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<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td><strong>Friday, June 22, 2018</strong></td>
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<tr>
<td>3:00 PM–6:00 PM</td>
<td>Registration Open</td>
<td>Grand Ballroom Foyer</td>
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<tr>
<td><strong>Saturday, June 23, 2018</strong></td>
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<tr>
<td>7:30 AM–6:00 PM</td>
<td>Registration Open</td>
<td>Grand Ballroom Foyer</td>
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<tr>
<td>8:00 AM–8:30 AM</td>
<td><strong>Education Course Coffee and Pastries</strong></td>
<td>Grand Ballroom D</td>
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<td></td>
<td><em>(Education Course Session 1 Registrants Only)</em></td>
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<tr>
<td>8:30 AM–12:00 Noon</td>
<td><strong>Education Course Session 1</strong></td>
<td>Grand Ballroom D</td>
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<tr>
<td></td>
<td><strong>Embryology and Development of Central Nervous System: From Prenatal Period to Adolescence</strong></td>
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<td><em>(Separate Registration Required)</em></td>
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<td><strong>Organized by the Education Committee, Chairperson, Julia Y. Hui, Celgene Corporation</strong></td>
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<tr>
<td>8:30 AM–8:40 AM</td>
<td>Welcome</td>
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<td><em>Teratology Society President, Alan M. Hoberman, Charles River Laboratories</em></td>
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<tr>
<td>8:40 AM–8:45 AM</td>
<td>Course Overview</td>
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<td><em>Education Committee Chairperson, Julia Y. Hui, Celgene Corporation</em></td>
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<tr>
<td>8:45 AM–9:30 AM</td>
<td>Pre- and Postnatal Development of the Central Nervous System</td>
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<td><em>John M. DeSesso, Exponent, Inc.</em></td>
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<td>9:30 AM–10:15 AM</td>
<td>Development of Central Nervous System: Differences/Comparisons in Mammalian Species</td>
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<td><em>Christine Charvet, Cornell University</em></td>
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<td>10:15 AM–10:30 AM</td>
<td>Break</td>
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<tr>
<td>10:30 AM–11:15 AM</td>
<td>Pre- and Postnatal Development and Assessment of Central Nervous System Functions in Human and Animals</td>
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<td><em>Gregg D. Stanwood, Florida State University</em></td>
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<td>11:15 AM–12:00 Noon</td>
<td>Susceptibility to Disruptions of Normal Central Nervous System Development by Toxicants and Other Factors</td>
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<td><em>Christine Perdan Curran, Northern Kentucky University</em></td>
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</table>
12:00 Noon–1:30 PM  Lunch on Your Own

1:30 PM–5:00 PM  Education Course Session 2  Grand Ballroom D
Assessment and Management of Developmental Effects on the Central Nervous System: From the Molecular Level to the Clinical Setting
(Separate Registration Required)
Organized by the Education Committee, Chairperson, Julia Y. Hui, Celgene Corporation

1:30 PM–1:35 PM  Course Overview  Education Committee, Chairperson, Julia Y. Hui, Celgene Corporation

1:35 PM–2:20 PM  Brain Extracellular Space: A Molecular Highway for Cell Communication in Development  Sabina Hrabetova, SUNY Downstate Medical Center

2:20 PM–3:05 PM  Developmental Neurotoxicity: In Vivo Preclinical Assessment and Models of Disease  Ellen McGlinchey, Charles River Laboratories

3:05 PM–3:20 PM  Break

3:20 PM–4:05 PM  Developmental Neurotoxicology: The Continuum from In Vivo to In Vitro and Alternate Approaches  William Slikker Jr., US Food and Drug Administration

4:05 PM–4:50 PM  Clinical Assessments and Management of Developmental Effects on the Central Nervous System  Claire D. Coles, Emory University School of Medicine

4:50 PM–5:00 PM  Discussion

5:30 PM–7:30 PM  Student and Postdoctoral Fellow Mixer  Flamingo Deck

6:30 PM–9:00 PM  Council 1 Meeting  Committee Reports  Waters Edge

Sunday, June 24, 2018

7:00 AM–6:00 PM  Registration Open  Grand Ballroom Foyer

7:00 AM–8:00 AM  2019 Program Committee Meeting  Waters Edge A

7:30 AM–8:00 AM  Morning Coffee and Pastries  (Joint with DNTS)  Grand Ballroom Foyer

8:00 AM–8:15 AM  President’s Welcome  Teratology Society President, Alan M. Hoberman, Charles River Laboratories  Grand Ballroom D
8:15 AM–9:00 AM  Josef Warkany Lecture
The Arrogance of Teratology (L1)
(Joint with DNTS)
Chairperson: Alan M. Hoberman, Charles River Laboratories
Lecturer: John M. DeSesso, Exponent, Inc.

9:05 AM–12:05 PM  Graduate Student and Postdoctoral Fellow Platform Session 1
Grand Ballroom D
Organized by the Student Affairs Committee
Chairperson: Dinesh J. Stanislaus, GlaxoSmithKline

Presenting author is underlined.

9:05 AM–9:10 AM  Introduction
Dinesh J. Stanislaus, GlaxoSmithKline

9:10 AM–9:30 AM  1 A Mechanistic Agent-Based Model for Brain Angiogenesis and Developmental Neurovascular Toxicity
Zurlinden TJ¹, Saili KS¹, Spencer RS², Baker NC³, Knudsen TB¹. ¹US Environmental Protection Agency, ORD, National Center for Computational Toxicology, Research Triangle Park, NC, United States, ²ARA, Research Triangle Park, NC, United States, ³Leidos, Research Triangle Park, NC, United States.

9:30 AM–9:50 AM  2 Transcriptomic Profiling of Flame Retardant Exposures in Human Embryonic Stem Cell Neural Progenitors
Chen H, Iyer N, Yan CD, Robinson JF. University of California, San Francisco, San Francisco, CA, United States

9:50 AM–10:10 AM  3 Intrinsic and Ethanol-Enhanced Fetal DNA Damage and Neurodevelopmental Deficits in Brca1 Knockout Progeny Associated with Decreased Brain BRCA1 Levels
Drake DM¹, Or B², Wells PG²,³. ¹Department of Pharmaceutical Sciences and the Centre for Pharmaceutical Oncology, University of Toronto, Toronto, ON, Canada, ²Department of Pharmacology and Toxicology, Faculty of Medicine, University of Toronto, Toronto, ON, Canada, ³Department of Pharmaceutical Sciences and the Centre for Pharmaceutical Oncology, University of Toronto, Toronto, ON, Canada.
10:10 AM–10:30 AM  4 Transient Maternal Hypothyroidism Alters Neural Progenitors and Results in Abnormal Brain Development
O'Shaughnessy KL\textsuperscript{1,2}, Thomas SE\textsuperscript{1,2}, Ford JL\textsuperscript{2}, Ford RL\textsuperscript{1,2}, Gilbert ME\textsuperscript{2}. \textsuperscript{1}Oak Ridge Institute for Science Education (ORISE), Oak Ridge, TN, United States, \textsuperscript{2}US Environmental Protection Agency, ORD, National Health and Environmental Effects Research Laboratory, Toxicity Assessment Division, Research Triangle Park, NC, United States.

10:30 AM–10:45 AM  Break—Grand Ballroom Foyer

10:45 AM–11:05 AM  5 Increased Risk of Necrotizing Enterocolitis in Offspring of Toxicant-Exposed Mice
Mokshagundam S\textsuperscript{1}, Ding T\textsuperscript{1}, Wilson AJ\textsuperscript{1}, Dallas ML\textsuperscript{2}, Osteen KG\textsuperscript{2}, Bruner-Tran KL\textsuperscript{1}. \textsuperscript{1}Vanderbilt University Medical Center, Nashville, TN, United States, \textsuperscript{2}Vanderbilt University, Nashville, TN, United States.

11:05 AM–11:25 AM  6 Medically Assisted Reproduction and the Risk of Preterm Birth
Gorgui J\textsuperscript{1,2}, Sheehy O\textsuperscript{2}, Trasler J\textsuperscript{3}, Fraser W\textsuperscript{4}, Bérard A\textsuperscript{1,2}. \textsuperscript{1}University of Montréal, Montréal, QC, Canada, \textsuperscript{2}CHU Sainte-Justine Research Center, Montréal, QC, Canada, \textsuperscript{3}McGill University, Montréal, QC, Canada, \textsuperscript{4}University of Sherbrooke, Sherbrooke, QC, Canada.

11:25 AM–11:45 PM  7 Surveillance of Microcephaly and Neurotropic Infections Using Healthcare Databases
Messinger CJ\textsuperscript{1,2}, He M\textsuperscript{2}, Huybrechts KF\textsuperscript{2}, Bateman B\textsuperscript{2}, Hernandez-Diaz S\textsuperscript{1}. \textsuperscript{1}Harvard Medical School, Boston, Massachusetts, United States, \textsuperscript{2}Division of Pharmacoepidemiology and Pharmacoeconomics, Brigham and Women’s Hospital and Harvard Medical School, Boston, MA, United States, \textsuperscript{3}Harvard TH Chan School of Public Health, Boston, MA, United States.
11:45 PM–12:05 PM  
Noninvasive Screening of Fetal Anomalies: The Serum Metabolomic Way  

12:05 PM–1:30 PM  
Lunch on Your Own

12:05 PM –1:30 PM  
Past Presidents’ and Honorees’ Luncheon  
Starfish
(By Invitation Only)

12:30 PM–1:30 AM  
Constitution and Bylaws Committee Meeting  
Tarpon

12:30 PM–1:30 AM  
Membership Committee Meeting  
Dolphin

1:30 PM–2:00 PM  
F. Clarke Fraser New Investigator Award  
Grand Ballroom D
Cancer Risk in Children with Birth Defects: Developing a Research Program in the Epidemiology of Rare Complex Traits (L2)

Chairperson: Julia M. Gohlke, Virginia Polytechnic Institute and State University
Lecturer: Philip Lupo, Baylor College of Medicine

2:00 PM–2:30 PM  
James G. Wilson Publication Award  
Grand Ballroom D
Genetic Vulnerabilities to Prenatal Alcohol Exposure: Limb Defects in Sonic Hedgehog and GLI2 Heterozygous Mice

Chairperson: Brian Enright, AbbVie Inc.
Lecturer: Eric W. Fish, University of North Carolina–Chapel Hill
2:35 PM–5:30 PM Organotypic Culture Models (OCMs) and Microphysiological Systems (MPS) for Human Development: New Platforms for Mechanistic Evaluation of Developmental Toxicity Symposium

Chairpersons: Brian Johnson, University of Wisconsin-Madison and Thomas B. Knudsen, National Center for Computational Toxicology, US EPA

2:35 PM–2:40 PM  Introduction

2:40 PM–3:15 PM  S1 An Engineered Organoid Culture Model That Incorporates Human Mesenchymal and Epithelial Cells to Model Palatal Fusion
Barbara D. Abbott, US Environmental Protection Agency

3:15 PM–3:45 PM  S2 Engineering an In Vitro and In Silico Model of Human Neural Tube Development for Analysis of Molecular Pathways
Randolph S. Ashton, University of Wisconsin

3:45 PM–4:15 PM  S3 Recapitulating Human Endocardial Cushion Morphogenesis with Organotypic Culture Models and Microfluidics
E. Sid Hunter, US Environmental Protection Agency

4:15 PM–4:30 PM  Break—Grand Ballroom Foyer

4:30 PM–5:00 PM  S4 Building an Integrated Fetal Organotypic Membrane on a Chip (IFMOC) for Predictive Toxicology
Kevin G. Osteen, Vanderbilt University School of Medicine

5:00 PM–5:30 PM  S5 Paracrine Sonic Hedgehog Gradients in a Microphysiological System for Predictive Toxicology
Brian Johnson, University of Wisconsin-Madison

2:35 PM–5:30 PM Current Topics and Updates for Pregnancy Waters Edge Registries Workshop

Chairpersons: Christina D. Chambers, University of California–San Diego and Lewis B. Holmes, MassGeneral Hospital for Children

2:35 PM–2:55 PM  W1 Collecting Patient-Reported Data via a Mobile App for Studies of Pregnancy Exposures and Outcomes: A Pilot Study
Sascha Dublin, Kaiser Permanente Washington Health Research Institute

2:55 PM–3:15 PM  W2 Sample Size and Power Issues for Pregnancy Registries
Sonia Hernandez-Diaz, Harvard School of Public Health
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
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Christina D. Chambers, University of California San Diego |
| 3:35 PM–3:55 PM | W4      | Recruitment in the Age of Social Media: A CRO Perspective  
Nicole Hurst, Pharmaceutical Product Development, LLC |
| 3:55 PM–4:15 PM | W5      | To Count or Not Count: Cardiac Defects in Pregnancy Registries  
Thieu Nguyen, Johns Hopkins All Children’s Heart Institute |
| 4:15 PM–4:30 PM |         | Break—Grand Ballroom Foyer |
| 4:30 PM–4:50 PM | W6      | US Food and Drug Administration Updates  
Leyla Sahin, US Food and Drug Administration |
| 4:50 PM–5:05 PM | W7      | Update from the United States Zika Pregnancy and Infant Registry  
Baez-Santiago MA¹, Carr C¹, Ellington S¹, Jones AM¹, Fulton A¹, Reynolds M¹, Gilboa SM¹, Honein MA², USZPAIR Collaborators¹. ¹Division of Congenital and Developmental Disorders, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, Atlanta, GA, United States, ²Division of Congenital and Developmental Disorders, National Center on Birth Defects and Developmental Disabilities, CDC, Atlanta, GA, United States. |
| 5:05 PM–5:20 PM | W8      | High Prevalence of Selected Birth Defects in Ensenada Baja California, Mexico  
Santos-Burgoa L¹, Pallares ME¹, Rosenthal J², Santos-Burgoa C³. ¹Departamento de Pediatría, Hospital General de Ensenada, Instituto de Salud, Ensenada, BC, Mexico, ²Division of Congenital and Developmental Disorders, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, Atlanta, GA, United States, ³Milken Institute School of Public Health, Department of Global Health, The George Washington University, Washington, DC, United States. |
| 5:20 PM–5:30 PM |         | Discussion |
5:35 PM–6:00 PM Patricia Rodier Mid-Career Award
for Research and Mentoring
Assessing Addiction Risk in Rodents Following Perinatal Exposure to PCBs: Behavioral and Neurochemical Indicators
(Joint with DNTS)
Chairpersons: Julia M. Gohlke, Virginia Polytechnic Institute and State University and Michael T. Williams, Cincinnati Children’s Research Foundation
Lecturer: Helen J.K. Sable, University of Memphis

6:00 PM–7:30 PM Welcome Reception, Poster Session 1, and Exhibits Attended
(Joint with DNTS)
Teratology Society Posters P1–P22 and LB1–LB3
DNTS Posters 1–11

7:30 PM–8:00 PM New Member "Sundae" Night Social
(By Invitation Only)

Monday, June 25, 2018

7:00 AM–6:00 PM Registration Open

7:00 AM–8:00 AM Breakfast with the Teratology Mentors
(Advance Signup Is Required)

7:00 AM–8:00 AM Nominations and Elections Committee Meeting

7:00 AM–8:00 AM Publications Committee Meeting

7:00 AM–8:00 AM Science Committee Meeting

7:30 AM–8:00 AM Morning Coffee and Pastries

8:00 AM–9:00 AM Keynote Lecture
Zika: Florida’s Experience Responding to an Emerging Public Health Threat (L3)
(Joint with DNTS)
Chairpersons: Dana L. Shuey, Incyte
Speaker: Celeste Philip, Florida Department of Health

9:05 AM–12:00 Noon Assessing the Lifelong Impacts of Prenatal and Early-Life Exposure to Air Pollution Symposium
(Joint with DNTS)
Chairpersons: Natalie Johnson, Texas A&M School of Public Health and Peter H. Langlois, Texas Department of State Health Services
9:10 AM–9:45 AM S6 Using Birth Defects Registries to Identify Developmental Toxicants in Air Pollution
Gary M. Shaw, Stanford University

9:45 AM–10:20 AM S7 Effects of Ambient Ultrafine Particle Exposure on Brain Development and Behavior: Parallels with Neurodevelopmental Disorders
Deborah Cory-Slechta, University of Rochester Medical School

10:20 AM–10:35 AM Break

10:35 AM–11:10 AM S8 Prenatal Air Pollution Exposure and Offspring Pulmonary Immunosupression
Natalie Johnson, Texas A&M School of Public Health

11:10 AM–11:45 AM S9 Genetic Susceptibility to Developmental PAH Exposure
Christine Perdan Curran, Northern Kentucky University

11:45 AM–12:00 Noon Discussion

9:05 AM–12:00 Noon Application of New Genomic Technologies in the Understanding of Birth Defects Symposium
Grand Ballroom G
Chairperson: Jan M. Friedman, University of British Columbia

Jan M. Friedman, University of British Columbia

9:30 AM–10:00 AM S11 Identifying Structural Variants and the Genes that Cause Birth Defects
Evan Eichler, University of Washington

10:00 AM–10:30 AM S12 Mutations that Alter Splicing
Daniel MacArthur, The Broad Institute

10:30 AM–10:45 AM Break

10:45 AM–11:15 AM S13 Genomic Dark Matter: Regulatory Variants
Peter Robinson, The Jackson Laboratory for Genomic Medicine

11:15 AM–11:45 AM S14 The Importance and Challenges of Data Sharing
Bartha M. Knoppers, McGill University

11:45 AM–12:00 Noon Discussion
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<tr>
<th>Time</th>
<th>Session/Topic</th>
<th>Authors</th>
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<tr>
<td>9:05 AM–9:15 AM</td>
<td>Introduction</td>
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<tr>
<td>9:15 AM–9:30 AM</td>
<td>Early Pregnancy Ondansetron Exposure and Risk of Structural Birth Defects</td>
<td>Kirby R(^1), Zambelli-Weiner A(^2), Via C(^2), Yuen M(^2), Weiner D(^2).  (^1)University of South Florida, Tampa, FL, United States, (^2)Translational Technologies International, Hampstead, MD, United States.</td>
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<tr>
<td>9:30 AM–9:45 AM</td>
<td>Ondansetron and the Risk of Congenital Malformations</td>
<td>Huybrechts KF(^1), Hernandez-Diaz S(^2), Straub L(^1), Gray K(^3), Patomo E(^1), Desai R(^1), Mogun H(^1), Bateman B(^1,4).  (^1)Division of Pharmacoepidemiology and Pharmacoeconomics, Brigham and Women’s Hospital and Harvard Medical School, Boston, MA, United States, (^2)Harvard TH Chan School of Public Health, Boston, MA, United States, (^3)Division of Maternal-Fetal Medicine, Brigham and Women’s Hospital and Harvard Medical School, Boston, MA, United States, (^4)Department of Anesthesiology, Brigham and Women’s Hospital and Harvard Medical School, Boston, MA, United States.</td>
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<tr>
<td>9:45 AM–10:00 AM</td>
<td>Maternal ADHD Medication Use during Pregnancy and the Risk of ADHD in Children</td>
<td>Lemelin M(^1), Sheehy O(^2), Bérard A(^1,2).  (^1)Faculty of Pharmacy, University of Montréal, Montréal, QC, Canada (^2)Research Center, CHU Sainte-Justine, Montréal, QC, Canada.</td>
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<tr>
<td>10:00 AM–10:15 AM</td>
<td>Evidence That Nevirapine Causes Harmful Fetal Effects</td>
<td>Zash R(^1,2,3), Diseko M(^3), Mayondi G(^3), Mmalane M(^3), Makhema J(^3), Lockman S(^2,3,4), Holmes LB(^3), Shapiro RL(^2,3).  (^1)Beth Israel Deaconess Medical Center, Boston, MA, United States, (^2)Harvard TH Chan School of Public Health, Boston, MA, United States, (^3)Botswana Harvard AIDS Institute Partnership, Gaborone, Gaborone, Botswana, (^4)Division of Infectious Diseases, Brigham and Women’s Hospital, Boston, MA, United States, (^5)MassGeneral Hospital for Children, Boston, MA, United States.</td>
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10:35 AM–12:00 Noon  When Does the Presence of Medication in Mothers Milk Become a Risk to the Child Workshop

*Chairpersons: Melissa Sherman Tassinari, and Belen Tornesi, Abbvie Inc.*

10:35 AM–10:40 AM  Introduction

10:40 AM–11:10 AM  W9  The More Chemicals, the Worse the Milk? Risks of Maternal Medications during Lactation
*Jason Sauberan, Neonatal Research Institute*

11:10 AM–11:40 AM  W10  Challenges and Successes in Running a Lactation Study
*Marie Teil, UCB Farchim S.A.*

11:40 AM–12:00 Noon  Discussion

12:00 Noon–1:30 PM  Lunch on Your Own

12:00 Noon–1:30 PM  *BDR Editorial Board Meeting*

12:00 Noon–1:30 PM  Building a Professional Scientific Presence Using Social Media Workshop

*Chairpersons: Elise M. Lewis, Charles River Laboratories, and Dinesh J. Stanislaus, GlaxoSmithKline*

12:00 Noon–12:10 PM  Boxed Lunch Pick-Up

12:10 PM–12:40 PM  W11  Social Media for Scientists: Professional Networking and Creating Impact for Your Work
*Paige Jarreau, FromTheLabBench*

12:40 PM–1:30 PM  Discussion

1:30 PM–2:00 PM  Agnish Fellowship Lecture

*Chairperson: Julia Y. Hui, Celgene Corporation*

*Speaker: Anthony R. Scialli, Scialli Consulting LLC*

2:05 PM–5:20 PM  *Public Affairs Symposium*  CME

*Infectious Diseases during Pregnancy and Sequelae for the Mother and Baby*

*Chairpersons: Evi Struble, US Food and Drug Administration and Susan L. Makris, US Environmental Protection Agency*

2:05 PM–2:10 PM  Introduction
*Evi Struble, US Food and Drug Administration*

2:10 PM–2:50 PM  S15  An Update on Zika Virus As a Cause of Birth Defects
*Sonja A. Rasmussen, Centers for Disease Control and Prevention*
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<th>Time</th>
<th>Session</th>
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<tr>
<td>2:50 PM–3:30 PM</td>
<td>S16</td>
<td>Vaccine Development to Prevent Congenital Cytomegalovirus Infection</td>
<td>Haruhiko Murata, US Food and Drug Administration</td>
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<td>3:30 PM–3:45 PM</td>
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<td>Break</td>
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<td>3:45 PM–4:25 PM</td>
<td>S17</td>
<td>Parvovirus B19 Infection during Pregnancy: Are We Underestimating the Fetal Risks?</td>
<td>Asher Ornoy, Hebrew University Medical School</td>
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<td>4:25 PM–4:45 PM</td>
<td>S18</td>
<td>Developing Safe and Effective Drugs for Viral Infections during Pregnancy: The US Food and Drug Administration Perspective</td>
<td>Yodit Belew, US Food and Drug Administration</td>
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<td>4:45 PM–5:05 PM</td>
<td>S19</td>
<td>Regulatory Considerations for Developing Drugs for Use in Pregnant Women</td>
<td>Nneka McNeal-Jackson, US Food and Drug Administration</td>
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<td>5:05 PM–5:20 PM</td>
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<td>Discussion</td>
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<td>(Joint with DNTS)</td>
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<td>Chairpersons: Diana Dow-Edwards, SUNY Downstate Medical Center and Grace S. Lee, US Food and Drug Administration</td>
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<td>2:05 PM–2:10 PM</td>
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<td>Introduction</td>
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<td>2:10 PM–2:45 PM</td>
<td>S20</td>
<td>Maternal and Child Health Impact of the US Prescription Opioid Epidemic: Combined Public Health–Clinical Response</td>
<td>Cheryl S. Broussard, Centers for Disease Control and Prevention</td>
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<td>2:45 PM–3:20 PM</td>
<td>S21</td>
<td>Pharmacotherapy of Pregnant Women with Opioid Use Disorder</td>
<td>Hilary S. Connery, Harvard Medical School</td>
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<td>3:20 PM–3:35 PM</td>
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<td>Break</td>
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<td>3:35 PM–4:10 PM</td>
<td>S22</td>
<td>Nonclinical Assessment of the Effects of Opioids on Development: Challenges and Limitations</td>
<td>Elizabeth A. Bolan, US Food and Drug Administration</td>
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<td>4:10 PM–4:45 PM</td>
<td>S23</td>
<td>Nonopiate Treatment for Neonatal Abstinence Syndrome (NAS): Clinical and Preclinical Data</td>
<td>Henrietta S. Bada, University of Kentucky</td>
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</table>
2:05 PM–2:20 PM  Introduction

2:20 PM–2:35 PM  Preterm Birth and Heat Waves: Influence of the Spatial Resolution of the Exposure Estimate in Determining the Association

Wu YY\(^1\), Zaitchik BF\(^2\), Swarup S\(^3\), Gohlke JM\(^1\).
\(^1\)Department of Population Health Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States, \(^2\)Department of Earth and Planetary Sciences, Johns Hopkins University, Baltimore, MD, United States, \(^3\)Network Dynamics Simulation Science Laboratory, Biocomplexity Institute of Virginia Polytechnic Institute and State University, Blacksburg, VA, United States.

2:35 PM–2:50 PM  Arsenic Exposure Alters Folate Metabolism Causing Genomic Instability and Neural Tube Defects in a Dose-Dependent Manner

Lachenauer ER\(^1\), Kamynina E\(^1\), Krämer L\(^2\), DiRisio AC\(^1\), Stabler SP\(^3\), Brosnan ME\(^4\), Brosnan JT\(^4\), Hiller K\(^{2,5}\), Field MS\(^1\), Stover PJ\(^1\).
\(^1\)Cornell University, Ithaca, NY, United States, \(^2\)Technische Universität Braunschweig, Braunschweig, Lower Saxony, Germany, \(^3\)University of Colorado, Aurora, CO, United States, \(^4\)Memorial University of Newfoundland, St. John’s, Newfoundland and Labrador, Canada, \(^5\)Helmholtz Centre for Infection Research, Braunschweig, Lower Saxony, Germany.

2:50 PM–3:05 PM  Repression of the Autophagy Gene AMBRA1 in the Developing Neuroepithelium Is a Novel Mechanism Underlying Diabetic Embryopathy

Chen X. University of Maryland School of Medicine, Baltimore, MD, United States.

3:05 PM–3:20 PM  Restoring BMP4 Expression in Vascular Endothelial Progenitors Ameliorates Maternal Diabetes-Induced Neural Tube Defects

Cao S. University of Maryland, Baltimore, MD, United States.

3:20 PM–3:35 PM  Break
3:35 PM–3:50 PM 17 Tris(1,3-dichloro-2-propyl) Phosphate Exposure during Early-Blastula Alters the Normal Trajectory of Zebrafish Embryogenesis Dasgupta S¹, Cheng V², Vliet SM², Mitchell CA², Volz DC¹. ¹Department of Environmental Sciences, University of California, Riverside, CA, United States, ²Environmental Toxicology Graduate Program, University of California, Riverside, CA, United States.

3:50 PM–4:05 PM 18 Gene-Ethanol Interactions and Their Impact on Craniofacial Development Lovely CB¹,², Swartz ME², McCarthy N², Norrie J², Henegar T², Eberhart JK². ¹University of Louisville, Louisville, KY, United States, ²University of Texas at Austin, Austin, TX, United States.

4:05 PM–4:20 PM 19 Quaternary Ammonium Compounds Temporarily Alter the Gut Microbiome Hrubec T¹,², McDonald V², Shan L¹, Luo X². ¹E. Via College of Osteopathic Medicine–Virginia Campus, Blacksburg, VA, United States, ²VA-MD College of Veterinary Medicine, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States.

4:20 PM–4:35 PM 20 Maternal and Infant Genetic Variants in Folate, Homocysteine and Trans-Sulfuration Pathways, Folic Acid Supplementation and Risk of Congenital Heart Defects among Women Taking Selective Serotonin Reuptake Inhibitors during Pregnancy Nembhard WN¹, Tang X¹, Hu Z¹, MacLeod S¹, Stowe ZN², Webber D¹. ¹University of Arkansas for Medical Sciences, Little Rock, AR, United States, ²University of Wisconsin at Madison, Madison, WI, United States.

4:35 PM–4:50 PM 21 Epigenome-Wide Assessment Identifies Developmental Genes in Differentially Methylated Regions Associated with Hypospadias Lupo PJ¹, Brown AL¹, Ehli EA², Kallsen NA², Peyton SA², Davies GE², Patel A³, Zamilpa I³, Wyatt RA³, Hobbs CA³. ¹Baylor College of Medicine, Houston, TX, United States, ²Avera Institute for Human Genetics, Sioux Falls, SD, United States, ³University of Arkansas for Medical Sciences, Little Rock, AR, United States.
4:50 PM–5:05 PM  22  Copy Number Variants in Hypoplastic Right Heart Syndrome
Giannakou A1, Sicko R.J2, Kay DM2, Zhang W1, Romitti P1, Caggana M2, Brody L4, Shaw GM3, Jelliffe L6, Mills JL1. 1Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, MD, United States, 2New York State Department of Health, Albany, NY, United States, 3The University of Iowa, Iowa City, IA, United States, 4NHGRI, Bethesda, MD, United States, 5Stanford University, San Francisco, CA, United States, 6University of California, San Francisco, San Francisco, CA, United States.

5:05 PM–5:20 PM  23  The Syndrome of Proximal Femur, Fibula, and Midline Metatarsal Long Bone Deficiencies
Hootnick DR1, Vargesson NA2. 1Departments of Orthopedics, Pediatrics, and Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY, United States, 2School of Medicine, Medical Sciences and Nutrition, Institute of Medical Sciences, University of Aberdeen, Aberdeen, Scotland, United Kingdom.

5:30 PM–7:00 PM  Poster Session 2 and Exhibits Attended
(Joint with DNTS)  Grand Ballroom E
Teratology Society Posters P23–P44 and LB4–LB6
DNTS Posters 12–22

7:00 PM–9:30 PM  Teratology Society and MARTA Graduate Students and Postdoctoral Fellows Career Event
(Open to Teratology Society and DNTS Graduate Student and Postdoctoral Fellows)  Sandpiper Deck

Tuesday, June 26, 2018

7:00 AM–6:00 PM  Registration Open  Grand Ballroom Foyer

7:00 AM–8:00 AM  Communications Coordination Committee Meeting  Starfish

7:30 AM–8:00 AM  Morning Coffee and Pastries  Grand Ballroom Foyer
(Joint with DNTS)

8:00 AM–9:00 AM  Robert L. Brent Lecture—Teratogen Update
Progress against Malaria: The Role of Antimalarial Drugs and Their Use in Pregnancy (L5)
Chairperson: Alan M. Hoiberman, Charles River Laboratories
Lecturer: Robert L. Clark, Artemis Pharmaceutical Research

Grand Ballroom D
### The Teratology of Autism: An Update and Understanding from Different Perspectives Symposium (Joint with DNTS)

**Chairpersons:** Chris J Stodgell, University of Rochester and Susan L. Makris, US Environmental Protection Agency

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<td>9:05 AM–9:10 AM</td>
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| 9:10 AM–9:45 AM | S25 Clinical Characteristics of Autism Spectrum Disorders  
  *Loisa Bennetto, University of Rochester* |
| 9:45 AM–10:20 AM | S26 Maternal Anxiety and Stress and Its Effect on Fetal and Childhood Development: An Extrapolation to Autism  
  *Thomas G. O’Connor, University of Rochester* |
| 10:20 AM–10:35 AM | Break                                                                |
| 10:35 AM–11:10 AM | S27 Placental Development: Vascularization of the Placenta in Children with Autism  
  *Carolyn Margaret Salafia, Placental Analytics* |
| 11:10 AM–11:45 AM | S28 Animal Models of Autism  
  *Craig Powell, The University of Texas Southwestern Medical Center* |
| 11:45 AM–12:00 Noon | Discussion                                                          |

### Hot Topic Symposium Acetaminophen

**Chairpersons:** Sarah Gloria Običan, University of South Florida and Sonja A. Rasmussen, Centers for Disease Control and Prevention

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| 9:10 AM–9:30 AM | S29 Emerging Clinical Information on Acetaminophen  
  *Sarah Gloria Običan, University of South Florida* |
| 9:30 AM–9:50 AM | S30 A Review of the Acetaminophen Preclinical Reproductive Toxicology and Postnatal Development Data: Old and New  
  *Graham P. Bailey, Janssen Pharmaceutica N.V.* |
| 9:50 AM–10:10 AM | S31 Fetal Risks of Maternal Fever in Pregnancy  
  *Christina D. Chambers, University of California–San Diego* |
| 10:10 AM–10:20 AM | Discussion                                                          |

10:20 AM–10:35 AM | Break
**10:35 AM–12:00 Noon**  
**Nongenetic Factors Causing Neural Tube Defects**  
**Grand Ballroom G**

*Chairpersons: Michael D. Collins, University of California–Los Angeles and Grace S. Lee, US Food and Drug Administration*

10:35 AM–10:40 AM  
Introduction

10:40 AM–11:20 AM  
S32 Neural Tube Defects: Causation, Embryonic Development, and a New Method for Primary Prevention  
Andrew J. Copp, University College London Institute of Child Health

11:20 AM–11:40 AM  
S33 Utilizing the Sea Urchin Gene Regulatory Network (GRN) As a Molecular Target to Detect the Mechanism of Valproic Acid Teratogenicity  
Michael D. Collins, University of California–Los Angeles

11:40 AM–12:00 Noon  
S34 Fumonisin B1 (FB1) and Fingolimod (FTY720): Tortilla Toxin and Oral Therapeutic Target Sphingolipid Pathways During Neural Tube Closure  
Janee Gelineau-van Waes, Creighton University School of Medicine

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**10:35 AM–11:50 AM**  
**Platform Session 4**  
**Waters Edge**

**Clinical Teratology and Epidemiology**

*Chairpersons: Russell S. Kirby, USF College of Public Health and Marie McKenzie, University of Georgia*

10:35 AM–10:50 AM  
Introduction

10:50 AM–11:05 AM  
24 An Increased Cephalic Index: A Fetal Effect of Valproic Acid, but Not Phenytoin, Phenobarbital, or Carbamazepine  
Holmes LB¹, Hunt A-T², Stadelmaier R³, Deutsch C⁴, Adams J⁵. ¹MassGeneral Hospital for Children, Boston, MA, United States, ²Hunt Consulting Associates, Chapel Hill, NC, United States, ³Albert Einstein College of Medicine, Bronx, NY, United States, ⁴The Psychobiology Program at the Eunice Kennedy Shriver Center and Departments of Psychiatry and Pediatrics, University of Massachusetts Medical School, Worcester, MA, United States, ⁵Department of Psychology, UMass-Boston, Boston, MA, United States.
11:05 AM–11:20 AM  25  The Impact of Technology on the Prevalence of Congenital Malformations
Straub L¹, Huybrechts KF¹, Bateman B¹,², Mogun H¹, Hernandez-Diaz S³. ¹Division of Pharmacoepidemiology and Pharmacoeconomics, Brigham and Women’s Hospital and Harvard Medical School, Boston, MA, United States, ²Department of Anesthesiology, Brigham and Women’s Hospital and Harvard Medical School, Boston, MA, United States, ³Harvard TH Chan School of Public Health, Boston, MA, United States.

Ospina ML¹, Mercado M², Galang RR³, Moore CA³, González M⁴, Valencia D⁵, Cuevas L⁶, Pacheco O⁴, Bermudez A⁵, Domínguez M³, Gilboa SM³, Rozo N⁴, Avila G⁴, Honein MA³, Prieto F⁴. ¹Dirección General, Instituto Nacional de Salud, Bogotá, Distrito Capital, Colombia, ²Dirección de Investigación en Salud Pública, Instituto Nacional de Salud, Bogotá, DC, Colombia, ³Division of Congenital and Developmental Disorders, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, Atlanta, GA, United States, ⁴Dirección de Vigilancia y Análisis de Riesgo en Salud Pública, Instituto Nacional de Salud, Bogotá, DC, Colombia, ⁵Dirección de Redes en Salud Pública, Instituto Nacional de Salud, Bogotá, DC, Colombia.

11:35 AM–11:50 AM  27  Surface Physical Examinations in Resource-Limited Settings: Setting the Standard for Baseline Malformation Rate
Nasri H, Holmes LB. MassGeneral Hospital for Children, Boston, MA, United States.

12:00 Noon–1:30 PM  Lunch and Learn Mini Course
Waters Edge
Role and Function of Placenta in Pregnancy
(Separate Registration Required)
Organized by the Education Committee, Chairperson, Julia Y. Hui, Celgene Corporation

12:00 Noon–12:10 PM  Boxed Lunch Pick-Up

12:10 PM–12:55 PM  Roles of Placentae as an Anchor, Conduit and Controller during Pregnancy: Implications across Species
Richard K. Miller, University of Rochester Medical Center
12:55 PM–1:30 PM  Human Placenta Models for Reproductive Toxicology: Primary Human Trophoblasts, Microdevices, and Systems-Based Approaches
Joshua F. Robinson, University of California–San Francisco

12:00 Noon–1:30 PM  Lunch on Your Own

1:30 PM–4:30 PM  Epigenetic Effects of Environmental Exposures during Pregnancy Symposium  
Grand Ballroom D
Chairpersons: Barbara R. Hales, McGill University and Kembra L. Howdeshell, National Institute of Environmental Health Sciences

1:30 PM–1:45 PM  Introduction

1:45 PM–2:15 PM  S35 Placental Epi/Genomics As Sensors of the In Utero Environment and Predictors of Fetal Development
Jia Chen, Mt. Sinai School of Medicine

2:15 PM–2:45 PM  S36 Epigenetic Impact of Prenatal Exposure to Bisphenol A and Polycyclic Aromatic Hydrocarbons: Sex Differences and Effects on Neuroplasticity
Frances A. Champagne, University of Texas–Austin

2:45 PM–3:15 PM  S37 Transgenerational Inheritance of Neurobehavioral and Physiological Deficits from Developmental Exposure to Benzo[a]Pyrene in Zebrafish
Robert L. Tanguay, Oregon State University

3:15 PM–3:30 PM  Break

3:30 PM–4:00 PM  S38 Molecular Effects of Prenatal Phthalate Exposures on the Epigenome, Childhood BMI, and Obesity
Nina T. Holland, University of California–Berkeley

4:00 PM–4:30 PM  S39 Transgenerational Placental Dysfunction As a Consequence of Paternal Developmental Toxicant Exposure in a Mouse Model
Kaylon L. Bruner-Tran, Vanderbilt University School of Medicine
1:30 PM–4:30 PM Rare Childhood Diseases and Unmet Medical Needs: The Waters Edge Hope of Innovative Therapies Symposium

Chairperson: Kenneth Lyons Jones, UCSD, CA MotherToBaby and Elise Madison Lewis, Charles River Laboratories

1:30 PM–1:55 PM Introduction
Kenneth Lyons Jones, UCSD, CA MotherToBaby

1:55 PM–2:30 PM S40 Treating Rare Diseases with Nonplacebo Sugar Pills
Hudson H. Freeze, Sanford Burnham Prebys Medical Discovery Institute

2:30 PM–3:05 PM S41 The Rare Disease Parent's Role in Scientific Collaboration
Cristina Might, NGLY1.org

3:05 PM–3:20 PM Break

3:20 PM–3:55 PM S42 Natural History, Clinical Studies, and Therapeutic Options in Barth Syndrome
Hilary Vernon, Johns Hopkins University School of Medicine

3:55 PM–4:30 PM S43 The Use of Animal Models for Nonclinical Development of Therapeutics for Orphan Diseases
Lorraine Sullivan, BioMarin Pharmaceutical Inc.

4:35 PM–6:00 PM Multidisciplinary Research Needs Workshop

Chairpersons: Peter H. Langlois, Texas Department of State Health Services and William Slikker Jr., National Center For Toxicological Research, US FDA

4:35 PM–4:45 PM Introduction

4:45 PM–5:15 PM Examples of Prior Issues Benefitting from Multidisciplinary Research
Speaker TBA

5:15 PM–5:45 PM Breakout Groups: Discussion of Emerging Issues/Exposures That Could Benefit from Multidisciplinary Research

5:45 PM–6:00 PM Wrap-Up: Reports from Groups and Discussion

6:00 PM–7:30 PM Poster Session 3 and Exhibits Attended

Teratology Society Posters P45–P76 and LB7–LB12

Wednesday, June 27, 2018

6:30 AM–7:30 AM Teratology Society 37th Annual Volleyball Game

Beach
7:30 AM–2:30 PM  Registration Open  Grand Ballroom Foyer

7:30 AM–8:00 AM  Morning Coffee and Pastries  Grand Ballroom Foyer
(Joint with DNTS)

8:00 AM–9:00 AM  Teratology Society and European Teratology Society  Grand Ballroom D
Exchange Lecture
Are We Ready for Alternative Testing? (L6)
Chairpersons: Paul C. Barrow, F. Hoffmann-La Roche Ltd. and Susan L. Makris, US Environmental Protection Agency

European Teratology Society
Manon Beekhuijzen, Charles River Laboratories

Teratology Society
Nicole Churchill Kleinstreuer, NTP Interagency Center for the Evaluation of Alternative Toxicological Methods, NIEHS

9:05 AM–12:00 Noon  March of Dimes Symposium  Grand Ballroom D
Measuring Success in Prevention of Adverse Pregnancy Outcomes  CME
Chairpersons: Jan M. Friedman, University of British Columbia and Godfrey P. Oakley Jr., Emory University

9:05 AM–9:15 AM  Introduction
Godfrey P. Oakley Jr., Emory University

9:15 AM–9:40 AM  S44 Prematurity Prevention
Claudia Holzman, Michigan State University

9:40 AM–10:05 AM  S45 Measuring the Impact of Maternal Vaccination to Prevent Adverse Pregnancy Outcomes
Sonja A. Rasmussen, Centers for Disease Control and Prevention

10:05 AM–10:30 AM  S46 A 2017 Global Update on Folic Acid-Preventable Spina Bifida and Anencephaly
Vijaya Kancherla, Emory University

10:30 AM–11:00 AM  Warkany Tea

11:00 AM–11:25 AM  S47 Prevention and FASD: What Can the Clinician Do to Reduce the Prevalence of FASD?
Albert E. Chudley, University of Manitoba

Tamara Johnson, US Food and Drug Administration

11:50 AM–12:00 Noon  Discussion
9:05 AM–12:00 Noon Changing Susceptibilities throughout Embryofetal Waters Edge Development Symposium

Chairpersons: Katerine Saili, US Environmental Protection Agency and Mary Alice Smith, University of Georgia

9:05 AM–9:10 AM Introduction

9:10 AM–9:50 AM S49 Formation of the Blood-Brain Barrier and Susceptibilities to Toxicants
Katerine Saili, US Environmental Protection Agency

9:50 AM–10:30 AM S50 Leveraging Organ-on-a-Chip Technology to Study the Human Placenta
Cassidy Blundell, University of Pennsylvania

10:30 AM–11:00 AM Warkany Tea

11:00 AM–11:30 AM S51 Changes in the Developing Gastro-Intestinal Tract: Impacts on Exposure and Susceptibilities
John M. DeSesso, Exponent, Inc.

11:30 AM–12:00 Noon S52 Changes in Susceptibility of the Developing Fetus to Infections: Listeriosis As an Example
Mary Alice Smith, University of Georgia

10:30 AM–11:00 AM Warkany Tea
Grand Ballroom Foyer
(Joint with DNTS)

12:00 Noon–1:30 PM Lunch on Your Own

12:30 PM–1:30 PM Awards Committee Meeting Coral

12:30 PM–1:30 PM Education Committee Meeting Dolphin

12:30 PM–1:30 PM Finance Committee Meeting Manatee

12:30 PM–1:30 PM Public Affairs Committee Meeting Starfish

12:30 PM–1:30 PM Student Affairs Committee Meeting Tarpon

1:30 PM–4:30 PM Wiley Symposium Grand Ballroom D
Evaluating the Developmental Reproductive Effects of Botanical Supplements

Chairperson: Natasha Catlin, Pfizer, Inc. and Kembra L. Howdeshell, National Institute of Environmental Health Sciences

1:30 PM–1:35 PM Introduction

James S. McLay, University of Aberdeen

2:15 PM–2:55 PM S54 Assessing Lead Exposure Risk from Botanicals: Ayurvedics As a Case Study
Mary L. Hixon, Gradient
2:55 PM–3:10 PM Break

3:10 PM–3:50 PM S55 National Toxicology Program on Botanicals: Case Studies Evaluating Developmental and Reproductive Toxicity in Animal Models
Kristen Ryan, National Toxicology Program

3:50 PM–4:30 PM S56 In Vitro Methods to Evaluate Safety of Botanicals on Reproductive Health
Karen M. VanderMolen, The Procter and Gamble Company

1:30 PM–4:30 PM HESI Symposium Grand Ballroom G
Neonatal Pediatric Drug Development: From Bench to Bedside
Chairpersons: Connie L. Chen, ILSI Health and Environmental Sciences Institute and Luc M. De Schaepdrijver, Janssen Research and Development

1:30 PM–1:35 PM Introduction

1:35 PM–2:15 PM S57 Drug Development for Neonatal Disease: Setting the Stage
Luc M. De Schaepdrijver, Janssen Research and Development

Michelle Ehrlich, Mount Sinai School of Medicine

2:55 PM–3:10 PM Break

3:10 PM–3:50 PM S59 Clinical Dosing and Pharmacokinetics Considerations for Neonatal Abstinence Disease Treatment
Walter K. Kraft, Thomas Jefferson University

3:50 PM–4:30 PM S60 Pharmacokinetics in Nonclinical Models and Translation to the Clinic: Challenges and Future Directions
Pieter Annaert, KU Leuven
4:35 PM–6:30 PM  
**Annual Meeting Awards Presentation and Business Meeting**
Graduate Student and Postdoctoral Fellow Travel Awards
Treasure Hung Grand Prize Drawing
Wilson Presentation Awards
Marie Taubeneck Award
FASEB DREAM Awards
James C. Bradford Memorial Student Poster Awards
Edward W. Carney Trainee Awards
Teratology Society Innovator Award
Edward W. Carney Distinguished Service Award
Recognition of Other Awards Presented throughout the Week
Annual Business Meeting

7:30 PM–9:30 PM  
**Closing Celebration**

**Thursday, June 28, 2018**

7:00 AM–10:00 AM  
**Council 2 Meeting**