

**Teratology Society 2018 Annual Meeting  
Mechanisms, Models, Mothers and Babies:  
Bringing Birth Defects Research into Practice  
Hilton Clearwater Beach Resort  
Clearwater Beach, Florida  
June 23–27, 2018**

Only sessions designated with **CME** are eligible for Continuing Medical Education credit.

**Friday, June 22, 2018**

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| <b>3:00 PM–6:00 PM</b> | <b>Registration Open</b> | <b>Grand Ballroom Foyer</b> |
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**Saturday, June 23, 2018**

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| <b>7:30 AM–6:00 PM</b> | <b>Registration Open</b> | <b>Grand Ballroom Foyer</b> |
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| <b>8:00 AM–8:30 AM</b> | <b>Education Course Coffee and Pastries</b><br><i>(Education Course Session 1 Registrants Only)</i> | <b>Grand Ballroom D</b> |
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| <b>8:30 AM–12:00 Noon</b> | <b>Education Course Session 1</b><br><b>Embryology and Development of Central Nervous System: From Prenatal Period to Adolescence</b><br><i>(Separate Registration Required)</i><br><br><i>Organized by the Education Committee, Chairperson, Julia Y. Hui, Celgene Corporation</i> | <b>Grand Ballroom D</b> |
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| 8:30 AM–8:40 AM | Welcome<br><i>Teratology Society President, Alan M. Hoberman, Charles River Laboratories</i> |
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| 8:40 AM–8:45 AM | Course Overview<br><i>Education Committee Chairperson, Julia Y. Hui, Celgene Corporation</i> |
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| 8:45 AM–9:30 AM | Embryology/Morphological Development of Central Nervous System in Human<br><i>John M. DeSesso, Exponent, Inc.</i> |
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| 9:30 AM–10:15 AM | Development of Central Nervous System: Differences/Comparisons in Mammalian Species<br><i>Christine Charvet, Cornell University</i> |
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| 10:15 AM–10:30 AM | Break |
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| 10:30 AM–11:15 AM | Pre- and Postnatal Development and Assessment of Central Nervous System Functions in Human and Animals<br><i>Gregg D. Stanwood, Florida State University</i> |
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| 11:15 AM–12:00 Noon | Susceptibility to Disruptions of Normal Central Nervous System Development by Toxicants and Other Factors<br><i>Christine Perdan Curran, Northern Kentucky University</i> |
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| <b>12:00 Noon–1:30 PM</b>           | <b>Lunch on Your Own</b>                                                                                                                                                                                                                                                                                                                            |                             |
| <b>1:30 PM–5:00 PM</b>              | <b>Education Course Session 2</b><br><b>Assessment and Management of Developmental Effects</b><br><b>on the Central Nervous System: From the Molecular</b><br><b>Level to the Clinical Setting</b><br>(Separate Registration Required)<br><br><i>Organized by the Education Committee, Chairperson, Julia Y. Hui,</i><br><i>Celgene Corporation</i> | <b>Grand Ballroom D</b>     |
|                                     | 1:30 PM–1:35 PM      Course Overview<br><i>Education Committee, Chairperson, Julia Y. Hui,</i><br><i>Celgene Corporation</i>                                                                                                                                                                                                                        |                             |
|                                     | 1:35 PM–2:20 PM      Brain Extracellular Space: A Molecular Highway<br>for Cell Communication in Development<br><i>Sabina Hrabetova, SUNY Downstate Medical</i><br><i>Center</i>                                                                                                                                                                    |                             |
|                                     | 2:20 PM–3:05 PM      Developmental Neurotoxicity: <i>In Vivo</i> Preclinical<br>Assessment and Models of Disease<br><i>Ellen McGlinchey, Charles River</i>                                                                                                                                                                                          |                             |
|                                     | 3:05 PM–3:20 PM      Break                                                                                                                                                                                                                                                                                                                          |                             |
|                                     | 3:20 PM–4:05 PM      Developmental Neurotoxicology: The Continuum<br>from <i>In Vivo</i> to <i>In Vitro</i> and Alternate Approaches<br><i>William Slikker Jr., US Food and Drug</i><br><i>Administration</i>                                                                                                                                       |                             |
|                                     | 4:05 PM–4:50 PM      Clinical Assessments and Management of<br>Developmental Effects on the Central Nervous<br>System<br><i>Claire D. Coles, Emory University School of</i><br><i>Medicine</i>                                                                                                                                                      |                             |
|                                     | 4:50 PM–5:00 PM      Discussion                                                                                                                                                                                                                                                                                                                     |                             |
| <b>5:30 PM–7:30 PM</b>              | <b>Student and Postdoctoral Fellow Mixer</b>                                                                                                                                                                                                                                                                                                        | <b>Tommy's Tiki Bar</b>     |
| <b>6:30 PM–9:00 PM</b>              | <b>Council 1 Meeting</b><br>Committee Reports                                                                                                                                                                                                                                                                                                       | <b>Waters Edge</b>          |
| <b><u>Sunday, June 24, 2018</u></b> |                                                                                                                                                                                                                                                                                                                                                     |                             |
| <b>7:00 AM–6:00 PM</b>              | <b>Registration Open</b>                                                                                                                                                                                                                                                                                                                            | <b>Grand Ballroom Foyer</b> |
| <b>7:00 AM–8:00 AM</b>              | <b>2019 Program Committee Meeting</b>                                                                                                                                                                                                                                                                                                               | <b>Waters Edge A</b>        |
| <b>7:30 AM–8:00 AM</b>              | <b>Morning Coffee and Pastries</b><br>(Joint with DNTS)                                                                                                                                                                                                                                                                                             | <b>Grand Ballroom Foyer</b> |
| <b>8:00 AM–8:15 AM</b>              | <b>President's Welcome</b><br><i>Teratology Society President, Alan M. Hoberman, Charles River Laboratories</i>                                                                                                                                                                                                                                     | <b>Grand Ballroom D</b>     |

8:15 AM–9:00 AM

**Josef Warkany Lecture**  
**The Arrogance of Teratology (L1)**  
(Joint with DNTS)

**Grand Ballroom D**

*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 TJ<sup>1</sup>, Sali KS<sup>1</sup>, Spencer RS<sup>2</sup>, Baker NC<sup>3</sup>, Knudsen TB<sup>1</sup>. <sup>1</sup>US Environmental Protection Agency, ORD, National Center for Computational Toxicology, Research Triangle Park, NC, United States, <sup>2</sup>ARA, Research Triangle Park, NC, United States, <sup>3</sup>Leidos, 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 DM<sup>1</sup>, Or B<sup>2</sup>, Wells PG<sup>2,3</sup>. <sup>1</sup>Department of Pharmaceutical Sciences and the Centre for Pharmaceutical Oncology, University of Toronto, Toronto, ON, Canada, <sup>2</sup>Department of Pharmacology and Toxicology, Faculty of Medicine, University of Toronto, Toronto, ON, Canada, <sup>3</sup>Department of Pharmaceutical Sciences and the Centre for Pharmaceutical Oncology, University of Toronto, Toronto, ON, Canada.*

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| 10:10 AM–10:30 AM | 4 | <p>Transient Maternal Hypothyroidism Alters Neural Progenitors and Results in Abnormal Brain Development</p> <p><u>O'Shaughnessy KL</u><sup>1,2</sup>, Thomas SE<sup>1,2</sup>, Ford JL<sup>2</sup>, Ford RL<sup>1,2</sup>, Gilbert ME<sup>2</sup>. <sup>1</sup>Oak Ridge Institute for Science Education (ORISE), Oak Ridge, TN, United States, <sup>2</sup>US Environmental Protection Agency, ORD, National Health and Environmental Effects Research Laboratory, Toxicity Assessment Division, Research Triangle Park, NC, United States.</p>       |
| 10:30 AM–10:45 AM |   | Break—Grand Ballroom Foyer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 10:45 AM–11:05 AM | 5 | <p>Increased Risk of Necrotizing Enterocolitis in Offspring of Toxicant-Exposed Mice</p> <p><u>Mokshagundam S</u><sup>1</sup>, Ding T<sup>1</sup>, Wilson AJ<sup>1</sup>, Dallas ML<sup>2</sup>, Osteen KG<sup>1</sup>, Bruner-Tran KL<sup>1</sup>. <sup>1</sup>Vanderbilt University Medical Center, Nashville, TN, United States, <sup>2</sup>Vanderbilt University, Nashville, TN, United States.</p>                                                                                                                                                |
| 11:05 AM–11:25 AM | 6 | <p>Medically Assisted Reproduction and the Risk of Preterm Birth</p> <p><u>Gorgui J</u><sup>1,2</sup>, Sheehy O<sup>2</sup>, Trasler J<sup>3</sup>, Fraser W<sup>4</sup>, Bérard A<sup>1, 2</sup>. <sup>1</sup>University of Montréal, Montréal, QC, Canada, <sup>2</sup>CHU Sainte-Justine Research Center, Montréal, QC, Canada, <sup>3</sup>McGill University, Montréal, QC, Canada, <sup>4</sup>University of Sherbrooke, Sherbrooke, QC, Canada.</p>                                                                                               |
| 11:25 AM–11:45 PM | 7 | <p>Surveillance of Microcephaly and Neurotropic Infections Using Healthcare Databases</p> <p><u>Messinger CJ</u><sup>1,2</sup>, He M<sup>2</sup>, Huybrechts KF<sup>2</sup>, Bateman B<sup>2</sup>, Hernandez-Diaz S<sup>3</sup>. <sup>1</sup>Harvard Medical School, Boston, Massachusetts, United States, <sup>2</sup>Division of Pharmacoepidemiology and Pharmacoeconomics, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, United States, <sup>3</sup>Harvard TH Chan School of Public Health, Boston, MA, United States.</p> |

11:45 PM–12:05 PM

8

Noninvasive Screening of Fetal Anomalies: The Serum Metabolomic Way

*Troisi J<sup>1,2,3</sup>, Sarno L<sup>4</sup>, Richards SM<sup>5,6</sup>, Symes SJ<sup>6,7</sup>, Adair DC<sup>6</sup>, Scala G<sup>2</sup>, Taylor RS<sup>8</sup>, McCowan LM<sup>8</sup>, Fasano A<sup>9,10</sup>, Martinelli P<sup>4</sup>, Guida M<sup>1,2</sup>.*

*<sup>1</sup>Department of Medicine, Surgery, and Dentistry, Scuola Medica Salernitana, University of Salerno, Salerno, SA, Italy, <sup>2</sup>Theoreo srl–Spin-Off Company of the University of Salerno, Salerno, SA, Italy, <sup>3</sup>European Biomedical Research Institute of Salerno (EBRIS), Salerno, SA, Italy, <sup>4</sup>Department of Neurosciences, Reproductive, and Dentistry Sciences, University of Naples Federico II, Naples, NA, Italy, <sup>5</sup>Department of Biology, Geology and Environmental Sciences, University of Tennessee at Chattanooga, Chattanooga, TN, United States, <sup>6</sup>Department of Obstetrics and Gynecology, University of Tennessee, College of Medicine, Chattanooga, TN, United States, <sup>7</sup>Department of Chemistry and Physics, University of Tennessee at Chattanooga, Chattanooga, TN, United States, <sup>8</sup>Department of Obstetrics and Gynaecology, Faculty of Medical and Health Science, The University of Auckland, Auckland, NZ, New Zealand, <sup>9</sup>Harvard Medical School, Boston, MA, United States, <sup>10</sup>MassGeneral Hospital for Children, Department of Pediatrics, Basic, Clinical and Translational Research, Boston, MA, United States.*

12:05 PM–1:30 PM

Lunch on Your Own

12:05 PM –1:30 PM

Past Presidents' and Honorees' Luncheon  
(By Invitation Only)

Starfish

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  
Cancer Risk in Children with Birth Defects: Developing  
a Research Program in the Epidemiology of Rare  
Complex Traits (L2)

Grand Ballroom D

*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  
Genetic Vulnerabilities to Prenatal Alcohol Exposure: Limb  
Defects in Sonic Hedgehog and GLI2 Heterozygous Mice

Grand Ballroom D

*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** **CME**

**Grand Ballroom D**

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

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|-----------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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<br><i>Barbara D. Abbott, US Environmental Protection Agency</i> |
| 3:15 PM–3:45 PM | S2 | Engineering an <i>In Vitro</i> and <i>In Silico</i> Model of Human Neural Tube Development for Analysis of Molecular Pathways<br><i>Randolph S. Ashton, University of Wisconsin</i>   |
| 3:45 PM–4:15 PM | S3 | Recapitulating Human Endocardial Cushion Morphogenesis with Organotypic Culture Models and Microfluidics<br><i>E. Sid Hunter, US Environmental Protection Agency</i>                  |
| 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<br><i>Kevin G. Osteen, Vanderbilt University School of Medicine</i>                     |
| 5:00 PM–5:30 PM | S5 | Paracrine Sonic Hedgehog Gradients in a Microphysiological System for Predictive Toxicology<br><i>Brian Johnson, University of Wisconsin-Madison</i>                                  |

2:35 PM–5:30 PM

**Current Topics and Updates for Pregnancy  
Registries Workshop** **CME**

**Waters Edge**

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

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| 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<br><i>Sascha Dublin, Kaiser Permanente Washington Health Research Institute</i> |
| 2:55 PM–3:15 PM | W2 | Sample Size and Power Issues for Pregnancy Registries<br><i>Sonia Hernandez-Diaz, Harvard School of Public Health</i>                                                                            |

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| 3:15 PM–3:35 PM | W3 | Drugs in Breastmilk: Addition of a Human Breast Milk Tissue Repository Sample Collection and Associated Data Appended to a Set of US/Canadian Pregnancy Registries<br><i>Christina D. Chambers, University of California San Diego</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3:35 PM–3:55 PM | W4 | Recruitment in the Age of Social Media: A CRO Perspective<br><i>Nicole Hurst, Pharmaceutical Product Development, LLC</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3:55 PM–4:15 PM | W5 | To Count or Not Count: Cardiac Defects in Pregnancy Registries<br><i>Thieu Nguyen, Johns Hopkins All Children's Heart Institute</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4:15 PM–4:30 PM |    | Break—Grand Ballroom Foyer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 4:30 PM–4:50 PM | W6 | US Food and Drug Administration Updates<br><i>Leyla Sahin, US Food and Drug Administration</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 4:50 PM–5:05 PM | W7 | Update from the United States Zika Pregnancy and Infant Registry<br><i>Baez-Santiago MA<sup>1</sup>, Carr C<sup>1</sup>, Ellington S<sup>1</sup>, Jones AM<sup>1</sup>, Fulton A<sup>1</sup>, Reynolds M<sup>1</sup>, Gilboa SM<sup>1</sup>, Honein MA<sup>2</sup>, USZPAIR Collaborators<sup>1</sup>. <sup>1</sup>Division of Congenital and Developmental Disorders, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, Atlanta, GA, United States, <sup>2</sup>Division of Congenital and Developmental Disorders, National Center on Birth Defects and Developmental Disabilities, CDC, Atlanta, GA, United States.</i> |
| 5:05 PM–5:20 PM | W8 | High Prevalence of Selected Birth Defects in Ensenada Baja California, Mexico<br><i>Santos-Burgoa L<sup>1</sup>, Pallares ME<sup>1</sup>, Rosenthal J<sup>2</sup>, Santos-Burgoa C<sup>3</sup>. <sup>1</sup>Departamento de Pediatría, Hospital General de Ensenada, Instituto de Salud, Ensenada, BC, Mexico, <sup>2</sup>Division of Congenital and Developmental Disorders, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, Atlanta, GA, United States, <sup>3</sup>Milken Institute School of Public Health, Department of Global Health, The George Washington University, Washington, DC, United States.</i>       |
| 5:20 PM–5:30 PM |    | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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| <b>5:35 PM–6:00 PM</b> | <b>Patricia Rodier Mid-Career Award<br/>for Research and Mentoring</b><br><b>Assessing Addiction Risk in Rodents Following Perinatal Exposure to<br/>PCBs: Behavioral and Neurochemical Indicators</b><br>(Joint with DNTS)<br><br><i>Chairpersons: Julia M. Gohlke, Virginia Polytechnic Institute and State University<br/>and Michael T. Williams, Cincinnati Children's Research Foundation</i><br><br><i>Lecturer: Helen J.K. Sable, University of Memphis</i> | <b>Grand Ballroom D</b> |
| <b>6:00 PM–7:30 PM</b> | <b>Welcome Reception, Poster Session 1,<br/>and Exhibits Attended</b><br>(Joint with DNTS)<br><br>Teratology Society Posters P1–P22<br>DNTS Posters 1–11                                                                                                                                                                                                                                                                                                            | <b>Grand Ballroom E</b> |
| <b>7:30 PM–8:00 PM</b> | <b>New Member "Sundae" Night Social</b><br>(By Invitation Only)                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Starfish</b>         |

**Monday, June 25, 2018**

|                           |                                                                                                                                                                                                                                                                                       |                             |
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| <b>7:00 AM–6:00 PM</b>    | <b>Registration Open</b>                                                                                                                                                                                                                                                              | <b>Grand Ballroom Foyer</b> |
| <b>7:00 AM–8:00 AM</b>    | <b>Breakfast with the Teratology Mentors</b><br>(Advance Signup Is Required)                                                                                                                                                                                                          | <b>Starfish</b>             |
| <b>7:00 AM–8:00 AM</b>    | <b>Nominations and Elections Committee Meeting</b>                                                                                                                                                                                                                                    | <b>Coral</b>                |
| <b>7:00 AM–8:00 AM</b>    | <b>Publications Meeting</b>                                                                                                                                                                                                                                                           | <b>Dolphin</b>              |
| <b>7:00 AM–8:00 AM</b>    | <b>Science Committee Meeting</b>                                                                                                                                                                                                                                                      | <b>Tarpon</b>               |
| <b>7:30 AM–8:00 AM</b>    | <b>Morning Coffee and Pastries</b><br>(Joint with DNTS)                                                                                                                                                                                                                               | <b>Grand Ballroom Foyer</b> |
| <b>8:00 AM–9:00 AM</b>    | <b>Keynote Lecture</b><br><b>Zika: Florida's Experience Responding to an Emerging<br/>Public Health Threat (L3)</b><br><br><i>Chairpersons: Dana L. Shuey, Incyte</i><br><br><i>Speaker: Celeste Philip, Florida Department of Health</i>                                             | <b>Grand Ballroom D</b>     |
| <b>9:05 AM–12:00 Noon</b> | <b>Assessing the Lifelong Impacts of Prenatal and<br/>Early-Life Exposure to Air Pollution Symposium</b><br>(Joint with DNTS)<br><br><i>Chairpersons: Natalie Johnson, Texas A&amp;M School of Public Health and<br/>Peter H. Langlois, Texas Department of State Health Services</i> | <b>Grand Ballroom D</b>     |
| 9:05 AM–9:10 AM           | Introduction                                                                                                                                                                                                                                                                          |                             |
| 9:10 AM–9:45 AM           | S6 Using Birth Defects Registries to Identify<br>Developmental Toxicants in Air Pollution<br>Amy Padula, University of California–San<br>Francisco                                                                                                                                    |                             |

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| 9:45 AM–10:20 AM    | S7 | Effects of Ambient Ultrafine Particle Exposure on Brain Development and Behavior: Parallels with Neurodevelopmental Disorders<br><i>Deborah Cory-Slechta, University of Rochester Medical School</i> |
| 10:20 AM–10:35 AM   |    | Break                                                                                                                                                                                                |
| 10:35 AM–11:10 AM   | S8 | Prenatal Air Pollution Exposure and Offspring Pulmonary Immunosuppression<br><i>Natalie Johnson, Texas A&amp;M School of Public Health</i>                                                           |
| 11:10 AM–11:45 AM   | S9 | Genetic Susceptibility to Developmental PAH Exposure<br><i>Christine Perdan Curran, Northern Kentucky University</i>                                                                                 |
| 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*

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| 9:05 AM–9:30 AM     | S10 | Introduction: Current Status of Genomic Testing to Identify Causes of Birth Defects<br><i>Jan M. Friedman, University of British Columbia</i> |
| 9:30 AM–10:00 AM    | S11 | Identifying Structural Variants and the Genes that Cause Birth Defects<br><i>Evan Eichler, University of Washington</i>                       |
| 10:00 AM–10:30 AM   | S12 | Mutations that Alter Splicing<br><i>Daniel MacArthur, The Broad Institute</i>                                                                 |
| 10:30 AM–10:45 AM   |     | Break                                                                                                                                         |
| 10:45 AM–11:15 AM   | S13 | Genomic Dark Matter: Regulatory Variants<br><i>Peter Robinson, The Jackson Laboratory for Genomic Medicine</i>                                |
| 11:15 AM–11:45 AM   | S14 | The Importance and Challenges of Data Sharing<br><i>Bartha M. Knoppers, McGill University</i>                                                 |
| 11:45 AM–12:00 Noon |     | Discussion                                                                                                                                    |

**9:05 AM–10:15 AM**

**Platform Session 2  
Epidemiology: Pharmaceuticals**

**Waters Edge**

*Chairpersons: Nelson Pace, Exponent, Inc. and Kary Ellen Thompson, Bristol-Myers Squibb*

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

**10:35 AM–12:00 Noon      When Does the Presence of Medication in Mothers Milk Become a Risk to the Child Workshop      Waters Edge**

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

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| 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<br><i>Jason Saubaran, Neonatal Research Institute</i> |

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|                           | 11:10 AM–11:40 AM                                                                                                                                                                                                                                                                                                          | W10 | Challenges and Successes in Running a Lactation Study<br><i>Marie Teil, UCB Farchim S.A.</i>                                               |                         |
|                           | 11:40 AM–12:00 Noon                                                                                                                                                                                                                                                                                                        |     | Discussion                                                                                                                                 |                         |
| <b>12:00 Noon–1:30 PM</b> | <b>Lunch on Your Own</b>                                                                                                                                                                                                                                                                                                   |     |                                                                                                                                            |                         |
| <b>12:00 Noon–1:30 PM</b> | <b>BDR Editorial Board</b>                                                                                                                                                                                                                                                                                                 |     |                                                                                                                                            | <b>Dolphin</b>          |
| <b>12:00 Noon–1:30 PM</b> | <b>Building a Professional Scientific Presence Using Social Media Workshop</b><br><i>(Separate Registration Required, Boxed Lunch Provided)</i><br><i>Chairpersons: Elise M. Lewis, Charles River Laboratories, and Dinesh J. Stanislaus, GlaxoSmithKline</i>                                                              |     |                                                                                                                                            | <b>Grand Ballroom D</b> |
|                           | 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<br><i>Paige Jarreau, FromTheLabBench</i>            |                         |
|                           | 12:40 PM–1:30 PM                                                                                                                                                                                                                                                                                                           |     | Discussion                                                                                                                                 |                         |
| <b>1:30 PM–2:00 PM</b>    | <b>Agnish Fellowship Lecture Causation (L4)</b><br><i>Chairperson: Julia Y. Hui, Celgene Corporation</i><br><i>Speaker: Anthony R. Scialli, Scialli Consulting LLC</i>                                                                                                                                                     |     |                                                                                                                                            | <b>Grand Ballroom D</b> |
| <b>2:05 PM–5:20 PM</b>    | <b>Public Affairs Symposium  Infectious Diseases during Pregnancy and Sequelae for the Mother and Baby</b><br><i>Chairpersons: Evi Struble, US Food and Drug Administration and Susan L. Makris, US Environmental Protection Agency</i> |     |                                                                                                                                            | <b>Grand Ballroom D</b> |
|                           | 2:05 PM–2:10 PM                                                                                                                                                                                                                                                                                                            |     | Introduction<br><i>Evi Struble, US Food and Drug Administration</i>                                                                        |                         |
|                           | 2:10 PM–2:50 PM                                                                                                                                                                                                                                                                                                            | S15 | An Update on Zika Virus As a Cause of Birth Defects<br><i>Sonja A. Rasmussen, Centers for Disease Control and Prevention</i>               |                         |
|                           | 2:50 PM–3:30 PM                                                                                                                                                                                                                                                                                                            | S16 | Vaccine Development to Prevent Congenital Cytomegalovirus Infection<br><i>Haruhiko Murata, US Food and Drug Administration</i>             |                         |
|                           | 3:30 PM–3:45 PM                                                                                                                                                                                                                                                                                                            |     | Break                                                                                                                                      |                         |
|                           | 3:45 PM–4:25 PM                                                                                                                                                                                                                                                                                                            | S17 | Parvovirus B19 Infection during Pregnancy: Are We Underestimating the Fetal Risks?<br><i>Asher Ornoy, Hebrew University Medical School</i> |                         |

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| 4:25 PM–4:45 PM | S18 | Developing Safe and Effective Drugs for Viral Infections during Pregnancy: The US Food and Drug Administration Perspective<br><i>Yodit Belew, US Food and Drug Administration</i> |
| 4:45 PM–5:05 PM | S19 | Regulatory Considerations for Developing Drugs for Use in Pregnant Women<br><i>Nneka McNeal-Jackson, US Food and Drug Administration</i>                                          |
| 5:05 PM–5:20 PM |     | Discussion                                                                                                                                                                        |

**2:05 PM–5:20 PM**

**Opiates: Impact on Pregnancy and Child Development Symposium**   
(Joint with DNTS)

**Grand Ballroom G**

*Chairpersons: Diana Dow-Edwards, SUNY Downstate Medical Center and Grace S. Lee, US Food and Drug Administration*

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|-----------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2:05 PM–2:10 PM |     | Introduction                                                                                                                                                                                |
| 2:10 PM–2:45 PM | S20 | Maternal and Child Health Impact of the US Prescription Opioid Epidemic: Combined Public Health–Clinical Response<br><i>Cheryl S. Broussard, Centers for Disease Control and Prevention</i> |
| 2:45 PM–3:20 PM | S21 | Pharmacotherapy of Pregnant Women with Opioid Use Disorder<br><i>Hilary S. Connery, Harvard Medical School</i>                                                                              |
| 3:20 PM–3:35 PM |     | Break                                                                                                                                                                                       |
| 3:35 PM–4:10 PM | S22 | Nonclinical Assessment of the Effects of Opioids on Development: Challenges and Limitations<br><i>Elizabeth A. Bolan, US Food and Drug Administration</i>                                   |
| 4:10 PM–4:45 PM | S23 | Nonopiate Treatment for Neonatal Abstinence Syndrome (NAS): Clinical and Preclinical Data<br><i>Henrietta S. Bada, University of Kentucky</i>                                               |
| 4:45 PM–5:20 PM | S24 | Opioid Effects in the Infant Brain: Animal-Human Correlation<br><i>Dusica Bajic, Harvard Medical School</i>                                                                                 |

*Chairpersons: Barbara F. Hales, McGill University and Linda G. Roberts*

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| 2:05 PM–2:20 PM |    | Introduction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2:20 PM–2:35 PM | 13 | <p>Preterm Birth and Heat Waves: Influence of the Spatial Resolution of the Exposure Estimate in Determining the Association<br/> <u>Wu YY<sup>1</sup></u>, <u>Zaitchik BF<sup>2</sup></u>, <u>Swarup S<sup>3</sup></u>, <u>Gohlke JM<sup>1</sup></u>.<br/> <sup>1</sup><i>Department of Population Health Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States,</i> <sup>2</sup><i>Department of Earth and Planetary Sciences, Johns Hopkins University, Baltimore, MD, United States,</i> <sup>3</sup><i>Network Dynamics Simulation Science Laboratory, Biocomplexity Institute of Virginia Polytechnic Institute and State University, Blacksburg, VA, United States.</i></p>                                                                                                                                                                           |
| 2:35 PM–2:50 PM | 14 | <p>Arsenic Exposure Alters Folate Metabolism Causing Genomic Instability and Neural Tube Defects in a Dose-Dependent Manner<br/> <u>Lachenauer ER<sup>1</sup></u>, <u>Kamynina E<sup>1</sup></u>, <u>Krämer L<sup>2</sup></u>, <u>DiRisio AC<sup>1</sup></u>, <u>Stabler SP<sup>3</sup></u>, <u>Brosnan ME<sup>4</sup></u>, <u>Brosnan JT<sup>4</sup></u>, <u>Hiller K<sup>2,5</sup></u>, <u>Field MS<sup>1</sup></u>, <u>Stover PJ<sup>1</sup></u>. <sup>1</sup><i>Cornell University, Ithaca, NY, United States,</i> <sup>2</sup><i>Technische Universität Braunschweig, Braunschweig, Lower Saxony, Germany</i> <sup>3</sup><i>University of Colorado, Aurora, CO, United States,</i> <sup>4</sup><i>Memorial University of Newfoundland, St. John's, Newfoundland and Labrador, Canada</i> <sup>5</sup><i>Helmholtz Centre for Infection Research, Braunschweig, Lower Saxony, Germany.</i></p> |
| 2:50 PM–3:05 PM | 15 | <p>Repression of the Autophagy Gene AMBRA1 in the Developing Neuroepithelium Is a Novel Mechanism Underlying Diabetic Embryopathy<br/> <u>Chen X.</u> <i>University of Maryland School of Medicine, Baltimore, MD, United States.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3:05 PM–3:20 PM | 16 | <p>Restoring BMP4 Expression in Vascular Endothelial Progenitors Ameliorates Maternal Diabetes-Induced Neural Tube Defects<br/> <u>Cao S.</u> <i>University of Maryland, Baltimore, MD, United States.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3:20 PM–3:35 PM |    | Break                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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| 3:35 PM–3:50 PM | 17 | <p>Tris(1,3-dichloro-2-propyl) Phosphate Exposure during Early-Blastula Alters the Normal Trajectory of Zebrafish Embryogenesis<br/> <u>Dasgupta S</u><sup>1</sup>, Cheng V<sup>2</sup>, Vliet SM<sup>2</sup>, Mitchell CA<sup>2</sup>, Volz DC<sup>1</sup>. <sup>1</sup><i>Department of Environmental Sciences, University of California, Riverside, CA, United States</i>, <sup>2</sup><i>Environmental Toxicology Graduate Program, University of California, Riverside, CA, United States</i>.</p>                                                                                                                                                                                    |
| 3:50 PM–4:05 PM | 18 | <p>Gene-Ethanol Interactions and Their Impact on Craniofacial Development<br/> <u>Lovely CB</u><sup>1,2</sup>, Swartz ME<sup>2</sup>, McCarthy N<sup>2</sup>, Norrie J<sup>2</sup>, Henegar T<sup>2</sup>, Eberhart JK<sup>2</sup>. <sup>1</sup><i>University of Louisville, Louisville, KY, United States</i>, <sup>2</sup><i>University of Texas at Austin, Austin, TX, United States</i>.</p>                                                                                                                                                                                                                                                                                           |
| 4:05 PM–4:20 PM | 19 | <p>Quaternary Ammonium Compounds Temporarily Alter the Gut Microbiome<br/> <u>Hrubec T</u><sup>1,2</sup>, McDonald V<sup>3</sup>, Shan L<sup>1</sup>, Luo X<sup>2</sup>. <sup>1</sup><i>E. Via College of Osteopathic Medicine–Virginia Campus, Blacksburg, VA, United States</i>, <sup>2</sup><i>VA-MD College of Veterinary Medicine, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States</i>, <sup>3</sup><i>Department of Biological Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States</i>.</p>                                                                                                              |
| 4:20 PM–4:35 PM | 20 | <p>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<br/> <u>Nembhard WN</u><sup>1</sup>, Tang X<sup>1</sup>, Hu Z<sup>1</sup>, MacLeod S<sup>1</sup>, Stowe ZN<sup>2</sup>, Webber D<sup>1</sup>, National Birth Defects Prevention Study<sup>1</sup>. <sup>1</sup><i>University of Arkansas for Medical Sciences, Little Rock, AR, United States</i>, <sup>2</sup><i>University of Wisconsin at Madison, Madison, WI, United States</i>.</p>                                                      |
| 4:35 PM–4:50 PM | 21 | <p>Epigenome-Wide Assessment Identifies Developmental Genes in Differentially Methylated Regions Associated with Hypospadias<br/> <u>Lupo PJ</u><sup>1</sup>, Brown AL<sup>1</sup>, Ehli EA<sup>2</sup>, Kallsen NA<sup>2</sup>, Peyton SA<sup>2</sup>, Davies GE<sup>2</sup>, Patel A<sup>3</sup>, Zamilpa I<sup>3</sup>, Wyatt RA<sup>3</sup>, Hobbs CA<sup>3</sup>, Scheurer ME<sup>1</sup>, Canon S<sup>3</sup>. <sup>1</sup><i>Baylor College of Medicine, Houston, TX, United States</i>, <sup>2</sup><i>Avera Institute for Human Genetics, Sioux Falls, SD, United States</i>, <sup>3</sup><i>University of Arkansas for Medical Sciences, Little Rock, AR, United States</i>.</p> |

4:50 PM–5:05 PM      22      Copy Number Variants in Hypoplastic Right Heart Syndrome  
*Giannakou A<sup>1</sup>, Sicko RJ<sup>2</sup>, Kay DM<sup>2</sup>, Zhang W<sup>1</sup>, Romitti P<sup>3</sup>, Caggana M<sup>2</sup>, Brody L<sup>4</sup>, Shaw GM<sup>5</sup>, Jelliffe L<sup>6</sup>, Mills JL<sup>1</sup>. <sup>1</sup>Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, MD, United States, <sup>2</sup>New York State Department of Health, Albany, NY, United States, <sup>3</sup>The University of Iowa, Iowa City, IA, United States, <sup>4</sup>NHGRI, Bethesda, MD, United States, <sup>5</sup>Stanford University, San Francisco, CA, United States, <sup>6</sup>University 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 DR<sup>1</sup>, Vargesson NA<sup>2</sup>. <sup>1</sup>Departments of Orthopedics, Pediatrics, and Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY, United States, <sup>2</sup>School 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      Grand Ballroom E**  
 (Joint with DNTS)

Teratology Society Posters P23–P44  
 DNTS Posters 12–21

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

## **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      Grand Ballroom D**  
**Progress against Malaria: The Role of Antimalarial Drugs and Their Use in Pregnancy (L5)**

*Chairperson: Alan M. Hoberman, Charles River Laboratories*

*Lecturer: Robert L. Clark, Artemis Pharmaceutical Research*

**9:05 AM–12:00 Noon**

**The Teratology of Autism: An Update and Understanding from Different Perspectives Symposium**   
(Joint with DNTS)

**Grand Ballroom D**

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

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

**9:05 AM–10:20 AM**

**Hot Topics Symposium  
Acetaminophen**

**Waters Edge**

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

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|-------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:05 AM–9:10 AM   |     | Introduction                                                                                                                                                         |
| 9:10 AM–9:30 AM   | S29 | Emerging Clinical Information on Acetaminophen<br><i>Sarah Gloria Običan, University of South Florida</i>                                                            |
| 9:30 AM–9:50 AM   | S30 | A Review of the Acetaminophen Preclinical Reproductive Toxicology and Postnatal Development Data: Old and New<br><i>Graham P. Bailey, Janssen Pharmaceutica N.V.</i> |
| 9:50 AM–10:10 AM  | S31 | Fetal Risks of Maternal Fever in Pregnancy<br><i>Christina D. Chambers, University of California–San Diego</i>                                                       |
| 10:10 AM–10:20 AM |     | Discussion                                                                                                                                                           |

**10:20 AM–10:35 AM**

**Break**

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| <b>10:35 AM–12:00 Noon</b> | <b>Nongenetic Factors Causing Neural Tube Defects Symposium </b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Grand Ballroom G</b> |
|                            | <i>Chairpersons: Michael D. Collins, University of California–Los Angeles and Grace S. Lee, US Food and Drug Administration</i>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |
| 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<br><i>Andrew J. Copp, University College London Institute of Child Health</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                         |
| 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<br><i>Michael D. Collins, University of California–Los Angeles</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                         |
| 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<br><i>Janee Gelineau-van Waes, Creighton University School of Medicine</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                         |
| <b>10:35 AM–11:50 AM</b>   | <b>Platform Session 4<br/>Clinical Teratology and Epidemiology</b>                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Waters Edge</b>      |
|                            | <i>Chairpersons: Russell S. Kirby, USF College of Public Health and TBA</i>                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |
| 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<br><i>Holmes LB<sup>1</sup>, Hunt A-T<sup>2</sup>, Stadelmaier R<sup>3</sup>, Deutsch C<sup>4</sup>, Adams J<sup>5</sup>. <sup>1</sup>MassGeneral Hospital for Children, Boston, MA, United States, <sup>2</sup>Hunt Consulting Associates, Chapel Hill, NC, United States, <sup>3</sup>Albert Einstein College of Medicine, Bronx, NY, United States, <sup>4</sup>The Psychobiology Program at the Eunice Kennedy Shriver Center and Departments of Psychiatry and Pediatrics, University of Massachusetts Medical School, Worcester, MA, United States, <sup>5</sup>Department of Psychology, UMass-Boston, Boston, MA, United States.</i> |                         |

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| 11:05 AM–11:20 AM | 25 | <p>The Impact of Technology on the Prevalence of Congenital Malformations</p> <p><u>Straub L</u><sup>1</sup>, <u>Huybrechts KF</u><sup>1</sup>, <u>Bateman B</u><sup>1,2</sup>, <u>Mogun H</u><sup>1</sup>, <u>Hernandez-Diaz S</u><sup>3</sup>. <sup>1</sup>Division of Pharmacoepidemiology and Pharmacoeconomics, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, United States, <sup>2</sup>Department of Anesthesiology, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, United States, <sup>3</sup>Harvard TH Chan School of Public Health, Boston, MA, United States.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 11:20 AM–11:35 AM | 26 | <p>Surveillance of Microcephaly and Other Congenital Central Nervous System Malformations: The Colombian Experience during the 2015–2016 Zika Virus Epidemic</p> <p><u>Ospina ML</u><sup>1</sup>, <u>Mercado M</u><sup>2</sup>, <u>Galang RR</u><sup>3</sup>, <u>Moore CA</u><sup>3</sup>, <u>González M</u><sup>4</sup>, <u>Valencia D</u><sup>3</sup>, <u>Cuevas L</u><sup>4</sup>, <u>Pacheco O</u><sup>4</sup>, <u>Bermudez A</u><sup>5</sup>, <u>Dominguez M</u><sup>3</sup>, <u>Gilboa SM</u><sup>3</sup>, <u>Rozo N</u><sup>4</sup>, <u>Avila G</u><sup>4</sup>, <u>Honein MA</u><sup>3</sup>, <u>Prieto F</u><sup>4</sup>. <sup>1</sup>Dirección General, Instituto Nacional de Salud, Bogotá, Distrito Capital, Colombia, <sup>2</sup>Dirección de Investigación en Salud Pública, Instituto Nacional de Salud, Bogotá, DC, Colombia, <sup>3</sup>Division of Congenital and Developmental Disorders, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, Atlanta, GA, United States, <sup>4</sup>Dirección de Vigilancia y Análisis de Riesgo en Salud Pública, Instituto Nacional de Salud, Bogotá, DC, Colombia, <sup>5</sup>Dirección de Redes en Salud Pública, Instituto Nacional de Salud, Bogotá, DC, Colombia.</p> |
| 11:35 AM–11:50 AM | 27 | <p>Surface Physical Examinations in Resource-Limited Settings: Setting the Standard for Baseline Malformation Rate</p> <p><u>Nasri H</u>, <u>Holmes LB</u>. MassGeneral Hospital for Children, Boston, MA, United States.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

**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

Overview and Species Comparison of the Role of Placenta in Pregnancy  
Richard K. Miller, University of Rochester Medical Center

12:55 PM–1:30 PM

Human *In Vitro* and *In Silico* Models for Placental Toxicology  
*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 Hope of Innovative Therapies Symposium**

**Waters Edge**

*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*

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| 1:55 PM–2:30 PM | S40 | Treating Rare Diseases with Nonplacebo Sugar Pills<br><i>Hudson H. Freeze, Sanford Burnham Prebys Medical Discovery Institute</i>                 |
| 2:30 PM–3:05 PM | S41 | The Rare Disease Parent's Role in Scientific Collaboration<br><i>Cristina Might, NGLY1.org</i>                                                    |
| 3:05 PM–3:20 PM |     | Break                                                                                                                                             |
| 3:20 PM–3:55 PM | S42 | Natural History, Clinical Studies, and Therapeutic Options in Barth Syndrome<br><i>Hilary Vernon, Johns Hopkins University School of Medicine</i> |
| 3:55 PM–4:30 PM | S43 | Use of Animal Models of Disease to Support Nonclinical Safety Programs in Rare Diseases<br><i>Lorraine Sullivan, BioMarin Pharmaceutical Inc.</i> |

**4:35 PM–6:00 PM      Multidisciplinary Research Needs Workshop      Grand Ballroom D**  
*Chairpersons: Peter H. Langlois, Texas Department of State Health Services and William Slikker Jr., National Center For Toxicological Research, US FDA*

**6:00 PM–7:30 PM      Poster Session 3 and Exhibits Attended      Grand Ballroom E**  
 Teratology Society Posters P45–P76

**Wednesday, June 27, 2018**

**6:30 AM–7:30 AM      Teratology Society 37<sup>th</sup> 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 Exchange Lecture      Grand Ballroom D**  
**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

**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  
Measuring Success in Prevention of Adverse  
Pregnancy Outcomes**

**Grand Ballroom D**

*Chairpersons: Jan M. Friedman, University of British Columbia and  
Godfrey P. Oakley Jr., Emory University*

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| 9:05 AM–9:15 AM     |     | Introduction<br><i>Godfrey P. Oakley Jr., Emory University</i>                                                                                              |
| 9:15 AM–9:40 AM     | S44 | Prematurity Prevention<br><i>Claudia Holzman, Michigan State University</i>                                                                                 |
| 9:40 AM–10:05 AM    | S45 | Measuring the Impact of Maternal Vaccination to Prevent Adverse Pregnancy Outcomes<br><i>Sonja A. Rasmussen, Centers for Disease Control and Prevention</i> |
| 10:05 AM–10:30 AM   | S46 | A 2017 Global Update on Folic Acid-Preventable Spina Bifida and Anencephaly<br><i>Vijaya Kancharla, Emory University</i>                                    |
| 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?<br><i>Albert E. Chudley, University of Manitoba</i>                        |
| 11:25 AM–11:50 AM   | S48 | US Food and Drug Administration Regulations and Birth Defect Prevention: It's More Than Labeling<br><i>Tamara Johnson, US Food and Drug Administration</i>  |
| 11:50 AM–12:00 Noon |     | Discussion                                                                                                                                                  |

9:05 AM–12:00 Noon

**Changing Susceptibilities throughout Embryofetal  
Development Symposium **

**Waters Edge**

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

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| 9:05 AM–9:10 AM   |     | Introduction                                                                                                                        |
| 9:10 AM–9:50 AM   | S49 | Formation of the Blood-Brain Barrier and Susceptibilities to Toxicants<br><i>Katerine Saili, US Environmental Protection Agency</i> |
| 9:50 AM–10:30 AM  | S50 | Leveraging Organ-on-a-Chip Technology to Study the Human Placenta<br><i>Cassidy Blundell, University of Pennsylvania</i>            |
| 10:30 AM–11:00 AM |     | Warkany Tea                                                                                                                         |

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| 11:00 AM–11:30 AM   | S51 | Changes in the Developing Gastro-Intestinal Tract: Impacts on Exposure and Susceptibilities<br><i>John M. DeSesso, Exponent, Inc.</i>        |
| 11:30 AM–12:00 Noon | S52 | Changes in Susceptibility of the Developing Fetus to Infections: Listeriosis As an Example<br><i>Mary Alice Smith, University of Georgia</i> |

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| <b>10:30 AM–11:00 AM</b> | <b>Warkany Tea</b><br>(Joint with DNTS) | <b>Grand Ballroom Foyer</b> |
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| <b>12:00 Noon–1:30 PM</b> | <b>Lunch on Your Own</b> |
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| <b>12:30 PM–1:30 PM</b> | <b>Awards Committee Meeting</b> | <b>Coral</b> |
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| <b>12:30 PM–1:30 PM</b> | <b>Education Committee Meeting</b> | <b>Dolphin</b> |
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| <b>12:30 PM–1:30 PM</b> | <b>Finance Committee Meeting</b> | <b>Manatee</b> |
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| <b>12:30 PM–1:30 PM</b> | <b>Public Affairs Committee Meeting</b> | <b>Starfish</b> |
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| <b>12:30 PM–1:30 PM</b> | <b>Student Affairs Committee Meeting</b> | <b>Tarpon</b> |
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| <b>1:30 PM–4:30 PM</b> | <b>Wiley Symposium</b><br><b>Evaluating the Developmental Reproductive Effects of Botanical Supplements</b><br><i>Chairperson: Natasha Catlin, Pfizer, Inc. and Kembra L. Howdeshell, National Institute of Environmental Health Sciences</i> | <b>Grand Ballroom D</b> |
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| 1:30 PM–1:35 PM | Introduction |
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| 1:35 PM–2:15 PM | S53 | Herbal Products Use during Pregnancy: What, When, and Why?<br><i>James S. McLay, University of Aberdeen</i> |
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| 2:15 PM–2:55 PM | S54 | Assessing Lead Exposure Risk from Botanicals: Ayurvedics As a Case Study<br><i>Mary L. Hixon, Gradient</i> |
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| 2:55 PM–3:10 PM | Break |
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| 3:10 PM–3:50 PM | S55 | National Toxicology Program on Botanicals: Case Studies Evaluating Developmental and Reproductive Toxicity in Animal Models<br><i>Kristen Ryan, National Toxicology Program</i> |
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| 3:50 PM–4:30 PM | S56 | <i>In Vitro</i> Methods to Evaluate Safety of Botanicals on Reproductive Health<br><i>Karen M. VanderMolen, The Procter and Gamble Company</i> |
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| 1:30 PM–4:30 PM                       | <b>ILSI HESI Symposium</b><br><b>Neonatal Pediatric Drug Development: From Bench to Bedside</b><br><i>Chairpersons: Connie L. Chen, ILSI Health and Environmental Sciences Institute and Luc M. De Schaepdrijver, Janssen Research and Development</i>                                                                                                                                                                                                                                |                                                                                                                                                         | <b>Grand Ballroom G</b> |
| 1:30 PM–1:35 PM                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Introduction                                                                                                                                            |                         |
| 1:35 PM–2:15 PM                       | S57                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Drug Development for Neonatal Disease: Setting the Stage<br><i>Luc M. De Schaepdrijver, Janssen Research and Development</i>                            |                         |
| 2:15 PM–2:55 PM                       | S58                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Neonatal Opioid Withdrawal Syndrome: Incidence, Diagnosis, Treatment, and Preclinical Models<br><i>Michelle Ehrlich, Mount Sinai School of Medicine</i> |                         |
| 2:55 PM–3:10 PM                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Break                                                                                                                                                   |                         |
| 3:10 PM–3:50 PM                       | S59                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Clinical Dosing and Pharmacokinetics Considerations for Neonatal Abstinence Disease Treatment<br><i>Walter K. Kraft, Thomas Jefferson University</i>    |                         |
| 3:50 PM–4:30 PM                       | S60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Pharmacokinetics in Nonclinical Models and Translation to the Clinic: Challenges and Future Directions<br><i>Pieter Annaert, KU Leuven</i>              |                         |
| 4:35 PM–6:30 PM                       | <b>Annual Meeting Awards Presentation and Business Meeting</b><br>Student and Postdoctoral Fellow Travel Awards<br>James C. Bradford Memorial Student Poster Awards<br>Wilson Presentation Awards<br>Edward W. Carney Trainee Award<br>Marie Taubeneck Award<br>Innovator Award<br><i>Birth Defects Research</i> Distinguished Scholar Awards<br>Edward W. Carney Distinguished Service Award<br>Recognition of Other Awards Presented throughout the Week<br>Annual Business Meeting |                                                                                                                                                         | <b>Grand Ballroom D</b> |
| 7:30 PM–9:30 PM                       | <b>Closing Celebration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                         | <b>Waters Edge</b>      |
| <b><u>Thursday, June 28, 2018</u></b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                         |                         |
| 7:00 AM–10:00 AM                      | <b>Council 2 Meeting</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                         | <b>Waters Edge</b>      |