Epithelial Cells with That Expressed in the Immortalized Human Proximal Tubule Cell Line, HK-2. *S. Shrestha*, *S. H. Garrett*, *D. A. Sens*, and *S. Somji*. Pathology, University of North Dakota, Grand Forks, ND.

#2277 **Poster Board Number 541**
Nephrotoxicity following Soman (GD) Exposure in the Rat Model. J. F. Irwin[1], M. Guignet[1], K. Laitipaya[1], A. Opitz[1], M. Wegner[2], *J. H. McDonough*[1], and E. A. Johnson[1]. [1]Research, USAMRICD, Aberdeen Proving Ground, MD; and [2]Research Support, USAMRICD, Aberdeen Proving Ground, MD.

#2278 **Poster Board Number 542**
Role of Renal Bioactivation Enzyme Systems on 3,5-Dichloronitrobenzene (3,5-DCNB)-Induced Nephrotoxicity *In Vitro*. J. Tate[2], *C. Racine*[1], S. Vermudez[3], C. Tyree[1], D. Ward[1], D. Anestis[1], and *G. O. Rankin*[1]. [1]Pharmacology, Physiology and Toxicology, Marshall University, Huntington, WV; [2]West Virginia Wesleyan College, Buckhannon, WV; and [3]Chaminade University, Honolulu, HI.

WEDNESDAY

Program Schedule (Continued)

Abstract #

#2279 **Poster Board Number 543**
Potential Mechanisms Involved in the Aggravation of Renal Tubulointerstitial Fibrosis Caused by Fluoride Exposure in Rats with Unilateral Ureteral Obstruction. T. Kido[1,2], *M. Tsunoda*[2], C. Sugaya[2], H. Hano[3], and H. Yanagisawa[1]. [1]Public Health and Environmental Medicine, The Jikei University School of Medicine, Tokyo, Japan; [2]Hygiene, Kitasato University School of Medicine, Sagamihara, Japan; and [3]Pathology, Jikei University School of Medicine, Tokyo, Japan.

#2280 **Poster Board Number 544**
Canine Renal Proximal Tubule Cells As an *In Vitro* Model for Toxicity Assessment of Pet Food Ingredients. *J. Koci*[1], B. Jeffery[2], *J. E. Riviere*[1], and *N. A. Monteiro-Riviere*[1]. [1]Anatomy and Physiology, College of Veterinary Medicine, Kansas State University, Manhattan, KS; and [2]Mars Inc., Global Quality and Food Safety, McLean, VA.

#2281 **Poster Board Number 545**
Diglycolic Acid, the Toxic Metabolite of Diethylene Glycol, Inhibits Renal Mitochondrial Respiration. R. H. Nichols, T. Conrad, and *K. McMartin*. Pharmacology, Toxicology & Neuroscience, LSU Health Sciences Center, Shreveport, LA.

#2282 **Poster Board Number 546**
Effects of Polyphenolics of *Cocos nucifera* Husk Fiber on Selected Kidney Function Indices in Rat. *J. O. Adebayo*, O. O. Owalabi, S. T. Baruwa, S. O. Malomo, and *E. A. Balogun*. Biochemistry, University of Ilorin, Ilorin, Nigeria.

#2283 **Poster Board Number 547**
Exploring the Role of Oxidative Stress in 3,5-Dichloroaniline (3,5-DCA)-Induced Nephrotoxicity *In Vitro*. *C. Racine*, D. Anestis, J. G. Ball, *M. Valentovic*, and *G. O. Rankin*. Pharmacology, Physiology, and Toxicology, Marshall University, Huntington, WV.

#2284 **Poster Board Number 548**
A Predominant Role of Prostaglandin E_2 Receptor EP1 in Dioxin-Induced Neonatal Hydronephrosis. K. Aida-Yasuoka[1], *W. Yoshioka*[1], A. Shimada[1], N. Fujisawa[1], N. Endo[1], S. Narumiya[2], N. Nishimura[1], and *C. Tohyama*[1]. [1]Grad. Sch. of Med., The Univ. of Tokyo, Tokyo, Japan; and [2]Grad. Sch. of Med., Kyoto Univ., Kyoto, Japan.

#2285 **Poster Board Number 549**
Strain Differences in Renal Biomarker Response following Cisplatin or Vancomycin Administration in Sprague-Dawley and Wistar Han Rats. *L. Besenhofer*[1], *R. Yeager*[1], *T. L. Palenski*[1], C. Mattis[1], D. Desmond[1], S. Riendl[1], J. K. Johnson[1], H. Yang[2], and K. Barnhart[1]. [1]Preclinical Safety, AbbVie, Inc., North Chicago, IL; and [2]Data and Statistical Sciences, AbbVie, Inc., North Chicago, IL.

Abstract #

#2286 **Poster Board Number 550**
Evaluation of Biomarkers of Early Kidney Injury in an Adult Mexican Population Environmentally Exposed to Fluoride. M. I. Jiménez-Córdova[1], M. Cárdenas-González[1], G. Aguilar Madrid[2], A. Barrera-Hernández[1], E. E. Villarreal-Vega[3], I. A. Domínguez-Guerrero[3], R. Infante-Ramírez[3], C. González-Horta[3], *O. Barbier*[1], and *L. M. Del Razo*[1]. [1]Toxicology, Cinvestav-IPN, Mexico City, Mexico; [2]Salud en el Trabajo, Instituto Mexicano del Seguro Social, Mexico City, Mexico; and [3]Ciencias Quimicas, Universidad Autónoma de Chihuahua, Chihuahua, Mexico.

#2287 **Poster Board Number 551**
Imaging Techniques Supporting Human Risk Assessment of Drug-Induced Crystal Nephropathy in Preclinical Studies. B. Lenz[1], U. Niederhauser[1], S. Deininger[2], J. Fuchser[2], M. Siam[3], S. Schadt[1], A. De Paepe[1], P. Maliver[1], R. Zurbach[1], and *M. Albassam*[1]. [1]Roche Pharma Research and Early Development, Hoffmann-La Roche, Basel, Switzerland; [2]Bruker Daltonik, Bremen, Germany; and [3]Accelrys AG, Liestal, Switzerland.

#2288 **Poster Board Number 552**
Hepcidin: A Novel Treatment for Heme-Mediated Kidney Injury? R. van Swelm[1,2], J. Wetzels[3], V. Verweij[2], C. Laarakkers[1], J. Pertijs[2], R. Masereeuw[2], and D. Swinkels[1]. [1]Laboratory Medicine, Radboudumc, Nijmegen, Netherlands; [2]Pharmacology and Toxicology, Radboudumc, Nijmegen, Netherlands; and [3]Nephrology, Radboudumc, Nijmegen, Netherlands. Sponsor: *F. Russel*.

#2289 **Poster Board Number 553**
Acute Renal Toxicity to Diglycolic Acid: Preliminary Findings of an *In Vitro*-to-*In Vivo* Comparison. M. Mossoba, Z. Keltner, T. Black, N. Olejnik, A. S. DePina, K. Belgrave, V. Topping, P. Wiesenfeld, J. Sprando, S. Vohra, H. Toomer, and R. Sprando. Division of Toxicology, Food and Drug Administration, Laurel, MD. Sponsor: *J. Yourick*.

#2290 **Poster Board Number 554**
High-Concentration SGLT2 Inhibitor-Mediated Change in Renal Glucose Metabolism. P. F. Secker, S. Hochrein, and *D. R. Dietrich*. Human & Environmental Toxicology, University of Konstanz, Konstanz, Germany.

#2291 **Poster Board Number 555**
Unravelling the Phenomenon of Propiverine-Induced DAAO Accumulation in Rat Kidney: A Direct Approach. A. Heussner[1], M. Y. Maier[1], L. Luks[1], P. F. Secker[1], S. Sacchi[2,3], L. Pollegioni[3,2], and *D. R. Dietrich*[1]. [1]Human & Environmental Toxicology, University of Konstanz, Konstanz, Germany; [2]Dipartimento di Biotecnologie e Scienze della Vita, Università degli studi dell'Insubria, Varese, Italy; and [3]Centro Interuniversitario di Ricerca in Biotecnologie Proteiche The Protein Factory, Politecnico di Milano, Milano, Italy.

#2292 **Poster Board Number 556**
Unravelling the Mechanism of Propiverine-Induced DAAO Accumulation in Rat Kidney: The Role of Proteasomal Degradation. L. Luks, and *D. R. Dietrich*. Human & Environmental Toxicology, University of Konstanz, Konstanz, Germany.

Program Schedule (Continued)

Abstract #

#2293 **Poster Board Number 557**
Identification of Epigenetic Modifications of CDK Inhibitors Induced by Nephrotoxicants Using Targeted DNA Methylation and Next-Generation Sequencing. R. T. Kolli[1], N. E. Scholpa[1], T. C. Glenn[2], and *B. S. Cummings*[1]. [1]Pharmaceutical Biomedical Sciences, University of Georgia, Athens, GA; and [2]Environmental Health Science, University of Georgia, Athens, GA.

#2294 **Poster Board Number 558**
Live Cell High-Content Imaging to Mechanistically Classify Kidney Toxicity. *S. Ramm*, W. W. Chen, and *V. S. Vaidya*. Laboratory of Systems Pharmacology, Harvard Medical School, Boston, MA.

#2295 **Poster Board Number 559**
Renal Expression of TGF-β1 and Inflammation-Related miRNAs in a Rat Model after Subchronic Exposure to Fluoride. B. Parada-Cruz, *T. Jacobo-Estrada*, *M. Cárdenas-González*, E. López-Ventura, and *O. Barbier*. Toxicología, CINVESTAV, Mexico City, Mexico.

#2296 **Poster Board Number 560**
Inhibition of TGF-β1-Induced Renal Epithelial Mesenchymal Transition (EMT) by Chrysin Is Mediated through Akt Inhibition. *S. M. Ford*, and R. Nagavally. Toxicology Program, St. John's University, Jamaica, NY.

#2297 **Poster Board Number 561**
Early Detection of Kidney Toxicity in Humans Using Urinary microRNA-21, -200c and -423. M. Pavkovic[1], C. Robinson-Cohen[2], O. Nicoara[3], D. Antoine[4], J. Himmelfarb[2], S. Waikar[5], and *V. S. Vaidya*[1,5]. [1]Laboratory of Systems Pharmacology, Harvard Medical School, Boston, MA; [2]Kidney Research Institute, University of Washington, Seattle, WA; [3]Nephrology, Boston Children's Hospital, Boston, MA; [4]Molecular and Clinical Pharmacology, University of Liverpool, Liverpool, United Kingdom; and [5]Department of Medicine, Brigham and Women's Hospital, Boston, MA.

#2298 **Poster Board Number 562**
Fluoride Enhances Basal Autophagy but Depresses Autophagic Response to Starvation in NRK-52E Cells. D. D. Lopez-Ventura[1], *M. P. Santoyo*[1], E. López-Ventura[1], J. Narváez Morales[1], *L. Arreola-Mendoza*[2], and *O. Barbier*[1]. [1]Toxicologia, CINVESTAV, Distrito Federal, Mexico; and [2]CIIEMAD-IPN, Distrito Federal, Mexico.

#2299 **Poster Board Number 563**
Effect of Cadmium Exposure during Gestation over HIF-1 in Rat Fetal Kidney. *T. Jacobo*, *M. Cárdenas-González*, B. Parada-Cruz, and *O. Barbier*. Toxicology, CINVESTAV, México City, Mexico.

#2300 **Poster Board Number 564**
ERK1/2 Suppresses PGC-1α and Mitochondrial Biogenesis in Endotoxin and I/R-Induced AKI. J. Collier, J. A. Smith, R. M. Whitaker, and *R. Schnellmann*. Drug Discovery and Biomedical Sciences, Medical University of South Carolina, Charleston, SC.

Abstract #

#2301 **Poster Board Number 565**
Resveratrol Attenuates Cisplatin Cytotoxicity in HK-2 Cells: Effects on TNFalpha and Oxidative Stress. *M. Valentovic*, J. G. Ball, R. Murphy, A. Lamyaithong, and A. Schnelle. Pharmacology, Physiology and Toxicology, Marshall University School of Medicine, Huntington, WV.

#2302 **Poster Board Number 566**
SMOC2 Mediates Kidney Fibrosis via Activating Fibroblasts. A. K. Ajay[1], F. Craciun[1], and *V. S. Vaidya*[1,2,3]. [1]Medicine, Harvard Medical School, Boston, MA; [2]Harvard Program in Therapeutic Sciences, Harvard Medical School, Boston, MA; and [3]Department of Environmental Health, Harvard School of Public Health, Boston, MA.

#2303 **Poster Board Number 567**
Altered slc6a20b Sequence in Chemokine Receptor D6 Knockout Mice May Be Related to Protection from Diabetic Nephropathy. S. Zheng[1], J. Xu[1], D. Powell[2], H. Bodduluri[3], *L. Cai*[1], and *P. Epstein*[1]. [1]Pediatrics, University of Louisville, Louisville, KY; [2]Nephrology and Hypertension, University of Louisville, Louisville, KY; and [3]Microbiology and Immunology, University of Louisville, Louisville, KY.

#2304 **Poster Board Number 568**
The Hedgehog-Gli1 Pathway Promotes Ethanol-Induced Renal Fibrosis. *C. Latchoumycandane*[1], L. Nagy[2], and T. M. McIntyre[1]. [1]Cellular & Molecular Medicine, Lerner Research Institute Cleveland Clinic, Cleveland, OH; and [2]Pathobiology, Lerner Research Institute Cleveland Clinic, Cleveland, OH.

#2305 **Poster Board Number 569**
Effects of Pregnancy and Renal Insufficiency on the Disposition of Mercuric Ions. *C. Bridges*[1], C. S. Oliveira[2], L. Joshee[1], and *R. K. Zalups*[1]. [1]Division of Basic Medical Sciences, Mercer University School of Medicine, Macon, GA; and [2]Post-Graduate Course in Biological Science - Toxicological Biochemistry, Federal University of Santa Maria, Santa Maria, Brazil.

#2306 **Poster Board Number 570**
Fenofibrate Upregulates FGF21 and Nrf2 Function to Prevent Diabetic Nephropathy. *Y. Cheng*[1,2], *J. Zhang*[1,3], Z. Xu[2], and *L. Cai*[1]. [1]University of Louisville, Louisville, KY; [2]Jilin University, Changchun, China; and [3]The People's Hospital of Liaoning Province, Shenyang, China.

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Receptors

Chairperson(s): *Curtis Omiecinski, Pennsylvania State University, University Park, PA.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *2:45 PM–4:30 PM*

#2307 **Poster Board Number 601**
Hepatocyte-Targeted Deletion of Aryl Hydrocarbon Receptor Increases Hepatic Energy Storage and Alters Energy Homeostasis. *N. Girer*, *I. Murray*, *L. Zhang*, *A. Patterson*, and *G. H. Perdew*. Center for Mol. Tox. and Carcinogen., Penn State University, University Park, PA.

WEDNESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#2308 **Poster Board Number 602**
Characterization of Human and Mouse PXR- and CAR-Mediated Transcriptional Activation by Bisphenol A and Its Related Compounds. H. Kojima[1], S. Sanoh[2], S. Takeuchi[1], K. Sugihara[3], K. Yoshinari[4], and S. Kitamura[5]. [1]Hokkaido Institute of Public Health, Sapporo, Japan; [2]Graduate School of Biomedical and Health Sciences, Hiroshima University, Hiroshima, Japan; [3]Faculty of Pharmaceutical Science, Hiroshima International University, Kure, Japan; [4]School of Pharmaceutical Sciences, University of Shizuoka, Shizuoka, Japan; and [5]Nihon Pharmaceutical University, Saitama, Japan. Sponsor: *T. Yoshida*.

#2309 **Poster Board Number 603**
The *In Vitro* and *In Vivo* Response to PPARα Activation in Rats. *P. D. McMullen*, S. Pendse, *S. Bhattacharya*, *R. N. Hardwick*, B. Parks, *E. LeCluyse*, *R. A. Clewell*, and *M. E. Andersen*. The Hamner Institutes for Health Sciences, Durham, NC.

#2310 **Poster Board Number 604**
Genome-Wide Analysis of Aryl Hydrocarbon Receptor (AhR)- and AhR Repressor (AhRR)-Bound Regions in Dioxin-Treated MCF7 Cells. Y. Yang, S. Ahmed, and *J. B. Matthews*. Department of Pharmacology and Toxicology, University of Toronto, Toronto, ON, Canada.

#2311 **Poster Board Number 605**
Role of the Aryl Hydrocarbon Receptor in the Development and Function of Breast Cancer Stem Cells. *E. A. Stanford*[1], O. Novikov[1], Z. Wang[1], *G. Murphy*[2], and *D. H. Sherr*[1]. [1]Environmental Health, Boston University School of Public Health, Boston, MA; and [2]Hematology and Oncology, Boston University School of Medicine, Boston, MA.

#2312 **Poster Board Number 606**
Functional Differences among Polymorphic TCDD-Inducible Poly-ADP-ribose Polymerase (TIPARP) Variants. T. E. Cho, A. Gomez, and *J. B. Matthews*. Department of Pharmacology and Toxicology, University of Toronto, Toronto, ON, Canada.

#2313 **Poster Board Number 607**
Nuclear Receptor 4A1 (NR4A1) Is a Drug Target for Treating Rhabdomyosarcoma. *A. Reeder*[1], *E. Hedrick*[1], and *S. H. Safe*[2]. [1]Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX; and [2]Institute of Biosciences & Technology, Texas A&M Health Science Center, Houston, TX.

#2314 **Poster Board Number 608**
Nuclear Receptor 4A1 (NR4A1) As a Drug Target for Breast Cancer Chemotherapy. *E. Hedrick*[1], *S. Lee*[2], J. Somagoni[3], M. Singh[3], and *S. H. Safe*[1]. [1]Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX; [2]Department of Food Science and Technology, Keimyung University, Daegu, Republic of Korea; and [3]Department of Pharmaceutics, College of Pharmacy and Pharmaceutical Sciences, Florida A&M University, Tallahassee, FL.

Abstract #

#2315 **Poster Board Number 609**
Nuclear Receptor 4A1 (NR4A1) As a Drug Target for Renal Cell Adenocarcinoma. *E. Hedrick*[2], A. Abudayyeh[1], S. Lee[3], G. Kim[4], M. A. Abdelrahim[5], *U. Jin*[4], and *S. H. Safe*[2,4]. [1]Department of Emergency Medicine, University of Texas MD Anderson, Houston, TX; [2]Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX; [3]Department of Food Science and Technology, Keimyung University, Daegu, Republic of Korea; [4]Institute of Biosciences and Technology, Texas A&M Health Sciences Center, Houston, TX; and [5]Department of Internal Medicine, Baylor College of Medicine, Houston, TX.

#2316 **Poster Board Number 610**
Insect Growth-Regulating Insecticides Differentially Activate the PPAR Signaling Network. *C. N. Holmes*, and *G. A. LeBlanc*. Biological Sciences, North Carolina State University, Raleigh, NC.

#2317 **Poster Board Number 611**
The Gut Microbiota Impacts Persistent Organic Pollutant-Associated Inflammation via an Aryl Hydrocarbon Receptor-Dependent Mechanism. *L. Zhang*[1], R. Nichols[1], *R. Hao*[1], J. Cai[1], P. Smith[1], E. Hatzakis[2], *G. H. Perdew*[1], and *A. Patterson*[1]. [1]Veterinary and Biomedical Sciences, Pennsylvania State University, University Park, PA; and [2]Department of Chemistry, Pennsylvania State University, University Park, PA.

#2318 **Poster Board Number 612**
Role of Nuclear Receptions in Steatohepatitis Caused by Aroclor 1260 and High-Fat Diet Coexposure. *B. Wahlang*[1], *K. C. Falkner*[2], *M. Song*[2], *H. Clair*[2], R. A. Prough[2], and *M. Cave*[1,2]. [1]Pharmacology & Toxicology, University of Louisville, Louisville, KY; and [2]Department of Medicine, University of Louisville, Louisville, KY.

#2319 **Poster Board Number 613**
***CYP1A6* Induction by TCDD Is More Sensitive to TALEN Mutagenesis of AHR1β Than AHR1α in the *Xenopus laevis* Cell Line XLK-WG.** S. H. Freeburg, E. G. Engelbrecht, and *W. H. Powell*. Biology, Kenyon College, Gambier, OH.

#2320 **Poster Board Number 614**
Interactions between Thyroid Hormone and Dioxin Signaling in the Frog *Xenopus laevis*. M. M. Koenecke, J. D. Taft, and *W. H. Powell*. Biology, Kenyon College, Gambier, OH.

#2321 **Poster Board Number 615**
Comparative Analysis of Quercetin and Its Structurally-Related Analogues on Activation of Rat and Human Vitamin D Receptor. *A. Lau*, G. Yang, and *T. K. Chang*. Faculty of Pharmaceutical Sciences, The University of British Columbia, Vancouver, BC, Canada.

#2322 **Poster Board Number 616**
(Ant)agonist-Induced Modulation of ERα and ERβ Cointeraction. L. de Haan[1], N. Evers[1], S. Wang[1], J. H. van den Berg[1], R. Houtman[2], *J. P. Groten*[2,1], and *I. Rietjens*[1]. [1]Toxicology, Wageningen University, Wageningen, Netherlands; and [2]Toxicology, Pamgene International B.V., 's Hertogenbosch, Netherlands.

Program Schedule (Continued)

Abstract #

#2323 **Poster Board Number 617**
The Role of the Ah-Receptor in Aversion to Novel Food Items in Rats. S. Mahiout[1], V. Pustylnyak[2], and R. Pohjanvirta[1]. [1]University of Helsinki, Helsinki, Finland; and [2]Novosibirsk State University, Novosibirsk, Russian Federation. Sponsor: *M. Viluksela*.

#2324 **Poster Board Number 618**
The Autoinduction Mechanism of Aryl Hydrocarbon Receptor 2 (AhR2) through TCDD-Activated AhR1/2 in the Red Seabream (*Pagrus major*). S. Bak[1], *E. Kim*[1,2], M. Iida[3], and *H. Iwata*[3]. [1]Life and Nanopharmaceutical Science, KyungHee University, Seoul, Republic of Korea; [2]Biology, KyungHee University, Seoul, Republic of Korea; and [3]Center for Marine Environmental Studies, Ehime University, Matsuyama, Japan.

#2325 **Poster Board Number 619**
The Effect of Quercetin and Kaempferol Aglycones and Glucuronides on PPAR-γ Activation. K. Beekmann[1,2], L. Rubio[3], L. de Haan[1], L. Actis-Goretta[2], and *I. Rietjens*[1]. [1]Division of Toxicology, Wageningen University, Wageningen, Netherlands; [2]Nestlé Research Center, Nestec Ltd., Lausanne, Switzerland; and [3]Department of Food Technology, Universitat de Lleida, Lleida, Spain.

#2326 **Poster Board Number 620**
Pharmacological Modulation of GRM1 Activation by Riluzole Results in a Reduction in Exosome Levels in Melanoma. *A. L. Isola*[1,2], Y. Wen[3], J. Goydos[3], and S. Chen[1,2,3]. [1]Susan Lehman Cullman Laboratory for Cancer Research, Ernest Mario School of Pharmacy, Rutgers University, Piscataway, NJ; [2]Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ; and [3]Rutgers, Cancer Institute of New Jersey, New Brunswick, NJ.

#2327 **Poster Board Number 621**
Functional Roles of the Ah Receptor PASB Domain Revealed by Site-Directed Mutagenesis. *A. Soshilov*, and *M. Denison*. Environmental Toxicology, University of California Davis, Davis, CA.

#2328 **Poster Board Number 622**
Dietary Beta-Napthoflavone Exposure Suppresses Mammary Gland Differentiation and Lactogenic Gene Expression in Pregnant Mice. K. R. Belton, *G. H. Perdew*, and *A. Patterson*. Center for Molecular Toxicology and Carcinogenesis, Department of Veterinary and Biomedical Sciences, Pennsylvania State University, University Park, PA.

#2329 **Poster Board Number 623**
Genomic Profiling of the Constitutive Androstane Receptor in Humanized Mice. *B. Niu*[1], C. A. Praul[2], I. Albert[3], and *C. J. Omiecinski*[1]. [1]Center for Molecular Toxicology and Carcinogenesis, Department of Veterinary and Biomedical Sciences, Pennsylvania State University, University Park, PA; [2]Genomics Core Facility, Pennsylvania State University, University Park, PA; and [3]Department of Biochemistry and Molecular Biology, Pennsylvania State University, University Park, PA.

Abstract #

#2330 **Poster Board Number 624**
Differential Interactions of the Mouse and Human Constitutive Androstane Receptors (CAR) with RXRs and DNA-Binding Motifs. *E. Laurenzana*, R. Agrawal, and *C. J. Omiecinski*. Center for Molecular Toxicology, The Pennsylvania State University, University Park, PA.

#2331 **Poster Board Number 625**
Activation of the Car and Pxr Nuclear Receptors in the Liver of MIBK-Exposed Mice. *B. J. Hughes*[1], *M. J. LeBaron*[1], L. Kan[1], *A. M. Lynch*[2], *S. Borghoff*[3], *S. M. Green*[4], T. Mensing[5], *S. S. Sarang*[6], and *C. Smulders*[6]. [1]The Dow Chemical Company, Midland, MI; [2]The American Chemical Council, Washington, DC; [3]ToxStrategies, Inc, Cary, NC; [4]Eastman Chemical, Kingsport, TN; [5]Sassol Solvent, Moers, Germany; and [6]Shell International, Houston, TX.

#2332 **Poster Board Number 626**
ARNT Regulates Noncanonical NF-κB Activity through Modulation of RelB-p100 Nuclear Localization. *K. Gardella*, I. Muro, K. Sarkar, and *C. Wright*. Division of Pharmacology and Toxicology, College of Pharmacy, and The Center for Molecular and Cellular Toxicology, The University of Texas at Austin, Austin, TX.

#2333 **Poster Board Number 627**
Constitutive Androstane Receptor/Pregnane X Receptor-Dependent CYP450 Inhibition and Metabolism of Antifungal Itraconazole. *T. Chen*, *F. Chen*, D. Coslo, and *C. J. Omiecinski*. Center for Molecular Toxicology and Carcinogenesis, Department of Veterinary and Biomedical Sciences, Pennsylvania State University, University Park, PA.

#2334 **Poster Board Number 628**
Hormetic Mechanism-Receptor/Cell Signaling Pathways. *R. Blain*[1], and *E. J. Calabrese*[2]. [1]ICF International, Fairfax, VA; and [2]Department of Public Health and Health Sciences, Environmental Health Sciences Division, University of Massachusetts, Amherst, MA.

#2335 **Poster Board Number 629**
Aryl Hydrocarbon Receptor +/- Mice Are Protected from High-Fat Diet-Induced Disruption of Metabolic Rhythms. C. Jaeger, and *S. Tischkau*. Southern Illinois University School of Medicine, Springfield, IL.

#2336 **Poster Board Number 630**
Identification of Human Constitutive Androstane Receptor (hCAR) Modulators. C. Lynch[1,2], J. Zhao[1], R. Huang[1], L. Li[2], H. Wang[2], and *M. Xia*[1]. [1]National Center for Advancing Translational Sciences, National Institute of Health, Rockville, MD; and [2]Pharmaceutical Sciences, University of Maryland, Baltimore, Baltimore, MD.

#2337 **Poster Board Number 631**
Ligand Activation of PPARβ/δ Attenuates Inflammation in Both Primary and KC13-2 Kupffer Cells. *G. Balandaram*[1], *J. M. Peters*[1], and *F. Gonzalez*[2]. [1]Department of Veterinary and Biomedical Sciences, The Pennsylvania State University, University Park, PA; and [2]Laboratory of Metabolism, NCI, Bethesda, MD.

WEDNESDAY

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

To find up-to-date information use the SOT Mobile Event App or the Online Planner

Program Schedule (Continued)

Abstract #

#2338 **Poster Board Number 632**
The Nuclear Receptor Constitutive Androstane Receptor (CAR) Is Essential for Toxaphene-Induced Liver Tumorigenic Response in Mice. *Z. Wang*[1], *X. Li*[1], *B. Neal*[2], *J. C. Lamb*[2], and *J. E. Klaunig*[1]. [1]Indiana University, Bloomington, IN; and [2]Exponent Inc, Alexandria, VA.

#2339 **Poster Board Number 633**
The Role of Nuclear Receptors Constitutive Androstane Receptor and Pregnane X Receptor in Dieldrin-Induced Liver Tumors in Mouse. *Q. Wu, Z. Wang, X. Li*, and *J. E. Klaunig*. Indiana University, Bloomington, IN.

#2340 **Poster Board Number 634**
LXRα Antagonist, SPA088 Attenuates T0901317-Induced Nonalcoholic Fatty Liver. W. Sim[1], K. Lee[1], D. Kim[1], K. Shin[2], and *B. Lee*[1]. [1]College of Pharmacy, Seoul National University, Seoul, Republic of Korea; and [2]College of Pharmacy, The Catholic University, Bucheon, Republic of Korea.

#2341 **Poster Board Number 635**
Deletion of TIPARP Increases Sensitivity to Dioxin-Induced Hepatosteatosis and Lethality. S. Ahmed[1], D. Bott[1], A. Gomez[1], L. M. MacPherson[1], A. Rasheed[2], L. Tamblyn[1], K. Sugamori[1], Y. Yang[1], T. E. Cho[1], C. Cummins[2], D. M. Grant[1,2], and *J. B. Matthews*[1]. [1]Pharmacology, University of Toronto, Toronto, ON, Canada; and [2]Pharmacy, University of Toronto, Toronto, ON, Canada.

#2342 **Poster Board Number 636**
Preliminary Characterization of a Suite of Nuclear Receptor Knockout Rats. K. P. Forbes, E. Kouranova, A. McCoy, and X. Cui. Research and Development, SAGE Labs, Saint Louis, MO. Sponsor: *T. Brayman*.

Wednesday Afternoon, March 25
1:00 PM to 4:30 PM
CC Exhibit Hall

PS

Poster Session: Nanotoxicology, *In Vivo*

Chairperson(s): *Alison Elder, University of Rochester, Rochester, NY.*

Displayed: *1:00 PM–4:30 PM*

Author-Attended: *1:00 PM–2:45 PM*

#2343 **Poster Board Number 641**
Biokinetics and Effects of Barium Sulfate Nanoparticles. N. Konduru Venkata[1], *R. Landsiedel*[2], T. C. Donaghey[1], *J. Brain*[1], *W. Wohlleben*[2], and R. M. Molina[1]. [1]Environmental Health, Harvard School of Public Health, Boston, MA; and [2]BASF SE, Ludwigshafen, Germany.

#2344 **Poster Board Number 642**
Identification of the Appropriate Dose Metric for Pulmonary Inflammation of Silver Nanoparticles in an Inhalation Toxicity Study. H. Braakhuis[1,2], *F. R. Cassee*[2,3], P. Fokkens[2], L. de la Fonteyne[2], W. H. de Jong[2], A. G. Oomen[2], P. Krystek[4], H. van Loveren[1,2], and M. V. Park[2]. [1]Department of Toxicogenomics, Maastricht University, Maastricht, Netherlands; [2]National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands; [3]Institute of Risk Assessment Sciences, Utrecht, Netherlands; and [4]Philips Innovation Services, Eindhoven, Netherlands.

Abstract #

#2345 **Poster Board Number 643**
Effects of Amorphous Silica Coating on Cerium Oxide (CeO_2) Nanoparticle-Induced Pulmonary Responses. J. Y. Ma[1], R. R. Mercer[1], M. Barger[1], D. Schwegler-Berry[1], P. Demokritou[2], and *V. Castranova*[3]. [1]PPRB/HELD, NIOSH, Morgantown, WV; [2]Harvard, Boston, MA; and [3]School of Pharmacy, WVU, Morgantown, WV.

#2346 **Poster Board Number 644**
Biokinetic Comparison after Single IV Administration or Chronic Aerosol Inhalation of TiO2 Nanoparticles: Impact on Blood-Brain Barrier. C. Disdier[1], J. Devoy[2], M. Chalansonnet[2], F. Gagnaire[2], L. Gate[2], F. Cosnier[2], and A. Mabondzo[1]. [1]iBiTec-S, CEA, Gif sur Yvette, France; and [2]INRS, Toxicology and Biometrology Division, INRS, Nancy, France. Sponsor: *A. Lund*.

#2347 **Poster Board Number 645**
"Taquann" Dispersion Method with Direct Injection Whole-Body Inhalation System for Engineered Nano Materials Toxicity Studies. *J. Kanno*, and Y. Taquahashi. Division of Cellular and Molecular Toxicology, National Institute of Health Sciences, Tokyo, Japan.

#2348 **Poster Board Number 646**
Short-Term Inhalation of Nanosized Copper Oxide Results in Adverse Pulmonary Effects in Rats. I. Gosens[1], B. Bokkers[1], L. Manadori[2], D. Hristozov[4], W. H. de Jong[1], V. Stone[3], and *F. R. Cassee*[1]. [1]National Institute for Public Health and the Environment (RIVM), Bilthoven, Netherlands; [2]Veneto Nanotech, Rovigo, Italy; [3]Heriot-Watt University, Edinburgh, United Kingdom; and [4]University of Venice, Venice, Italy.

#2349 **Poster Board Number 647**
Biokinetics and Inhalation Toxicity of Nano-BaSO4 after 1, 4, 13, and 52 Weeks of Exposure. J. Keller[1], L. Ma-Hock[1], W. Wohlleben[2,1], *K. Wiench*[3], V. Strauss[1], K. Kuettler[1], S. Gröters[1], *B. van Ravenzwaay*[1], and *R. Landsiedel*[1,2]. [1]Experimental Toxicology and Ecology, BASF SE, Ludwigshafen am Rhein, Germany; [2]Polymer Physics, BASF SE, Ludwigshafen am Rhein, Germany; and [3]Product Safety, BASF SE, Ludwigshafen am Rhein, Germany.

#2350 **Poster Board Number 648**
Inhalation of Cadmium Oxide Nanoparticles by Pregnant Mice Causes Nephrotoxicity in Both Mother and Offspring. *J. L. Blum*[1], *J. Edwards*[2], *W. C. Prozialeck*[2], and *J. T. Zelikoff*[1]. [1]Environmental Medicine, New York University School of Medicine, Tuxedo, NY; and [2]Pharmacology, Midwestern University, Downers Grove, IL.

#2351 **Poster Board Number 649**
Pulmonary Response of Tungsten (IV) Oxide (WO_3) Nanoparticles in Golden Syrian Hamsters. M. V. Prajapati, and *J. M. Cerreta*. PHS, St. John's University, Queens, NY.

#2352 **Poster Board Number 650**
Inhaled TiO_2 Nanoparticles Induce Formation of NLRP3 Inflammasome and Upregulation of IL1-beta Expression in the Lungs of Golden Syrian Hamsters. O. O. Adebolu, and *J. M. Cerreta*. PHS, St. John's University, Queens, NY.

Program Schedule (Continued)

Abstract #

#2353 **Poster Board Number 651**
Acute Effects following Inhalation Exposure to Metal Oxide Nanoparticle-Containing Chemical Mechanical Planarization Slurries. A. J. Kennell[1], R. Gelein[1], P. Wade-Mercer[1], S. Brenner[2], *G. Oberdorster*[1], and *A. Elder*[1]. [1]Environmental Medicine, University of Rochester, Rochester, NY; and [2]Colleges of Nanoscale Science and Engineering, SUNY Polytechnic Institute, Albany, NY.

#2354 **Poster Board Number 652**
Functional Assessment of the Serome following Pulmonary Exposure to Carbon Nanotubes. M. Aragon[1], *M. Campen*[1], *A. Erdely*[2], and A. K. Ottens[3]. [1]University of New Mexico, Albuquerque, NM; [2]NIOSH, Morgantown, WV; and [3]Virginia Commonwealth University, Richmond, VA.

#2355 **Poster Board Number 653**
Heterogeneity in Quantum Dot-Induced Lung Inflammation and Toxicity in Recombinant Inbred Mouse Strains of the Collaborative Cross. *D. K. Scoville*[1], *C. Carosino*[1], *R. S. McMahan*[2,1], *C. White*[1], S. Schmuck[1], *M. Cartwright*[1], X. Gao[3], *S. N. Kelada*[4], *O. Kosyk*[5], *I. Rusyn*[6,5], and *T. Kavanagh*[1]. [1]Environmental and Occupational Health Sciences, University of Washington, Seattle, WA; [2]Medicine, University of Washington, Seattle, WA; [3]Bioengineering, University of Washington, Seattle, WA; [4]Genetics, University of North Carolina, Chapel Hill, NC; [5]Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC; and [6]Veterinary Integrative Biosciences, Texas A&M University, College Station, TX.

#2356 **Poster Board Number 654**
Glutathione Deficiency Modulates Susceptibility to Multiwalled Carbon Nanotube-Associated Acute Lung Inflammation in Mice. *M. Cartwright*[1], S. Schmuck[1], C. Chisholm[1], C. Corredor[2], J. Posner[2,3], V. Shutthanandan[4], D. R. Baer[4], and *T. Kavanagh*[1]. [1]Environmental and Occupational Health Sciences, University of Washington, Seattle, WA; [2]Chemical Engineering, University of Washington, Seattle, WA; [3]Mechanical Engineering, University of Washington, Seattle, WA; and [4]Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory, Richland, WA.

#2357 **Poster Board Number 655**
Safety Studies on a Cerium-Containing Nanomaterial. *B. S. Jortner*[1], *M. Ehrich*[1], J. Hinckley[1], and *B. Rzigalinski*[2]. [1]Virginia-Maryland College of Veterinary Medicine, Virginia Tech, Blacksburg, VA; and [2]Via College of Osteopathic Medicine, Blacksburg, VA.

#2358 **Poster Board Number 656**
Investigating the Localization and Anti-Inflammatory Effects of Gold Nanoparticles in the Central Nervous System of Mice. *F. Fallahi*[1,2,3], *S. M. Hussain*[1,2,3], I. E. Pavel Sizemore[1], and *J. P. O'Callaghan*[4]. [1]Pharmacology & Toxicology, Wright State University, Dayton, OH; [2]Environmental Science, Wright State University, Dayton, OH; [3]711 HPW/ RHDJ, AFRL, WPAFB, Dayton, OH; and [4]CDC-NIOSH, Morgantown, WV.

Abstract #

#2359 **Poster Board Number 657**
Impact of Food-Grade Titanium Dioxide (TiO2) Compared to P25 Nanoparticles on the Gut Immune System after Oral Exposure in Rats. S. Bettini[1], L. Guzylack[1], C. Comera[1], E. Gaultier[1], C. Cartier[1], D. Thiaudière[2], M. Réfrégiers[2], M. Carrière[3], E. Boutet[1], F. Pierre[1], and E. Houdeau[1]. [1]Toxalim, INRA, Toulouse, France; [2]Synchrotron SOLEIL, Saclay, France; and [3]CEA LAN, Grenoble, France. Sponsor: *B. Salles*.

#2360 **Poster Board Number 658**
Pretreatment of Nanoparticles Alters Organ Disposition of [14C] Cholesterol in C57BL/6 Mice. *J. Lee*[1], S. Yu[2], and S. Chang[1]. [1]Environmental Energy & Systems Engineering, Kyonggi University, Suwon, Republic of Korea; and [2]Industry Environment R&D, Korea Atomic Energy Research Institute, Jeongeup, Republic of Korea.

#2361 **Poster Board Number 659**
Toxicity and Efficacy of Novel Formula of Iron-Based Nanocomposites in the Treatment of Iron Deficiency Anemia in Rodents. M. S. Moawad[1], M. B. Mohamed[2], and S. H. Abbas[3]. [1]Toxicology and Forensic Medicine, Faculty of Veterinary Medicine - Cairo University, Giza, Egypt; [2]National Institute of Laser Enhanced Science (NILES), Cairo University, Giza, Egypt; and [3]Pharco Pharmaceuticals, Pharco Corporation, Alexandria, Egypt. Sponsor: *O. El-Tawil*.

#2362 **Poster Board Number 660**
Activation of Complement As a Potential Predictor of Nanoparticle Biocompatibility: A Focus on Magnetite. *V. Escamilla*[1], M. Uribe-Ramirez[1], O. Lozano[2], S. Lucas[2], and *A. De Vizcaya Ruiz*[1]. [1]Toxicology, CINVESTAV-IPN, Mexico City, Mexico; and [2]Namur Nanosafety Centre, University of Namur, Namur, Belgium.

#2363 **Poster Board Number 661**
Determination of Gold Nanoparticle Penetration into Vaginal Mucosa Using a Rat Model. *Y. Zhang*[1,2], G. Sánchez-Pomales[1,3], J. Lim[1,3], Y. Jones[1,2], *N. V. Gopee*[2], S. Linder[1,3], and *P. C. Howard*[1,2]. [1]NCTR/ORA Nanotechnology Core Facility, FDA, Jefferson, AR; [2]NCTR, FDA, Jefferson, AR; and [3]ARL/ORA, FDA, Jefferson, AR.

#2364 **Poster Board Number 662**
Role of WNT/MAPK Crosstalk in *Caenorhabditis elegans* Reproduction Failure Due to Graphene Nanomaterials Exposure: A Systems Toxicology Approach. J. Yang, N. Chatterjee, and *J. Choi*. Faculty of Environment, University of Seoul, Seoul, Republic of Korea.

#2365 **Poster Board Number 663**
Biocompatibility of Doxorubicin-Conjugated Nanoparticles for Targeted Drug Delivery in Cancer. *S. Lee*[1], J. Lee[1], D. Khang[2], and *S. Kim*[1]. [1]Pharmacology, School of Medicine, Kyungpook National University, Daegu, Republic of Korea; and [2]Molecular Medicine, Gachon University of Medicine & Science, Incheon, Republic of Korea.

#2366 **Poster Board Number 664**
Nontoxic and Stable Nanocarriers for Delivering an Antitumor Agent *In Vivo*. G. M. Rivera[1,2], E. Torres[1], B. Gonzalez[1], K. Lopez[1], and *G. Barletta*[1,2]. [1]Biology, Universidad de Puerto Rico - Humacao, Humacao, Puerto Rico; and [2]Chemistry, Universidad de Puerto Rico - Humacao, Humacao, Puerto Rico.

Program Schedule (Continued)

Abstract #

Wednesday Afternoon, March 25
1:30 PM to 4:15 PM
CC Ballroom 6B

Symposium Session: Adult Neurogenesis in Chemical-Induced Neurotoxicities: A New Frontier in Toxicological Mechanistic Investigations, Biomarker Research, and Therapeutic Targeting

Chairperson(s): *Wei Zheng, School of Health Sciences, Purdue University, West Lafayette, IN; and Aaron B. Bowman, Neurology, Vanderbilt University, Nashville, TN.*

Endorser(s):
Metals Specialty Section
Neurotoxicology Specialty Section
Stem Cells Specialty Section

Loss of neurons in selective brain region(s) and retina is the pathological characteristic of numerous neurodegenerative diseases such as Parkinson's disease (PD), Alzheimer's disease (AD), and retinitis pigmentosa, among others. Classic neurobiology states that postmitotic neurons lack the ability to divide and thereby replace themselves. However, recent studies provide strong evidence that neurogenesis in the adult brain may mitigate adult neuronal loss by sustaining nonmotor function in PD and slowing cognitive deterioration and memory loss in AD. During adult neurogenesis, new neurons are generated from two primary proliferative niches in the adult brain. The subventricular zone (SVZ), nurtured by the cerebrospinal fluid (CSF) in brain ventricles, provides neural stem cells (NSC) via the rostral migration stream (RMS) to other brain regions, while the subgranular zone (SGZ) in the hippocampus produces new granule neurons for dentate gyrus. New studies suggest that toxicant exposure can alter neurogenesis, leading to compromised plasticity and neuronal dysfunction and exacerbating neuronal vulnerability to environmental toxicants. This session brings together experts in this fast evolving research field with a particular focus on how neurotoxicant exposure alters the adult neurogenesis and developmental proliferation. The goal of this session is to synthesize perspectives of critical niche areas of adult neurogenesis and its toxicology, with a focus on mechanisms that will provide new clues for potential amelioration and therapeutic intervention. This session will be of interest to those engaged in neurotoxicology related to neurodegenerative diseases, development, metal and pesticide toxicities, and systems biology.

#2367	1:30	**Adult Neurogenesis in Chemical-Induced Neurotoxicities: A New Frontier in Toxicological Mechanistic Investigations, Biomarker Research, and Therapeutic Targeting.** *W. Zheng*[1], and *A. B. Bowman*[2]. [1]School of Health Sciences, Purdue University, West Lafayette, IN; and [2]Neurology, Vanderbilt University, Nashville, TN.
	1:30	**Introduction.** W. Zheng. Purdue University, Lafayette, IN.
#2368	1:35	**Introduction to Adult Neurogenesis.** *A. B. Bowman*. Neurology, Vanderbilt University, Nashville, TN.
#2369	2:04	**Manganese-Copper Interaction: Effects on Adult Neurogenesis and Stem Cell Migration.** *W. Zheng, X. Fu*, and *S. L. O'Neal*. School of Health Sciences, Purdue University, West Lafayette, IN.
#2370	2:33	**Pesticide Exposure Disrupts Adult Neurogenesis and Behavior: Role of Inflammation and ER Stress.** *J. R. Richardson*, and *M. M. Hossain*. Environmental and Occupational Medicine, Robert Wood Johnson Medical School, Piscataway, NJ.
#2371	3:02	**Enhanced Neurogenesis for Brain Repair following Traumatic Brain Injury.** J. Chen. Indiana University School of Medicine, Indianapolis, IN. Sponsor: *W. Zheng*.

Abstract #

#2372	3:31	**Gestational Lead Exposure (GLE) Increases Retinal Progenitor Cell Proliferation, Neurogenesis, and Signaling in Children and Animals.** *D. A. Fox*. University of Houston, Houston, TX.
	4:00	**Panel Discussion/Q&A.**

Wednesday Afternoon, March 25
1:30 PM to 4:15 PM
CC Ballroom 6A

Symposium Session: Advanced Approaches for Quantitative Risk Assessment Using Human Data with Applications across Disciplines

Strategies for Exposure and Risk Assessments

Chairperson(s): *Deborah Proctor, ToxStrategies, Inc., Rancho Santa Margarita, CA; and Annie Albin Lumen, Biochemical Toxicology, US FDA/NCTR, Jefferson, AR.*

Endorser(s):
Occupational and Public Health Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Health risk and safety assessments developed from human data are typically complicated by confounding and covariates, yet there are obvious advantages to using human, rather than animal, data for risk assessment, particularly when attempting to assess risk or set safety thresholds among sensitive individuals and/or vulnerable populations and life stages. Further, the cumulative effects of multiple stressors and the mixture of environmental exposures from multiple sources are of important public interest but not readily evaluated in animal models. Recent advances in risk assessment modeling of human data for food allergies, pharmaceutical safety assessment, and occupational and environmental health have been achieved to address sensitive subgroups, conduct dose-response modeling, and assess cumulative exposures and health risks in relevant disciplines. Although the data needs vary across disciplines, the requirement to quantitatively describe variability in human response to a public health challenge is necessary across all. The objectives of this symposium are to review new approaches for risk assessment using human data and discuss case studies where these approaches have been applied, including biologically based pharmacokinetic modeling, dose-response modeling using smoothing splines, and probabilistic analysis to predict individual and population-level exposure-response relationships. The session aims to foster the use of innovative approaches across disciplines, focusing on risk assessment in sensitive/vulnerable subpopulations or sensitive life stages, and discuss strategies for improved decision-making and risk management.

#2373	1:30	**Advanced Approaches for Quantitative Risk Assessment Using Human Data with Applications Across Disciplines.** *D. Proctor*[1], and *A. Lumen*[2]. [1]ToxStrategies, Inc., Mission Viejo, CA; and [2]US FDA/NCTR, Jefferson, AR.
	1:30	**Introduction.** D. Proctor. ToxStrategies Inc, Mission Viejo, CA.
#2374	1:35	**Evaluation of Food Allergen Exposure Risk Using Quantitative Risk Assessment Modeling.** J. L. Baumert. Food Allergy Research & Resource Program, University of Nebraska-Lincoln, Lincoln, NE. Sponsor: *D. Proctor*.
#2375	2:04	**Comparison of Smoothing Spline Regression and Conventional Modeling Approaches for Quantitative Risk Assessments of Human Dioxin Exposure.** *C. M. Thompson*[1], *M. Suh*[2], G. Hixon[3], and A. Bichteler[3]. [1]ToxStrategies, Inc., Katy, TX; [2]ToxStrategies, Inc., Mission Viejo, CA; and [3]ToxStrategies, Inc, Austin, TX.

Program Schedule (Continued)

Abstract #		
#2376	2:33	**Application of a Probabilistic Framework to a Biologically Based Dose-Response Pregnancy Model to Evaluate Thyroidal Effects for Environmental Exposures to Perchlorate.** *A. Lumen*. Biochemical Toxicology, US FDA/NCTR, Jefferson, AR.
#2377	3:02	**Prediction of Patient Risk in Drug Development: Progress and Challenges for a "First in Class" Therapy.** *C. Sachs*. Biologics Toxicology, Janssen Research & Development, LLC, Spring House, PA.
#2378	3:31	**United States Environmental Protection Agency's Cumulative Risk Assessment Guidelines.** L. Martin. Risk Assessment Forum, US EPA, Washington, DC. Sponsor: *D. Proctor*.
	4:00	**Panel Discussion/Q&A.**

Wednesday Afternoon, March 25
1:30 PM to 4:15 PM
CC Ballroom 6D

W

Workshop Session: Genomics of Nonrodent Mammalian Species and Impacts on Nonclinical Safety Evaluation of Pharmaceuticals and Clinical Translation

Epigenomic Influences in Toxicological Responses

Chairperson(s): *Jing Yuan, Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT; and Hong Wu, Investigative Toxicology, DSRD, Pfizer Inc, Groton, CT.*

Endorser(s):
Clinical and Translational Toxicology Specialty Section
Drug Discovery Specialty Section
Molecular and Systems Biology Specialty Section

Inclusion of a nonrodent mammalian species is required in the safety assessment of pharmaceuticals according to ICH guidelines. The nonhuman primate has been commonly used for nonclinical safety assessment. In recent years, the minipig has emerged as a viable alternative of nonrodent species. The use of nonrodent species for testing aims at limiting the uncertainty in the risk extrapolation process from animal safety data to the human situation. The uncertainty mainly originates from species variation and population heterogeneity in various biological processes. While the use of small sample sizes for nonrodent species contributes to the observed variability or precision in a nonclinical safety study, any phenotypic variability observed is largely attributed to the genetic composition of testing animals. Therefore a better understanding of genetic variation and its subsequent impact on data interpretation from nonclinical safety studies in nonrodents is important. Comparative genomic studies in nonrodent species and humans will aid in better selection of relevant nonrodent species for safety assessment and better understanding of target organ toxicity mechanisms, which should lead to better translatability to humans. In this workshop, we will discuss the use of genetic and genomic data to support understanding of safety endpoints in nonrodent mammalian species, mainly nonhuman primates and minipig. The following issues will be included: (1) an overview of nonrodent mammalian species and genomic technologies used in nonclinical animal studies; (2) a series of case studies that illustrate the application of genetics and genomics in addressing toxicology issues, including species selection, immunomodulation, and target organ toxicity; (3) challenges and future perspectives of using genetic and genomic data to support safety assessment in nonrodent mammalian species; (4) a commentary from the regulatory perspectives on the application of genomics in clinical translation and challenges in regulatory submission.

Abstract #		
#2379	1:30	**Genomics of Nonrodent Mammalian Species and Impacts on Nonclinical Safety Evaluation of Pharmaceuticals and Clinical Translation.** *J. Yuan*[1], and *H. Wu*[2]. [1]Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT; and [2]Pfizer Inc., Groton, CT.
	1:30	**Introduction.** J. Yuan. Boehringer Ingelheim Pharmaceuticals Inc, Ridgefield, CT.
#2380	1:35	**Transcriptional Program of Organ Development in the Göttingen Minipig from Young to Adult.** U. Certa, and T. Heckel. Roche Pharmaceutical Research and Early Development, Basel, Switzerland. Sponsor: *J. Yuan*.
#2381	2:04	**Macaque Monkeys Are Vital Preclinical Models for Biomedical Research.** D. O'Conner[1], and R. Wiseman[2]. [1]AIDS Vaccine Research Laboratory, University of Wisconsin-Madison, Madison, WI; and [2]Wisconsin National Primate Research Center, University of Wisconsin-Madison, Madison, WI. Sponsor: *H. Wu*.
#2382	2:33	**Genetics: The Underappreciated Factor in Drug Safety Assessment Using Cynomolgus Monkeys.** *K. Adkins*. Pfizer Inc., Groton, CT.
#2383	3:02	**Geographic Origin-Dependent Genetic Variation in Nonhuman Primates and Impact for Toxicology Programs.** O. Grenet. Preclinical Safety, Novartis Institutes of Biomedical Research, Basel, Switzerland. Sponsor: *J. Yuan*.
#2384	3:31	**Regulatory Experiences with Submission of Genomic Data for Human Risk Assessment.** J. Leighton. OHOP/DHOT, US FDA, Silver Spring, MD. Sponsor: *J. Yuan*.
	4:00	**Panel Discussion/Q&A.**

Wednesday Afternoon, March 25
1:30 PM to 4:15 PM
CC Room 7

W

Workshop Session: Increasing Interest and Engagement in Toxicology and STEM Disciplines: The Multiple Modalities and Impact of Research and Internship Opportunities for High School and Undergraduate Students

Chairperson(s): *Richard S. Pollenz, Cell Biology, University of South Florida, Tampa, FL; and William D. Atchison, Department of Pharmacology/Toxicology, Michigan State University, East Lansing, MI.*

Endorser(s):
Committee on Diversity Initiatives
Education Committee
Postdoctoral Assembly

Only 40 percent of undergraduates who enter STEM disciplines graduate with a STEM degree. The loss is even greater for students from underrepresented groups. Thus, there is urgency at all educational levels to institute high-impact practices that will not only assure a strong pipeline within the STEM disciplines, but also produce qualified graduates with the skills to succeed in the job market and in graduate school. One of the most impactful practices to retain and prepare students interested in STEM disciplines is their strategic engagement in research experiences and internships. These experiences can be targeted at middle and high school students to get them interested in specific disciplines and STEM careers, and then offered to undergraduates either in the summer or as part of their academic programs to encourage STEM persistence, career readiness, and matriculation to graduate school. Since these types of experiences are often tailored to the agency or institution and have different programming elements, this session will provide case studies of proven research and internship programs that have been offered to high school students, undergraduates, and graduate students in academia, government, and industry. Presentations will focus on the implementation and management of the programs, details of the training exercises, staffing needs, costs, and assessment practices that document the impact to the students. The session should be beneficial to all institutions and agencies interested in developing similar programs or building on their current programs. In addition, these types of initiatives not only provide engaged opportunities for students, but serve as demonstrated evidence

Program Schedule (Continued)

Abstract #

of program development, mentoring activities, and outreach for those involved in implementing and administering the programs. The workshop will conclude with an unstructured panel discussion where attendees can network with the speakers and obtain details of how these programs may be scaled to fit their needs.

#2385	1:30	**Increasing Interest and Engagement in Toxicology and STEM Disciplines: The Multiple Modalities of Research and Internship Opportunities for High School and Undergraduate Students.** *R. S. Pollenz*. Cell Biology, University of South Florida, Tampa, FL.
	1:30	**Introduction and Overview of Session.** R. S. Pollenz. University of South Florida, Tampa, FL.
#2386	1:35	**A Model One-Week Residential High School STEM Pre-College Engagement Program.** *R. S. Pollenz*. Cell Biology, University of South Florida, Tampa, FL.
#2387	2:00	**Designing a Laboratory-Based Summer Program in Toxicology and Environmental Health Sciences for High School Students.** *L. M. Aleksunes*. Pharmacology and Toxicology, Rutgers University, Piscataway, NJ.
#2388	2:25	**Increasing Environmental Health Literacy: A Model for High School and Undergraduate Summer Internship Programs in Government.** T. R. Collins. Office of Fellows' Career Development, NIEHS, Research Triangle Park, NC. Sponsor: *R. Pollenz*.
#2389	2:50	**A Model for Undergraduate and Graduate Summer Student Programs in Industry.** *B. A. Pettersen*. Drug Safety Research and Development, Pfizer Global Research and Development, Groton, CT.
#2390	3:15	**"Bridge to the PhD in Biomedical Sciences": A Program to Foster Engagement of Underrepresented Minority Students in Biomedical Research.** *W. D. Atchison*. Pharmacology and Toxicology, Michigan State University, East Lansing, MI.
	3:40	**Panel Discussion/Q&A.**

Wednesday Afternoon, March 25
1:30 PM to 4:15 PM
CC Ballroom 6C

Workshop Session: Integrating Gene Expression Profiling into High-Throughput Toxicity Testing

Chairperson(s): *Chris Corton, US EPA, Durham, NC; and Scott S. Auerbach, NIEHS/NTP, Morrisville, NC.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Mechanisms Specialty Section
Molecular and Systems Biology Specialty Section

Coordinated programs in high-throughput toxicity testing (HTT) (e.g., Tox21 and ToxCast screening programs) currently use assays that evaluate a limited number of potential molecular targets. Because of their complete coverage of the genome, microarrays have the potential to evaluate the underlying network of most, if not all, targets simultaneously. This workshop addresses the growing recognition in the toxicology community that technologies that measure global gene expression can be adapted for HTT. Significant advantages for integrating these technologies into HTT include simultaneous assessment of a greater diversity of potential chemical targets, linkage to ongoing large-scale efforts that examine gene expression changes after chemical and genetic perturbations in multiple *in vitro* systems (in particular, the Library of Integrated Network-based Cellular Signatures

Abstract #

[LINCS] project), and the potential for using *in vitro* transcript profiling as a first step in HTT prior to more targeted *in vitro* assays. This workshop brings together a balanced representation of experts working in the field who will address challenges and provide solutions for using these global technologies in HTT and interpreting the results to inform risk assessment. The first speaker will present a comprehensive strategy for how expression profiling can be integrated into HTT, allowing the audience to understand the context of the following talks. The second and third speakers will describe two technologies (RASL-Seq and L1000 platforms) that have promising applications to HTT, highlighting how differences in platform performance can impact interpretation of chemical effects. The fourth speaker will discuss how transcript profiling results derived from cell cultures can be extrapolated to potential dose-relevant effects in the tissues of humans. The last speaker will describe the LINCS project as a model of HTT, in which transcript profiling of ~8000 chemicals was carried out across 17 cell lines. This workshop will be of broad interest to SOT members including scientists interested in the application of *in vitro* assays to regulatory decision-making.

#2391	1:30	**Integrating Gene Expression Profiling into High-Throughput Toxicity Testing.** *C. Corton*[1], and *S. S. Auerbach*[2]. [1]US EPA, Durham, NC; and [2]NIEHS, Durham, NC.
	1:30	**Introduction.** C. Corton. US EPA, Durham, NC.
#2392	1:40	**Strategies for Integrating Transcript Profiling into High-Throughput Toxicity Testing.** *R. S. Thomas*. NCCT, US EPA, Durham, NC.
#2393	2:05	**A High-Throughput Gene Expression Approach to Identify Toxicity Mechanisms.** D. Gerhold. NCATS, Bethesda, MD. Sponsor: *C. Corton*.
#2394	2:30	**Comparison of a Full-Genome Microarray with the L1000 Platform.** *G. P. Daston*. Procter & Gamble, Cincinnati, OH.
#2395	2:55	**From Cell Lines to Tissues: Extrapolation of Transcriptional Effects to Human Tissues.** *J. F. Wambaugh*. NCCT, US EPA, Durham, NC.
#2396	3:20	**Using the Library of Integrated Network-Based Cellular Signatures (LINCS) to Characterize the Mechanism of Action of Small-Molecule Therapeutics.** A. Subramanian. Broad Institute, Cambridge, MA. Sponsor: *C. Corton*.
	3:55	**Panel Discussion/Q&A.**

Wednesday Afternoon, March 25
1:30 PM to 4:15 PM
CC Ballroom 6E

Workshop Session: Strengths and Weaknesses of Mouse Models in Studies of Immunological Effects of Drugs and Chemicals

Safety Assessment Approaches for Product Development

Chairperson(s): *Courtney E. Sulentic, Pharmacology and Toxicology, Wright State University, Dayton, OH; and Bindu Nanduri, Mississippi State University, Mississippi State, MS.*

Endorser(s):
Immunotoxicology Specialty Section
Regulatory and Safety Evaluation Specialty Section

Recent results with high-throughput datasets have raised new interest in discussions on the suitability of mice as models for immunology, inflammation, and immunotoxicolgy in humans. Mouse models are routinely used in immunotoxicology safety testing, efficacy testing for new drugs, and in basic immunology research. Recent studies from the Inflammation and Host Response to Injury, Large-scale Collaborative Research Program compared humans to mouse models with regard to trauma and sepsis, and raised questions about the validity of mice as a model to study acute inflammatory responses in humans (www.pnas.org/cgi/doi/10.1073/pnas.1222878110).

Program Schedule (Continued)

Abstract #

This and other publications and original data from the presenters will provide an opportunity to discuss evidence for and against mice as suitable models for humans with regard to inflammation, immunology, and immunotoxicology. Data from industry and academia will be presented, along with evidence from various murine strains currently used in the study of acute inflammatory responses and immunity to attempt to identify key differences between mice and humans with regard to inflammatory and immune responses. Presenters will discuss how increased knowledge of these differences could increase the value of the mouse as an animal model for immunotoxicity studies.

#2397	1:30	**Strengths and Weaknesses of Mouse Models in Studies of Immunological Effects of Drugs and Chemicals.** *C. E. Sulentic*[2], and B. Nanduri[1]. [1]Department of Basic Sciences, CVM, Mississippi State University, Mississippi State, MS; and [2]Department of Pharmacology and Toxicology, Boonshoft School of Medicine, Wright State University, Dayton, OH.
	1:30	**Introduction.** C. E. Sulentic. Boonshoft School of Medicine, Wright State University, Dayton, OH.
#2398	1:40	**Mice As an Animal Model in Immunology: Regulatory and Industry Perspectives.** *K. L. Hastings*. Office of Regulatory Policy, Sanofi-Aventis, Mount Airy, MD.
#2399	2:08	**A Reassessment of Mice As a Model for Sepsis in Humans.** *S. B. Pruett*. Department of Basic Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.
#2400	2:36	**Xenobiotic Effects on Immunoglobulin Expression in a Humanized Mouse Model.** *C. E. Sulentic*. Department of Pharmacology and Toxicology, Boonshoft School of Medicine, Wright State University, Dayton, OH.
#2401	3:04	**Autoimmune-Prone versus Normal Mice As Models for Toxicant-Mediated Autoimmune Disease.** *K. M. Gilbert*. Department of Microbiology and Immunology, University of Arkansas for Medical Sciences, Little Rock, AR.
#2402	3:32	**Comparisons of Immunological Changes in Burn Patients and Rodent Thermal Injury Models.** E. Kovacs. Department of Surgery, Stritch School of Medicine, Loyola University, Chicago, IL. Sponsor: *S. Pruett*.
	4:00	**Panel Discussion/Q&A.**

Abstract #

Wednesday Afternoon, March 25
1:30 PM to 4:15 PM
CC Room 1

W

Workshop Session: The Carcinogenicity of Outdoor Air Pollution: A Review of the IARC Evaluation of Outdoor Air Pollution and Particulate Matter in Polluted Air As Group 1 (Known) Human Lung Carcinogens and Possible Bladder Carcinogens

Strategies for Exposure and Risk Assessments

Chairperson(s): *George M. Woodall, NCEA, US EPA, Research Triangle Park, NC; and Paul White, University of Ottawa, Ottawa, ON, Canada.*

Endorser(s):
Carcinogenesis Specialty Section
Mixtures Specialty Section
Risk Assessment Specialty Section

In October 2013, the International Agency for Research on Cancer (IARC), a specialized agency of the World Health Organization (WHO), evaluated outdoor air pollution and particulate matter (PM) in polluted air as Group 1 (known) human lung carcinogens. This workshop reviews and summarizes the key data from four disciplines (epidemiology, animal carcinogenesis, environmental mutagenesis, and human genotoxicity and epigenetic biomarkers) that were used to support the evaluation reached by IARC. This IARC Monograph (Vol. 109) follows an earlier set of monographs on the carcinogenicity of (a) polycyclic aromatic hydrocarbons and bitumin, (b) indoor air due to coal and biomass burning, and (c) diesel and gasoline emissions. These monographs, along with the outdoor air monograph, now provide an extremely comprehensive, timely, and integrated overview of all available research on outdoor air pollution. As noted in the outdoor air monograph, which is anticipated to be published in mid-2015, the working group concluded that there was sufficient evidence both in humans and animals for the carcinogenicity of outdoor air pollution and its associated PM, and there was strong mechanistic evidence from a wide variety of studies worldwide to support this conclusion. Four of the five speakers in this workshop were members of the IARC working group that made this evaluation. This session will wrap-up with a talk by the chair of the monograph who will note the lessons learned from this extensive analysis. He will also identify the future research directions and public health implications that emerge from this monograph and its remarkable data base. The views expressed in this abstract are those of the authors and do not necessarily reflect the views or policies of the US Environmental Protection Agency.

#2403	1:30	**The Carcinogenicity of Outdoor Air Pollution: A Review of the IARC Evaluation of Outdoor Air Pollution and Particulate Matter in Polluted Air As Group 1 (Known) Human Lung Carcinogens and Possible Bladder Carcinogens.** *G. M. Woodall*[1], A. J. Cohen[2], P. White[3], D. Demarini[1], and J. M. Samet[4]. [1]US EPA, Research Triangle Park, NC; [2]Health Effects Institute, Boston, MA; [3]University of Ottawa, ON, Canada; and [4]University of Southern California, Los Angeles, CA.
	1:30	**Introduction.** G. M. Woodall. US EPA, Research Triangle Park, NC.
#2404	1:35	**Lung Cancer Epidemiology of Outdoor Air Pollution.** A. J. Cohen. Health Effects Institute, Boston, MA. Sponsor: *G. Woodall.*
#2405	2:05	**The Mutagenicity of Outdoor Air Pollution Worldwide.** P. White. University of Ottawa, Ottawa, ON, Canada. Sponsor: *G. Woodall.*
#2406	2:35	**Carcinogenicity of Polluted Air in Experimental Animals.** *G. M. Woodall.* NCEA, US EPA, Research Triangle Park, NC.
#2407	2:55	**Genotoxicity and Epigenetics of Polluted Air in Humans.** D. Demarini. NHEERL, US EPA, Research Triangle Park, NC. Sponsor: *G. Woodall.*

Program Schedule (Continued)

Abstract #

#2408	3:25	**Public Health Implications of the IARC Evaluation of Outdoor Air Pollution As a Human Carcinogen.** J. M. Samet. Keck School of Medicine, University of Southern California, Los Angeles, CA. Sponsor: *G. Woodall*.
	3:55	**Panel Discussion/Q&A.**

Wednesday Afternoon, March 25
1:30 PM to 4:15 PM
CC Ballroom 6F

W

Workshop Session: Windfall or Pitfall: Is There a Need for Modification of Developmental and Reproductive Toxicology Studies When Endocrine Disruption Is the Mode of Action?

Safety Assessment Approaches for Product Development

Chairperson(s): *Bennard van Ravenzwaay, Toxicology, BASF SE, Ludwigshafen am Rhein, Germany; and Leon E. Gray, Endocrinology Branch, NHEERL, US EPA, Research Triangle Park, NC.*

Endorser(s):
Molecular and Systems Biology Specialty Section
Reproductive and Developmental Toxicology Specialty Section

Endocrine disruption (ED) has become an important topic of public concern. Despite increasing attention, little consensus exists about if/how low doses of ED chemicals affect homeostasis or even how these activities should be measured or regulated. Critics of current methodologies suggest that gaps in standard developmental and reproductive toxicity studies result in insufficient prediction of human safety in cases with an ED mode of action, arguing that nontraditional study designs and systems biology endpoints should be incorporated into regulatory decision-making. An increasing number of ED research and regulatory studies are now conducted using protocols modified to include *ex vivo* and *in vitro* assays, and kinetic modeling, as well as 'omic and epigenetic assessments. These enhancements may provide many new avenues for scientific discovery, but come at a price of increasing complexity. In this workshop, the strengths, weaknesses, and experimental pitfalls of these techniques will be presented and compared with conventional approaches to assess the consequences of ED. Advantages of such modifications for the detection and assessment of ED compounds will be weighed against their drawbacks using real-world example studies. The studies will first be presented, addressing what modifications were used and whether the "add on" parameters helped with hazard assessment. After each speaker has presented, the workshop will then conclude with a panel discussion session covering the good, the bad, and the ugly—which endpoints are useful and which are too complicated to make work, or generate uninterpretable data. The session will be of broad interest to academic, industry, regulatory, and consultant toxicologists concerned about the current status of ED testing and/or advances in nonclinical ED safety assessment.

#2409	1:30	**Windfall or Pitfall: Is There a Need for Modification of Developmental and Reproductive Toxicology Studies When Endocrine Disruption Is the Mode of Action?** *B. van Ravenzwaay*[1], *L. E. Gray*[2], *R. J. Rasoulpour*[3], *K. Boekelheide*[4], S. Schneider[1], H. Li[5], and K. C. Fussell[1]. [1]Toxicology, BASF SE, Ludwigshafen/Rhein, Germany; [2]US Environmental Protection Agency, Research Triangle Park, NC; [3]The Dow Chemical Company, Midland, MI; [4]Pathology and Lab Medicine, Brown University, Providence, RI; and [5]Wageningen University, Wageningen, Netherlands.
#2410	1:30	**An Introduction to Windfall or Pitfall: Is There a Need for Modification of Developmental and Reproductive Toxicology Studies When Endocrine Disruption is the Mode of Action?** *B. van Ravenzwaay*. Toxicology, BASF SE, Ludwigshafen/Rhein, Germany.

Abstract #

#2411	1:35	**Using Fetal Endocrine and Genomic Signatures to Predict the Relative Potency of Phthalate Esters and Their Effects on Postnatal Development of the Male Rat Reproductive Tract.** *L. E. Gray*. US EPA, Research Triangle Park, NC.
#2412	2:04	**The Nexus between Epigenetics and Endocrine Activity in Product Safety Assessment.** *R. J. Rasoulpour*. Human Health Assessment, Dow AgroSciences, Indianapolis, IN.
#2413	2:33	**Human-Relevant Toxicity Testing: Safety Factors or Human Tissues, Cells, and Molecules?** *K. Boekelheide*. Department of Pathology and Lab Medicine, Brown University, Providence, RI.
#2414	3:02	**Testing Mixtures of Endocrine Disruptors in Classical and Molecular Endpoints at Human-Relevant Exposure Levels.** *K. C. Fussell*[1], S. Schneider[1], S. Melching-Kollmuss[1], S. Gröters[1], V. Strauss[1], B. Siddeek[2], M. Benahmed[2], M. Frericks[1], and *B. van Ravenzwaay*[1]. [1]Toxicology, BASF SE, Ludwigshafen/Rhein, Germany; and [2]Centre Méditerranéen de Médecine Moléculaire (C3M), Inserm U895, Bâtiment Universitaire Archimed, Nice, France.
#2415	3:31	**Combining an *In Vitro* Developmental Toxicity Assay with *In Vitro* Placental Transfer Increases Predictive Value.** H. Li[1], *I. Rietjens*[1], *J. Louisse*[1], M. Blok[1], X. Wang[1], L. Snijders[1], and *B. van Ravenzwaay*[2,1]. [1]Division of Toxicology, Wageningen University, Wageningen, Netherlands; and [2]Toxicology, BASF SE, Ludwigshafen/Rhein, Germany.
	4:00	**Panel Discussion/Q&A.**

Wednesday Afternoon, March 25
1:30 PM to 4:15 PM
CC Room 8

PL

Platform Session: Inflammation in Disease Due to Environmental Exposures

Approaches for Protecting Vulnerable Populations

Chairperson(s): *Daniel J. Conklin, University of Louisville, Louisville, KY; and Dori Germolec, NIEHS, Research Triangle Park, NC.*

#2416	1:30	**World Trade Center Dust and Health—Short- and Long-Term Effects of Exposure.** *A. Harrington*, *J. M. Vaughan*, M. Sisco, *M. D. Cohen*, and *L. Chen*. Environmental Medicine, New York University, Tuxedo, NY.
#2417	1:50	**Toxicity of Subchronic *Aspergillus fumigatus* Exposures in BALB/cJ and B6C3F1/N Mouse Strains.** *D. Germolec*[1], A. P. Nayak[2], B. J. Green[2], A. R. Lemons[2], T. Croston[2], W. T. Goldsmith[2], and D. Beezhold[2]. [1]Toxicology Branch, NIEHS, Research Triangle Park, NC; and [2]Health Effects Laboratory Division, NIOSH, Morgantown, WV.
#2418	2:10	**Functional Characteristics of Immune Cells in Peripheral Blood of Individuals with Pleural Plaque and Patients with Malignant Mesothelioma.** *Y. Nishimura*, S. Lee, N. Kumagai-Takei, H. Matsuzaki, K. Yoshitome, and *T. Otsuki*. Hygiene, Kawasaki Medical School, Kurashiki, Japan.

Program Schedule (Continued)

Abstract #

#2419 2:30 **Metformin or Rosiglitazone Prevent Fine Particulate Matter ($PM_{2.5}$) Exposure-Induced Vascular Insulin Resistance and EPC Retention.** *P. Haberzettl*, A. Bhatnagar, and *D. J. Conklin*. Medicine, University of Louisville, Louisville, KY.

#2420 2:50 **Environmentally Prevalent Low Molecular Weight Polycyclic Aromatic Hydrocarbon Effects on Lung Cell Communication and Inflammation.** R. S. Osgood[1], K. Velmurugan[2], C. Alexander[2], K. Xiong[2], J. Xiong[2], *B. L. Upham*[3], and A. K. Bauer[2]. [1]Pharmaceutical Sciences, University of Colorado Denver, Aurora, CO; [2]Environmental and Occupational Health, University of Colorado Denver, Aurora, CO; and [3]Pediatrics and Human Development, MSU, Lansing, MI.

#2421 3:10 **Uranium and Environmental Metal Exposures from Legacy Mining Waste and Immune Dysfunction among Navajo DiNEH Study Participants.** E. Erdei[1], R. L. Rubin[2], J. Ong[1], D. MacKenzie[1], C. Miller[1], B. Pacheco[1], M. Cajero[1], C. Shuey[3], and *J. L. Lewis*[1]. [1]Community Environmental Health Program, University of New Mexico, Albuquerque, NM; [2]Dept. of Microbiology and Molecular Genetics, School of Medicine, University of New Mexico, Albuquerque, NM; and [3]Southwest Research and Information Center, Albuquerque, NM.

#2422 3:30 **Proinflammatory Responses and Inflammasome Activation by Sintered Indium-Tin Oxide Particles.** *M. A. Badding*[1], N. R. Fix[1], S. S. Leonard[1], and K. J. Cummings[2]. [1]Health Effects Laboratory Division, NIOSH, Morgantown, WV; and [2]Division of Respiratory Disease Studies, NIOSH, Morgantown, WV.

#2423 3:50 **IL-6 Deficiency Leads to a Specific Cytokine Profile during Irritant Contact Dermatitis.** L. R. Luckett-Chastain, *J. M. Kemp*, K. N. Calhoun, and *R. Gallucci*. Pharmaceutical Sciences, OU Health Sciences Center, Oklahoma City, OK.

Wednesday Afternoon, March 25,
1:45 PM to 2:45 PM
CC Room 24B

E

Exhibitor-Hosted Session: Advanced *In Vitro* ADME and Toxicology Services Designed to Improve Drug Safety and Efficacy

Presented by:
BioReliance

BioReliance, a scientific leader in toxicology for more than 50 years, is introducing a suite of advanced *in vitro* ADME/Tox assays and services designed to improve drug safety and efficacy. Drug safety, transporter, and metabolism data generated in novel liver, kidney, and intestinal cell lines will be presented.

Abstract #

Wednesday Afternoon, March 25,
1:45 PM to 2:45 PM
CC Room 24A

E

Exhibitor-Hosted Session: Sharpen the Focus of Your Toxicology Research Program Using Agilent's Integrated Biology 'Omics Solutions

Presented by:
Agilent Technologies

Agilent's GeneSpring Multiomics Suite enables insights to be gained in underlying mechanisms of toxicity through the analysis and visualization of multiomic data and mapping of affected pathways. Come to our workshop to learn about how it is being used to advance understanding of mechanisms underpinning endocrine disruption.

Wednesday Afternoon, March 25
4:30 PM to 5:50 PM
CC Ballroom 6D

R

Roundtable Session: Epigenetics and Chemical Safety Assessment: Are We Ready?

Epigenomic Influences in Toxicological Responses

Chairperson(s): *Igor Pogribny, National Center for Toxicological Research, Jefferson, AR; and Jay I. Goodman, Michigan State University, East Lansing, MI.*

Endorser(s):
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

Continuous exposure to certain natural and manmade chemicals might be a major cause of noncommunicable human diseases, including cancer. Evidence is accumulating indicating that some of the earliest events preceding the development of these pathological states involve perturbations of the cellular epigenome, including modifications at the 5-position of DNA-cytosine, histone modifications, and expression of noncoding RNAs. This suggests that despite a lack of conclusive information to clarify which epigenetic changes are involved directly in the pathogenesis of exposure-related disease and which are the results of the pathological state, they might be useful in safety assessment of chemicals, including pharmaceuticals. The application of epigenomic profiling technologies to chemical safety assessment has great potential for providing novel mechanistic insights into the molecular basis of long-lasting cellular perturbations, including increased susceptibility to disease and/or toxicity. However, a better understanding of some of the key questions, including the following: (i) can we design screening systems to identify epigenetic perturbations that are actual predictors of toxicity?; (ii) what type(s) of epigenetic alterations should be used as biomarkers of exposure?; (iii) can appropriate trans-species epigenetic biomarkers be identified?; (iv) how does the inter-individual variability of the epigenome affect risk assessment?; (v) can these biomarkers and evaluations improve the risk assessment process?; and (vi) what needs to be acquired prior to incorporation of an epigenetic evaluation into the overall chemical safety assessment process?

#2424 4:30 **Epigenetics and Chemical Safety Assessment: Are We Ready?** *I. Pogribny*[1], and *J. I. Goodman*[2]. [1]Biochemical Toxicology, National Center for Toxicological Research, Jefferson, AR; and [2]Pharmacology and Toxicology, Michigan State University, East Lansing, MI.

4:30 **Introduction.** I. Pogribny. US FDA-NCTR, Jefferson, AR.

4:35 **Investigating the Role of Epigenetics in Product Safety Assessment.** R. J. Rasoulpour. Dow AgroSciences, Indianapolis, IN.

Program Schedule (Continued)

Abstract #

4:50 **Epigenetics and Chemical Safety Assessment: Are microRNAs Potential Biomarkers of Chemical Carcinogenesis?** N. J. Gooderham. Imperial College London, London, United Kingdom.

5:05 **Toward Incorporating Epigenetic Mechanism into Carcinogen Identification and Evaluation.** Z. Herceg. International Agency for Research on Cancer (IARC), Lyon, France.

5:20 **Panel Discussion.** Panel Discussion/Q&A

Wednesday Afternoon, March 25
4:30 PM to 5:50 PM
CC Ballroom 6E

R

Roundtable Session: The Future of Carcinogenicity Testing

Safety Assessment Approaches for Product Development

Chairperson(s): *Yvonne Dragan, DuPont, Newark, DE; and James E. Klaunig, Indiana University, Ellettsville, IN.*

Endorser(s):
Carcinogenesis Specialty Section
Regulatory and Safety Evaluation Specialty Section

The current carcinogenicity testing scheme was developed in the 1930s and has undergone modifications in the years since. However, considerable advances in biology and knowledge of cancer mechanisms have also occurred over this time, and our increased mechanistic understanding of cancer development and progression coupled with the need to increase the science base of risk assessment warrant a re-evaluation of cancer testing approaches. This roundtable will examine current and future cancer assessment. Specifically, the roundtable will address how improvements in the detection and identification of carcinogens and the utility of this information for human risk assessment should be incorporated into the evaluation of potential carcinogenic risk. For example, recent proposed changes to the ICH S1 cancer risk guidelines have sparked a discussion of the utility of the rodent bioassay. The format of the roundtable will consist of three speakers providing an overview of the current and anticipated future approaches to carcinogen testing. In addition, a panel consisting of the three speakers and three additional toxicologists involved with carcinogen testing from the academic, industry, and regulatory sectors will be convened and will address the future testing paradigm for cancer.

#2425 4:30 **The Future of Carcinogenicity Testing.** *Y. Dragan*[1], and *J. E. Klaunig*[2]. [1]Haskell Global Centers, DuPont, Newark, DE; and [2]Department of Environmental Health, Indiana University, Elletsville, IN.

4:30 **Introduction.** Y. Dragan. DuPont Company, Newark, DE.

4:35 **The Future of Carcinogenicity Testing for Pharmaceuticals.** F. D. Sistare. Merck, West Point, PA.

4:50 **An NIEHS/NTP Perspective on the Future of Toxicity and Carcinogenesis Testing.** L. S. Birnbaum. NIEHS, Research Triangle Park, NC.

5:05 **Smarter Cancer Testing for Pesticide Chemicals.** A. B. Lowit. US EPA, Washington, DC.

5:20 **Panel Discussion.** Panel Discussion/Q&A

Abstract #

Wednesday Afternoon, March 25
4:30 PM to 5:50 PM
CC Room 7

EC

Education-Career Development Session: Crafting High-Impact Manuscripts: The Process from Hypothesis through Review and Publication

Chairperson(s): *Caitlin J. Murphy, University of Texas at Austin, Austin, TX; and Karin M. Streifel, University of California Davis, Davis, CA.*

Endorser(s):
Board of Publications
Career Resource and Development Committee
Postdoctoral Assembly

Publications are an essential component for a successful career across all sectors of toxicology, including industry, academia, and government. Although mentors provide informal guidance, students and postdoctoral fellows rarely receive formal training on how to develop a high-impact manuscript. Therefore, trainees still have questions regarding the publishing process. A complete understanding of the publication process will benefit junior scientists in formulating research plans, preparing manuscripts, in developing manuscript submission strategies, and in effectively serving as a reviewer—all important elements in a successful career. This session is designed to provide early-career toxicologists with insight into the publication process from the journal's perspective. Speakers will focus on (1) how to craft a high-impact manuscript; (2) the role of the associate editor, strategies of selecting reviewers, the expectations of a reviewer, and responding to reviewers' comments; (3) maintaining scholarly productivity in nonacademic careers; and (4) publishing in top-tier journals. Each speaker will also highlight what led to some of his or her most significant publications. Attendees will learn the benefits of publishing in the Society of Toxicology's journal, how this may help in their unique career path, and define the roles of key players of the publication process. As well, Dr. Marcia McNutt, the editor in chief of *Science*, will share her insights on what it takes to publish in high-impact journals. This discussion is pertinent to all junior-level toxicologists who are in the process of publishing, undergoing revisions, and reviewing manuscripts. This career-development session will provide the formal training to understanding the entire process of creating a high-quality manuscript.

#2426 4:30 **Crafting High-Impact Manuscripts: The Process from Hypothesis through Review and Publication.** *C. Murphy*[1], *K. Streifel*[2], *G. W. Miller*[3], *D. Dolinoy*[4], *L. D. Lehman-McKeeman*[5], and M. McNutt[6]. [1]University of Texas at Austin, Austin, TX; [2]University of California- Davis, Davis, CA; [3]Emory University, Atlanta, GA; [4]University of Michigan, Ann Arbor, MI; [5]Bristol-Myers Squibb, Princeton, NJ; and [6]*Science*, Washington, DC.

4:30 **Introduction to Crafting High-Impact Manuscripts: Questions from Trainees.** C. Murphy. University of Texas at Austin, Austin, TX.

4:35 **Crafting a High-Impact Manuscript.** G. W. Miller. Emory University, Atlanta, GA.

4:50 **The Role of Associate Editor.** D. Dolinoy. University of Michigan, Ann Arbor, MI.

5:05 **Maintaining Scholarly Productivity in Nonacademic Careers.** L. D. Lehman-McKeeman. Bristol-Myers Squibb Company, Princeton, NJ.

5:20 ***Science* on Science: Publishing in Top-Tier Journals.** M. McNutt. *Science* Magazine, Washington, DC.

5:35 **Panel Discussion.** Panel Discussion/Q&A

Program Schedule (Continued)

WEDNESDAY EVENING

Wednesday Evening, March 25
6:00 PM to 7:30 PM
CC
See room listing below.

Specialty Section Meeting/Receptions: Biological Modeling (30E); Biotechnology (31C); Clinical and Translational Toxicology (31A); Dermal Toxicology (30C); Mechanisms (29); Reproductive and Developmental Toxicology (28A); Stem Cells (30A)

Wednesday Afternoon, March 25
4:30 PM to 6:30 PM
Marriott Marquis Marina Ballroom D

Women in Toxicology Special Interest Group Reception

Late-Breaking Abstracts Scheduled for Thursday

In December, we invited our colleagues to submit an abstract during the late-breaking abstract submission phase. We are pleased with the number of abstracts received for consideration and that an overwhelming number were accepted for the Annual Meeting. These abstracts will be presented on Thursday, March 26, along with several dynamic symposium and workshop sessions already scheduled. You can find the poster sessions in the Sails Pavilion. A PDF supplement of these additional abstracts will be available to download via the SOT website in early March. The abstracts are not available in the final *Program* but are fully searchable through the SOT Mobile Event App and Online Planner.

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

THURSDAY MORNING

Thursday Morning, March 26
8:00 AM to 8:45 AM
CC Room 3

2015–2018 Strategic Plan Discussion Breakfast

Join the SOT Council for a detailed discussion of the new 2015–2018 Strategic Plan. This breakfast discussion will provide ample time for the membership to meet one-on-one with Council to gain an in-depth knowledge of the 2015–2018 Strategic Plan and the process forward. More information can be found on page 89.

Thursday Morning, March 26
8:30 AM to 12:00 Noon
CC Sails Pavilion

PS

Late-Breaking Poster Session

Displayed: *8:30 AM–12:00 Noon*

Author-Attended: *8:30 AM–12:00 Noon*

View abstracts via Mobile Event App, Online Planner, or downloadable PDF.

Thursday Morning, March 26
9:00 AM to 11:45 AM
CC Room 1

S

Symposium Session: Chromatin Structure, Genomics, and Transcriptional Responses to Environmental Insults

Epigenomic Influences in Toxicological Responses

Chairperson(s): *Ivan Rusyn, Integrative Biosciences, Texas A&M University, College Station, TX; and Igor Pogribny, National Center for Toxicological Research, Jefferson, AR.*

Endorser(s):
Carcinogenesis Specialty Section
Mechanisms Specialty Section
Molecular and Systems Biology Specialty Section

Exposure to many environmental toxicants has been associated with epigenetic changes, which can affect gene expression patterns and likely contribute to disease or other phenotypes associated with exposure. The information on the mechanisms by which chemicals may impact gene expression is rapidly evolving, and recent discoveries show how exposures perturb the proteins and processes upstream of DNA methylation and other epigenetic marks. The transition from using epigenetic signatures of exposure as potential biomarkers to identifying their mechanisms allows for better characterization of the biology of how environmental insults are involved in establishing and maintaining gene expression patterns and chromatin state. The participation of the proteins that act as "readers," "writers," or "erasers" of the epigenetic code, depositing/removing epigenetic marks or binding to them and recruiting other proteins, as well as other factors such as noncoding RNAs, chromatin remodeling complexes, inter- and intra-chromosomal interactions, and functional genomic elements, is now possible to elucidate using the latest genomic technologies. This symposium will explore how transcriptional regulation may be controlled by the developmental cues and/or environmental stimuli through a series of complex mechanisms which fall under the heading of epigenetic processes or modifications. Through a series of case studies, the basic mechanisms of the environmental control of epigenetic mechanisms will be illustrated. The linkages among exposure, genome, epigenome, and the host genetics will be addressed through data from *in vivo* and *in vitro* model systems.

Abstract #

#2427	9:00	**Chromatin Structure, Genomics, and Transcriptional Responses to Environmental Insults.** *I. Rusyn*[1], and *I. Pogribny*[2]. [1]Texas A&M University, College Station, TX; and [2]NCTR/FDA, Jefferson, AR.
	9:00	**Introduction.** I. Rusyn. Texas A&M University, College Station, TX.
#2428	9:05	**Epigenetic Programmers Targeted during Developmental Reprogramming.** *C. Walker*. Texas A&M University, Houston, TX.
#2429	9:35	**Epigenetic Dysregulation by Oxidative Stress from Chemical Exposures.** *M. Costa*. NYU School of Medicine, Tuxedo, NY.
#2430	10:05	**Transcriptional Effects of DNA Damage: Gene Expression Changes Associated with Tamoxifen Exposure in Humans and Nonhuman Primates.** *M. C. Poirier*. NIH/NCI, Bethseda, MD.
#2431	10:35	**Genotoxic and Epigenotoxic Effects of Chemical Exposures: One Side of the Same Coin?** *I. Pogribny*. NCTR/US FDA, Jefferson, AR.
#2432	11:05	**Genetics Driving Epigenetics Associated with Altered Complex Phenotypes.** T. Furey. Genetics, University of North Carolina at Chapel Hill, Chapel Hill, NC. Sponsor: *I. Rusyn*.
	11:35	**Panel Discussion/Q&A.**

Thursday Morning, March 26
9:00 AM to 11:45 AM
CC Ballroom 6E

S

Symposium Session: Comprehensive Analysis of Nano Silver Toxicity Profiles: Known, Unknown, and Surprises!

Chairperson(s): *Srikanth S. Nadadur, Division of Extramural Research & Training, NIEHS, Research Triangle Park, NC; and Linda S. Birnbaum, NIEHS, Research Triangle Park, NC.*

Endorser(s):
Inhalation and Respiratory Specialty Section
Nanotoxicology Specialty Section

The fascinating optoelectronic and chemical properties of noble metal nanoparticles led to their significant application in nanotechnology and biomedicine. The silver nanoparticles have found widespread use in consumer products ranging from disinfectant, antifouling agents, and textiles, to nutraceuticals, biosensing, diagnostic imaging, and therapeutics. This widespread use of nano silver has potential to contribute to human health effects and raise environmental safety concerns. Hence, there is a need to develop an integrated and coordinated approach to gain a comprehensive understanding on the potential toxicity to better guide safe and sustainable use of nanotechnology. The toxicology data available to date on nano silver produced by diverse methods, physicochemical properties (size, shape, and surface coatings), and systems (*in vitro*, *in vivo*) used to investigate toxicity outcomes suggest the issue of dissolution of nanoparticles and silver ions and incomplete characterization data. As part of ongoing research efforts within the NIEHS Centers for Nanotechnology Health Implications Research Consortium, investigations are carried out to understand the biological interactions and response to silver nanomaterials of defined shape, structure, and surface coating. These materials were commercially procured, extensively characterized, and investigated using cell culture systems (human, mouse, rat) representative of diverse organ systems and multiple rat and mouse models (wild type, knock out, collaborative cross strains, physiological states). The biological, physiological endpoints, and toxicokinetics from different routes of exposure indicated toxicity outcomes are dependent on the physicochemical properties, silver dissolution kinetics, cell culture system, or animal strains used. The presentations in this session will share with the scientific community the issues and scientific challenges in integrating this information into predictive health effects risk assessment models

Program Schedule (Continued)

Abstract #

and the benefits of collaborative consortium efforts in addressing Nano EHS issues identified by NNI.

#2433	9:00	**Comprehensive Analysis of Nano Silver Toxicity Profiles: Known, Unknown and Surprises!** *S. S. Nadadur*, and *L. S. Birnbaum*. Division of Extramural Research & Training, NIEHS, Research Triangle Park, NC.
	9:00	**Introduction.** S. S. Nadadur. NIEHS, Research Triangle Park, NC.
#2434	9:05	**Improving *In Vitro* Assessment of Silver Nanoparticle Toxicity through Understanding of Ion Dissolution and Protein Corona Formation.** *J. M. Brown*. Pharmaceutical Sciences, University of Colorado, Aurora, CO.
#2435	9:34	**Important Characteristics of Silver Nanoparticles and Particle Transformations in Biological Systems.** D. R. Baer[1], S. Chen[2], Z. Ji[3], P. Munusamy[1], *A. E. Nel*[3], A. Porter[2], *J. N. Smith*[1], C. Wang[1], M. P. Ryan[2], T. Xia[3], and J. I. Zink[3]. [1]Pacific Northwest National Laboratory, Richland, WA; [2]Imperial College London, London, United Kingdom; and [3]University of California Los Angeles, Los Angeles, CA.
#2436	10:03	**The Role of Genetics in the Susceptibility to Inhaled Nanoparticles.** *T. Gordon*. Environmental Medicine, New York University, Tuxedo, NY.
#2437	10:32	**Pulmonary Responses to Silver Nanoparticles: Role of Rat Strain, Particle Type, and Route of Exposure.** *L. S. Van Winkle*[1], *K. E. Pinkerton*[1], *C. J. Wingard*[4], *N. A. Holland*[4], *T. Fennell*[3], J. Seiffert[2], F. Chung[2], J. Zhang[5], and T. Tetley[2]. [1]University of California Davis, Davis, CA; [2]Imperial College London, London, United Kingdom; [3]RTI International, Research Triangle Park, NC; [4]Eastern Carolina University, Greenville, NC; and [5]Duke University, Durham, NC.
#2438	11:01	**Disposition and Toxicokinetics of Nanosilvers.** *T. Fennell*. RTI International, Research Triangle Park, NC.
	11:30	**Panel Discussion/Q&A.**

Thursday Morning, March 26
9:00 AM to 11:45 AM
CC Ballroom 6C

S

Symposium Session: Epigenetics, Developmental Programming, and Immune Function: Where Do We Go from Here?

Epigenomic Influences in Toxicological Responses

Chairperson(s): *Berran Yucesoy, University of Cincinnati, Cincinnati, OH; and Victor J. Johnson, BRT-Burleson Research Technologies, Morrisville, NC.*

Endorser(s):
Immunotoxicology Specialty Section
Inhalation and Respiratory Specialty Section
Reproductive and Developmental Toxicology Specialty Section

The epigenome is most vulnerable to dysregulation during the prenatal/fetal period as certain transient environmental influences can lead to persistent changes in epigenetic marks. These changes can adversely affect human development and health in childhood. Importantly, epigenetic changes that occur early during development may persist throughout life and, in some cases, may result in transgenerational impact on disease susceptibility. Many of the environmental factors that are implicated in infectious and noncommunicable disease risk are known to influence epigenetic programming of immune-related genes. This symposium is aimed at exploring the interaction

Abstract #

between epigenetic, environmental, and developmental factors and its implications for childhood, lifecourse, and transgenerational disease risk, and also for immune dysregulation and inflammation. In order to achieve this aim, the symposium will start with an overview of the central role of both microbial- and mammalian-generated epigenetic marks on immune development and dysfunction and will discuss related health risks and specific vulnerabilities. Next, the impact of prenatal and early postnatal environmental exposures on asthma and allergy risk will be discussed in the context of epigenetics, including alterations in DNA methylation, histone modifications, and microRNA expression of candidate genes. This will be followed by multigenerational and transgenerational outcomes of gestational arsenic exposure on tumor incidence in relation to epigenetic changes and the role of immune-related epigenetic regulation on tumor susceptibility. The symposium will end with a presentation discussing environmental epigenetics, the opportunity for development of epigenetic biomarkers of exposure and disruption of immune cell functions that are associated with disease development, and epigenetic potencies of individual pollutants. Novel, high-throughput technologies for examination of the epigenome as a whole will be leveraged to illustrate these concepts.

#2439	9:00	**Epigenetics, Developmental Programming, and Immune Function: Where Do We Go from Here?** *B. Yucesoy*[1], and *V. J. Johnson*[2]. [1]University of Cincinnati, Cincinnati, OH; and [2]Burleson Research Technologies, Morrisville, NC.
	9:00	**Introduction.** B. Yucesoy[1], and V. J. Johnson[2]. [1]University of Cincinnati, Cincinnati, OH; and [2]BRT Burleson Research Technologies Inc, Morrisville, NC.
#2440	9:05	**Environmental Epigenetics: Pivotal Factors for Programming Immune Function vs. Dysfunction.** *R. R. Dietert*. Cornell University, Ithaca, NY.
#2441	9:41	**Prenatal and Postnatal Environmental Exposures and Epigenetic Influences in Asthma and Allergy Risk.** R. Miller. Columbia University, New York City, NY. Sponsor: *B. Yucesoy*.
#2442	10:17	**The Effects of Gestational Arsenite Exposure on the F2 Generation: Role of Epigenetics.** *K. Nohara*[1], *K. Okamura*[1], *T. Suzuki*[1], I. Hatada[2], and K. Hata[3]. [1]National Institute for Environmental Studies, Tsukuba, Japan; [2]Institute for Molecular and Cellular Regulation, Gunma University, Maebashi, Japan; and [3]National Institute for Child Health and Development, Tokyo, Japan.
#2443	10:53	**Early-Life Exposure to Environmental Pollutants and Epigenetic Programming of Immune-Related Diseases.** *S. Ho*. University of Cincinnati, Cincinnati, OH.
	11:29	**Panel Discussion/Q&A.**

Program Schedule (Continued)

Abstract #

Thursday Morning, March 26
9:00 AM to 11:45 AM
CC Ballroom 6D

S

Symposium Session: Exposure Assessment in the 21st Century: Needs and Challenges Facing High-Throughput Exposure Modeling

Strategies for Exposure and Risk Assessments

Chairperson(s): *Barbara A. Wetmore, The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and Benjamin C. Blount, NCEH, CDC, Atlanta, GA.*

Endorser(s):
Occupational and Public Health Specialty Section
Regulatory and Safety Evaluation Specialty Section
Risk Assessment Specialty Section

The release of *Toxicity Testing in the 21st Century: A Vision and a Strategy* generated a great deal of interest in assessing the utility of high-throughput (HT) *in vitro* assays in chemical hazard identification. Dosimetric adjustment of *in vitro* bioactivity data allows the derivation of oral equivalent doses that, on a mg/kg/day basis, provide a comparator to external exposure, allowing generation of putative margins of exposure (MOEs) that may then be employed in prioritization strategies. As federal HT hazard assessments transition to chemicals lacking exposure estimates, developing HT exposure prediction tools becomes increasingly important and is key to inserting risk relevancy into the process. While recent HT modeling efforts have yielded promise, they have concomitantly identified key needs that will require resolution to reduce model uncertainty. Biomonitoring data can play an important role in ground-truthing models, but ongoing surveys only offer limited data relevant for this task. This session will provide an update on the HT exposure modeling efforts currently underway, challenges identified, and additional needs to support realistic estimates of exposure variability, including identification of sensitive populations. This symposium will also provide perspective on the use of such tools in a regulatory setting.

#2444	9:00	**Exposure Assessment in the 21st Century: Needs and Challenges Facing High-Throughput Exposure Modeling.** *B. A. Wetmore*[1], and B. C. Blount[2]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [2]National Center for Environmental Health, Centers for Disease Control and Prevention, Atlanta, GA.
	9:00	**Introduction.** B. A. Wetmore[1], and B. C. Blount[2]. [1]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and [2]National Center for Environmental Health, CDC, Sewanee, GA.
#2445	9:05	**Evaluating Rapid Models for High-Throughput Exposure Forecasting.** *J. F. Wambaugh.* National Center for Computational Toxicology, US EPA, Research Triangle Park, NC.
#2446	9:37	**Developing, Applying, and Evaluating Models for Rapid Screening of Chemical Exposures.** J. Arnot[1,2], H. Shin[3], A. Ernstoff[4,5], S. Csiszar[5], P. Fantke[4], X. Zhang[6], D. Bennett[3], *O. Jolliet*[5], *B. A. Wetmore*[7], and *T. E. McKone*[8,9]. [1]ARC Arnot Research & Consulting Inc., Toronto, ON, Canada; [2]University of Toronto Scarborough, Toronto, ON, Canada; [3]University of California Davis, Davis, CA; [4]Technical University of Denmark, Kongens Lyngby, Denmark; [5]University of Michigan, Ann Arbor, MI; [6]Harvard University, Cambridge, MA; [7]The Hamner Institutes for Health Sciences, Research Triangle Park, NC; [8]Lawrence Berkeley National Laboratory, Berkeley, CA; and [9]University of California Berkeley, Berkeley, CA.
#2447	10:09	**The Impact of Rapid Bioactivity-Exposure-Based Prioritization on Chemical Safety.** S. M. Knott. Office of Science Coordination and Policy, Exposure Assessment Coordination and Policy Division, US EPA, Washington, DC. Sponsor: *B. Wetmore.*

Abstract #

#2448	10:41	**Biomonitoring As an Exposure Assessment Tool in the Context of High-Throughput Screening (HTS): Concepts, Challenges, and Approaches.** *L. Aylward*[1], and *S. Hays*[2]. [1]Summit Toxicology, LLP, Falls Church, VA; and [2]Summit Toxicology, LLP, Allenspark, CO.
#2449	11:13	**Using Environmental and Biological Measurements to Develop Generalizable Relationships for Exposure Models.** *R. Rudel*, R. Dodson, and J. Brody. Silent Spring Institute, Newton, MA.

Thursday Morning, March 26
9:00 AM to 11:45 AM
CC Ballroom 6F

W

Workshop Session: Microphysiological Models of the Developing Nervous System: Biologically Driven Assembly Inspired by Embryology and Translated to Human Developmental Toxicology

Approaches for Protecting Vulnerable Populations

Chairperson(s): *Thomas B. Knudsen, National Center for Computational Toxicology, US EPA, Research Triangle Park, NC; and William Slikker Jr., Office of the Director, US FDA-NCTR, Jefferson, AR.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Neurotoxicology Specialty Section
Reproductive and Developmental Toxicology Specialty Section

Recent advances using human stem cells and other cells that can be ushered through differentiation and developmental maturation offer an unprecedented opportunity to develop predictive systems for toxicological assessment. The use of human cells is an advantage because there is no need to extrapolate across species, but even so, there may be the requirement that different cell types interact in a three-dimensional (3D) relationship in order to provide prediction of the intact human. For example, in the developing nervous system, multiple cell types including neurons, astrocytes, and oligodendrocytes, interact in the presence of growth factors, cytokines, and other hormones to function within a 3D spatial configuration that can reflect normal biological functioning in a predictive manner. The purpose of this workshop is to take a close look at the novel approaches being applied for biologically driven assembly, in which exploiting the capacity of an embryo to build tissues and organs from scratch, and the multicellular response dynamics in biologically driven assembly are facilitating "human-on-a-chip" microscale systems and other cellular-complex culture models for evaluating developmental neurotoxicity. The individual topics will address the progress that has been made concerning how the cellular microenvironment dictates tissue morphogenesis and the importance of 3D cellular architecture in cellular function; identification of signaling pathways that contribute to exogenously-induced developmental neurotoxicity; mini-brain organoid platforms to study complex cellular networks and disease models for drug development, toxicology, and medicine; and the requirement for quantitative outcome measures that are essential to the overall success of the organotypic culture approach in order for it to be predictive of the human situation. Standard approaches will be outlined with the use of positive and negative test agents to allow confirmation of the reproducibility of these *in vitro* test systems in different laboratory environments. The views expressed in this abstract do not necessarily reflect US EPA or US FDA policy.

#2450	9:00	**Microphysiological Models of the Developing Nervous System: Biologically Driven Assembly Inspired by Embryology and Translated to Human Developmental Toxicology.** *T. B. Knudsen*[1], and *W. Slikker*[2]. [1]NCCT, US EPA, Research Triangle Park, NC; and [2]NCTR, US FDA, Jefferson, AR.
	9:00	**Introduction.** T. B. Knudsen. US EPA, Research Triangle Park, NC.

Program Schedule (Continued)

Abstract #		
#2451	9:05	**Engineered Microphysiological Systems for Cell-Based Predictive Models of Developmental Neurotoxicity and Teratogenicity.** W. L. Murphy. Biomedical Engineering, University of Wisconsin-Madison, Madison, WI. Sponsor: *T. Knudsen*.
#2452	9:41	**Probing Signaling Pathways in Developmental Neurotoxicity with Human 3D Neurospheres.** *E. Fritsche*. Group of Sphere Models and Risk Assessment, IUF Leibniz Research Institute for Environmental Medicine, Duesseldorf, Germany.
#2453	10:17	**Biological and Medical Applications of a Brain-on-a-Chip.** *T. Hartung*, *D. Pamies*, *H. T. Hogberg*, and *L. Smirnova*. CAAT, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD.
#2454	10:53	**Standards and Minimum Requirements for Validation of Complex Organotypic Culture Model Systems.** *R. E. Chapin*. DART, Pfizer, Inc, Groton, CT.
	11:29	**Panel Discussion.** W. Slikker. NCTR, US FDA, Jefferson, AR.

Thursday Morning, March 26
9:00 AM to 11:45 AM
CC Room 7

W

Workshop Session: Painting the Future of Repeat-Dose Systemic Toxicity Testing: Progress from the European SEURAT-1 Project

Chairperson(s): *Russell S. Thomas, National Center for Computational Toxicology, US EPA, Research Triangle Park, NC; and Maurice P. Whelan, Institute for Health and Consumer Protection, European Commission Joint Research Centre, Ispra, Italy.*

Endorser(s):
***In Vitro* and Alternative Methods Specialty Section**
Molecular and Systems Biology Specialty Section
Regulatory and Safety Evaluation Specialty Section

In 2011, a public-private partnership between the European Commission and Cosmetics Europe funded the "Safety Evaluation Ultimately Replacing Animal Testing" (SEURAT-1) cluster of six research consortia, with the goal of filling scientific knowledge gaps and accelerating the development of nonanimal test methods for repeat-dose toxicity testing. Replacement of repeated-dose testing with alternative approaches is a daunting task and will require a complete shift in paradigm toward a new definition of "adversity" defined at the molecular and cellular level, rather than by traditional apical endpoints. To demonstrate and evaluate the applicability of the alternative methods developed within the consortium, a series of cross-cluster case studies were initiated to (i) develop a series of adverse outcome pathways (AOPs) that can be used for designing integrated test systems, (ii) demonstrate various AOP-based systems for quantitatively predicting repeat-dose toxicity, and (iii) apply information from the predictive systems to a chemical safety assessment. The purpose of this workshop is to present, for the first time, the results and lessons learned from a complementary set of these case studies. The workshop will be of high interest to a broad audience, including industry representatives whose products are affected by the European Union ban on cosmetic animal testing, government regulators interested in *in vitro* alternatives to animal tests, and academic researchers investigating the mechanisms of chemical toxicity.

Abstract #		
#2455	9:00	**Painting the Future of Repeat-Dose Systemic Toxicity Testing: Progress from the European SEURAT-1 Project.** *R. S. Thomas*[1], and M. P. Whelan[2]. [1]National Center for Computational Toxicology, US EPA, Research Triangle Park, NC; and [2]Systems Toxicology Unit and the EU Reference Laboratory for Alternatives to Animal Testing (EURL ECVAM), European Commission Joint Research Centre, Ispra, Italy.
	9:00	**Introduction.** R. S. Thomas. US EPA, Research Triangle Park, NC.
#2456	9:05	**Predictive Power and Robustness of an AOP Construct for Bile Salt Export Pump Inhibition to Cholestatic Injury.** *M. Vinken*. Toxicology, Vrije Universiteit Brussel, Brussels, Belgium.
#2457	9:34	**Chemotypes for Mitochondrial Toxicity Prediction.** M. T. Cronin[1], S. J. Enoch[1], J. C. Madden[1], M. D. Nelms[1], K. R. Przybylak[1], A. N. Richarz[1], F. P. Steinmetz[1], and *C. Yang*[2]. [1]School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University, Liverpool, United Kingdom; and [2]Altamira LLC, Columbus, OH.
#2458	10:03	**AOP-Based Classification Model for Repeat-Dose Liver Toxicity.** A. Lostia, and M. P. Whelan. Institute for Health and Consumer Protection, System Toxicology Unit, European Commission, Joint Research Centre, Ispra, Italy. Sponsor: *R. Thomas*.
#2459	10:32	**Development of a Liver Co-Culture System for Evaluating Adverse Outcome Pathways Leading to Fibrosis.** L. A. van Grunsven. Liver Cell Biology Lab, Vrije Universiteit Brussel, Brussels, Belgium. Sponsor: *R. Thomas*.
#2460	11:01	**Case Studies on Using *In Vitro* Molecular Screening, 'Omics, and Computational Models to Support a Quantitative Chemical Risk Assessment and Chemical Read-Across.** *A. White*[1], and D. Knight[2]. [1]Safety & Environmental Assurance Centre, Unilever, London, United Kingdom; and [2]European Chemicals Agency, Helsinki, Finland.
	11:30	**Panel Discussion/Q&A.**

Thursday Morning, March 26
9:00 AM to 11:45 AM
CC Room 8

PL

Platform Session: POPs—*In Vitro*, *In Vivo*, and Computational Modeling Studies

Chairperson(s): *Bruce A. Fowler, Consultant, Rockville, MD; and Jack Vanden Heuvel, Penn State University, University Park, PA.*

#2461	9:00	**Human Organic Anion Transporting Polypeptides (OATPs) 1B1, 1B3, and 2B1 Can Transport Perfluoroalkyl Sulfonates.** W. Zhao[1], *J. Zitzow*[2], *D. J. Ehresman*[3], *S. Chang*[3], *J. L. Butenhoff*[3], and *B. Hagenbuch*[1]. [1]Pharmacology, Toxicology and Therapeutics, KU Medical Center, Kansas City, KS; [2]Pace Analytical, Minneapolis, MN; and [3]3M Company, St. Paul, MN.
#2462	9:20	**Effects of PFOA and PFOS on Cholesterol Efflux and Gene Expression in THP-1, Huh-7, and Caco-2 Cells.** *J. Vanden Heuvel*[1,2], *J. A. Garban*[1], D. B. Hannon[1,2], and K. Toyokawa[2]. [1]Veterinary and Biomedical Sciences, Penn State University, University Park, PA; and [2]Indigo Biosciences, Inc., State College, PA.

PS Poster Sessions
RI Regional Interest Session
R Roundtable Sessions
S Symposium Sessions
Thematic Sessions
W Workshop Sessions

Program Schedule (Continued)

Abstract #

#2463 9:40 **Transcriptomic Effects of Ortho-PCBs on Developing Zebrafish.** *J. V. Goldstone*, B. Lemaire, A. Kubota, and *J. J. Stegeman*. Biology, Woods Hole Oceanographic Institution, Woods Hole, MA.

#2464 10:00 **Toxicological Responses following Oral Exposure to Dechlorane Plus in Zebrafish (*Danio rerio*).** H. Kang, *D. Jung*, and *K. Choi*. School of Public Health, Seoul National University, Seoul, Republic of Korea.

#2465 10:20 **Fetal TCDD Exposure Increases Adult Male Mouse Susceptibility to Urinary Dysfunction.** *W. A. Ricke*[1,2], C. Lee[3], T. Clapper[3], A. J. Schneider[3], R. W. Moore[3], K. P. Keil[4], L. L. Abler[4], J. Wynder[2,1], A. L. Alvarado[4], *R. E. Peterson*[3], and C. M. Vezina[4,2]. [1]Urology, University of Wisconsin, Madison, WI; [2]Molecular and Environmental Toxicology, University of Wisconsin, Madison, WI; [3]School of Pharmacy, University of Wisconsin, Madison, WI; and [4]School of Veterinary Medicine, University of Wisconsin, Madison, WI.

#2466 10:40 **Exposure to Higher Doses of 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin Increases the Abundance of Segmented Filamentous Bacteria in Mice Gut Microbiota.** P. Bhaduri[1], R. D. Stedtfeld[1], *K. A. Fader*[2], T. M. Stedtfeld[1], *T. R. Zacharewski*[2], J. Tiedje[3], and S. A. Hashsham[1]. [1]CEE, Michigan State University, East Lansing, MI; [2]BMB, Michigan State University, East Lansing, MI; and [3]MMG, Michigan State University, East Lansing, MI.

#2467 11:00 **Epigenetic Effects of Persistent Organic Pollutants during Human Adipocyte Differentiation.** M. W. van den Dungen[1,2], D. E. Kok[2], A. J. Murk[1], and W. T. Steegenga[2]. [1]Subdepartment of Environmental Technology, Wageningen University, Wageningen, Netherlands; and [2]Division of Human Nutrition, Wageningen University, Wageningen, Netherlands. Sponsor: *I. Rietjens*.

#2468 11:20 **Pathway Analysis of Different Persistent Organic Pollutants Suggests Common Disease Connections.** *P. Ruiz*[1], A. Perlina[2], *B. A. Fowler*[3], and *M. Mumtaz*[1]. [1]Division of Toxicology and Human Health Sciences, Agency for Toxic Substances and Disease Registry, Atlanta, GA; [2]Sanford-Burnham Medical Research Institute, La Jolla, CA; and [3]Emory University Rollins School of Public Health, Atlanta, GA.

THANK YOU

ATTENDEES

On behalf of the 2014–2015 SOT Council, thank you for attending the 2015 SOT Annual Meeting and ToxExpo in San Diego, California. Your participation at this event plays a significant role in making the Society of Toxicology the number one scientific not-for-profit organization for toxicologists in the world. See you next year in New Orleans.

Meet the Editor-in-Chief of *Toxicological Sciences*

Gary W. Miller

SOT Pavilion
Monday–Wednesday
March 23–25
10:00 AM–11:00 AM and 2:00 PM–3:00 PM

Author Index

The numerals following the author names refer to the abstract numbers. The asterisk after the abstract number indicates the author is the presenter.

Interact with Speakers—Use the Mobile Event App or Online Planner to select the presentations you want to attend during the Annual Meeting. You may search speaker and abstract authors by name, affiliation, abstract number, and keyword. Use the results to build your schedule to maximize your meeting experience. The Attendee Messaging tool also enables you to contact (or interact with) presenters before, during, and after the meeting. Accessing session and speaker details is quick and easy.

Late-Breaking Abstracts Scheduled for Thursday

In December, we invited our colleagues to submit an abstract during the late-breaking abstract submission phase. We are pleased with the number of abstracts received for consideration and that an overwhelming number were accepted for the Annual Meeting. These abstracts will be presented on Thursday, March 26, along with several dynamic symposium and workshop sessions already scheduled. You can find the poster sessions in the Sails Pavilion. A PDF supplement of these additional abstracts will be available to download via the SOT website in early March. The abstracts are not available in the final *Program* but are fully searchable through the SOT Mobile Event App and Online Planner.

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Abstract Keyword Index

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1963–1964	**Paul S. Larson***	1981–1982	**Robert B. Forney***	1999–2000	**Jay I. Goodman**
1964–1965	**Harry W. Hays***	1982–1983	**Robert L. Dixon***	2000–2001	**Daniel Acosta Jr.**
1965–1966	**Frederick Coulston***	1983–1984	**Gabriel L. Plaa***	2001–2002	**David L. Eaton**
1966–1967	**Verald K. Rowe***	1984–1985	**Frederick W. Oehme**	2002–2003	**William F. Greenlee**
1967–1968	**John A. Zapp Jr.***	1985–1986	**Emil A. Pfitzer***	2003–2004	**Marion F. Ehrich**
1968–1969	**Carrol S. Weil***	1986–1987	**John Doull**	2004–2005	**Linda S. Birnbaum**
1969–1970	**Ted A. Loomis**	1987–1988	**Jerry B. Hook**	2005–2006	**Kendall B. Wallace**
1970–1971	**Robert L. Roudabush***	1988–1989	**James E. Gibson**	2006–2007	**James A. Popp**
1971–1972	**Wayland J. Hayes Jr.***	1989–1990	**Roger O. McClellan**	2007–2008	**George B. Corcoran**
1972–1973	**Victor A. Drill***	1990–1991	**Curtis D. Klaassen**	2008–2009	**Kenneth S. Ramos**
1973–1974	**Joseph F. Borzelleca**	1991–1992	**Donald J. Reed**	2009–2010	**Cheryl Lyn Walker**
1974–1975	**Sheldon D. Murphy***	1992–1993	**John L. Emmerson***	2010–2011	**Michael P. Holsapple**
1975–1976	**Seymour L. Friess***	1993–1994	**I. Glenn Sipes**	2011–2012	**Jon C. Cook**
1976–1977	**Robert A. Scala**	1994–1995	**Meryl H. Karol**	2012–2013	**William Slikker Jr.**
1977–1978	**Harold M. Peck***	1995–1996	**Jack H. Dean**	2013–2014	**Lois D. Lehman-McKeeman**
1978–1979	**Leon Golberg***	1996–1997	**James S. Bus**		

*Deceased

Elected and Appointed Committees

Elected Committees

Awards Committee
Barbara D. Beck, Chair (2014–2015), Member (2013–2015)
Rory B. Conolly, Co-Chair (2014–2015), Member (2014–2016)
Michael Aschner, Member (2014–2016)
Janice E. Chambers, Member (2013–2015)
Suzanne Compton Fitzpatrick, Member (2013–2015)
Terry Gordon, Member (2013–2015)
Andrij Holian, Member (2014–2016)
John B. Morris*
Raul A. Suarez**

Membership Committee
Tao Wang, Chair (2014–2015), Member (2012–2015)
William Mark Valentine, Co-Chair (2014–2015), Member (2013–2016)
Michael D. Aleo, Member (2014–2017)
Rebecca A. Clewell, Member (2014–2017)
Kathleen Gabrielson, Member (2013–2016)
Michelle J. Hooth, Member (2012–2015)
Michael L. Dourson, Ad Hoc Member (2014–2015)
Senthilkumar Perumal Kuppusamy, Postdoctoral Representative (2014–2015)
Michelle Carroll Turpin, Student Representative (2014–2015)
Aaron Barchowsky*
John A. Wisler*
Kim von Brook**

Nominating Committee
William Slikker Jr., Chair (2014–2015), Member (2013–2015)
Kim Boekelheide, Member (2014–2016)
George B. Corcoran, Member (2013–2015)
Brian S. Cummings, Member (2013–2015)
Bruce A. Fowler, Member (2013–2015)
Hanan N. Ghantous, Member (2014–2016)
B. Paige Lawrence, Member (2014–2016)
Anthony M. Ndifor, Member (2013–2015)
Jean F. Regal, Member (2014–2016)
Lois D. Lehman-McKeeman*
Clarissa Russell Wilson**

Appointed Committees

Audit Committee
James E. Klaunig, Chair (2014–2015), Member (2012–2015)
Kim Boekelheide, Member (2013–2016)
Lawrence R. Curtis, Member (2014–2017)
Lois D. Lehman-McKeeman*
Clarissa Russell Wilson**

Board of Publications
Douglas A. Keller, Chair (2014–2015), Member (2011–2015)
Matthew J. Campen, Co-Chair (2013–2015), Member (2012–2016)
Rory B. Conolly, Member (2014–2017)
Patricia E. Ganey, Member (2013–2016)
Norbert E. Kaminski, Member (2014–2015)
Peter L. Goering*, Ad Hoc Member (2014–2015), Member (2014–2016)
Gary W. Miller, Ad Hoc Member (2013–2016), Editor-in-Chief (2013–2016)
Marcia G. Lawson**

Career Resource and Development Committee
William J. Brock, Chair (2014–2015), Member (2012–2015)
Erica D. Bruce, Co-Chair (2014–2015), Member (2013–2016)
Anne Marie Api, Member (2012–2015)
Diana J. Auyeung-Kim, Member (2014–2017)
Ambuja S. Bale, Member (2013–2016)
Bryan Delaney, Member (2014–2017)
Tammy R. Dugas, Member (2014–2015)
Betina J. Lew, Member (2013–2016)
Richard K. Miller Sr., Member (2014–2015)
Wilson K. Rumbeiha, Member (2014–2017)
Vikrant Vijay, Member (2012–2015)
Brenna Flannery, Postdoctoral Representative (2014–2015)
Prathap Kumar, Student Representative (2014–2015)
Lorrene A. Buckley*
Kevin Merritt**

Committee on Diversity Initiatives
Kristini Miles, Chair (2014–2015), Member (2012–2015)
Jorge M. Naciff, Co-Chair (2014–2015), Member (2013–2016)
Robert P. Casillas, Member (2012–2015)
Sakina E. Eltom, Member (2013–2016)
Aimen K. Farraj, Member (2014–2017)
Umesh M. Hanumegowda, Member (2013–2016)
Douglas K. Stevens, Member (2012–2015)
Jesus T. Olivero-Verbel, Member (2014–2017)
Judith T. Zelikoff, Member (2014–2017)
Jose E. Manautou, Ad Hoc Member (2011–2015)
Yasmeen M. Nkrumah-Elie, Postdoctoral Representative (2014–2015)
Suzanne Martos, Student Representative (2014–2015)
Myrtle A. Davis*
Ofelia A. Olivero*
Rachel Woodson**

Congressional Task Force
George B. Corcoran, Chair (2014–2015), Member (2014–2015)
John W. Davis II, Member (2014–2015)
Michael P. Holsapple, Member (2014–2015)
Daland R. Juberg, Member (2014–2015)
James C. Lamb IV, Member (2014–2015)
John Norman, Member (2014–2015)
David Taylor Szabo, Member (2014–2015)
Myrtle A. Davis*
Michelle Werts**

Contemporary Concepts in Toxicology (CCT) Conferences Committee
Donna L. Mendrick, Chair (2014–2015), Member (2013–2016)
Elaina M. Kenyon, Co-Chair (2014–2015), Member (2013–2016)
Michael A. Gallo, Member (2014–2017)
Alison Harrill, Member (2014–2017)
Eric B. Harstad, Member (2013–2016)
Ronald N. Hines, Member (2013–2015)
Daland R. Juberg, Member (2012–2015)
Michael Lawton, Member (2014–2015)
Michael P. Waalkes, Member (2014–2017)
Ivan Rusyn*
Clarissa Russell Wilson**

* Council Contact
** Staff Liaison
TBD=To be determined

Elected and Appointed Committees (Continued)

CCT Organizing Committee for FutureTox III: Bridges for Translation: Transforming 21st Century Science into Risk Assessment and Regulatory Decision-Making
Daland R. Juberg, Chair (2014–2015)
Thomas B. Knudsen, Co–Chair (2014–2015)
Richard A. Becker, Member (2014–2015)
Elaine M. Faustman, Member (2014–2015)
Suzanne Compton Fitzpatrick, Member (2014–2015)
John R. "Jack" Fowle III, Member (2014–2015)
Thomas Hartung, Member (2014–2015)
Ronald N. Hines, Member (2014–2015)
Douglas A. Keller, Member (2014–2015)
Emmanuel Lemazurier, Member (2014–2015)
John C. Lipscomb, Member (2014–2015)
Donna L. Mendrick, Member (2014–2015)
Raymond R. Tice, Member (2014–2015)
David Watson, Member (2014–2015)
Allison Harrill, CCT Committee Liaison (2014–2015)
George P. Daston*
Marcia G. Lawson**

Continuing Education Committee
Qiyu Jay Zhao, Chair (2014–2015), Member (2012–2015)
Gary O. Rankin, Co-Chair (2014–2015), Member (2013–2016)
Gayathri Chadalapaka, Member (2012–2015)
Kimberly A. Henderson, Member (2014–2017)
Michael F. Hughes, Member (2014–2017)
Saber M. Hussain, Member (2013–2016)
William B. Mattes, Member (2012–2015)
Monicah A. Otieno, Member (2013–2016)
James Wagner, Member (2014–2017)
Galen Miller, Postdoctoral Representive (2014–2015)
Sanket Gadhia, Graduate Student Representative (2014–2015)
Ivan Rusyn*
John Wisler*
David Rossé**

Continuing Medical Education (CME) Task Force
Richard Y. Wang, Chair (2014–2015), Member (2012–2015)
William D. Atchison, Member (2014–2015)
John G. Benitez, Member (2012–2015)
Michael J. Kosnett, Member (2013–2016)
Melissa McDiarmid, Member (2014–2015)
Martin A. Philbert, Member (2012–2015)
Kenneth S. Ramos, Member (2012–2015)
Gary O. Rankin, Member (2014–2015)
John Wisler*
David Rossé**

Council Subcommittee for Non–SOT Meeting Funding
Denise Robinson Gravatt, Chair (2012–2015), Member (2012–2015)
George P. Daston, Co-Chair (2014–2015), Member (2014–2015)
Aaron Barchowsky, Member (2014–2015)
Myrtle Davis, Member (2013–2015)
Ivan Rusyn, Member (2013–2015)
Kevin Merritt**

Education Committee
Richard S. Pollenz, Chair (2014–2015), Member (2013–2015)
Vicente Santa Cruz, Co-Chair (2014–2015), Member (2013–2016)
Patrick Allard, Member (2014–2017)
Maureen Gwinn, Member (2014–2017)
Barbara L. F. Kaplan, Member (2014–2017)
James P. Luyendyk, Member (2013–2016)
Thu Annelise Nguyen, Member (2013–2016)
Rafael Ponce Jr., Member (2012–2015)
Leshuai Wu Zhang, Member (2012–2015)
Daniel James Spade, Postdoctoral Representative (2014–2015)
Jamie Moscovitz, Student Representative (2014–2015)
Myrtle A. Davis*
Ofelia A. Olivero*
Betty Eidemiller**

Education Committee: K–12 Subcommittee
Angela Slitt, Chair (2013–2015), Member (2011–2015)
Virunya S. Bhat, Co-Chair (2014–2015), Member (2013–2016)
Marie Meagher Bourgeois, Member (2013–2016)
Christine A. Curran, Member (2014–2017)
Therese K. Fick, Member (2011–2015)
David R. Johnson, Member (2013–2016)
Courtney L. McGinnis, Member (2014–2017)
Thu Annelise Nguygen, Education Committee Liaison (2014–2016)
Maureen R. Gwinn, Education Committee Co-Liaison (2014–2015)
Myrtle A. Davis*
Ofelia A. Olivero*
Betty Eidemiller**

Education Subcommittee: K–12 Regional Chapter Contacts
Southeastern: Marie Meagher Bourgeois, Chair (2013–2016), Member (2011–2016)
Allegheny-Erie: William James Mackay (2014–2015)
Central States: Partha C. Kasturi (2014–2015)
Lake Ontario: Warren G. Foster (2013–2015)
Lone Star: Jeffrey L. Larson (2012–2015)
Midwest: Gregory L. Erexson (2013–2015)
Michigan: John Phillip Buchweitz (2014–2016)
Mid-Atlantic: Diane Hardej (2011–2016)
Mountain West: Martha A. Lindsey (2011–2015)
National Capital Area: Gopala Krishna (2011–2015)
North Carolina: Jason P. Stanko (2014–2015)
Northern California: Toufan Parman (2011–2015)
Northeast: Courtney L. McGinnis (2011–2015)
Northland: Therese K. Fick (2011–2015)
Ohio Valley: Christine P. Curran (2011–2015)
Pacific Northwest: Katie Sprugel (2011–2015)
South Central: Wesley G. N. Gray (2014–2017)
Southern California: Jessica A. Camacho (2014–2015)
Angela Slitt, K–12 Subcommittee Chair (2013–2015)
Myrtle A. Davis*
Ofelia A. Olivero*
Betty Eidemiller**

* Council Contact
** Staff Liaison
TBD=To be determined

Elected and Appointed Committees (Continued)

Education Subcommittee: Graduate Education
James P. Luyendyk, Chair (2013–2015), Member (2013–2017)
Barbara L.F. Kaplan, Co-Chair (2014–2017)
Karissa Adkins, Member (2014–2015)
Diana J. Auyeung-Kim, Member (2014–2015)
Cecile M. Krejsa, Member (2014–2015)
Emily G. Notch, Member (2013–2015)
Kendall B. Wallace, Member (2014–2015)
Richard S. Pollenz, Education Committee Chair (2013–2015)
Jamie Moscovitz, Student Representative (2014–2015)
Myrtle A. Davis*
Ofelia A. Olivero*
Betty Eidemiller**

Education Subcommittee: ToxLearn Work Group
Phil Wexler, Chair (2004–2014), Member (2004–2015)
John H. Duffus, Member (2004–2015)
Tammy R. Dugas, Member (2006–2015)
Sue M. Ford, Member (2006–2015)
Pertti J. Hakkinen, Member (2012–2015)
Michael A. Kamrin, Member (2004–2015)
Sidhartha D. Ray, Member (2011–2015)
Paul Wright, Member (2004–2015)
Richard S. Pollenz, Education Committee Liaison (2014–2015)
Myrtle A. Davis*
Ofelia A. Olivero*
Betty Eidemiller**

Education Subcommittee: Undergraduate Education
Mindy F. Reynolds, Chair (2013–2015), Member (2009–2015)
Joshua P. Gray, Co-Chair (2014–2015), Member (2012–2016)
Shu-Yuan Cheng, Member (2013–2016)
Deadre J. Johnson, Member (2014–2017)
Deobrah E. Keil, Member (2014–2017)
Karen E. Stine, Member (2014–2017)
Kristine L. Willett, Member (2013–2016)
James P. Luyendyk, Education Committee Liaison (2014–2015)
Myrtle A. Davis*
Ofelia A. Olivero*
Betty Eidemiller**

Endowment Fund Board
Jeffrey A. Handler, Chair (2012–2015), Member (2011–2017)
Matthew S. Bogdanffy, Co-Chair (2014–2015), Member (2013–2016)
Daniel Acosta Jr., Member (2014–2017)
Laura Andrews, Member (2013–2016)
Norman J. Barlow, Member (2013–2015)
A. Jay Gandolfi, Member (2014–2015)
Denise Robinson Gravatt, Member (2014–2017)
Lois D. Lehman-McKeeman*, Member (2014–2016)
I. Glenn Sipes, Member (2012–2015)
William Slikker Jr., Member (2013–2015)
George P. Daston, Ex-Officio Member (2014–2015)
Norbert E. Kaminski, Ex-Officio Member (2014–2015)
Clarissa Russell Wilson **, Ex-Officio Member (2015–2016)

Finance Committee
Denise Robinson Gravatt*, Chair (2013–2015), Member (2012–2015)
George P. Daston, Co-Chair (2014–2015), Member (2014–2017)
Jack H. Dean, Member (2013–2017)
Peter L. Goering, Member (2014–2017)
Norbert E. Kaminski, Member (2013–2016)
Anthony M. Ndifor, Member (2012–2015)
John P. Wise Sr., Member (2013–2016)
Clarissa Russell Wilson**

Government Liaison Groups

ATSDR/NCEH/CDC
Peter L. Goering*, Chair (2014–2015), Member (2010–2015)
George P. Daston, Member (2014–2015)
Myrtle A. Davis, Member (2013–2015)
Moiz Mumtaz, Agency Contact (2011–2015)
John S. Wheeler, Agency Contact (2011–2015)
Marcia G. Lawson**

DoD
Leigh Ann Burns Naas*, Chair (2014–2015), Member (2013–2015)
Aaron Barchowsky, Member (2014–2015)
Ofelia A. Olivero, Member (2014–2015)
Gail Darlene Chapman, Agency Contact (2013–2015)
Janis E. Hulla, Agency Contact (2013–2015)
Saber M. Hussain, Agency Contact (2013–2015)
Harry Salem, Agency Contact (2013–2015)
Patricia Underwood, Ad Hoc Member (2014–2015)
Marcia G. Lawson**

EPA
Lorrene A. Buckley*, Chair (2014–2015), Member (2013–2015)
Peter L. Goering, Member (2013–2015)
John A. Wisler, Member (2013–2015)
David J. Dix, Agency Contact (2014–2015)
Edward V. Ohanian, Agency Contact (2013–2015)
Harold Zenick, Agency Contact (2010–2015)
Marcia G. Lawson**

FDA/NCTR
Ivan Rusyn*, Chair (2014–2015), Member (2012–2015)
Myrtle A. Davis, Member (2013–2015)
Denise Robinson Gravatt, Member (2012–2015)
Suzanne Compton Fitzpatrick, Agency Contact (2014–2015)
Donna L. Mendrick, Agency Contact (2013–2015)
Marcia G. Lawson**

NICHD
John A. Wisler*, Chair (2014–2015), Member (2013–2015)
Lorrene A. Buckley, Member (2012–2015)
John B. Morris, Member (2014–2015)
Lisa Kaeser, Agency Contact (2010–2015)
Michael Dellarco, Agency Contact (2013–2015)
Kim von Brook**

NIEHS
Leigh Ann Burns Naas*, Chair (2014–2015), Member (2014–2015)
John B. Morris, Member (2014–2015)
Ofelia A. Olivero, Member (2014–2015)
Christopher P. Weis, Agency Contact (2013–2015)
Kim von Brook**

* Council Contact
** Staff Liaison
TBD=To be determined

Elected and Appointed Committees (Continued)

NIOSH
Denise Robinson Gravatt*, Chair (2012–2015), Member (2013–2015)
Lois D. Lehman-McKeeman, Member (2014–2015)
John A. Wisler, Member (2013–2015)
James M. Antonini, Agency Contact (2014–2015)
Kim von Brook**

Graduate Student Leadership Committee (GSLC) Executive Board
Alessandro Venosa, Chair (2014–2015), Member (2013–2015)
Kelly Michelle Almond, Programming Subcommittee Chair (2014–2015)
Karilyn Sant, Communications Subcommittee Chair (2014–2015)
Monica Langley, Professional Development Subcommittee Chair (2014–2015)
Megan Cromie, Secretary (2014–2015)
Ivan Rusyn*
David Rossé**

GSLC
Regional Chapter Representatives
Allegheny-Erie: Cody E. Nichols (2014–2015)
Central States: Xie Yuchao (2014–2015)
Lone Star: Meghan Marie Cromie (2014–2015)
Michigan: Nikita Joshi (2014–2015)
Mid-Atlantic: Puneet Vij (2014–2015)
Midwest: Kirsten Sue Eckstrum (2013–2015)
Mountain West: Bryan Harder (2014–2015)
National Capital Area: Suzanne Nicole Martos (2014–2015)
North Carolina: Jason Neil Franklin (2014–2015)
Northeast: Gregory James Smith (2014–2015)
Northern California: Ray Zhang (2014–2015)
Northland: Bethany A. Davis (2014–2015)
Ohio Valley: Banrida Wahlang (2014–2015)
Pacific Northwest: Andrea Lynn Knecht (2014–2015)
South Central: Dorcas Falodun (2014–2015)
Southeastern: Alison J. Abritis (2012–2015)
Southern California: Jessica Aimee Camacho (2014–2015)

Special Interest Group Representatives
American Association of Chinese in Toxicology:
Kathy Siyu Xue (2013–2015)
Association of Scientists of Indian Origin:
Prathap Kumar S. Mahalingaiah (2014–2015)
Hispanic Organization of Toxicologists:
Federico Leonardo Sinche Chele (2014–2015)
Korean Toxicologists Association in America:
Hae-Ryung Park (2013–2015)
Toxicologists of African Origin: Melanie Abongwa (2014–2015)
Women in Toxicology: Jessica M. Sapiro (2014–2015)

GSLC *(continued)*
Specialty Section Representatives
Biological Modeling: Todd James Zurlinden (2013–2016)
Biotechnology: Vijaykumar P. Kale (2013–2015)
Carcinogenesis: Christal Lewis (2014–2015)
Cardiovascular Toxicology: Valerie Minarchick (2013–2015)
Clinical and Translational
Toxicology: Michelle A. Carroll-Turpin (2013–2015)
Comparative and Veterinary: Joanna Kreitinger (2014–2016)
Dermal Toxicology: Shuxi Qiao (2014–2015)
Drug Discovery Toxicology: Muhammet Ay (2014–2015)
Ethical, Legal, and Social Issues: Lisa Hoffman (2014–2015)
Food Safety: Erica Sue Clark (2014–2015)
Immunotoxicology: Aimee E. Hillegas (2013–2015)
In Vitro and Alternative Methods: Tejas Lahoti (2014–2015)
Inhalation and Respiratory: Desinia B. Miller (2013–2015)
Mechanisms: Jamie Moscovitz (2014–2015)
Medical Device and Combination Product: Kevin Trout (2014–2015)
Metals: Stefanie Lynn O'Neal (2014–2015)
Mixtures: Nicole Anne Kurhanewicz (2013–2015)
Molecular and Systems Biology: Leah Wehmas (2014–2015)
Nanotoxicology: Marusia A. Popovech (2014–2015)
Neurotoxicology: Dilshan S. Harischandra (2014–2015)
Occupational and Public Health: Sonja R. Christensen (2013–2015)
Ocular Toxicology: Adele Miller (2014–2016)
Regulatory and Safety Evaluation: Forrest C. Jessop (2014–2015)
Reproductive and Developmental Toxicology: Kristin Bircsak (2014–2015)
Risk Assessment: Allison C. Franzen (2014–2016)
Stem Cells: Sanket Gadhia (2014–2015)
Toxicologic and Exploratory Pathology: Douglas B. Snider (2014–2016)
Ivan Rusyn*
David Rossé**

GSLC Communications Subcommittee
Karilyn Sant, Chair (2014–2015), Member (2014–2015)
Todd James Zurlinden, Secretary (2014–2015)
Kristin Bircsak, Member (2014–2015)
Kristina Eckstrum, Member (2014–2015)
Bryan Harder, Member (2014–2015)
Dilshan Harischandra, Member (2014–2015)
Nikita Joshi, Member (2014–2015)
Adele Miller, Member (2014–2015)
Valerie Minarchick, Member (2014–2015)
Jamie Moscovitz, Member (2014–2015)
Stefanie Lynn O'Neal, Member (2014–2015)
Hae-Ryung Park, Member (2014–2015)
Marusia ("Mary") Popovech, Member (2014–2015)
Gregory James Smith, Member (2014–2015)
Michelle Carroll-Turpin, Member (2014–2015)
Banrida Wahlang, Member (2014–2015)
Leah Wehmas, Member (2014–2015)
Kathy Siyu Xue, Member (2014–2015)
Ivan Rusyn*
David Rossé**

* Council Contact
** Staff Liaison
TBD=To be determined

Elected and Appointed Committees (Continued)

GSLC Professional Development Subcommittee
Monica Langley, Chair (2014–2015), Member (2014–2015)
Desinia B. Miller, Secretary (2014–2015)
Melanie Abongwa, Member (2014–2015)
Dorcas Falodun, Member (2014–2015)
Sanket Gadhia, Member (2014–2015)
Aimee Hillegas, Member (2014–2015)
Vijaykumar Kale, Member (2014–2015)
Andrea Knecht, Member (2014–2015)
Prathap Kumar, Member (2014–2015)
Nicole Kurhanewicz, Member (2014–2015)
Tejas Lahoti, Member (2014–2015)
Jessica Sapiro, Member (2014–2015)
Federico Leonardo Sinche, Member (2014–2015)
Douglas Snider, Member (2014–2015)
Ivan Rusyn*
David Rossé**

GSLC Programming Subcommittee
Kelly Almond, Chair (2014–2015), Member (2014–2015)
Forrest C. Jessop, Secretary (2014–2015)
Alison Abritis, Member (2014–2015)
Muhammet Ay, Member (2014–2015)
Jessica Aimee Camacho, Member (2014–2015)
Sonja Christensen, Member (2014–2015)
Erica Clark, Member (2014–2015)
Bethany Davis, Member (2014–2015)
Jason Franklin, Member (2014–2015)
Allison Franzen, Member (2014–2015)
Lisa Hoffman, Member (2014–2015)
Joanna Kreitinger (2014–2015)
Christal Lewis, Member (2014–2015)
Suzanne Martos, Member (2014–2015)
Cody Nichols, Member (2014–2015)
Shuxi Qiao, Member (2014–2015)
Kevin Trout, Member (2014–2015)
Puneet Vij, Member (2014–2015)
Yuchao Xie, Member (2014–2015)
Ray Zhang, Member (2014–2015)
Ivan Rusyn*
David Rossé**

Historian
Hanspeter R. Witschi, Chair (2014–2015), Member (2010–2015)
Leigh Ann Burns Naas*
Clarissa Russell Wilson**

Hookah Issue Statement Writing Team
Judith T. Zelikoff, Chair (2014–2015), Member (2014–2015)
Terry Gordon, Member (2014–2015)
Clive Meredith, Member (2014–2015)
Anthony R. Schatz, Member (2014–2015)
Laura S. Van Winkle, Member (2014–2015)
Michael L. Weitzman, Member (2014–2015)
John B. Morris*
Michelle Werts**

ICT 2019 Organizing Committee
William Slikker Jr., Chair (2013–2019), Member (2013–2019)
Daniel Acosta Jr., Member (2014–2019)
Lorrene A. Buckley, Member (2013–2019)
Dori R. Germolec, Member (2013–2019)
Denise Robinson Gravatt, Member (2013–2019)
Ivan Rusyn, Member (2013–2019)
Judith T. Zelikoff, Member (2013–2019)
Peter Goering*, Member (2013–2019)
Clarissa Russell Wilson**

Issue Statement Review (ISR) Task Force
Lorrene A. Buckley*, Co-Chair (2014–2015), Member (2013–2015)
John A. Wisler*, Co-Chair (2014–2015), Member (2013–2015)
Matthew S. Bogdanffy, Member (2013–2015)
John C. Lipscomb, Member (2013–2015)
Judith T. Zelikoff, Member (2013–2015)
Michelle Werts**

IUTOX Councilors
Peter L. Goering, Member (2013–2016)
Norbert E. Kaminski, Member (2013–2016)
Kenneth E. McMartin, Member (2014–2016)
Timothy P. Pastoor, Member (2013–2016)
Lois D. Lehman-McKeeman*, Member (2013–2016)
Clarissa Wilson**

Long Term Continuing Education (CE) Planning Task Force
John A. Wisler, Chair (2014–2015), Member (2014–2015)
Norbert E. Kaminski, Member (2014–2015)
Denise Robinson Gravatt, Member (2014–2015)
Gary O. Rankin, Member (2014–2015)
Ivan Rusyn, Member (2014–2015)
David Rossé**

Nominating Committee for Honorary Members
Lois D. Lehman-McKeeman*, Chair (2014–2015), Member (2014–2016)
Peter L. Goering, Member (2014–2015)
William Slikker Jr., Member (2013–2015)
Raul A. Suarez**

Postdoctoral Assembly (PDA) Executive Board
Colleen Elizabeth McLoughlin, Chair (2014–2015), Member (2013–2015)
Kathryn E. Page, Vice-Chair (2014–2015)
Karin Marie Streifel, Secretary (2013–2015)
John Clarke, Councilor (2014–2015)
April D. Lake, Treasurer (2014–2015)
Caitlin Jean Murphy, Councilor (2014–2015)
Aaron Barchowsky*
Rachel Woodson**

* Council Contact
** Staff Liaison
TBD=To be determined

Elected and Appointed Committees (Continued)

Postdoctoral Assembly (PDA)

Regional Chapter Representatives

Allegheny-Erie: Kevin Beezhold (2014–2015)
Central States: Samuel Buxton (2014–2015)
Lone Star: Amelia Romoser (2013–2015)
Michigan: Madina Khalid (2014–2015)
Mid-Atlantic: Daniel Willis (2013–2015)
Midwest: Mary Jo Laws (2013–2015)
Mountain West: Jonathan Henry Shannahan (2014–2015)
National Capital Area: Chad Brocker (2013–2015)
North Carolina: Samantha Jean Snow (2014–2015)
Northeast: Priscilla Christine Encarnacao (2014–2015)
Northern California: Galen William Miller (2014–2015)
Northland: Sarah Elizabeth Lacher (2014–2015)
Ohio Valley: Smita S. Ghare (2014–2015)
Pacific Northwest: Tod A. Harper (2014–2015)
South Central: Si Chen (2013–2015)
Southeastern: Guoqing Qian (2014–2015)
Southern California: Parrisa C. Solaimani (2014–2015)

Special Interest Group Representatives

American Association of Chinese in Toxicology: Qiangen Wu (2014–2015)
Association of Scientists of Indian Origin: Mallikarjuna Shivapura Basavarajappa (2014–2015)
Hispanic Organization of Toxicologists: Teresa De Jesus Palacios-Hernandez (2014–2015)
Korean Toxicologists Association in America: Jang-Won Lee (2014–2015)
Toxicologists of African Origin: Yasmeen M. Nkrumah-Elie (2014–2015)
Women in Toxicology: Phoebe Stapleton (2013–2015)

Specialty Section Representatives

Biological Modeling: Martin B. Phillips (2014–2015)
Biotechnology: Amy M. Sharma (2013–2015)
Cardiovascular Toxicology: Leslie Charles Thompson (2014–2015)
Clinical and Translational Toxicology: Tracie Baker (2013–2015)
Comparative and Veterinary: Satya Achanta (2015–2016)
Dermal Toxicology: Anil K. Jain (2014–2015)
Drug Discovery Toxicology: Arya Sobhakumari (2014–2015)
Food Safety: Brenna Flannery (2013–2015)
Immunotoxicology: Ashwini S. Phadnis-Moghe
In Vitro and Alternative Methods: Sridhar Jaligama (2014–2015)
Inhalation and Respiratory: Cara Lynn Sherwood (2014–2015)
Mechanisms: Rhiannon N. Hardwick (2014–2015)
Metals: Alicia Bolt (2013–2015)
Mixtures: Ronald B. Pringle (2014–2015)
Molecular and Systems Biology: Jill A. Franzosa, (2014–2015)
Nanotoxicology: Matthew W. Grogg (2014–2015)
Neurotoxicology: Kristen R. Ryan (2013–2015)
Occupational and Public Health: Melissa Ann Badding (2014–2015)
Regulatory and Safety Evaluation: Senthilkumar P. Kuppusamy (2013–2015)
Reproductive and Developmental Toxicology: Brandiese Beverly (2014–2015)
Risk Assessment: Michelle DeSimone (2014–2015)
Stem Cells: Ntube Nini Olive Ngalame (2013–2015)
Toxicologic and Exploratory Pathology: Mili Mandal (2014–2015)

Rapid Response Task Force

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Daniel R. Dietrich, Member (2014–2015)
Suzanne C. Fitzpatrick, Member (2014–2015)
Sharon A. Meyer, Member (2014–2015)
Lisa Tonner Navarro, Member (2014–2015)
Kendall B. Wallace, Member (2014–2015)
Stefanie O'Neal, Student Representative (2014–2015)
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Brian J. Day, Member (2014–2018)
Mary Beth Genter, Member (2012–2016)
B. Bhaskar Gollapudi, Member (2011–2015)
Paul C. Howard, Member (2012–2016)
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April Brewer**

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Jessica Janiak, Member (2014–2015)
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Ronald S. Filler, Member (2010–2016)
George M. Gray, Member (2010–2016)
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James C. Lamb IV, Member (2010–2016)
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Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) Board of Trustees Representative
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Kenneth E. McMartin, Member (2013–2016)
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Stephen Munday
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The Endocrine Society (ENDO)
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Environmental Mutagenesis and Genomics Society (EMGS)
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International Society for the Study of Xenobiotics (ISSX)
Steven C. Kemp

Safety Pharmacology Society (SPS)
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Society of Environmental Toxicology and Chemistry (SETAC)
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Society for Risk Analysis (SRA)
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Kristi Jacobs, Member (2014–2015)
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Sabine Francke-Carroll, Colloquium 3 Member (2014–2015)
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Teresa L. Leavens, Member (2014–2015)
Matthew Thomas Martin, Member (2014–2015)
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Nadia Moore, Councilor
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Andrea Lynn Knecht, Student Representative
David K. Scoville, Student Representative-Elect

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Lei Guo, Secretary
Baitang Ning, Treasurer
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David Robert Wallace, Councilor
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Dorcas Falodun, Student Representative

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Marie Meagher Bourgeois, President-Elect
Celia A. Dodd, Secretary-Treasurer
Nikolay (Nick) M. Filipov, Past President
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Barbara Wallner Kemppainen, Councilor
Guoqing Qian, Postdoctoral Representative
Alison J. Abritis, Student Representative

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Jacob Jabbour, President
Lisa D. Beilke, Vice President
Arezoo Campbell, Vice President-Elect
Beth A. Hinkle, Secretary
Helen Jeannine McBride, Treasurer
Vince R. Torti, Past President, Councilor
Cynthia J. Davenport, Councilor
Niel Hoglen, Councilor
Adrian Nanez, Councilor
Parrisa C. Solaimani, Postdoctoral Representative
Jessica Aimee Camacho, Student Representative

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Baitang Ning, Member
Kelly A. Brant, Member
David R. Steup, Member
Todd A. Thompson, Member
Aaron Barchowsky*
John A. Wisler*
Ashley Pomper**

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American Association of Chinese in Toxicology (230×)
Yi Jin, President
Ching-Hung Hsu, President-Elect
Xiaoyong Yan, Secretary
Ping Peng, Treasurer
Edward Chow, Past President
Xuefeng Ren, Councilor
Victoria C. Tu, Councilor
Qiangen Wu, Postdoctoral Representative
Kathy Siyu Xue, Student Representative

Association of Scientists of Indian Origin (281×)
Sachin S. Devi, President
Sudheer Beedanagari, Vice President
Mamta V. Behl, Vice President-Elect
Priya Venkatakrishnan, Secretary-Treasurer
S. Satheesh Anand, Past President
Sachin Bhusari, Councilor
Mayur S. Mitra, Councilor
Mallikarjuna Shivapura Basavarajappa, Postdoctoral Representative
Prathap Kumar S. Mahalingaiah, Student Representative

Hispanic Organization of Toxicologists (146×)
Linval R. DePass, President
Minerva Mercado Feliciano, Vice President
Elena Estela Hernandez Ramon, Vice President-Elect
Veronica Ramirez Alcantara, Secretary
Ranulfo Lemus Olalde, Treasurer
Betina J. Lew, Past President
Silvia B. M. Barros, Councilor
Azita K. Cuevas, Councilor
Maria E. Gonsebatt Bonaparte, Councilor
Betzabet Quintanilla-Vega, Councilor
Teresa De Jesus Palacios-Hernandez, Postdoctoral Representative
Federico Leonardo Sinche, Student Representative

Korean Toxicologists Association in America (60×)
James H. Kim, President
Christopher J. Choi, Vice President
Jong Sung Kim, Secretary-Treasurer
Sang-Tae Kim, Past President, Councilor
Jin Ho Chung, Councilor
Jang-Won Lee, Postdoctoral Representative
Hae-Ryung Park, Student Representative

Toxicologists of African Origin (130×)
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Christopher W. Stewart, Vice President
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Melanie Abongwa, Student Representative

Women in Toxicology (642×)
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Sudheer Beedanagari, Co-Chair
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James H. Kim, Member
Minerva Mercado Feliciano, Member
Mayur S. Mitra, Member
Yasmeen M. Nkrumah-Elie, Member
Ping Peng, Member
Prathibha S. Rao, Member
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Christopher J. Bowman, Vice President-Elect
Chad R. Blystone, Secretary-Treasurer
Jodi A. Flaws, Past President, Councilor
Reza Rasoulpour, Senior Councilor
Judith T. Zelikoff, Junior Councilor
Aileen F. Keating, New Career Councilor
Brandiese Beverly, Postdoctoral Representative
Kristin Bircsak, Student Representative

Risk Assessment (786×)
John M. DeSesso, President
Hugh Barton, Vice President
Sean M. Hays, Vice President-Elect
George Woodall, Secretary-Treasurer
Laurie C. Haws, Past President, Councilor
Anna B. Lowit, Councilor
Michael H. Lumpkin, Councilor
Michelle DeSimone, Postdoctoral Representative
Allison C. Franzen, Student Representative

Stem Cells (105×)
Jingbo Pi, President
B. Alex Merrick, Vice President
Erik J. Tokar, Vice President-Elect
Colleen Cosgrove Hegg, Secretary-Treasurer
Kyle L. Kolaja, Past President, Councilor
Charles Lindamood, Senior Councilor
Anna M. Vetrano, Junior Councilor
Ntube Nini Olive Ngalame, Postdoctoral Representative
Sanket Gadhia, Student Representative

Toxicologic and Exploratory Pathology (172×)
David L. Hutto, President
Kathleen Gabrielson, Vice President
Shashi K. Ramaiah, Vice President-Elect
Tomas F. Magee, Secretary-Treasurer
Dennis J. Meyer, Past President, Councilor
Chidozie Amuzie, Councilor
Christopher J. Gibson, Councilor
Mili Mandal, Postdoctoral Representative
Douglas B. Snider, Student Representative

Specialty Section Collaboration and Communication Group
Kenneth McMartin, Chair
Kenneth Hastings, Co-Chair
Aaron B. Bowman, Member
Gary Burleson, Member
Alison Elder, Member
Kyle Kolaja, Member
Andrew Olaharski, Member
Jenny Roberts, Member
J. Craig Rowlands, Member
David Thomas, Member
Leigh Ann Burns Naas*
Raul A. Suarez**

× Membership totals as printed in the most recent *Membership Directory*

Society of Toxicology Awards and Honors

SOT Honor Descriptions

Honorary Membership

The Society of Toxicology recognizes nonmembers who embody outstanding and sustained achievements in the field of toxicology with Honorary Membership. Candidates are nominated by two Full or Associate members of the Society. Seconding letters and information regarding career achievements in toxicology should accompany the nomination. A two-thirds vote of Council determines recipients, with not more than two Honorary Members elected during any one term of Council. Nominations should be sent to SOT Headquarters by October 9.

Inductees

1962 Eugene M. K. Geiling*
1962 W. F. Von Oettingen*
1962 Torald H. Sollman*
1963 Ethel Browning*
1966 R. Tecwyn Williams*
1976 Norton Nelson*
1982 George H. Hitchings*
1986 Bernard B. Brodie*
1986 Herbert Remmer*
1991 Hyman J. Zimmerman*
1994 Ronald W. Estabrook
1994 Wendell W. Weber
1995 Gertrude B. Elion*
1995 Charles S. Lieber*
1996 Sten G. Orrenius
1996 Dennis Parke*
1997 John E. Casida
1997 Roger W. Russell*
1998 Jud Coon
1998 Michel Mercier
1999 William O. Robertson
1999 Takashi Sugimura
2000 Findlay Russell*
2001 Herbert L. Needleman
2007 Mario Molina
2008 Lee Hartwell
2008 H. Robert Horvitz
2009 Gilbert S. Omenn
2009 Sir John E. Walker
2010 Sir Philip Cohen
2010 Ferid Murad
2011 William C. Hays
2011 Frances Oldham Kelsey
2012 Frank J. Gonzalez
2012 Leroy Hood
2013 Bruce A. Beutler
2013 Jeremy K. Nicholson
2014 Sir John B. Gurdon
2014 Donald E. Ingber
2015 Shawn Douglas Lamb

Awards Descriptions

Achievement Award

The Achievement Award is presented to a member of the Society of Toxicology who has less than 15 years of experience since obtaining his/her highest earned degree (in the year of the SOT Annual Meeting) and has made significant contributions to toxicology. This award consists of a plaque and a cash stipend.

Award Recipients

1967 Gabriel L. Plaa*
1968 Allan H. Conney*
1969 Samuel S. Epstein
1970 Sheldon D. Murphy*
1971 Yves Alarie
1972 Robert L. Dixon*
1974 Morris F. Cranmer
1975 Ian C. Munro*
1976 Curtis D. Klaassen
1977 James E. Gibson
1978 Raymond D. Harbison
1979 Michael R. Boyd
1980 Philip G. Watanabe*
1982 Frederick P. Guengerich
1984 Melvin E. Andersen
1985 Alan R. Buckpitt
1986 Sam Kacew
1987 James S. Bus
1988 Jeanne M. Manson
1989 James P. Kehrer
1990 Michael P. Waalkes
1991 Debra Lynn Laskin
1992 Michael P. Holsapple
1993 David L. Eaton
1994 James L. Stevens
1995 Lucio G. Costa
1996 Kenneth S. Ramos
1997 Kevin E. Driscoll
1998 Rick G. Schnellmann
1999 Michel Charbonneau*
2000 Christopher Bradfield
2001 Martin A. Philbert
2002 Ruth A. Roberts
2003 Lois D. Lehman-McKeeman
2004 David C. Dorman
2006 José E. Manautou
2007 Jeffrey M. Peters
2008 Ivan Rusyn
2009 Russell S. Thomas
2010 Gary W. Miller
2011 Nathan Cherrington
2012 Donna D. Zhang
2013 Wei Xu
2014 Matthew J. Campen
2015 Vishal S. Vaidya

Indicates SOT Awards

**Deceased*

Society of Toxicology Awards and Honors (Continued)

Arnold J. Lehman Award

The Arnold J. Lehman Award is presented to recognize an individual who has made a major contribution to risk assessment and/or the regulation of chemical agents, including pharmaceuticals. The contribution may have resulted from the application of sound scientific principles to regulation and/or from research activities that have significantly influenced the regulatory process. The nominee may be employed in academia, government, or industry and must be an SOT member. This award consists of a plaque and a cash stipend.

Award Recipients

1980 Allan H. Conney*
1981 Gabriel L. Plaa*
1982 Gary M. Williams
1983 David P. Rall*
1984 Tibor Balasz*
1985 Frederick Coulston*
1986 Gerrit Johannes Van Esch
1987 John P. Frawley*
1988 Kundan S. Khera*
1989 Richard H. Adamson
1990 Harold C. Grice
1991 Bernard A. Schwetz
1992 Roger O. McClellan
1993 Thomas W. Clarkson
1994 Bruce N. Ames
1995 Emil A. Pfitzer*
1996 John F. Rosen*
1998 Helmut Alfred Greim
2000 Carole A. Kimmel, Janardan K. Reddy
2001 Samuel M. Cohen
2002 Dennis Paustenbach
2003 Michael L. Dourson
2004 Melvin E. Andersen
2005 Rory B. Conolly
2006 Kathryn R. Mahaffey*
2007 Harvey J. Clewell
2008 Vicki Dellarco
2009 Michael Bolger
2010 Edward V. Ohanian
2011 Bette Meek
2012 Joe L. Mauderly
2013 Moiz Mumtaz
2014 B. Bhaskar Gollapudi
2015 Richard A. Becker

Best Postdoctoral Publication Awards

The Best Postdoctoral Publication Awards recognize talented postdoctoral researchers who have recently published exceptional papers in the field of toxicology. Applications are reviewed by the Postdoctoral Assembly Board and outside reviewers with appropriate scientific expertise. The research reported in the paper must have been conducted while the applicant was engaged in a postdoctoral research position. The applicant will be the first author on a peer-reviewed paper published online or in print, or in press, in the preceding interval of October 1 to September 30. Review articles will not be accepted unless they contain meta-analyses, and/or decision analyses. Co-first authored papers will be accepted, with clear delineation of applicant's effort. The review process follows NIH conflict of interest, confidentiality, and nondisclosure rules.

Award Recipients

2007 Nadine Dragin, Kristen Mitchell, Drobna Zuzana
2008 Joshua P. Gray, Christie M. Sayes, Khristy J. Thompson
2009 Jeffrey W. Card, Kembra Howdeshell, Lewis Zhichang Shi
2010 Bret F. Bessac, Manabu Nukaya, Nicholas Radio
2011 Dieldrich S. Bermudez , Joshua A. Harrill, Jordan Ned Smith
2012 Maryse Lemaire, Xuefeng Ren, Nisha S. Sipes
2013 Petra Haberzettl, Anne Loccisano, Yuanyuan Xu
2014 Annie Lumen, Gul Mehnaz Mustafa, Phoebe A. Stapleton
2015 John Clarke, Yong Ho Kim, Christina Powers

Board of Publications for the Best Paper in *Toxicological Sciences* Award

The Board of Publications Award for the Best Paper in *Toxicological Sciences* is presented to the author(s) of the best paper published in this official SOT publication during a 12-month period, terminating with the June issue of the calendar year preceding the Annual Meeting at which the award is presented. The author(s) need not be a member of the Society of Toxicology. Submissions should include a one-page summary of the paper's contribution to the science of toxicology and a copy of the article for which the nomination is being made. Any member of the Society may submit one title for consideration. In addition, the titles of no more than six papers to be considered are submitted by the editor of *Toxicological Sciences*. All papers submitted will be evaluated by the Board of Publications. This award consists of a plaque and a cash stipend. (This award was formerly known as the Frank R. Blood Award from 1974–1994.)

Best Paper in *Toxicological Sciences*

(formerly published as Fundamental and Applied Toxicology)

Award Recipients

1995 J. L. Larson, D. C. Wolf, B. E. Butterworth
1995 M. I. Luster, C. Portier, D. G. Pait, G. J. Rosenthal, D. R. Germolec, E. Corsini, B. L. Blaylock, P. Pollock, Y. Kouchi, W. Craig, K. L. White, A. E. Munson, C. E. Comment
1996 B. C. Allen, R. J. Kavlock, C. A. Kimmel, E. M. Faustman
1997 F. L. Fort, H. Ando, T. Suzuki, M. Yamamoto, T. Hamashima, S. Sato, T. Kitazaki, M. C. Matony, G. D. Hodgen
1998 D. D. Parrish, M. J. Schlosser, J. C. Kapeghian, V. M. Traina
1999 C. A. Franklin, M. J. Inskip, C. L. Baccanale, C. M. Edwards, W. I. Manton, E. Edwards, E. J. O'Flaherty
2000 H. A. Boulares, C. Giardina, C. L. Navarro, E. A. Khairallah*, S. D. Cohen
2001 J. Chen, Y. Li, J. A. Lavigne, M. A. Trush, J. D. Yager
2002 M. J. Bajt, J. A. Lawson, S. L. Vonderfecht, J. S. Gujral, H. Jaeschke
2003 S. Haddad, M. Beliveau, R. Tardif, K. Krishnan
2004 A. Nyska, C. Moyer, A. Ledbetter, D. Christiani, M. Schlasweiler, D. Costa, R. Hauser, U. Kodavanti
2005 N. V. Soucy, M. A. Ihnat, L. Hess, C. D. Kamat, A. Barchowsky, M. J. Post, L. R. Klei, C. Clark
2006 H. Sawada, K. Takami, S. Ashai
2007 T. Green, R. Lee, S. Lloyd, J. Noakes, T. Pastoor, R. Peffer, M. Robinson, P. Rose, A. Toghill, F. Waechter, E. Weber
2008 S. Snykers, T. Vanhaecke, P. Papelue, A. Luttun, Y. Jiang, Y. V. Heyden, C. Verfaillie, V. Rogiers
2009 Q. Yang, T. Nagano, Y. Shah, C. Cheung, S. Ito, F. J. Gonzalez

Society of Toxicology Awards and Honors (Continued)

2010 R. L. M. Dobson, S. Motlagh, M. Quijano, R. T. Cambron, T. R. Baker, A. M. Pullen, B.T. Regg, A. S. Bigalow-Kern, T. Vennard, A. Fix, R. Reimschuessel, G. Overmann, Y. Shan, G. P. Daston
2011 K. Lu, L. B. Collins, H. Ru, E. Bermudez, J. A. Swenberg
2012 J. G. DeKeyser, E. M. Laurenzana, E. C. Peterson, T. Chen, C. J. Omiecinski
2013 R. Sellamuthu, C. Umbright, J.R. Roberts, R. Chapman, S-H Young, D. Richardson, H. Leonard, W. McKinney, B. Chen, D. Frazer, S. Li, M. Kashon, P. Joseph
2014 A. Schinwald, F. A. Murphy, A. Prina-Mello, C. A. Poland, F. Byrne, D. Movia, J. R. Glass, J. C. Dickerson, D. A. Schultz, C. E. Jeffree, W. MacNee, K. Donaldson
2015 R. S. Thomas, S. C. Wesselkamper, Nina Ching Y. Wang, Q. J. Zhao, D. D. Petersen, J. C. Lambert, I. Cote, L. Yang, E. Healy, M. B. Black, H. J. Clewell III, B. C. Allen, M. E. Andersen

Frank R. Blood Award

Award Recipients

1974 Y. Alarie
1975 D. J. Ecobichon, G. J. Johnstone, O. Hutzinger
1976 R. D. Brown
1977 J. Dedinas, G. D. DiVincenzo, C. J. Kaplan
1978 P. J. Gehring*, E. O. Madrid, G. R. McGowan, P. G. Watanabe*
1979 R. Fradkin, E. J. Ritter, W. J. Scott, J. G. Wilson
1980 J. A. Last, P. F. Moore, O. G. Raabe, B. K. Tarkington
1981 Y. Alarie, M. Brady, C. Dixon, M. Karol
1982 M. E. Andersen, M. L. Gargas, L. J. Jenkins Jr., R. A. Jones
1983 H. D. Heck
1984 E. Dybing, S. Nelson, E. Soderlund, C. von Bahr
1985 N. Imura, M. Inokawa, K. Miura
1986 C. C. Wilhite, M. I. Dawson, K. J. Williams
1987 J. Kao, F. K. Patterson, J. Hall
1988 D. L. Laskin, S. Ji, A. M. Pilaro
1989 R. G. Cuddihy, W. C. Griffith, R. F. Henderson, J. L. Mauderly, R. O. McClellan, M. D. Snipes, R. K. Wolff
1990 W. P. Beierschmitt, J. T. Brady, J. B. Bartolone, D. S. Wyand, E. A. Khairallah*, S. D. Cohen
1991 J. B. Silkworth, D. Cutler, L. Antrim, D. Houston, C. Tumasonis, L. S. Kaminsky
1992 D. A. Fox, S. D. Rubinstein, P. Hsu
1993 T. Mably, R. W. Moore, R. W. Goy, R. E. Peterson
1994 S. J. Borghoff, W. H. Lagarde

Congressional Science Leadership Award

The Congressional Science Leadership Award provides recognition of a congressional leader who demonstrates reliance upon sound scientific principles in either (1) public policy or decision-making relating to health and safety or (2) dedicated advancement of legislation for the protection of human, animal, and environmental health. This award consists of a plaque.

Award Recipients

2009 Congressman David Wu (D-OR)
2010 Senator Johnny Isakson (R-GA)
Congressman David Price (D-NC)
2011 Congresswoman Judy Biggert (R-IL)
Senator Amy Klobuchar (D-MN)
2012 Congressman Rush Holt (D-NJ)
2013 Congressman Dave Reichert (R-WA)
2014 Senator Tom Udall (D-NM)

Contributions to Public Awareness of the Importance of Animals in Toxicology Research Award

The Contributions to Public Awareness of the Importance of Animals in Toxicology Research Award is presented annually to an individual (or organization) in recognition of contributions made to the public understanding of the role and importance of experimental animals in toxicological science. This award may be for either a single seminal piece of work or a longer-term contribution to public understanding of the necessity of the use of animals in toxicological research to both ensure and enhance the quality of human and animal health and the environment. This award consists of a plaque and a cash stipend.

Award Recipients

2000 Allegheny-Erie Regional Chapter
2001 Massachusetts Society for Medical Research
2002 George Nethercutt
2003 Michael Derelanko
2004 North Carolina Association for Biomedical Research (NCABR), Americans for Medical Progress (AMP)
2005 Orrin G. Hatch, Foundation for Biomedical Research (FBR)
2006 Jayne Mackta

Distinguished Toxicology Scholar Award

The Distinguished Toxicology Scholar Award is presented to a member of SOT who has made substantial and seminal scientific contributions to our understanding of the science of toxicology. Nominees should be active scientists involved in toxicological research. The prime consideration for this award is scientific accomplishments. This award consists of a plaque and a cash stipend. The recipient delivers the Distinguished Toxicology Scholar Award Lecture at the SOT Annual Meeting. (This award was presented in 2001 as the Scientific Achievement Award.)

Award Recipients

2001 James E. Troska
2003 Henry C. Pitot
2004 Gerald N. Wogan
2005 Daniel Nebert
2006 Sten G. Orrenius
2007 Stephen H. Safe
2008 Toshio Narahashi*
2009 Lance R. Pohl
2010 Harihara M. Mehendale
2011 Oliver Hankinson
2012 Ernest Hodgson
2013 John J. Lemasters
2014 Richard E. Peterson
2015 Ian Kimber

Society of Toxicology Awards and Honors (Continued)

Education Award

The Education Award is presented to an individual who is distinguished by the teaching and training of toxicologists and who has made significant contributions to education in the broad field of toxicology. This award consists of a plaque and a cash stipend.

Award Recipients

1975 Harold C. Hodge*
1976 Ted A. Loomis
1977 Robert B. Forney*
1979 Sheldon D. Murphy*
1980 Herbert H. Cornish*
1981 Frederick Sperling*
1982 Lloyd W. Hazleton*
1983 Julius M. Coon*
1984 Frank Guthrie, Ernest Hodgson
1985 William B. Buck
1986 Robert I. Krieger
1987 Gabriel L. Plaa*
1988 John Autian
1989 Tom S. Miya
1990 Charles H. Hine
1991 Hanspeter R. Witschi
1992 Dean E. Carter*
1993 Curtis D. Klaassen
1994 Robert A. Neal*
1995 William Carlton
1996 Robert Snyder
1997 Albert E. Munson
1998 David J. Holbrook
1999 Jules Brodeur
2000 Gary Carlson
2001 Harihara Mehendale
2002 Joseph Borzelleca
2003 Frederick W. Oehme
2004 A. Jay Gandolfi
2005 Nobuyuki Ito
2006 Robert A. Schatz
2007 Torbjörn Malmfors
2008 Steven Cohen
2009 Janice E. Chambers, Serrine S. Lau
2010 Tetsuo Satoh
2011 Michael Gallo
2012 John H. Duffus
2013 Rick G. Schnellmann
2014 Herman N. Autrup
2015 Theodore A. Slotkin

Enhancement of Animal Welfare Award

The Enhancement of Animal Welfare Award is presented annually to a member of the Society in recognition of a contribution made to the advancement of toxicological science through the development and application of methods that replace, refine, or reduce the need for experimental animals. The achievement recognized may be either a seminal piece of work or a long-term contribution to toxicological science and animal welfare. This award consists of a plaque and a cash stipend.

Award Recipients

2000 Yves Alarie
2001 Alan Goldberg
2002 Gary Williams
2003 G. Frank Gerberick, Ian Kimber
2005 Daniel Acosta
2006 William S. Stokes
2007 Thomas Hartung
2009 Sally Robinson
2010 Leonard M. Schechtman
2013 Martin L. Stephens
2014 Marcel Leist

Founders Award

The SOT Founders Award is presented to a Full, Emeritus Full, or Retired Full member of the Society of Toxicology who has demonstrated outstanding leadership in fostering the role of toxicological sciences in safety decision-making through the development and/or application of state-of-the-art approaches that elucidate, with a high degree of confidence, the distinctions for humans between safe and unsafe levels of exposures to chemical and physical agents. This award consists of a plaque and a cash stipend.

Award Recipients

2008 John Doull
2009 Roger O. McClellan
2010 James S. Bus
2011 Joseph F. Borzelleca
2012 John A. Moore
2013 William Alfred Suk
2014 John A. Thomas

Global Senior Scholar Exchange Program

The Society of Toxicology Global Senior Scholar Exchange Program (GSSEP) aims to increase the global impact of toxicology on human health and safety by working to strengthen toxicology programs and capacity in universities in developing countries. Through this novel program, SOT will sponsor specific collaborations between universities in the United States and in developing countries. The program enables an exchange visit of senior scientists between the partnered universities to address identified gaps in the developing country university's core toxicology curriculum; supports courses or symposia on toxicology topics of high priority in the developing country; and funds the senior scholars' attendance at the SOT Annual Meeting as an opportunity to present research and establish networking opportunities.

Award Recipients

2012 Scholar: Jesus Olivero-Verbel (Colombia)
Hosts: Michael P. Waalkes and Miroslav Styblo (USA),
Scholar: Orish Ebere Orisakwe (Nigeria)
Host: Judith T. Zelikoff (USA)
2013 Scholar: Sri Noegrohati (Indonesia)
Hosts: Michael Dourson and Bernard K. Gadagbui (USA),
Scholar: Mohamed Mosaad Salama (Egypt)
Host: Mohamed B. Abou-Donia (USA)
2014 Scholar: Gonzalo J. Diaz (Colombia)
Host: Wilson K. Rumbeiha (USA)
Scholar: Ebenezer O. Farombi (Nigeria)
Host: James E. Klaunig (USA)
2015 Scholar: Sunisa Chaiklieng (Thailand)
Host: Norbert E. Kaminski (USA)
Scholar: Deepak Dhakal (Nepal)
Host: Aaron Barchowsky (USA)

Society of Toxicology Awards and Honors (Continued)

Graduate Student Travel Support

Graduate Student Travel Support defrays expenses for doctoral students presenting platform talks or posters at the SOT Annual Meeting. To be eligible, the student must be an SOT member (or have submitted a membership application) who has not previously received SOT Graduate Student Travel Support. Funding priority is based on seniority in graduate school.

Leading Edge in Basic Science Award

The Leading Edge in Basic Science Award is presented to a scientist who, based on his/her research, has made a recent (within the past five years), seminal basic scientific contribution to understanding fundamental mechanisms of toxicity. The recipient may be a respected basic scientist, member or nonmember, including toxicologists as well as other scientists who may not identify themselves with the discipline of toxicology but whose research findings are likely to have a pervasive impact on the field of toxicology. The recipient delivers the Leading Edge in Basic Science Award Lecture at the SOT Annual Meeting. This award consists of a plaque and a cash stipend.

Award Recipients

2009 John Katzenellenbogen
2010 Richard S. Paules
2011 Masayuki Yamamoto
2012 Myung-Haing Cho
2013 Donald E. Ingber
2014 Vishal S. Vaidya

Merit Award

The Merit Award is presented to a member of the Society of Toxicology in recognition of distinguished contributions to toxicology throughout an entire career in areas such as research, teaching, regulatory activities, consulting, and service to the Society. This award consists of a plaque and a cash stipend. The recipient delivers the Merit Awardee Lecture at the SOT Annual Meeting.

Award Recipients

1966 Henry F. Smyth Jr.*
1967 Arnold J. Lehman*
1968 R. T. Williams*
1969 Harold C. Hodge*
1970 Don D. Irish
1971 Kenneth P. DuBois*
1972 O. Garth Fitzhugh*
1973 Herbert E. Stokinger*
1974 William B. Deichmann*
1975 Frederick Coulston*
1976 Verald K. Rowe*
1977 Harry W. Hays*
1978 Julius M. Coon*
1979 David W. Fassett*
1980 Bernard L. Oser*
1981 John H. Weisburger*
1982 Harold M. Peck*
1983 Perry J. Gehring*
1984 Tom S. Miya
1985 Carrol S. Weil*
1986 Ted A. Loomis
1987 Bo Holmstedt
1988 Seymour L. Friess*
1989 Wayland J. Hayes Jr.*
1990 Sheldon D. Murphy*
1991 Toshio Narahashi*
1992 W. Norman Aldridge
1993 John Doull
1994 Ernest Hodgson
1995 Robert A. Scala
1996 Gabriel L. Plaa*
1997 Mary O. Amdur*
1998 John A. Thomas
1999 Thomas Clarkson
2000 Philippe Shubik*
2001 Donald Reed
2002 Bernard Schwetz
2003 M. W. Anders
2004 Robert Goyer
2005 Roger O. McClellan
2006 A. Wallace Hayes
2007 James A. Swenberg
2008 Hanspeter Witschi
2009 Gary M. Williams
2010 Marion F. Ehrich
2011 Michael Aschner
2012 Curtis D. Klaassen
2013 Frederick Peter Guengerich
2014 Jay I. Goodman
2015 Günter Oberdörster

Minority Undergraduate Student and Advisor Awards

The Minority Undergraduate Student and Advisor Awards provide support for awardees to participate in the Undergraduate Education Program at the SOT Annual Meeting. This program is an introduction to the discipline of toxicology for undergraduate science majors and includes an orientation, a special poster session with scientists, and activities with an SOT mentor. The travel awards are for those from groups underrepresented in the sciences (African American, Native American, Latino or Hispanic Americans, and Pacific Islanders) and for their advisors. The advisors are eligible regardless of racial or ethnic background. Meeting registration and support for travel, lodging, and meals are provided for students and advisors who are not local to the meeting site. Students and advisors from local institutions receive meeting and program registration and meals. In the past, the program has been supported in part by NIH-MARC, Pfizer, Johnson & Johnson, Covance, and other supporters. The recipient list is available on the website.

Outstanding Graduate Student Leadership Awards

The Outstanding Graduate Student Leadership Award is presented by the SOT Graduate Student Leadership Committee in recognition of graduate student representatives who have contributed to the Society in a significant manner beyond the routine duties of a representative of a Regional Chapter, Specialty Section, or Special Interest Group.

Award Recipients

2009 Enrique Fuentes-Mattei, Sheppard A. Martin
2010 Haitian Lu, Erica N. Rogers, Prasad Krishnan
2011 Heather Bolstad, Michael Borland
2012 Chad Brocker, Azita Cuevas
2013 Shirisha Chittiboyina, Hannah Pope-Varsalona
2014 Brittany Baisch, Christin Grabinski, Alessandro Venosa

Society of Toxicology Awards and Honors (Continued)

Perry J. Gehring Diversity Student Travel Award

The Perry J. Gehring Diversity Student Travel Award recognizes a student who was selected to participate in a previous SOT Undergraduate Program, is from an ethnic group underrepresented in toxicology (African American, Hispanic, Native American, or Pacific Islander), and is presenting a paper at the upcoming SOT meeting. The award recipient is selected by the Committee on Diversity Initiatives.

The Gehring Student Travel Award is provided through the Society of Toxicology Endowment Fund. This award recognizes Dr. Perry J. Gehring, who served as SOT President in 1980–1981 and made important scientific contributions, especially in biological modeling and evidence-based assessment. Dr. Gehring had a strong interest in encouraging individuals from ethnic groups underrepresented in the sciences to enter biomedical sciences and toxicology.

Award Recipients

2009 Vanessa De La Rosa
2010 Nygerma L. Dangleben
2011 Eva A. Amouzougan
2012 Alba K. Gonzalez Rivera
2013 Alexandra Colón-Rodríguez
2014 Pamella B. Tijerina
2015 Latisha T. Pryor

Pfizer SOT Undergraduate Student Travel Awards

Pfizer SOT Undergraduate Student Travel Awards are presented through the Society of Toxicology to foster an interest in graduate studies in the field of toxicology by bringing promising undergraduate students to the SOT Annual Meetings. Pfizer, Inc., will provide up to five awards per year to undergraduate students presenting research at the Annual Meeting. Awardees will be selected by the Education Committee based on the quality of the submitted abstract and the advisor's supporting recommendation. Those selected will receive travel assistance for the meeting, a plaque presented at the annual Awards Ceremony, and recognition at a special Pfizer function. Awardees will be matched with a graduate student and a Pfizer scientist to mentor them during the Annual Meeting, and will have the opportunity to attend the Society of Toxicology Undergraduate Education Program on the Sunday of the Annual Meeting.

Award Recipients

2006 Shawntay Chaney, Theresa M. Eagle, Natalie Malek, Adeliada Segarra, Ryan Vaughan
2007 Kay Gonsalves, Lisa Koselke, Basharat Sanni, Sonia Talathi, Anna Zimmerman
2008 Amy DeMicco, Tharu Fernando, Yamel Perdomo, Amy Yi Hsan Saik, Kelly Sullivan
2009 Sherine Crawford, Trish T. Hoang, Kelly Krcmarik, Cory M. Mathias, P. Sean McGrath
2010 Annie L. Carlton, Alisha Chitrakar, Megan E. Culbreth, Chang Woo Lee, Sharon Ochs
2011 Brandon Haghverdian, Jessica H. Hartman, Camila Odio, Viviana Vidal Anaya, Phillip Alan Wages
2012 Ashley Press, Darien Shapiro, Qi Wang, Brittany Winner, Frances A. Xin
2013 Amy Ashworth, Naing Bajaj, Adrienne R. Klinger, Anna Lang, Douglas J. Saforo
2014 Wesley Cai, Cory V. Gerlach, Lukas Gora, Elaine Kuo, Virginia Mitchell, Kia Z. Perez-Vale, Ricardo Rivera-Soto, Bradley Rowland, Kelly Schlotman, Jennette Shoots, Kelly VanDenBerg
2015 Weelic Chong, Zuania Ideliz Cordero Badillo, Emily A. Daniel, Gifty Aboagye Dominah, Scott H. Freeburg, Kathryn E. Fulda, Samantha Hall, Alexander Jones, Megan M. Koenecke, Sloane Kathryn Miller, Latisha T. Pryor, Yssa Rodriguez, Nicole A. Sidebotham, Anna V. Wojcicki

Public Communications Award

The Public Communications Award is presented by the Society of Toxicology to an individual who has made a major contribution to broadening the awareness of the general public on toxicological issues through any aspect of public communications. The award should reflect accomplishments made over a significant period of time. Examples of qualifying media in which the nominated communication may appear are as follows: books, brochures, continuing education courses, databases, extension bulletins, magazines, newspapers (local or national), outreach, public presentations, public forums, radio and television scripts, and workshops. This award consists of a plaque and a cash stipend.

Award Recipients

1994 Michael A. Kamrin
1995 Philip Abelson*
1996 Bruce N. Ames
1997 Audrey Gotsch
1999 Ann de Peyster
2001 Anna Shvedova
2002 Sam Kacew
2003 Charlene A. McQueen
2004 Kenneth Olden
2005 Robert Kreiger
2007 Linda S. Birnbaum
2010 Philip Wexler
2012 Martin A. Philbert
2013 Marti Lindsey
2014 David L. Eaton
2015 Andrew D. Maynard

SOT/AstraZeneca/SOT Endowment Fund/ IUTOX Travel Award

(formerly known as SOT/AstraZeneca/IUTOX Travel Fellowships)

The Society of Toxicology sponsors travel awards administered by IUTOX and supported by AstraZeneca, the Society of Toxicology, and the SOT Endowment Fund. Awards are available to junior and senior scientists from a country where toxicology is underrepresented to assist with travel to attend the Society of Toxicology Annual Meeting.

Award Recipients

2002 Christophor Dishovsky (Bulgaria), Zoltan Gregus (Hungary), Maritza Rojas Martini (Venezuela), Choon-Nam Ong (Singapore), W. Wasowicz (Poland), Ping-kun Zhou (China)
2003 Jian-Hui Liang (China), Marjan G. Vracko (Slovenia), Eman A. Seif (Egypt)
2004 Cristina Bolaton (Philippines), P.K. Gupta (India), Salmaan Inayat-Hussain (Malaysia), Xianping Ying (China)
2005 Diana B. Apostolova (Bulgaria), Marite Arija Bake (Latvia), Teresa I. Fortuoul (Mexico), Mary Gulumian (South Africa), He Jiliang (China), Khalidya Khamidulina (Russia), L. Orish Orisakwe (Nigeria), Songsak Srianujata (Thailand), Sinan Suzen (Turkey)

Society of Toxicology Awards and Honors (Continued)

2006 Olanike Adeyemo (Nigeria),
Deepak Argwal (India),
Carlos Colangelo (Argentina),
Sandra Demichelis (Argentina),
Mumtaz Iscan (Turkey),
Karolina Lyubomirova (Bulgaria),
Osman Aly Osman (Egypt),
Shuang-Qing Peng (China),
Julia Radenkova-Saeva (Bulgaria)

2007 Hatem Ahmed (Egypt),
Jiri Bajgar (Czech Republic),
Ismet Çok (Turkey),
Carlos Garcia (Peru),
Wenceslao Kiat (Philippines),
Calivarathan Latchoumycandane (Singapore),
Fateheya Metwally (Egypt),
Hilmi Orhan (Turkey),
Nwoha Umunna (Nigeria)

2008 Jin-Ho Chung (Korea),
Lyndy McGaw (South Africa),
Kemal Buyukguzel (Turkey),
Hande Gurer-Orhan (Turkey),
Phillip Burcham (Australia),
Sayed Bakry (Egypt),
Zdravko Paskalev (Bulgaria),
Gafer Rageh Ahmed (Egypt)

2009 Sema Burgaz (Turkey),
Estefania G. Moreira (Brazil),
Kolawole V. Olorunshola (Nigeria),
Kelly P.K. Olympio (Brazil),
Betzabet Quintanilla-Vega (Mexico),
Jalila Ben Salah (Tunisia),
Suleeporn Sangrajang (Thailand)

2010 Asongalem Emmanuel Acha (Cameroon),
Ayse Basak Engin (Turkey),
Ronnie A. D. Frazer-Williams (Sierra Leone),
Yan Li (China),
Jesus T. Olivero-Verbel (Colombia),
Suresh V. S. Rana (India),
Ganna Shayakhmetova (Ukraine),
Vanessa Steenkamp (South Africa),
Marcelo J. Wolansky (Argentina),
Motao Zhu (China)

2011 Sonali Das (India),
Rawiwan Maniratanachote (Thailand),
Anoka A. Njan (Nigeria),
Daam Settachan (Thailand),
Osman S. Shaik (India),
Songsak Srianujata (Thailand),
Omoniyi Kayode Yemitan (Nigeria),
Qinli Zhang (China),
Bin Zhao (China)

2012 Oladipo Ademuyiwa (Nigeria),
Murali Badanthadka (India),
Sunisa Chaiklieng (Thailand),
Xianju Huang (China),
Zhenlie Huang (China),
Guojun Li (China),
Jianlin Lou (China),
Maria Samayoa (Guatemala),
Haixue Wang (China),
Jingshu Zhang (China),
Xiaofeng Zhang (China),
Li Zhou (China)

2013 John I. Anetor (Nigeria),
Kailen Boodhia (South Africa),
Karina R. Caballero-Gallardo (Colombia),
Osama S. El-Tawil (Egypt),
Miriam Carolina Guzmán Quilo (Guatemala),
Wafa Hassen (Tunisia),
Saleem Khan (India),
Wenceslao A. Kiat Jr. (Philippines),
Ravinesh Mishra (India),
Olubanke O. Ogunlana (Nigeria)

2014 Samir Abbès (Tunisia),
Wafa Hassen (Tunisia),
Gopabandhu Jena (India),
Sameeh A. Mansour (Egypt),
Siti N. Mubarokah (Indonesia),
Olufunke E. Ola-Davies (Nigeria),
Iyekhoetin M. Omoruyi (Nigeria),
Ishiaq Omotosho (Nigeria),
Muneeb U. Rehman (India),
Yang Song (China),
Jing Zhang (China)

2015 Khaled Abdou (Egypt),
Amos O. Abolaji (Nigeria),
Motunrayo G. Akande (Nigeria),
Huawei Duan (China),
Patient Guedenon (Benin),
Jin Hongtao (China),
Carine J. Marks (South Africa),
Davaadorj Rendoo (Mongolia),
Palanisamy Sankar (India),
Tawit Suriyo (Thailand)

SOT Regional Chapter Awards

Most SOT Regional Chapters provide awards to recognize outstanding students, postdoctoral scholars, or scientists throughout their career. Application requirements and deadlines vary. For more details refer to the award descriptions on the SOT website at **www.toxicology.org**, under Regional Chapters or the Awards and Fellowships section.

SOT Special Interest Group Awards

SOT Special Interest Groups provide awards to recognize outstanding students, postdoctoral scholars, or scientists throughout their career. Application requirements and deadlines vary. For more details refer to the award descriptions on the SOT website at **www.toxicology.org**, under Special Interest Groups or the Awards and Fellowships section.

SOT Specialty Section Student Awards

Most SOT Specialty Sections provide awards to recognize outstanding students, postdoctoral scholars, or scientists throughout their career at the SOT Annual Meeting. Application requirements and deadlines vary. For more details refer to the award descriptions on the SOT website at **www.toxicology.org**, under Specialty Sections or the Awards and Fellowships section.

SOT Undergraduate Intern Travel Award

Each year SOT funds several undergraduates for summer research projects in toxicology. To encourage these students to continue to pursue toxicology, SOT provides travel support for eligible students to present the work they completed during the summer at the next Annual Meeting.

Award Recipients

2015 Hillary K. Markey, Royce Harrison Nichols

Society of Toxicology Awards and Honors (Continued)

Toxicology Landmarks Program

SOT is committed to creating a safer and healthier world by advancing the science of toxicology. In order to accomplish this mission, SOT will work to become a forum for novel discoveries and to increase the visibility of the organization and the members as scientific leaders and resources. The SOT Landmarks Program accomplishes these objectives by recognizing the scientists, science, and achievements that toxicology has made throughout the ages. Each year, the SOT Communications Committee evaluates entries for the Landmarks Program and selects an achievement for recognition. The chosen landmark will be recognized with a plaque that will be placed at an appropriate location to honor an individual, event, or notable achievement that contributed to the advancement of the science of toxicology. That achievement will be confirmed by the leadership of the Society and will be recognized at the SOT Annual Meeting and ToxExpo.

Award Recipients

2012 Bruce N. Ames
2013 Herbert L. Needleman

Translational Impact Award

The Translational Impact Award is presented to a scientist whose recent (in the past 10 years) outstanding clinical, environmental health, or translational research has improved human and/or public health in an area of toxicological concern. Scientists who are leaders in multidisciplinary team efforts who have contributed to alleviating toxicity-related health problems are particularly attractive candidates. The nominee may be a member or nonmember from any background (toxicologists, clinicians, basic scientists, epidemiologists, engineers, etc.). This award consists of a plaque and a cash stipend. The recipient delivers the Translational Impact Award Lecture at the SOT Annual Meeting.

Award Recipients

2009 Thomas W. Kensler
2010 Kenneth E. McMartin
2011 Weida Tong
2012 John G. Benitez
2014 Timothy D. Phillips
2015 Jefferey Burgess

Translational/Bridging Travel Award

Two awards will be given annually to assist with travel to the SOT Annual Meeting. The SOT Awards Committee will confer two awards annually to either a mid- or senior-level scientist or clinician with at least ten years of postdoctoral research or clinical practice experience and who has an active research program, or currently is active in the practice of clinical toxicology, medical toxicology, disease prevention, or in the application of transitional toxicology. This award consists of a cash stipend and a complimentary registration for the SOT Annual Meeting.

Award Recipient

2012 Xuemei Huang
2013 M. Shane Hutson

Undergraduate Educator Award

The Undergraduate Educator Award, supported by the Endowment Fund, is presented to an SOT member who is distinguished by outstanding contributions to the teaching of undergraduate students in toxicology and toxicology-related areas, and whose efforts support SOT's strategic efforts to "Build for the Future of Toxicology." Members of the Society of Toxicology who have made significant contributions to undergraduate education in toxicology may be nominated and should have a faculty appointment with primary responsibilities in the teaching of undergraduates and demonstrate a distinguished undergraduate teaching record. This award consists of a plaque and a cash stipend.

Award Recipients

2011 Joan B. Tarloff*
2012 Sue M. Ford
2013 Sidhartha Ray
2014 William D. Atchison
2015 Mindy F. Reynolds

Undergraduate Toxicology Education Awards

The Undergraduate Toxicology Education Awards provide support for awardees to participate in the Undergraduate Education Program at the SOT Annual Meeting. This program is an introduction to the discipline of toxicology for undergraduate science majors and includes an orientation, a special poster session with scientists, and activities with an SOT mentor. The travel awards are for those from institutions that receive a limited amount of federal funding in science and technology (list of institutions is available on the website). Preference in selection will be students who are first-generation college attendees (that is, neither parent graduated from a four-year academic institution).

Meeting registration and support for travel, lodging, and meals are provided for students who are not local to the meeting site. Students from local institutions receive registration, meeting materials, and an expense stipend. The recipient list is available on the website.

Supported Award Descriptions

AstraZeneca Traveling Lectureship Awards

The AstraZeneca Traveling Lectureship Award is presented through the Society of Toxicology to recognize excellence in research and service in toxicology and to promote greater collaboration between European and North American toxicologists and to enable North American toxicologists. The award is intended to familiarize recipients with research and regulatory issues in Europe and to bring a North American perspective to these issues. Candidates for the award should be established, mid-career North American scientists who are members of the Society and who demonstrate the ability to develop collaborative relationships with European colleagues.

Award Recipients

1990 Robert I. Krieger, Joseph R. Landolph
1991 Sam Kacew
1992 Charles V. Smith, Jerold A. Last
1993 Terrence James Monks, Harihara H. Mehendale
1995 David L. Eaton, Hanspeter R. Witschi
1996 Rick G. Schnellmann, James P. Kehrer
1997 Lucio G. Costa, Durisala Desaiah
1998 Syed F. Ali, Curtis J. Omiecinski
1999 Alvaro Puga
2000 Kenneth Ramos, Garold Yost*
2001 Ronald Hines, Richard Seegal
2003 William D. Atchison
2004 Charlene A. McQueen
2005 Kevin M. Crofton
2006 Robert A. Roth
2007 Michael S. Denison
2008 José E. Manautou
2009 Kim Boekelheide
2010 J. Chris Corton
2011 Saber Hussain
2012 Bhagavatula Moorthy

Colgate-Palmolive Awards for Student Research Training in Alternative Methods

The purpose of the Colgate-Palmolive Awards for Student Research Training in Alternative Methods is to enhance student research training using *in vitro* methods or alternative techniques to reduce, replace, or refine use of animals in toxicological research. The Awards Committee will present the awards to graduate students. Two or more awards, up to $3,750 each, are available annually. Awards will defray travel, per diem, and training expenses.

The award is for expenses for training consistent with the goal of this award program. The training may include, but is not limited to, use of *in vitro* and *ex vivo* procedures, use of nonmammalian animal models, computer modeling, and structure-activity relationships. Graduate students may propose to develop expertise in relevant methodologies at (1) a laboratory away from their home institution; (2) a laboratory at their home institution that would not be available to them otherwise; or (3) approved workshops, symposia, or continuing education programs where hands-on training will be received. The training should help toxicology graduate students enhance their thesis or dissertation research.

Award Recipients

2000 Jason Gross
2001 Jason Biggs, Victoria Richards
2002 Kartik Shankar, Chad M. Vezina, Ryan L. Williams
2003 Sachin Devi, Midhun Korrapati, Pallavi Limaye
2004 Jaya Chilakapati, Marc A. Nascarella
2005 Vishaka Bhave, Ankur Dnyanmote, Jonathan Maher
2006 Mary Hassani, Prajakta Palkar
2007 Renee Gardner, Prajakta Palkar, Rohit Singhal, René Viñas
2008 Kimberly A. Hays, Haitian Lu
2009 Jennifer Cole, Katie Beth Paul, Samuel Peterson
2010 Maxwell C. K. Leung, David T. Szabo, Natalia M. VanDuyn
2011 Vijay More
2012 Agnes Forgacs, René Viñas
2013 Aaron Lulla, Jamie Moscovitz, Alexandra Munoz
2014 Laura E. Armstrong, Christin M. Grabinski
2015 Prajakta Shimpi

Colgate-Palmolive Grants for Alternative Research

The Colgate-Palmolive Grants for Alternative Research will identify and support efforts that promote, develop, refine, or validate scientifically acceptable animal alternative methods to facilitate the safety assessment of new chemicals and formulations. Scientists at any stage of career progression may submit a proposal. High priority will be given to projects that use *in vitro* or nonanimal models, reproductive and developmental toxicology, neurotoxicology, systemic toxicology, sensitization, and acute toxicity. The maximum award is $40,000, made as a single lump payment. Awardees can re-apply for funding in subsequent years.

Award Recipients

2006 Rola Barhoumi, Abby Benninghoff, Jodie Flaws, Courtney Sulentic, Xiaouzhong Yu
2007 Rita L. Caruso, Daniel R. Cerven, Anne R. Greenlee, Glenn M. Walker
2008 Daniel R. Ceven, Duncan C. Ferguson, Shashi K. Ramiah
2009 Qin M. Chen, Timothy J. Shafer, Mehmet Uzumcu
2010 Patrick Allard, Duncan C. Ferguson, Mehmet Uzumcu
2011 Patrick Allard, Hao Zhu
2012 Mingzhu Fang, Jennifer Freeman
2013 Lei Li Kerr, Hao Zhu
2014 Patricia E. Ganey, Matthew Troese
2015 Alfredo Miranda de Goes, Lei Li Kerr

Colgate-Palmolive Postdoctoral Fellowship Award in *In Vitro* Toxicology

The Colgate-Palmolive Company sponsors the Colgate-Palmolive Postdoctoral Fellowship Award in *In Vitro* Toxicology through the Society of Toxicology to advance the development of alternatives to animal testing in toxicological research. The award is given annually and includes stipend and research-related costs up to $44,000 for one year (including funding to attend the SOT Annual Meeting to present this research). The award is available to postdoctoral trainees employed by academic institutions, federal/national laboratories, or research institutes worldwide. Preference will be given to applicants in their first year of postdoctoral study.

Award Recipients

1988 Ernest Bloom
1989 Gin Hsieh
1990 Dennis E. Chapman
1991 Anne Walsh
1992 Qin Chen
1993 Erika Cretton
1994 William Chan
1995 Bob Van de Water
1997 Alan Parrish
1999 Russell Thomas
2001 Kevin Kerzee, Christopher Reilly
2002 Kevin Kerzee
2003 Kimberly Miller
2004 Kimberly Miller
2005 Francis Tukov
2007 Aaron Rowland
2008 Aaron Rowland
2009 Ankur Dnyanmote
2010 Ankur Dnyanmote
2011 Cassandra Deering-Rice
2012 Melanie Adler
2013 Melanie Adler
2014 Jonathan H. Shannahan
2015 Fabian A. Grimm

Supported Award Descriptions (Continued)

Colgate-Palmolive Traveling Lectureship in Alternative Methods in Toxicology Award

Offered 1996–2008

Award Recipients

1996 University of Mississippi Medical Center
Visiting Professor: Tetsuo Satoh
1996 University of Illinois at Urbana
Visiting Professor: Julio Davila
1996 Mississippi State University
Visiting Professor: Michael Holsapple
1996 Washington State University
Visiting Professor: Daniel Acosta
1997 Indiana University School of Medicine
Visiting Professor: A. Jay Gandolfi
1997 University of Arizona Health Science Center
Visiting Professor: Kevin E. Driscoll
1997 University of New Mexico
Health Sciences Center
Visiting Professor: Sam Kacew
1997 University of Illinois
Visiting Professor: Michael Denison
1998 University of Washington
Visiting Professor: Bruce Fowler
1998 San Diego State University
Visiting Professor: Leigh Ann Burns-Naas
1999 San Diego State University
Visiting Professor: Robert Chapin
2000 Yale University, School of Medicine
Visiting Professor: Narendre Singh
2001 Medical College of Wisconsin
Visiting Professor: Garold Yost
2003 Washington State University
Visiting Professor: Marc W. Fariss
2004 University of Louisiana at Monroe
Visiting Professor: Snorri S. Thorgeirsson
2008 University of Louisiana at Monroe
Visiting Professor: George Michalopoulos

Novartis Graduate Student Fellowship Award

The Novartis Graduate Student Fellowship Award is available for student members of the SOT engaged in full-time graduate study toward a PhD in toxicology. The major professor must be an SOT member. The evaluation is based primarily on originality of the dissertation research, research productivity, relevance to toxicology, scholastic achievement, and letters of recommendation. Finalists are interviewed at the Annual Meeting and receive travel support.

Award Recipients

1989 Timothy Zacharewski
1990 Mary Suzanne Stefaniak
1991 Donald Bjerke
1992 Lhanoo Gunawardhana
1993 Christopher Martenson
1994 Nyla Harper
1995 Heather E. Kleiner
1996 Russell Thomas
1997 Melva Rios-Blancos
1998 Kent Carlson
1999 Mark Hickman
2000 Jeffrey Moran
2001 Vishal Vaidya
2002 Kartik Shankar
2003 Sachin Devi
2004 James Luyendyk
2005 Andrea W. Wong
2006 Sheung P. Ng
2007 Atrayee Banerjee
2008 Helen J. Badham
2009 Yue Cui
2010 Eric N. Liberda
2011 Alexandria Lau
2012 Julia E. Rager

Syngenta Fellowship Award in Human Health Applications of New Technologies

The Syngenta Fellowship Award in Human Health Applications of New Technologies is presented to either a third-year (or later) graduate student or a postdoctoral trainee. Funding in the amount of $15,000 is to support mode-of-action research aimed at characterizing dose-dependent effects of xenobiotics on mammalian systems in such a way that the causal sequence of key events underlying toxicity is elucidated. The work should permit a quantitative basis for extrapolation of the results from animal bioassays or animal models (*in silico, in vitro*) to humans at relevant human doses. The awardee will receive funding to travel to the SOT Annual Meeting to accept the award and for travel to a Syngenta facility to present the results.

Award Recipients

2010 Haitian Lu
2011 Michelle C. DeSimone
2012 Benjamin Moeller
2013 Julia E. Rager
2014 Dilshan S. Harischandra
2015 Alok Ranjan

Endowment Fund Honor Roll of Contributors

The SOT Endowment Fund Board, on behalf of the entire membership of the Society of Toxicology, gratefully acknowledges the generosity of the many donors who made contributions to the SOT Endowment Fund from January 1, 2014 to January 31, 2015.

2014–2015 Honor Roll of Contributors

—LIFETIME *PARACELSUS* CIRCLE VISIONARY —

$50,000-$100,000

None at this time.

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$25,000-$49,999

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$10,000–$24,999

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2014–2015 Honor Roll of Contributors

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$250–$499 in 2014–2015

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$100–$249 in 2014–2015

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Endowment Fund Honor Roll of Contributors (Continued)

2014–2015 Honor Roll of Contributors

—BRONZE ENDOWMENT CONTRIBUTOR—

$40–$99 in 2014–2015

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• Toxicon •

—PLATINUM CONTRIBUTOR—

$5,000–$9,999

• Elsevier •

—GOLD CONTRIBUTOR—

$2,500–$4,999

• Gradient • Zoetis •

—SILVER CONTRIBUTOR—

$1,000–$2,499

None

—EMPLOYER'S MATCHING CONTRIBUTION—

• Amgen Foundation on behalf of Adrian Nanez • Amgen Foundation on behalf of John A. Wisler •
• Bristol-Myers Squibb Foundation on behalf of Kristina Dam Chadwick •
• Bristol-Myers Squibb Foundation on behalf of Michael J. Graziano • Pfizer Foundation on behalf of Denise Robinson Gravatt •
• Pfizer Foundation on behalf of Heather Dowty • Pfizer Foundation on behalf of Hugh Barton •
• Pfizer Foundation on behalf of Tiffini K. Brabham •

SOT Society of Toxicology ENDOWMENT investing in the Future...

Details about SOT 2014 Endowment Fund Recipients can be found on pages 80–83.
For more information about the Award Recipients and the Endowment Fund, please visit ***www.toxicology.org/endowment.***

Endowment Fund Donor Contribution Form

SOT Endowment Family of Funds

The individual Funds that make up the SOT Endowment Fund are briefly described below. All are, or intend to become, Permanently Restricted Net Asset Funds, with their assets invested so their Funds will be continued in perpetuity with proceeds used for the purpose(s) identified by their original donor or those who provided leadership for creating each specific Fund.

Society Funds

- **Education**—Proceeds from this Fund support a margin of excellence in SOT Educational Activities.
- **Global Activities**—Proceeds from this Fund will be used to promote the involvement of the SOT in international activities such as those of the International Union of Toxicology.
- **SOT Strategic Priorities**—Proceeds from this Fund support the highest priority needs of the Society as determined by the SOT Council.

The Society of Toxicology is matching 1-to-1 dollar contributions to all permanently restricted funds (donations to temporarily restricted funds match will be vested once the fund has reached the required threshold for permanent status). The 1-to-1 match is effective for contributions made between July 1, 2013 until June 30, 2016, or until the $400,000 in matching funds has been expended.

Named Funds

These Funds match the interests of the donors with the future financial needs of SOT, its Specialty Sections (SS), Special Interest Groups (SIG), and Regional Chapters (RC).

- **Daniel and Patricia Acosta Diversity Student Fund**—SOT Education Fund
- **Mary Amdur Student Award**—Inhalation and Respiratory SS
- **Celebrating Women in Toxicology Award Fund**—Women in Toxicology SIG
- **Young Soo Choi Student Scholarship Award**—Korean Toxicologists Association in America SIG
- **Laxman S. Desai ASIO Student Award**—Association of Scientists of Indian Origin SIG
- **Diversity Initiatives**—Committee on Diversity Initiatives
- **John Doull Student Award**—Risk Assessment SS
- **Environmental Carcinogenesis Research Fellowship Fund**—Carcinogenesis SS
- **Founders Fund**—Founders Fund recipient selected by Awards Committee
- **Donald E. Gardner Inhalation Toxicology Education Award**—Inhalation and Respiratory SS
- **Perry J. Gehring Biological Modeling Student Award**—Biological Modeling SS
- **Perry J. Gehring Diversity Student Travel Award**—Committee on Diversity Initiatives
- **Perry J. Gehring Risk Assessment Student Award**—Risk Assessment SS
- **Harry W. Hays Memorial**—SOT Education and/or Strategic Priorities
- **Health and Environmental Science Institute Immunotoxicology Young Investigator Student Award**—Immunotoxicology SS
- **Vera W. Hudson and Elizabeth K. Weisburger Scholarship**—Women in Toxicology SIG
- **Frank C. Lu Food Safety Student Award**—Food Safety SS
- **Jean Lu Student Scholarship Award**—American Association of Chinese in Toxicology SIG
- **Roger O. McClellan Student Award**—Comparative and Veterinary SS and Toxicologic and Exploratory Pathology SS
- **Harihara Mehendale ASIO Student Award**—Association of Scientists of Indian Origin SIG
- **Metals Specialty Section Student Research Award**—Metals SS
- **Molecular and Systems Biology Student Award**—Molecular and Systems Biology SS
- **Sheldon D. Murphy Memorial Fund**—SOT Education and/or Student Travel
- **Toshio Narahashi Neurotoxicology Fellowship Award**—Neurotoxicology SS
- **Pacific Northwest Toxicology Development**—Pacific Northwest RC
- **Emil A. Pfitzer Drug Discovery Student Award**—Drug Discovery Toxicology SS
- **Gabriel L. Plaa Education Award**—Mechanisms SS
- **Renal Toxicology Fellowship Award**—Mechanisms SS
- **Robert J. Rubin Student Travel Award**—Mechanisms SS and Risk Assessment SS
- **Dharm V. Singh ASIO Student Award**—Association of Scientists of Indian Origin SIG
- **Dharm V. Singh Carcinogenesis Award**—Carcinogenesis SS
- **Carl C. Smith Student Mechanisms Award**—Mechanisms SS
- **Ronald G. Thurman Student Travel Award**—Mechanisms SS
- **Toxikon, A Preclinical Toxicology Organization, and Dr. Dharm Singh Association of Scientists of Indian Origin Award Fund**—Association of Scientists of Indian Origin SIG

Recognition Levels

Individual Recognition
(Based on July–June Fiscal Year Giving)

- ***Paracelsus* Circle**—$500 or more
- **Gold**—$250–$499 or more
- **Silver**—$100–$249 or more
- **Bronze**—$40–$99 in a given year

Individual Recognition
(Cumulative Contributions)

- **Lifetime *Paracelsus* Circle Visionary**—$50,000 or more
- **Lifetime *Paracelsus* Circle Futurist**—$25,000–$49,999
- **Lifetime *Paracelsus* Circle Leader**—$10,000–$24,999
- **Lifetime *Paracelsus* Circle Benefactor**—$5,000–$9,999
- **Lifetime *Paracelsus* Circle Member**—$5,000 Commitment

Corporate/Institutional Recognition information can be found on the SOT website under contributions.

Donors who give $40 or more will be identified by name on the SOT Endowment Fund website and other Fund literature unless they wish to remain anonymous. In the case of couples who are both members of the SOT, the Recognition Level is based on the contribution of each individual. Thus, a $500 joint contribution from a couple who are both members of the SOT is recognized at the Gold Level and a $1,000 joint contribution is recognized at the *Paracelsus* Circle Level.

501(c)3 Charitable Organization

The SOT Endowment Fund is part of the Society of Toxicology, a charitable, nonprofit, 501(c)3 organization under the Internal Revenue Code. The SOT Tax Identification Number is 52-605-7050. Contributions to the SOT Endowment Fund typically will be considered tax-deductible contributions. The Society of Toxicology will provide written acknowledgment of all contributions made to the SOT Endowment Fund.

SOT | Society of Toxicology
ENDOWMENT
Investing in the Future ...

Donor Contribution Form

The SOT Endowment Fund is a family of Funds created to match the interests of Donors with the future financial needs of the SOT, its Specialty Sections, Special Interest Groups, and Regional Chapters. The individual Funds and Recognition Levels are briefly described on the proceeding page.

Contribution Information

☐ I wish to be identified by name as an Endowment Fund Donor by Recognition Level, as shown on the proceeding page. Name for acknowledgment:

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☐ I do not want to be publicly identified as a Donor; I wish to remain anonymous.

☐ I intend to contribute $5,000 or more within ten years in order to be recognized as a **Lifetime *Paracelsus* Circle Member**.
(For budget purpose only—not legally enforceable.)

☐ My employer will match my contribution.
(Please enclose your employer's Matching Gift Form)

Employer _____

Please contact me concerning the following:

☐ To assist in arranging a Corporate Gift/Stock or other assets.

☐ Naming the SOT Endowment Fund in my Will or Trust.

☐ Purchasing a Charitable Gift Annuity.

☐ Establishing a new Fund.

☐ Contributing securities, property, etc.

☐ Other _____

☐ I am giving my gift ($500 minimum):

In memory of _____

In honor of _____

Mail or Fax to:

Society of Toxicology Endowment Fund
1821 Michael Faraday Drive, Suite 300
Reston, VA 20190

Fax: 703.438.3113

Donor Information

Name			
Affiliation			
Address			
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Contributions of $500 or greater may be allocated to one or more funds in increments of $250 per fund.

General Purpose Funds

Education	$
Global Activities	$
SOT Strategic Priorities	$

Named Funds

(Listed on the proceeding page)

	$
	$
	$
	$
	$
	$
TOTAL	$

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☐ Enclosed is a check for $ _____ Check # _____

☐ AMEX ☐ Discover ☐ Diners ☐ MasterCard ☐ Visa

Credit Card #		Exp Date	
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Individuals who are interested in making a donation to create a specific purpose Fund or individuals from a Specialty Section or other formal/informal group who are interested in providing leadership for creating a specific purpose Fund are encouraged to contact Clarissa Wilson at SOT Headquarters by telephone: 703.438.3115 or email: clarissa@toxicology.org.

SOT Affiliates

The Society of Toxicology has established a special category for private, public, and not-for-profit organizations that wish to contribute to the success of SOT toward "creating a safer and healthier world by advancing the science of toxicology."

AbbVie
Abbott Park, Illinois

American Petroleum Institute
Washington, DC

AstraZeneca
Mecclesfield, United Kingdom

Boehringer Ingelheim Pharmaceuticals, Inc.
Ridgefield, Connecticut

Bristol-Myers Squibb Company
Princeton, New Jersey

Celgene Corporation
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Charles River
Wilmington, Massachusetts

Chevron Corporation
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The Coca-Cola Company
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Indianapolis, Indiana

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Annandale, New Jersey

Genentech, Inc.
South San Francisco, California

Gilead Sciences, Inc.
Foster City, California

Hamner Institutes for Health Sciences
Research Triangle Park, North Carolina

Honeywell International, Inc.
Morristown, New Jersey

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Huntingdon, Cambridgeshire, United Kingdom

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Greensboro, North Carolina

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Toxicology Excellence for Risk Assessment (TERA)
Cincinnati, Ohio

Western Slope Laboratory
Troy, Michigan

WIL Research Laboratories, LLC
Ashland, Ohio

WuXi AppTec
St. Paul, Minnesota

XRpro Sciences, Inc.
Cambridge, Massachusetts

If your organization is interested in participating in the SOT Affiliate program, please contact marcia@toxicology.org.


Society of Toxicology
55th Annual Meeting
and ToxExpo
New Orleans, Louisiana
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Mark Your Calendar!

Headquarters Staff

Society of Toxicology Headquarters

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Supporting Opportunities Are Still Available and Help To:

- Show your company's commitment to advancing toxicology
- Gain valuable exposure to more than 6,500 attendees
- Keep meeting registration fees affordable to scientists, students, and all attendees, thereby bringing more participants together at this important event
- Reduce your bottom line—contributions are tax deductible under 501(c)3 provisions

Supporting Opportunities Gives You:

- Recognition in all Annual Meeting publications and promotional materials, *ToxExpo Directory*, the SOT website, postmeeting newsletters, and colorful signage and banners at the meeting
- The right to host an Exhibitor-Hosted Session at the Annual Meeting
- Invitations to the President's Reception
- And much more!

The Diamond Level Supporters ($10,000 or more) can be found on the back cover.

For more information contact SOT Headquarters and ask for Laura Helm at 703.438.3115 or email laura@toxicology.org.

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The Society of Toxicology
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Quick Start Guide

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54th Annual Meeting and ToxExpo™

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