

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-PGF2 α /PGF2 α 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

9:35 AM **Acute Estrogen Exposure Increases Heart Rate via a G-Protein-Coupled Estrogen Receptor Mechanism in Zebrafish.** D. Gorelick. University of Alabama, Birmingham, AL. Sponsor: B. McIntyre.

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

10:33 AM **TGF. and FGF Inhibition Elucidates Mechanisms Controlling the Formation of the Diencephalon.** J. Gamse. Bristol-Myers Squibb, New Brunswick, NJ.

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

11:31AM **Elucidation of the Mechanism of Action of Thalidomide and IMiD Compounds Gives Novel Insights into Their Pleiotropic Effects.** R. Chopra. Celgene, Summit, NJ. Sponsor: B. McIntyre.

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. Soms, 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.**

Monday, March 14, 9:30 AM to 12:15 PM, CC Room R08

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.**

Monday, March 14, 9:30 AM to 12:15 PM, CC Room R06

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 ³Nathional Institutes of Environmental Health Sciences, Research Triangle Park, NC.

Monday, March 14, 9:30 AM to 12:45 PM, CC Exhibit Hall

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

Real-Time Cell Viability Profiling of Tox21 10K Compounds. J.-H. Hsieh¹, R. Huang², R. Tice³, R. Paules³, M. Xia², and S. Auerbach³. ¹Kelly Government Solutions, Durham, NC; ²NCATS, Rockville, MD; and ³NIH/NIEHS, Durham, NC.

Abstract 1098; Poster Board P127

QSAR Modeling to Predict Androgen Receptor Pathway Activity. Q. Zang², D. Allen², W. Casey³, R. Judson¹, and N. Kleinstreuer². ¹US EPA/ORD/NCCT, Durham, NC; ²ILS, Inc., Durham, NC; and ³NIEHS/NICEATM, Durham, NC.

Abstract 1099; Poster Board P128

QSAR-Based Prediction of Ames Mutagenicity for Regulatory Submissions. V.K. Gombar, M.S. Lawless, and R.D. Clark. Simulations Plus, Lancaster, CA. Sponsor: S. Ferguson.

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. Moore¹, 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.

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

***In Vitro* Screening to *In Vivo* Testing of Polycyclic Aromatic Compounds at the National Toxicology Program.** C.V. Rider, S.S. Auerbach, J.-H. Hsieh, E. Tokar, D. Germolec, S.S. Ferguson, K. Shockley, E. Mutlu, S. Masten, and S. Waidyanatha. NTP/NIEHS, Research Triangle Park, NC.

Poster Session: Ocular Toxicology

Chairperson(s): Patrick McNutt, USAMRICD, Gunpowder, MD; and Clive Steven Roper, Charles River Laboratories, Trant, United Kingdom.

Abstract 1609; Poster Board P447

Reduced Disc Shedding Contribute to Kava Kava Extract-Induced Retinal Degeneration in F344/N Rats. H. Yamashita^{3,4}, 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.

Monday, March 14, 2:00 PM to 4:45 PM, CC Great Hall B

**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 **Epigenome: Tool for Assessment of Health Impact of Cumulative Exposure to Chemical and Non-Chemical Stressors.** K. Olden. US EPA, Washington, DC.

Abstract 1724

3:34 PM **The NIH Roadmap Epigenomics Program, and How It Can Help You!** L.H. Chadwick. NIEHS, Research Triangle Park, NC. Sponsor: S. McCullough.

4:30 PM **Panel Discussion/Q&A.**

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.

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

Past Presidents' 5K Fun Run/Walk

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.

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 **Bridging Chemical Exposures Technology with Bioactivity through Combining Passive Wristband Samplers and Bioassays to Better Understand Mixtures.** K. Anderson. Oregon State University, Corvallis, OR. Sponsor: C. Rider.

12:00 PM **Panel Discussion/Q&A.**

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

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 1767b

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 Room R04

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, Valhalla, 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.

Poster Session: Stem Cell Biology and Toxicology

Chairperson(s): Joshua F. Robinson, University of California, San Francisco, San Francisco, CA; and Kameshwar P. Singh, School of Medicine and Dentistry, University of Rochester, Rochester, NY.

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. Singh², N. Englert¹, Z. Unnisa², J.A. Bennett², E. Henry², T. Thatcher², 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. Flaws³, 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

Prenatal Exposure to Bisphenol A and Hyperactivity: Implications for Attention Deficit Hyperactivity Disorder, a Systematic Review and Meta-Analysis. J.R. Rochester, A.L. Bolden, and C.F. Kwiatkowski. The Endocrine Disruption Exchange (TEDX), Paonia, CO. Sponsor: K. Howdeshell.

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. Toraason⁴, M. Cesta¹, R. Herbert¹, A. Brix², M. Cora¹, K. Janardhan³, 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.

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 Sreenivasa 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

Bayesian Integrated Testing Strategy (ITS) for Skin Sensitization Potency Assessment – A Decision Support System for Quantitative Weight of Evidence and Adaptive Testing Strategy. J. Jaworska⁶, A. Natsch¹, C. Ryan⁵, J. Strickland², T. Ashikaga⁴, and M. Miyazawa³. ¹Givaudan Schweiz AG, Dubendorf, Switzerland; ²ILS/NICEATM, Research Triangle Park, NC; ³Kao Corporation, Tochigi, Japan; ⁴Shiseido Company Limited, Kanagawa, Japan; ⁵The Procter & Gamble Company, Mason, OH; and ⁶The Procter & Gamble Company, Strombeek-Bever, Belgium.

Abstract 2202; Poster Board P132

Multivariate Models for Prediction of Human Skin Sensitization Hazard. J. Strickland⁵, Q. Zang⁵, M. Paris⁵, D.M. Lehmann², N. Kleinstreuer⁵, D. Allen⁵, N. Choksi⁵, J. Matheson¹, A. Jacobs⁴, A. Lowit³, and W. Casey⁵. ¹CPSC, Rockville, MD; ²US EPA/ORD/NHEERL, Durham, NC; ³US EPA/OSCSPP/OPP, Washington, DC; ⁴US FDA/CDER, Silver Spring, MD; and ⁵NIEHS/NICEATM, Durham, NC.

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. Wetmore⁴, S. Ferguson², M. DeVito², 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

Evaluation of Polycyclic Aromatic Compound Toxicity Using Metabolically-Competent *In Vitro* Liver Models. P.E. Dunlap, S. Ramaiahgari, E.J. Tokar, M. Fenton, S. Waidyanatha, M. DeVito, W.A. Boyd, C. Rider, and S.S. Ferguson. NIEHS, Research Triangle Park, NC.

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.

Tuesday, March 15, 1:15 PM to 4:30 PM, CC Exhibit Hall (cont'd)

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. Slattery². 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.

2:00 PM **Introduction.** K.L. Willett. University of Mississippi, University, MS.

Abstract 2515

2:40 PM **Transgenerational Effects of Environmental Exposures in Animals: A Literature Review.** V. Walker. NIEHS, Research Triangle Park, NC. Sponsor: K.L. Willett.

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.

Tuesday, March 15, 2:00 PM to 4:45 PM, CC Room R06 (cont'd)

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. Conley⁴, L.E. Gray⁴, 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

11:27 AM

Differential Susceptibility of Stem Cells in Inorganic Carcinogenesis. E. Tokar. NIEHS, Research Triangle Park, NC.

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

9:35 AM

Cardiovascular Outcomes Associated with Low-to-Moderate-Dose Arsenic Exposure in Bangladesh. M. Argos. University of Illinois at Chicago, Chicago, IL. Sponsor: D.J. Carlin.

Abstract 2571

10:59 AM

The Impacts of Low-Moderate-Level Drinking Water Arsenic Exposure on Reproduction. M.S. Bloom. University at Albany, State University of New York, Rensselaer, NY. Sponsor: D.J. Carlin.

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)

Abstract 2585

11:23 AM **Using HTS Data for Decision-Making for Further *In Vivo* Testing.** M. Behl. NTP/NIEHS, Research Triangle Park, NC.

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. VanDuyn^{2,3}, 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

Estimating Compound Potency in Tox21 Phase II Estrogen Receptor Assays Using Weighted Information Gain. K.R. Shockley. NIEHS, Research Triangle Park, NC. Sponsor: R. Tice.

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. Hamm², 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. Nagai², 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. Cave^{2,3}. 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, Università 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

Exhibitor-Hosted Session: DRAGON ONLINE: A Web-Based Tool for Systematic Literature Review

Presented by: ICF International

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.**

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

Career Advancement and Development Resources

The Evolution of the Postdoc: Transitioning from Trainee to Professional in the Modern Era

Wednesday, March 16, 1:15 PM to 4:30 PM, CC Exhibit Hall

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. Wetmore³, M.J. DeVito¹, M. Xia², B. Parks³, R. Huang², K. Houck⁴, R.R. Tice¹, R. Judson⁴, R.S. Thomas⁴, and M.E. Andersen³. 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.

Wednesday, March 16, 1:00 AM to 2:00 PM, NIEHS, NTP, and EHP Exhibit Booth 1456

Tox 21 Data (Integration and Visualization Tools)

Wednesday, March 16, 1:15 PM to 4:45 PM, CC Exhibit Hall

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

Retrospective Analysis of Acute Toxicity Tests for Pesticides. M. Paris, J. Strickland, D. Allen, and W. Casey. NIEHS/NICEATM, Durham, NC.

Abstract 2995; Poster Board Number P135

A Computational Approach to Evaluate NIEHS Funded Scientific Literature in the Context of the 2012–2017 NIEHS Strategic Plan. K.J. Chandler, E. Milliman, L.S. Birnbaum, and S.A. Newton. National Institute of Environmental Health Sciences, Research Triangle Park, NC.

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. Woychik¹, J.H. Santos¹, O. Lozoya¹, I. Martinez², D. Grenet¹, T. Wolfgang¹, T. Wang¹, and N. Chandel². ¹National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC; and ²Northwestern University Feinberg School of Medicine, Evanston, IL.

Poster Session: Animal Models of Disease

Chairperson(s): Alain Stricker-Krongrad, Sinclair Research Center, Auxvasse, MO.

Abstract 3089; Poster Board P243

The Effects of a High Fat (HF) Diet on Male Diversity Outbred (DO) Mice. M.J. DeVito³, S.J. Borghoff⁴, L. Zorrilla¹, K.R. Shockley², G. Kissling², and G. Travlos³. ¹Bayer Crop Science, Research Triangle Park, NC; ²Biostatistics, and Computational Biology Branch, Research Triangle Park, NC; ³Division of the National Toxicology Program, Research Triangle Park, NC; and ⁴ToxStrategies, Inc., Cary, NC.

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

Relationship of AhR Genotype to DE-71 Tumor Formation in Wistar Han Rats. B.A. Merrick², T. Maynor¹, A.E. Brix¹, G.E. Kissling², M.J. DeVito², S. Waidyanatha², and J.K. Dunnick². ¹ILS, Inc., Research Triangle Park, NC; and ²NIEHS, Research Triangle Park, NC.

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

DNA Methylation and Transcriptional Changes in Smokers During Monocyte Differentiation. N.A. Englert, M. Campbell, C. Crowl, G. Pittman, D. Porter, and D.A. Bell. NIEHS, Research Triangle Park, NC.

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^{1,2}, W.N. Jefferson¹, E. Padilla-Banks¹, V.L. Bae-Jump², and C.J. Williams^{1,2}. ¹National Institute of Environmental Health Sciences, Durham, NC; and ²UNC 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. Filgo³, D.M. Chambers¹, E.M. Quist^{2,3}, B.C. Blount¹, and S.E. Fenton³. ¹Centers for Disease Control, and Prevention, Atlanta, GA; ²NCSU, Raleigh, NC; and ³NIEHS, Research Triangle Park, NC.

Wednesday, March 16, 1:15 PM to 4:45 PM, CC Exhibit Hall (cont'd)

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.

Wednesday, March 16, 2:00 PM to 4:45 PM, CC Room R06

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

2:20 PM **Role of Exosomes Released by Arsenic Transformed Prostate Epithelial Cells in the Recruitment of Stem Cells into an Oncogenic Phenotype.** N.O. Ngalame, E.U. Rivera, N. Makia, and E.J. Tokar. NTP, NIEHS, Durham, NC.

Wednesday March 16, 5:00 PM to 6:20 PM, CC Room 220

Career Advancement and Development Resources

“Talksicology”: Effective Oral Presentation Techniques

Thursday, March 17, 9:30 AM to 12:15 PM, CC Room 217

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.

Thursday, March 17, 9:30 AM to 12:15 PM, CC Room 206

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.

Thursday, March 17, 9:30 AM to 12:15 PM, CC Great Hall B

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.

Thursday, March 17, 9:30 AM to 12:45 PM, CC Great Hall A

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. Jones³, 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. Moeller¹, M. Doyle-Eisele¹, J.D. McDonald¹, C.R. Blystone², and S. Waidyanatha². ¹Lovelace Respiratory Research Institute, Albuquerque, NM; and ²NIEHS, Research Triangle Park, NC.

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. Black², S. Watson², P. Patel², R. Snyder², J. Burgess², 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. Ji³, A. Taylor¹, L. Miller-DeGraff², M. George², J. Marshburn², R. Snyder², A. Rice², 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. Snyder^{1,2}, 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.

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**

Thursday, March 17, 1:00 PM to 6:00 PM, Room 205

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.