SOT 55th Annual Meeting and ToxExpo
New Orleans, LA • March 13-17, 2016
NIEHS and NTP Activities

NIEHS, NTP, and EHP Exhibit
Booth 1456/1458/1357/1359
CC Exhibit Hall

ToxExpo Hours:
Monday, March 14 9:15 AM - 4:30 PM
Tuesday, March 15 9:15 AM - 4:30 PM
Wednesday, March 16 9:15 AM - 4:30 PM

Sunday, March 13, 8:15 AM to 12:00 PM, CC Second Floor

Continuing Education: Advancing the Detection, Imaging, and Pitfalls in Monitoring Oxidative Stress in Health and Disease Health and Environmental Impacts of Manmade and Naturally Released Toxicants Molecular Toxicology: Mechanistic Insights and Hazard Assessment
Chairperson(s): Maria B. Kadiiska, NIEHS/NIH, Research Triangle Park, NC; and Ronald P. Mason, NIEHS/NIH, Research Triangle Park, NC.
We Detect Free Radicals Not Because It Is Easy but Because It Is Hard. Ronald P. Mason, NIH/NIEHS, Research Triangle Park, NC.
Validation of Best Detection Methods for Oxidative Stress Biomarkers in Biological Fluids. Maria B. Kadiiska, NIEHS/NIH, Research Triangle Park, NC.
Reinterpreting the Best Biomarker of Oxidative Stress: The 8-iso-PGF2α/PGF2α Ratio Distinguishes Chemical from Enzymatic Lipid Peroxidation. Thomas J. van ‘t Erve, NIEHS/NIH, Research Triangle Park, NC.

Sunday, March 13, 1:15 PM to 5:00 PM, CC Second Floor

Continuing Education: Zebrafish as a Tool in Toxicology and Drug Discovery Screening Health and Environmental Impacts of Manmade and Naturally Released Toxicants Recent Advances in Safety Assessment
Chairperson(s): Mamta Behl, National Toxicology Program/NIEHS, Research Triangle Park, NC; and Arantza Muriana, BBD BioPhenix S.L.-Biobide, San Sebastian-Donostia, Spain.
Introduction and Course Goals. Mamta Behl, National Toxicology Program/NIEHS, Research Triangle Park, NC.
Zebrafish—Whatever You Ever Wondered About! Additional Discussion with All Panel Speakers

Sunday, March 13, 4:45 PM to 5:15 PM, CC Great Hall B

SOT Award Recipients
Enhancement of Animal Welfare Award
Warren Casey, PhD, DABT
Sunday, March 13, 7:30 PM to 9:00 PM, CC La Nouvelle Orleans Ballroom B

Student/Postdoctoral Scholar Mixer

Monday, March 14 to 16, 9:30 AM to 4:30 PM, CC Room 204

Research Funding Insights
Representatives from federal agencies funding research, including NIH program and review staff of the Center for Scientific Review and NIEHS, are available in the Research Funding Room for individual conversations.

Monday, March 14, 9:30 AM to 12:15 PM, CC Great Hall B

Symposium Session: Opening the Black Box: Understanding the Molecular Mechanisms of Developmental Toxicity

Developmental Toxicity: Mechanisms and Evaluation
Molecular Toxicology: Mechanistic Insights and Hazard Assessment
Chairperson(s): Barry McIntyre, NIEHS, Research Triangle Park, NC; and Joshua Gamse, Bristol-Myers Squibb, New Brunswick, NJ. (Abstract #1014a)

Abstract 1014b

Abstract 1015
10:04 AM  Fetal Arsenic Exposure Disrupts TGF.2-SMAD Signaling and Developmental EMT. T. Camenisch. University of Arizona, Tucson, AZ.

Abstract 1016

Abstract 1017
11:02 AM  The Role of Histone Deacetylase Inhibition in Mediating the Effects of Developmental Toxicants on Limb Development. B. Hales. McGill University, Montreal, QC, Canada.

Abstract 1018

12:00PM  Panel Discussion/Q&A.

Monday, March 14, 9:30 AM to 12:15 PM, CC Room R02

Workshop Session: Nanotoxicology and Ocular Drug Delivery: One Size Does Not Fit All
Chairperson(s): Chris J. Somps, Pfizer, Inc., Groton, CT; and Donald A. Fox (OTSS Member), University of Houston, Houston, TX. (Abstract #1030a)

Abstract 1030b
9:35 AM  Overview of Nanomaterial Toxicology and Strategies for Assessing the Safety of Nanoscale Materials. N.J. Walker. NIEHS-NTP, Durham, NC.

12:00 PM  Panel Discussion/Q&A.
Regional Interest Session: The Toxicological Implications of the Gulf Oil Spill: Research Accomplishments and Research Needs Health and Environmental Impacts of Manmade and Naturally Released Toxicants
Chairperson(s): Bernard Goldstein, University of Pittsburgh, Pittsburgh, PA; and Maureen Lichtveld, Tulane University, New Orleans, LA. (Abstract #1051a)

9:30 AM  Introduction

Abstract 1051b
9:40 AM  Gulf Oil Spill Response: Health Research, Community-Academic Partnerships, Lessons Learned, and Future Preparedness. L.S. Birnbaum. NIEHS, Research Triangle Park, NC.

11:55 AM  Panel Discussion/Q&A.

Platform Session: Ozone Research
Health and Environmental Impacts of Manmade and Naturally Released Toxicants
Chairperson(s): Urmila Kodavanti, US Environmental Protection Agency, Research Triangle Park, NC; and Robert Devlin, US Environmental Protection Agency, Research Triangle Park, NC.

Abstract 1064
9:45 AM  Scavenger Receptor BI Regulates Pulmonary Inflammation after Ozone Exposure. R.M. Tighe1, A. Birukova1, M.J. Yaeger2, B. Luo2, M.B. Fessler3, C.J. Wingard2, and K.M. Gowdy2. 1Duke University, Durham, NC; 2East Carolina University, Greenville, NC; and 3National Institutes of Environmental Health Sciences, Research Triangle Park, NC.

Poster Session: Bioinformatics and Toxicology Recent Advances in Safety Assessment
Chairperson(s): Mark Gosink, Pfizer Inc., Groton, CT.

Abstract 1074; Poster Board P103
Evaluation of the Literature Prioritization Capabilities of SWIFT-Review, a Tool for Conducting Systematic Reviews of Environmental Health Questions. B.E. Howard2, K. Miller2, J. Phillips2, K. Thayer1, and R. Shah2. 1National Institute of Environmental Health Sciences, Research Triangle Park, NC; and 2Sciome, LLC, Research Triangle Park, NC.

Abstract 1090; Poster Board P119
Mining the Tox21 Literature with SWIFTReview. B.E. Howard2, J. Phillips2, K. Miller2, K. Thayer1, and R. Shah2. 1National Institute of Environmental Health Sciences, Research Triangle Park, NC; and 2Sciome, LLC, Research Triangle Park, NC.

Abstract 1095; Poster Board P124

Abstract 1098; Poster Board P127
QSAR Modeling to Predict Androgen Receptor Pathway Activity. Q. Zang2, D. Allen2, W. Casey3, R. Judson3, and N. Kleinstreuer2. 1US EPA/ORD/NCCT, Durham, NC; 2ILS, Inc., Durham, NC; and 3NIH/NICEATM, Durham, NC.
**Abstract 1099; Poster Board P128**


**Poster Session: Biomonitoring**

Chairperson(s): Justin G. Teeguarden, Pacific Northwest National Laboratory, Richland, WA; and Arnold Schecter, University of Louisville School of Medicine, Louisville, KY.

**Abstract 1143; Poster Board P172**

**Metals & Organics Biomonitoring in Female Vietnamese Electronic Waste Recyclers, General Population, & US NHANES.** A. Schecter3, H.T. Quynh1, W. Shropshire4, J. Lanceta3, J. Kincaid3, and L. Birnbaum2. 1Center Ecological Agriculture, Hanoi, Viet Nam; 2NIH, Research Triangle Park, NC; 3University of Louisville, Louisville, KY; and 4University of Texas, Houston, TX.

**Poster Session: Arsenic Toxicity**

**Toxicity of Metals**

Chairperson(s): Andrew Monnot, Cardno-ChemRisk, San Francisco, CA; and Britton C. Goodale, Geisel School of Medicine at Dartmouth, Hanover, NH.

**Abstract 1256; Poster Board P405**

**Arsenic Transformation of Human Prostate Epithelial and Stem Cells Show Decreased Toll Like Receptor -3 (tlr3) Expression: Correlation with Down-Regulated miR 29, 147 and 152 Clusters and Increased Expression of DNA Methyl Transferases Dnmt1, 3a and 3b.** C. Escudero-Lourdes2, E.E. Uresti-Rivera1, N.O. Ngalame1, M.P. Waalkes1, and E.J. Tokar1. 1National Institute of Environmental Health Sciences, Durham, NC; and 2Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico.

**Poster Session: Respiratory Toxicology**

Chairperson(s): Brian Day, National Jewish Health, Denver, CO.

**Abstract 1308; Poster Board P507**

**39-Week Inhalation Toxicity and Fibrogenicity of Abrasive Blasting Sand and Specular Hematite.** W.M. Gwinn2, M.F. Cesta2, M.D. Stout2, J.H. Roycroft2, C.S. Smith2, J.A. Dill1, G.L. Baker1, A. Gupta1, B.K. Hayden1, K.M. Patton1, and D. Germolec2. 1Battelle, Richland, WA; and 2NIEHS, Research Triangle Park, NC.

**Poster Session: Immunotoxicology**

Chairperson(s): Isaah Mohar, Gradient Corp., Seattle, WA; and Jessica Meyers, University of Rochester, Rochester, NY.

**Immunotoxic Effects of Sodium Tungstate Dihydrate on Female B6C3F1/N Mice When Administered in Drinking Water.** R. Frawley2, M. Smith3, K. White3, S. Elmore2, R. Herbert2, R. Moore3, L. Staska4, M. Behl2, M. Hooth2, G. Kissling2, and D. Germolec2. 1EPL, Research Triangle Park, NC; 2NIEHS, Research Triangle Park, NC; 3Virginia Commonwealth University, Richmond, VA; and 4WIL Research, Hillsborough, NC.

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**Trainee Discussion with Plenary Session Presenters: Drs. Taylor and Nichols**

Chairperson(s): Gabriel Knudsen, NIEHS, Research Triangle Park, NC; and Caitlin J. Murphy, Smithers Avanza, Gaithersburg, MD.

**Lecturers:** Doris Taylor, Director, Regenerative Medicine Research at the Texas Heart Institute, Houston, TX; and Joan Nichols, University of Texas Medical Branch, Galveston, TX.
Monday, March 14, 11:45 AM to 12:15 PM, CC Exhibit Hall (Near SOT Pavilion, Booth 500)

Global Gallery of Toxicology Poster Session—Representative Attended

Monday, March 14, 12:30 PM to 1:30 PM, NIEHS, NTP, and EHP Exhibit Booth 1456

Meet the Editor-in-Chief of Environmental Health Perspectives: Sally Perreault Darney, Ph.D.

Monday, March 14, 1:15 PM to 4:30 PM, CC Exhibit Hall

Poster Session: Genetic Toxicology I
Chairperson(s): Joanna Klapacz, The Dow Chemical Co, Midland, MI; and Robert Schiestl, University of California Los Angeles, Los Angeles, CA.
Abstract 1390; Poster Board P119
Bisphenol A Alters Cellular Microenvironment to Promote Survival After Oxidative Stress. N.R. Gassman3, E. Coskun1, P. Jaruga1, M. Dizdaroglu1, and S.H. Wilson2. 1National Institute of Standards, and Technology, Gaithersburg, MD; 2NIEHS/NIH, Research Triangle Park, NC; and 3University of South Alabama Mitchell Cancer Institute, Mobile, AL.

Poster Session: Mixtures
Health and Environmental Impacts of Manmade and Naturally Released Toxicants
Chairperson(s): Olushola M. Awoyemi, Tennessee State University, Nashville, TN; and Dorothy Yu Huang, University of Calgary, Calgary, AB, Canada.
Abstract 1451; Poster Board P180

Poster Session: Ocular Toxicology
Chairperson(s): Patrick McNutt, USAMRICD, Gunpowder, MD; and Clive Steven Roper, Charles River Laboratories, Tranent, United Kingdom.
Abstract 1609; Poster Board P447
Reduced Disc Shedding Contribute to Kava Kava Extract-Induced Retinal Degeneration in F344/N Rats. H. Yamashita3,4, M.J. Hoenerhoff3, K.R. Shockley1, S.D. Peddada1, K.E. Gerrish2, D. Sutton3, C.A. Cummings5, Y. Wang3, J.F. Foley3, M. Behl3, R.C. Sills3, and A.R. Pandiri3. 1Biostatistics, and Computational Biology Branch, NIEHS, Research Triangle Park, NC; 2Molecular Genomics Core Laboratory, NIEHS, Research Triangle Park, NC; 3National Toxicology Program, National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC; 4Taisho Pharmaceutical Co., Ltd., Saitama, Japan; and 5UltraPath Imaging, Research Triangle Park, NC.

Monday, March 14, 1:30 PM to 2:30 PM, CC Room 220

Meet the Directors: A Conversation with Linda Birnbaum and Pamela McInnes
Chairperson(s): John B. Morris, Society of Toxicology Vice President; University of Connecticut, Storrs, CT.
Lecturers: Linda Birnbaum, NIEHS, Research Triangle Park, NC; and Pamela McInnes, NCATS, Bethesda, MD.
**Workshop Session: The Role of the Epigenome in Exposure Effects, Susceptibility, and Public Health**

**Molecular Toxicology: Mechanistic Insights and Hazard Assessment**

**Chairperson(s):** Shaun D. McCullough, US Environmental Protection Agency, Chapel Hill, NC; and Dana C. Dolinoy, University of Michigan, Ann Arbor, MI.

**Abstract 1721b**

2:10 PM  

**Abstract 1724**

3:34 PM  

4:30 PM  
Panel Discussion/Q&A.

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**Monday, March 14, 4:45 PM to 6:00 PM, CC Great Hall B**

**SOT/EUROTOX Debate: Preclinical (Safety) Toxicology Testing Predicts the Clinical Outcome**

**Chairperson(s):** Patricia E. Ganey, Michigan State University, East Lansing, MI; and Mumtaz Iscan, Ankara University, Ankara, Turkey.  
  
  **SOT Debater:** Thomas M. Monticello, Amgen, Inc., Thousand Oaks, CA.  
  **EUROTOX Debater:** Ruth Roberts, ApconiX Ltd, Alderley Edge, United Kingdom.

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**Tuesday, March 15, 7:00 AM, Audubon Park**

Past Presidents’ 5K Fun Run/Walk

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**Tuesday, March 15, 9:30 AM to 10:30 AM, NIEHS, NTP, and EHP Exhibit Booth 1456**

Meet the Editor-in-Chief of Environmental Health Perspectives: Sally Perreault Darney, Ph.D.

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**Tuesday, March 15, 9:30 AM to 12:15 PM, CC Room 208**

**Symposium Session: Unknown, Unknowns: Exploring the Unidentified Fraction of Complex Mixtures (Abstract #1762a)**

**Chairperson(s):** Cynthia Rider, NTP/NIEHS, Research Triangle Park, NC; and Bethany Hannas, The Dow Chemical Company, Midland, MI.

**Abstract 1762b**

9:35 AM  

12:00 PM  
Panel Discussion/Q&A.
Workshop Session: Bioactivity-Based Margin of Exposure Safety Assessment: The Next Stop along the Road to 21st Century Safety Assessments (Abstract #1767a)
Recent Advances in Safety Assessment
Chairperson(s): J. Craig Rowlands, The Dow Chemical Company, Midland, MI; and Nigel Walker, National Toxicology Program at NIEHS, Research Triangle Park, NC.

Abstract 1767a
9:35 AM Biological Canaries in the Coal Mine: Strategic Implications for Utilizing Bioactivity-Based Margins of Exposures in Human Health Risk Assessments. N. Walker. NIEHS, Research Triangle Park, NC.

Abstract 1771
11:35 AM Application of Genomic Benchmark Dose Analysis in the NTP Response to the Elk River Chemical Spill. S. Auerbach. NIEHS, Research Triangle Park, NC.

12:05 PM Panel Discussion/Q&A.

Tuesday, March 15, 9:30 AM to 12:15 PM, CC Great Hall B

Platform Session: Zebrafish Models: Advances and Applications in DART
Chairperson(s): Vicki Sutherland, NIEHS, Research Triangle Park, NC; and Katharine Horzmann, Purdue University, West Lafayette, IN.

Tuesday, March 15, 9:30 AM to 12:45 PM, CC Exhibit Hall

Poster Session: Alternative Models: Fish, Worms, and More Molecular Toxicology: Mechanistic Insights and Hazard Assessment
Recent Advances in Safety Assessment
Chairperson(s): Tetyana Kobets, New York Medical College, Valhala, NY; and Natalia Garcia-Reyero, US Army, Vicksburg, MS.

Abstract 1811; Poster Board P117
Assessment of C. elegans In Vivo ATP Status and Larval Development After Exposure to a Subset of Tox21 Compounds. J.R. Rice1, P.E. Dunlap1, M.V. Smith4, M.F. Bridge4, J.H. Freedman5, J. Zhao3, R. Huang3, M.S. Attene-Ramos3, M. Xia3, A. Simeonov3, and W.A. Boyd1. 1NIEHS, Durham, NC; 2NIH, Bethesda, MD; 3NIH, Bethesda, MN; 4Social & Scientific Systems, Inc., Durham, NC; and 5University of Louisville, Louisville, KY.

Abstract 1822; Poster Board P128
Role of ATP Binding Cassette Sub-Family Member 2 (ABCG2) in Mouse Embryonic Stem Cell Development. M. Rosen2, K. Chandler1, S. Jeffay2, S. Charla2, H. Nichols2, M. Hoopes2, and E.S. Hunter2. 1NIEHS, Research Triangle Park, NC; and 2US EPA, Research Triangle Park, NC.

Abstract 1834; Poster Board P140
Cadmium and Arsenic Transformed Human Peripheral Lung Cells Expressing Cd34 Display Stem Cell-Like and Malignant Properties. N. Makia, N. Ngalame, and E.J. Tokar. NTP, NIEHS, Durham, NC.
Abstract 1837; Poster Board P143
Prenatal Cigarette Smoke (CS) Exposure Causes Alteration in Hematopoietic Stem and Progenitor Cells (HSPCs) and Epigenetic Modifications. K.P. Singh1, N. Englert1, Z. Unnisa2, J.A. Bennett1, E. Henry3, T. Thatcher3, B. Bennett1, M.R. Campbell1, P.J. Sime2, R.P. Phipps2, T.A. Gasiewicz2, and D.A. Bell1. 1NIEHS, Research Triangle Park, NC; and 2School of Medicine, and Dentistry, University of Rochester, Rochester, NY. Sponsor: K. Singh.

Poster Session: Developmental Basis of Adult Disease Developmental Toxicity: Mechanisms and Evaluation
Chairperson(s): Merle G. Paule, NCTR, US Food and Drug Administration, Jefferson, AR.

Abstract 1856; Poster Board P162
Low Dose Tetrabromobisphenol A (TBBPA) Alters Mammary and Uterine Development Following Prenatal Exposure in Wistar Rats. S. E.A. Gillera1, A.J. Filgo1, D.K. Tucker1, J.A. Flaws1, B. Horman2, H.B. Patisaul2, and S.E. Fenton1. 1National Toxicology Program Laboratory, Research Triangle Park, NC; 2NC State University, Raleigh, NC; and 3University of Illinois, Urbana, IL.

Abstract 1857; Poster Board P163
Enhanced Spontaneous Mammary Tumor Susceptibility Induced by BPA Alternatives. D.K. Tucker3, S.A. Bouknight1, and S.E. Fenton2. 1Charles River Laboratories, Inc., Durham, NC; 2NIEHS, Research Triangle Park, NC; and 3UNC at Chapel Hill, Chapel Hill, NC.

Abstract 1859; Poster Board P165

Poster Session: Carcinogenesis I
Chairperson(s): Jessica LaRocca, Dow AgroSciences, Indianapolis, IN; and Kate Z. Guyton, IARC-WHO, Lyon, France.

Abstract 2045; Poster Board P449
Gene Expression Changes Following Repeat Oral Administration of Tetrabromobisphenol A (TBBPA) in Female Wistar Han Rats. S.M. Hall, S.J. Coulter, G.A. Knudsen, J.M. Sanders, and L.S. Birnbaum. NCI at NIEHS, Research Triangle Park, NC.

Poster Session: Toxic Inhalants Research
Chairperson(s): Kristen Ryan, NIEHS, Durham, NC.

Abstract 2131; Poster Board P615
Comparative Pulmonary Toxicity of Inhaled Metalworking Fluids in Rats and Mice. K.R. Ryan1, M. Toraason1, M. Cesta1, R. Herbert1, A. Brix1, M. Cora1, K. Janardhan1, K. Witt1, G. Kissling1, and D.L. Morgan1. 1Division of the National Toxicology Program, NIEHS, Research Triangle Park, NC; 2EPL Inc, Research Triangle Park, NC; 3ILS Inc, Research Triangle Park, NC; and 4NIOSH, Cincinnati, OH.

Tuesday, March 15, 1:00 PM to 2:00 PM, NIEHS, NTP, and EHP Exhibit Booth 1456

DrugMatrix/ToxFx Demonstration: Scott Auerbach, Ph.D. of NTP
Tuesday, March 15, 1:15 PM to 4:30 PM, CC Exhibit Hall

**Poster Session: 3D Cell and Organ-on-a-Chip Models Molecular Toxicology: Mechanistic Insights and Hazard Assessment**

**Recent Advances in Safety Assessment**
Chairperson(s): Susan Tilton, Oregon State University, Corvallis, OR; and Sreenivas Ramaiahgari, NIEHS, Durham, NC.

*Abstract 2179; Poster Board P109*
**Metabolically Competent HepaRG Spheroid Model for In Vitro Toxicology Studies.** S. Ramaiahgari, S. Waidyanatha, W. Boyd, M. DeVito, R. Paules, and S. Ferguson. DNTP, Durham, NC.

**Poster Session: Alternative Models for Ocular and Skin Toxicity**
Chairperson(s): Kathryn E. Page, The Clorox Company, Pleasanton, CA; and Judy Strickland, NIEHS, Research Triangle Park, NC.

*Abstract 2196; Poster Board P126*

**Poster Session: Biological Modeling**
Chairperson(s): Eva McLanahan, CDC/ATSDR, Atlanta, GA; and Rory Conolly, US Environmental Protection Agency, Research Triangle Park, NC.

*Abstract 2224; Poster Board P154*
**In Vitro to In Vivo Extrapolation for Estrogenic Activity of Environmental Chemicals.** X. Chang3, N. Kleinstreuer3, P. Ceger3, N. Choksi3, J.-H. Hsieh1, B.A. Wetmore5, S. Ferguson5, M. DeVito3, D. Allen3, and W. Casey3. 1Kelly Services, Inc., Durham, NC; 2NIEHS/DNTP, Durham, NC; 3NIEHS/NICEATM, Durham, NC; and 4The Hamner Institutes for Health Sciences, Durham, NC.

**Poster Session: Gene Regulation and Signal Transduction**
**Molecular Toxicology: Mechanistic Insights and Hazard Assessment**
Chairperson(s): Brad L. Upham, Michigan State University, East Lansing, MI.

*Abstract 2294; Poster Board Number P224*

*Abstract 2297; Poster Board P227*
**Liver Enzyme Inducibility of Polycyclic Aromatic Compounds in Metabolically-Competent Cultures of HepaRG.** S. Ferguson, and S. Ramaiahgari. NIEHS, Durham, NC.
Abstract 2307; Poster Board Number P237
Comparative Analysis of Nrf2 Target Genes Reveals Novel Functions. S.E. Lacher2, J. Lee2, X. Wang1, M. Campbell1, D. Bell1, and M. Slattery1. 1NIEHS, Research Triangle Park, NC; and 2University of Minnesota Medical School, Duluth, MN.

Poster Session: Non-Pharmaceutical Safety Assessment
Recent Advances in Safety Assessment
Chairperson(s): Ramesh C. Gupta, Murray State University, Hopkinsville, KY; and Brian J. Hughes, The Dow Chemical Company, Midland, MI.
Abstract 2456; Poster Board Number P522
Toxicity Profiling of Flame Retardants in Zebrafish Embryos Using a Battery of Assays. A. Alzualde1, A. Alday1, M. Behl2, R.R. Tice2, R.R. Paules2, A. Muriana1, and C. Quevedo1. 1BBDBioPhenix, San Sebastian, Spain; and 2NIEHS-NIH, Research Triangle Park, NC.

Tuesday, March 15, 1:30 PM to 2:30 PM, NIEHS, NTP, and EHP Exhibit Booth 1456
Meet the Editor-in-Chief of Environmental Health Perspectives: Sally Perreault Darney, Ph.D.

Tuesday, March 15, 2:00 PM to 4:45 PM, CC Great Hall B
Symposium Session: Using Multi- and Transgenerational Effects of Environmental Exposures in Diverse Animal Models for Assessment of Human Health Risks
Developmental Toxicity: Mechanisms and Evaluation
Chairperson(s): Kristine L. Willett, University of Mississippi, University, MS; and Jennifer L. Freeman, Purdue University, Lafayette, IN.
Abstract 2515

Tuesday, March 15, 2:00 PM to 4:45 PM, CC Room R06
Platform Session: Qualification of “New” DART Tools for Hazard Identification
Developmental Toxicity: Mechanisms and Evaluation
Chairperson(s): Christopher J. Bowman, Pfizer, Inc, Groton, CT; and Thomas B. Knudsen, US Environmental Protection Agency, Research Triangle Park, NC.
Abstract 2549
3:20 PM In Vitro-to-In Vivo Extrapolation of Xenoestrogens Using an Estrogen Responsive In Vitro Transcriptional Activation Assay and the In Vivo Uterotrophic Assay. J.M. Conley2, B.R. Hannas2, N. Evans2, J. Furr2, V. Sutherland1, P.M. Foster1, L.E. Gray2, and V.S. Wilson2. 1NIEHS, Research Triangle Park, NC; and 2US EPA, Research Triangle Park, NC.
Abstract 2550
3:40 PM  Bisphenol AF: Correlation of In Vitro Endocrine Responses with In Vivo Developmental Outcomes (A Case Example). V. Sutherland1, K. Pelch1, B. McIntyre1, J.M. Conley1, L.E. Gray1, J.-H. Hsieh1, L. Truong2, R. Tanguay2, Z. Lundby3, P. Allard3, and P.M. Foster1. 1National Toxicology Program, Research Triangle Park, NC; 2Oregon State University, Corvallis, OR; 3University of California, Los Angeles, Los Angeles, CA; and 4US EPA, Research Triangle Park, NC.

Tuesday, March 15, 7:30 PM to 9:00 PM, Hilton New Orleans Riverside, Jefferson Ballroom

Tox ShowDown
Chairperson(s): Joanna Kreitinger, GSLC Secretary, University of Montana, Missoula, MT.
Produced by: Graduate Student Leadership Committee

Wednesday, March 16, 9:30 AM to 12:15 PM, CC Great Hall B

Symposium Session: Patient-Specific Stem Cells as Models for Gene, Drug, and Environment Interactions in Disease
Chairperson(s): Aaron B. Bowman, Vanderbilt University Medical Center, Nashville, TN; and Jason R. Richardson, Northeast Ohio Medical University, Rootstown, OH.

Abstract 2556

11:55 AM  Panel Discussion/Q&A.

Wednesday, March 16, 9:30 AM to 12:15 PM, CC Room 220

Workshop Session: Moving Beyond Cancer: Current State of the Science of Noncancer Health Effects of Arsenic Toxicity of Metals
Chairperson(s): Danielle J. Carlin, NIEHS, Research Triangle Park, NC; and Janice S. Lee, US Environmental Protection Agency, Research Triangle Park, NC. (Abstract #2567)

Abstract 2568

Abstract 2571

Wednesday, March 16, 9:30 AM to 12:15 PM, CC Room 217

Workshop Session: Screening Chemicals for Neurotoxicity Outcomes—Using Large Datasets and Multiple Endpoints to Develop “Toxicity Profiles” Advances in Neurotoxicology Molecular Toxicology: Mechanistic Insights and Hazard Assessment
Chairperson(s): Timothy J. Shafer, US Environmental Protection Agency, Research Triangle Park, NC; and Mamta Behl, NTP/NIEHS, Research Triangle Park, NC.(Abstract #2580)
Wednesday, March 16, 9:30 AM to 12:15 PM, CC Room 217 (cont'd)

Abstract 2585

Wednesday, March 16, 9:30 AM to 12:45 PM, CC Exhibit Hall

Poster Session: Computational and Systems Toxicology I

Recent Advances in Safety Assessment
Chairperson(s): Ally Perlina, Thomson Reuters, Carlsbad, CA; and Moiz Mumtaz, CDC, Atlanta, GA.

Abstract 2604; Poster Board P102
Computational Models to Estimate In Vivo Activity Concentrations from Tox21 HTS Data. N.S. Sipes², J.F. Wambaugh¹, R. Pearce¹, B.A. Wetmore³, M.J. DeVito², and S.S. Ferguson². ¹NCCT/US EPA, Research Triangle Park, NC; ²NTP/NIEHS, Research Triangle Park, NC; and ³The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

Abstract 2616; Poster Board P114
A Gene Expression Biomarker Accurately Predicts Estrogen Receptor α Modulation in a Human Gene Expression Compendium. N.M. VanDuyn²,³, B.N. Chorley³, R.R. Tice¹, R.S. Judson³, and J.C. Corton³. ¹NIEHS, Research Triangle Park, NC; ²ORISE, Research Triangle Park, NC; and ³US EPA, Research Triangle Park, NC.

Poster Session: Computational and Systems Toxicology II

Recent Advances in Safety Assessment
Chairperson(s): Richard Judson, US Environmental Protection Agency, Research Triangle Park, NC.

Abstract 2649; Poster Board Number P147

Abstract 2651; Poster Board P149
Development and Application of a Reference Database for Androgen Receptor Activity. N. Kleinstreuer², P. Ceger², P. Browne¹, D. Allen², J. Hamm³, and W. Casey². ¹US EPA/OSCP, Washington, DC; and ²NIEHS/NICEATM, Durham, NC.

Poster Session: Risk Assessment 3

Chairperson(s): George M. Woodall, US Environmental Protection Agency, Research Triangle Park, NC; and Mathieu Valcke, Institut National de Santé Publique du Québec, Montréal, QC, Canada.

Abstract 2714; Poster Board P221
Thymomas in Fischer 344/N Rats in the National Toxicology Program Database. G.A. Willson¹, R.R. Moore¹, H. Nagai¹, R.A. Miller¹, J.F. Hardisty¹, N. Allison¹, and D.E. Malarkey². ¹Experimental Pathology Laboratories, Inc., Research Triangle Park, NC; and ²National Institute of Health Sciences, Research Triangle Park, NC. Sponsor: J. Hardisty.

Poster Session: Biomarkers

Chairperson(s): Michael Madden, US Environmental Protection Agency, Research Triangle Park, NC.

Abstract 2733; Poster Board P240
Adipocytokine and Liver Injury Biomarker Assessment in Electronic Waste Recyclers. K.C. Falkner³, L. Birnbaum¹, A. Schecter³, H. Clair³, and M. Cave²,³. ¹National Cancer Institute, Research Triangle Park, NC; ²Robley Rex Veterans Affairs Medical Center, Louisville, KY; and ³University of Louisville, Louisville, KY.
Wednesday, March 16, 9:30 AM to 12:45 PM, CC Exhibit Hall (cont’d)

Poster Session: Autoimmunity/Hypersensitivity
Chairperson(s): Susan McKarns, University of Missouri School of Medicine, Columbia, MO; and Emanuela Corsini, Universita degli Studi di Milano, Milan, Italy.

Abstract 2864; Poster Board P515
Evaluation of 4-Methylcyclohexanemethanol in a Combined Irritation and Local Lymph Node Assay in BALB/c Mice. V.J. Johnson¹, S.S. Auerbach², M.I. Luster¹, S. Waidyanatha², S.A. Masten², M.S. Wolfe², F.G. Burleson¹, G.R. Burleson¹, and D.R. Germolec². ¹Burleson Research Technologies, Inc., Morrisville, NC; and ²National Toxicology Program, National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC.

Wednesday, March 16, 10:00 AM to 12:00 PM, NIEHS, NTP, and EHP Exhibit Booth 1456

Tox 21 Data (Integration and Visualization Tools)

Wednesday, March 15, 10:30 AM to 12:30 PM, NIEHS, NTP, and EHP Exhibit Booth 1456

Meet the Editor-in-Chief of Environmental Health Perspectives: Sally Perreault Darney, Ph.D.

Wednesday, March 16, 12:00 PM to 1:00 PM, CC Room 212

ICF’s DRAGON enables scientists to work collaboratively on literature screening, study quality evaluations, and data extraction for systematic literature reviews. Documenting the data and decisions supporting the review increases transparency and preserves institutional knowledge. ICF’s team will demonstrate how the original prototype has grown into DRAGON ONLINE with expanded capabilities.

Wednesday, March 16, 12:30 PM to 1:50 PM, CC Room R02

Informational Session: Why Did the Scientific Program Committee Reject My Proposal? Developing a Good Idea into an Accepted SOT Session
Chairperson(s): John B. Morris, University of Connecticut, Storrs, CT; and Patricia E. Ganey, Michigan State University, East Lansing, MI.
1:10 PM Constructing a Competitive Proposal: Increasing the Likelihood of Acceptance. B.S. McIntyre. NIEHS, Research Triangle Park, NC.

Wednesday, March 16, 12:30 PM to 1:50 PM, CC Room 220

Education-Career Development Session: The Evolution of the Postdoc: Transitioning from Trainee to Professional in the Modern Era
Chairperson(s): Karilyn E. Sant, University of Massachusetts, Amherst, MA; and Samantha Snow, US Environmental Protection Agency, Research Triangle Park, NC.
12:50 PM Postdoc Training: Thinking Beyond the Bench. L. Birnbaum. NIEHS, Research Triangle Park, NC.
1:35 PM Panel Discussion/Q&A.
Career Advancement and Development Resources
The Evolution of the Postdoc: Transitioning from Trainee to Professional in the Modern Era

Poster Session: Food Safety/Nutrition 2
Chairperson(s): Rekha Mehta, Health Canada, Ottawa, ON, Canada; and Li-Rong Yu, National Center for Toxicological Research, US Food and Drug Administration, Jefferson, AR.

Abstract 3017; Poster Board P159
Assessing Bioactivities and Exposure Profiles of Fruit and Vegetable Juices. B.A. Wetmore 3, M.J. DeVito 1, M. Xia 3, B. Parks 3, R. Huang 3, K. Houck 4, R.R. Tice 1, R. Judson 4, R.S. Thomas 4, and M.E. Andersen 3. 1NIEHS, Research Triangle Park, NC; 2NIH, Rockville, MD; 3The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and 4US EPA, Research Triangle Park, NC.

Tox 21 Data (Integration and Visualization Tools)

Poster Session: Regulation and Policy
Chairperson(s): Niklas Andersson, European Chemicals Agency (ECHA), Helsinki, Finland; and Renee Hartsook, Amgen, Thousand Oaks, CA.

Abstract 2990; Poster Board P130

Abstract 2995; Poster Board Number P135

Poster Session: Alternative In Vitro Toxicity Models
Recent Advances in Safety Assessment
Chairperson(s): Daniel R. Dietrich, University of Konstanz, Konstanz, Germany; and Nancy A. Monteiro-Riviere, Kansas State University, Manhattan, KS.

Abstract 3065; Poster Board P217
Crosstalk Between Mitochondrial Function, the Epigenome and Gene Expression with Potential Implications to Environmental Health. R. Woychik 1, J.H. Santos 1, O. Lozoya 1, I. Martinez 2, D. Grenet 1, T. Wolfgang 1, T. Wang 2, and N. Chandel 2. 1National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC; and 2Northwestern University Feinberg School of Medicine, Evanston, IL.
Wednesday, March 16, 1:15 PM to 4:45 PM, CC Exhibit Hall (cont’d)

**Poster Session: Animal Models of Disease**
Chairperson(s): Alain Stricker-Krongrad, Sinclair Research Center, Auxvasse, MO.

Abstract 3089; Poster Board P243

**Poster Session: Cytochrome P450**
Chairperson(s): Laura Van Winkle, University of California, Davis, Davis, CA.

Abstract 3150; Poster Board P410
Evaluation of Xenobiotic Metabolism Inhibition with 23 Polycyclic Aromatic Compounds in Primary Human Hepatocyte Suspensions. W. Qu, M.J. DeVito, S.S. Fersuson, and C.V. Rider. Division of the National Toxicology Program, Research Triangle Park, NC.

**Poster Session: Liver—Translational**
Chairperson(s): Natalie Holman, The Hamner-University of North Carolina Institute for Drug Safety Sciences, Research Triangle Park, NC.

Abstract 3177; Poster Board P442

**Poster Session: Epigenetics**
**Molecular Toxicology: Mechanistic Insights and Hazard Assessment**
Chairperson(s): Narendra P. Singh, University of South Carolina School of Medicine, Columbia, SC; and Kathleen Gilbert, University of Arkansas for Medical Sciences, Little Rock, AR.

Abstract 3200; Poster Board P512

**Poster Session: Reproductive Toxicology**
**Developmental Toxicity: Mechanisms and Evaluation**
Chairperson(s): James Lamb, Exponent, Alexandria, VA; and John Wise, University of Louisville, Louisville, KY.

Abstract 3231; Poster Board P543
Aberrant Uterine SIX1 Expression May Promote Uterine Adenocarcinoma Following Neonatal Xenoestrogen Exposure. A.A. Suen, W.N. Jefferson, E. Padilla-Banks, V.L. Bae-Jump, and C.J. Williams. National Institute of Environmental Health Sciences, Durham, NC; and UNC Chapel Hill, Chapel Hill, NC.

Abstract 3241; Poster Board P553
Body Burden and Hepatic Cyp Expression in Rats Following Low Dose Drinking Water Exposure to a VOC Mixture During Pregnancy and Adolescence. A.J. Filgo, D.M. Chambers, E.M. Quist, B.C. Blount, and S.E. Fenton. Centers for Disease Control, and Prevention, Atlanta, GA; NCSU, Raleigh, NC; and NIEHS, Research Triangle Park, NC.
**Poster Session: Developmental and Juvenile Toxicology**

**Developmental Toxicity: Mechanisms and Evaluation**

Chairperson(s): Mark Hurtt, Pfizer Inc, Groton, CT; and Georgia K. Roberts, National Toxicology Program, Apex, NC.

Abstract 3261; Poster Board P613

*In Utero Exposure to the Dietary Supplement Vinpocetine Is Associated with Rat and Rabbit Embryo-Fetal Toxicity.* N. Catlin¹, P. Foster¹, E. Mylchreest², L. Miller², H. Cunny¹, and B. McIntyre¹. ¹National Toxicology Program, Durham, NC; and ²Southern Research Institute, Birmingham, AL.

**Abstract 3271; Poster Board P623**

*Potential Modes of Action for Perfluorooctanoic Acid (PFOA)-Induced Hepatocellular Hypertrophy in Mice.* E. Quist, V. Chappell, A. Filgo, Y. Wang, G. Kissling, and S. Fenton. NIEHS/NTP, Research Triangle Park, NC.

**Abstract 3273; Poster Board P625**

*Exposure to Butyl Paraben During Gestation and Lactation in Harlan Sprague Dawley Rats via Dosed Feed.* G.K. Roberts¹, S. Waidyanatha¹, B.L. Fletcher², M.A. Silinski², T.R. Fennell², H.C. Cunny¹, V. Godfrey Robinson¹, and C.R. Blystone¹. ¹Division of the National Toxicology Program, Research Triangle Park, NC; and ²RTI International, Research Triangle Park, NC.

**Platform Session: Heavy Metals: Mechanisms and Disease Pathogenesis**

**Toxicity of Metals**

Chairperson(s): James Gomes, University of Ottawa, Ottawa, ON, Canada; and Josh Edwards, Midwestern University, Downers Grove, IL.

Abstract 3339


**Career Advancement and Development Resources**

“Talksicology”: Effective Oral Presentation Techniques

**Workshop Session: Which Human Cell Lines Should I Use? Choosing the Appropriate Biological Systems for High-Throughput Toxicity Testing**

**Recent Advances in Safety Assessment**

Chairperson(s): Nisha S. Sipes, NTP/NIEHS, Research Triangle Park, NC; and Falgun Shah, Pfizer, Cambridge, MA. (Abstract #3382)

Abstract 3383

9:45 AM *Strategies for Choosing Biological Diversity for High-Throughput Toxicity Testing.* N.S. Sipes. NIEHS, Research Triangle Park, NC.
Platform Session: Advances in Mammary Gland Biology and Toxicology
Chairperson(s): Thomas Sanderson, INRS Institut Armand Frappier, Laval, QC, Canada; and Jason Stanko, National Toxicology Program Laboratory, Research Triangle Park, NC.
Abstract 3389
9:55 AM Differences in the Rate of In Situ Mammary Gland Development of Three Strains of Rat Used in Toxicity Testing Studies: Implications for Timing of Mammary Carcinogen Exposure. J.P. Stanko2, G.E. Kissling1, and S.E. Fenton2. 1Biostatistics, and Computational Biology Branch, Research Triangle Park, NC; and 2National Toxicology Program Laboratory, Research Triangle Park, NC.

Platform Session: Flame Retardants
Chairperson(s): Lynne Haber, TERA Center, University of Cincinnati, Cincinnati, OH; and Daniele Wikoff, ToxStrategies, Austin, TX.
Abstract 3406
10:10 AM Estimation of Human Percutaneous Uptake for Two Novel Brominated Flame Retardants, 2-Ethylhexyl Tetrabromobenzoate (TBB) and Bis(2-Ethylhexyl) Tetrabromophthalate (TBPH) Using the Parallelogram Method. G.A. Knudsen1, M.F. Hughes2, J.M. Sanders1, and L.S. Birnbaum1. 1National Cancer Institute, Research Triangle Park, NC; and 2US EPA, Research Triangle Park, NC.

Poster Session: Persistent Organic Pollutants
Health and Environmental Impacts of Manmade and Naturally Released Toxicants
Chairperson(s): Lisa M. Kamendulis, Indiana University, Bloomington, IN.
Abstract 3419; Poster Board P109
Serum Concentrations of Non-Ortho Polychlorinated Biphenyls (PCBs) in a Residential Cohort from Anniston, Alabama. M. Pavuk1, N.D. Dutton5, A. Sjodin3, R.S. Jones1, M.D. Lewin2, and L.S. Birnbaum4. 1Agency for Toxic Substances, and Disease Registry (ATSDR), Atlanta, GA; 2ATSDR, Atlanta, GA; 3NCEH/CDC, Atlanta, GA; 4NCI, Research Triangle Park, NC; and 5ORISE, Atlanta, GA.

Poster Session: Disposition and Pharmacokinetics
Chairperson(s): Benjamin C. Moeller, Lovelace Respiratory Research Institute, Albuquerque, NM; and Ronald Baynes, North Carolina State University, Raleigh, NC.
Abstract 3444; Poster Board P134
Disposition of Ethylene Glycol 2-Ethylhexylether Following Oral Administration and Dermal Application to Harlan Sprague Dawley Rats and B6C3F1/N Mice. B.C. Moeller4, M. Doyle-Eisele1, J.D. McDonald4, C.R. Blystone2, and S. Waidyanatha2. 1Lovelace Respiratory Research Institute, Albuquerque, NM; and 2NIEHS, Research Triangle Park, NC.
Thursday, March 17, 9:30 AM to 12:45 PM, CC Great Hall A (cont’d)

**Poster Session: Biotransformation**
Chairperson(s): Jason M. Fritz, US Environmental Protection Agency, Washington, DC.

**Abstract 3453; Poster Board P143**
Metabolism and Disposition of Sulfolane in Male and Female Harlan Sprague Dawley Rats and B6C3F1/N Mice. T.R. Fennell², S. Black³, S. Watson², P. Patel², R. Snyder², J. Burgess³, C.R. Blystone¹, and S. Waidyanatha¹.
¹Division of the National Toxicology Program, Research Triangle Park, NC; and ²RTI International, Research Triangle Park, NC.

**Poster Session: Nanotoxicology: Carbon Based**
Chairperson(s): Salik Hussain, NIEHS/NIH, Research Triangle Park, NC.

**Abstract 3498; Poster Board P188**
Hyaluronan Functionalization Reduces Lung Inflammatory and Fibrotic Responses of Multi-Walled Carbon Nanotubes. S. Hussain², Z. Ji², A. Taylor¹, L. Miller-DeGraff³, M. George², J. Marshburn³, R. Snyder², A. Rice³, J.C. Bonner¹, and S. Garantziotis². ¹NC State University, Raleigh, NC; ²NIEHS/NIH, Research Triangle Park, NC; and ³UCLA, Los Angeles, CA.

**Abstract 3505; Poster Board P195**
Multi-Walled Carbon Nanotubes May Impair Mucociliary Differentiation of Human Bronchial Epithelia and Club Cell Recovery in Oropharyngeally-Exposed Mice. R.J. Snyder¹,², S. Hussain¹, A. Rice¹, L. Degraff-Miller¹, S.H. Randell², and S. Garantziotis¹. ¹National Institute of Environmental Health Sciences, Durham, NC; and ²University of North Carolina Chapel Hill, Chapel Hill, NC.

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Thursday, March 17, 12:30 PM to 4:00 PM, Hilton New Orleans Riverside, Jefferson Ballroom

**Updates on Activities Related to 21st Century Toxicology and Related Efforts: Invited Presentations and Open Microphone**

**Satellite Meeting**

**Hosted by:** Thomas Hartung, Johns Hopkins Center for Alternatives to Animal Testing (CAAT), Baltimore, MD.

12:30 PM  **Box Lunch (for pre-registered participants) and Welcome.** Thomas Hartung, Johns Hopkins University

1:00 PM  **Invited Speakers**
ToxCast Update. Russell Thomas, US Environmental Protection Agency
EDSP21 Update. David Dix, US Environmental Protection Agency
Tox21 Update. Richard Paules, US National Toxicology Program
Hamner TT21C Update. Melvin Andersen, Hamner Institutes
NICEATM Update. Warren Casey, NICEATM
SEURAT/EU Tox-Risk Update. Michael Schwarz, University of Tuebingen

**CAAT’s Read-Across Initiative and Human Toxome-Related Activity Update.** Thomas Hartung, Johns Hopkins

Human Toxicology Project Consortium Update. Catherine Willett, HTPC
Evidence-Based Toxicology Update. Martin Stephens, Johns Hopkins

3:15 PM  **Open Microphone for Additional Presentations and Discussion**

4:00 PM  **Adjourn**

SOT 55th Annual Meeting and ToxExpo –18– NIEHS and NTP Activities
A Toxicology User’s Guide to the Roadmap Epigenomics and ENCODE Data Resources

Satellite Meeting

Hosted by: Ivan Rusyn, Texas A&M University, College Station, TX; and Lisa Chadwick, NIEHS, Research Triangle Park, NC.