

# 2001 ANNUAL MEETING

MONTREAL, QUEBEC

## Program

Revised 24-Apr-2001

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## Saturday, June 23

*Coffee and breakfast on your own*

11:30 am – 5:00 pm Registration – Foyer salon de bal (ballroom foyer)

1:00 PM – 5:15 PM **Education Course** – Salle de Bal Est (east ballroom)

### **Principles of Teratology: Application of New Technologies Towards Understanding Abnormal Development**

*Organized by Kok-Wah Hew, Nonclinical Drug Safety Evaluation, Purdue Pharma, L.P., Ardsley, New York, and the Education Committee*

*Course Syllabus produced in-part by Eli Lilly and Company*

- |                   |                                                                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 pm – 1:05 pm | WELCOME— <i>Robert Kavlock, President, Teratology Society</i>                                                                                   |
| 1:05 pm – 1:10 pm | INTRODUCTION— <i>Kok-Wah Hew, Chairman, Education Committee</i>                                                                                 |
| 1:15 pm – 2:00 pm | A REVIEW OF THE PRINCIPLES OF TERATOLOGY:<br>The Foundation to New Mechanistic Technologies<br><i>Speaker: James Schardein, Mansfield, Ohio</i> |

2:00 pm – 2:45 pm TECHNOLOGIES TO ANALYZE TERATOGENIC MECHANISMS  
*Speaker: Thomas Knudsen, Department of Pathology, Anatomy & Cell Biology, Thomas Jefferson University, Philadelphia, Pennsylvania*

2:45 pm – 3:30 pm GENE-TERATOGEN INTERACTION: GENOTYPE-RELATED SUSCEPTIBILITY DURING DEVELOPMENT  
*Speaker: Simon Ward, Division of Genomic Medicine, Royal Hallamshire Hospital, University of Sheffield Medical School, Sheffield, S. Yorks, United Kingdom*

3:30 PM – 3:45 PM BREAK

3:45 pm – 4:30 pm APOPTOSIS: CELL-SPECIFIC SUSCEPTIBILITY DURING DEVELOPMENT  
*Speaker: Philip E. Mirkes, Department of Pediatrics, University of Washington, Seattle, Washington*

4:30 pm – 5:15 pm LIMB DEVELOPMENT: untying the gordian knot with new ideas and technologies  
*Speaker: Bruce Carlson, Institute of Gerontology, University of Michigan, Ann Arbor, Michigan*

2:00 pm – 7:00 pm Council IA Meeting – Salon 3

## Sunday, June 24

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Coffee and breakfast on your own

8:00 am – 5:00 pm Registration – Foyer Salon de Bal (ballroom foyer)

8:00 am – 12:30 pm Council IB Meeting – Salon 3

7:30 am – 8:15 AM Education course continental breakfast

8:15 am – 11:30 pm **Education course** (Continued from Saturday) – Salle de Bal Est (east ballroom)

8:15 Am – 9:00 am SPATIOTEMPORAL PATTERNS OF GENE EXPRESSION: DEVELOPMENTAL STAGE-RELATED SUSCEPTIBILITY  
*Speaker: John Rogers, Reproductive Teratology Division, USEPA, Research Triangle Park, North Carolina*

9:00 am – 9:45 am REACTIVE INTERMEDIATES AND ABNORMAL DEVELOPMENT: AGENT-SPECIFIC SUSCEPTIBILITY  
*Speaker: Peter Wells, University of Toronto, Toronto, Ontario*

9:45 AM – 10:00 AM BREAK

10:00 am – 10:45 am REVISITING DOSE-DEPENDENT RELATIONSHIPS FOR TERATOGENS  
*Speaker: Elaine Faustman, Department of Environmental Health, University of Washington, Seattle, Washington*

10:45 am – 11:30 am CURRENT KNOWLEDGE OF ABNORMAL DEVELOPMENT: AN OVERVIEW  
*Speaker: William Scott, Children's Hospital Research Foundation, University of Cincinnati, Cincinnati, Ohio*

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11:30 am – 2:00 PM *Lunch on your own*

2:00 pm – 5:00 pm **March Of Dimes Symposium** – Salle de Bal Ouest (west ballroom)

### **Male-Mediated Developmental Toxicity**

*Organized by Barbara Hales, Department of Pharmacology and Therapeutics, McGill University, Montréal, Québec, Andrew F. Olshan, Department of Epidemiology, School of Public Health, University of North Carolina, Chapel Hill, North Carolina, and Donald Mattison, Medical Director, March of Dimes, White Plains, New York*

2:00 pm – 2:10 pm INTRODUCTION *Barbara Hales*

2:10 pm – 2:45 pm THE HUMAN STORY—WHERE ARE WE NOW?  
*Speaker: Andrew F. Olshan, Department of Epidemiology, School of Public Health, University of North Carolina, Chapel Hill, North Carolina*

2:45 pm – 3:20 pm DETECTING ADVERSE EFFECTS ON THE PATERNAL GENOME  
*Speaker: Sally Perreault Darney, Reproductive Toxicology Division, USEPA, Research Triangle Park, North Carolina*

3:20 PM – 3:40 PM BREAK

3:40 pm – 4:15 pm EFFECTS ON PROGENY OUTCOME—HUMAN AND ANIMAL STUDIES TO ELUCIDATE MECHANISMS  
*Speaker: Andrew J. Wyrobek, Biology and Biotechnology Research Program, Lawrence Livermore National Laboratory, Livermore, California*

4:15 pm – 4:50 pm ARE THERE APPROPRIATE BIOMARKERS OF PATERNAL DRUG EXPOSURE THAT PREDICT ALTERED PROGENY OUTCOME?  
*Speaker: Bernard Robaire, Department of Pharmacology and Therapeutics, McGill University, Montréal, Québec*

4:50 pm – 5:00 pm CLOSING REMARKS  
*Donald Mattison, Medical Director, March of Dimes, White Plains, New York*

5:00 PM – 6:00 PM Issues Forum – Salle de Bal Ouest (west ballroom)

### **Redesign and Relaunch of the Society's Journal**

5:00 PM – 7:30 PM Exhibits Open – Salle de Bal Centre (center ballroom)

6:00 PM – 7:30 PM President's Welcoming Reception – Salle de Bal Centre (center ballroom)

# **Monday, June 25**

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Coffee and breakfast on your own

7:45 AM – 5:00 PM Registration – Foyer Salon de Bal (ballroom foyer)

8:15 AM – 8:30 AM President's Welcome and Introduction – Salle de Bal Ouest (west ballroom)

*Robert J. Kavlock*

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**8:30 AM – 9:30 AM The Josef Warkany Lecture** – Salle de Bal Ouest (west ballroom)

### **To Die, Or Not To Die: That is the Question**

*Philip E. Mirkes, Department of Pediatrics, University of Washington, Seattle, Washington*

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9:30 AM – 12:30 PM **Wiley-Liss Symposium** – Salle de Bal Ouest (west ballroom)

### **Pluripotent Stem Cells In and Out of the Embryo**

*Organized by Tom Knudsen, Jefferson Medical College, Philadelphia, Pennsylvania*

*Sponsored by: John Wiley & Sons, Inc.*

9:30 am – 10:30 am OVERVIEW OF THE BIOLOGY OF PLURIPOTENT STEM CELLS OVERVIEW  
*Speaker: Peter Donovan, Kimmel Cancer Center, Thomas Jefferson University, Philadelphia, Pennsylvania*

10:30 am – 10:50 am BREAK

10:50 am – 11:40 am APPLICATION OF EMBRYONIC STEM CELLS AS RESEARCH TOOLS TO ADDRESS FUNDAMENTAL PROCESSES IN DEVELOPMENTAL TOXICITY  
*Speaker: Horsch Spielmann, ZEBET, Berlin, Germany*

11:40 am – 12:30 pm ISSUES IN THE BIOETHICS OF PLURIPOTENT STEM CELLS  
*Speaker: Laurie Zoloth, College of Humanities, San Francisco State University, San Francisco, California*

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12:30 am – 2:00 PM *Lunch on your own*

12:30 PM – 7:30 PM Posters and Exhibits Open – Salle de Bal Centre (center ballroom)

2:00 PM – 2:45 PM The James G. Wilson Publication Award – Salle de Bal Ouest (west ballroom)

2:45 PM – 4:30 PM **Student Plenary Session** – Salle de Bal Ouest (west ballroom)

*Chairpersons: Craig Harris, Toxicology Program, University of Michigan, Ann Arbor, Michigan, and Kimberly Brannen, University of North Carolina/USEPA, Research Triangle Park, North Carolina*

2: 45 pm – 3:00 pm NON-ACIDEMIC ISCHEMIA—THE FETAL  
NEUROLOGICAL TERATOGEN  
*R. Quintero and B.S. Schifrin, Department of Obstetrics  
& Gynecology, Glendale Adventist Medical Center,  
Glendale, California*

3:00 pm – 3:15 pm REGULATION OF THE C-JUN MITOGEN-ACTIVATED  
PROTEIN KINASE PATHWAY IN  
HYPERTHERMIA-EXPOSED DAY 9 MOUSE  
EMBRYOS  
*F.M. Bautista, L.C. Cornel, S.A. Little, and P.E. Mirkes,  
University of Washington, Seattle, Washington*

3:15 pm – 3:30 pm Break

3:30 pm – 3:45 pm PAX3: CONTROL OF DNA BINDING BY REDOX  
STATUS, METALS AND NITROGEN OXIDE SPECIES  
*A.F. Machado and M.D. Collins, UCLA, Los Angeles,  
California*

3:45 pm – 4:00 pm PREVENTION OF RETINOIC ACID-INDUCED CLEFT  
PALATE IN MICE BY SEPARATE OR CONCOMITANT  
ADMINISTRATION OF FOLATE AND METHIONINE  
*P.R. Reynolds, G.B. Schaalje and R.E. Seegmiller, BYU,  
Provo, Utah*

4:00 pm – 4:15 pm AN OXYGEN SENSING SWITCH FOR EMBRYONIC  
REGULATION OF MITOCHONDRIAL BIOGENESIS  
*M.F. O'Hara, J.H. Charlap, R.C. Craig and T.B.  
Knudsen, Department of Pathology, Anatomy and Cell  
Biology, Jefferson Medical College, Philadelphia,  
Pennsylvania*

4:15 pm – 4:30 pm EXPRESSION OF URACIL DNA GLYCOSYLASE, A  
DNA REPAIR ENZYME, IN THE  
ORGANOGENESIS-STAGE RAT CONCEPTUS.  
*R.K. Vinson and B.F. Hales, McGill University, Montréal,  
Canada*

5:00 pm – 7:30 pm Poster Session – Salle de Bal Centre (center ballroom)

**Teratology Society Posters 1-34; NBTS Posters 20-35**

*Supported by: Novartis Pharmaceuticals Corporation*

7:30 pm – 10:30 pm Student Reception – Salon 1

*Supported by: Pfizer, Inc., Aventis Pharmaceutical, Inc., Pharmacia & Upjohn Corp., MTA and MARTA*

Coffee and breakfast on your own

8:15 AM – 5:00 PM Registration – Foyer Salon de Bal (ballroom foyer)

9:00 AM – 12:00 PM **NBTS/Teratology Society Joint Symposium** – Salle de Bal Ouest (west ballroom)

## **Old Birth Defects and New Insights into Brain Development**

Organized by Patty Rodier, Department of Obstetrics & Gynecology, University of Rochester, Rochester, New York, and Merle Paule, Arkansas Children's Hospital, Little Rock, AR

9:00 am – 9:10 AM INTRODUCTION  
*Patty Rodier*

9:10 am – 9:50 AM NEUROBEHAVIOURAL CONSEQUENCES OF X-CHROMOSOME DELETIONS: IMPLICATIONS FOR AUTISM  
*Speaker: D.H. Skuse, S. Thomas, J. Kuntsi, K. Elgar, and P.A. Jacobs, Behavioural Sciences Unit, London, United Kingdom; and Wessex Regional Genetics Laboratory, Salisbury, United Kingdom*

9:50 am – 10:30 AM COGNITIVE PHENOTYPE IN CHILDREN WITH SPINA BIFIDA AND HYDROCEPHALUS  
*Speaker: M. Dennis, Department of Psychology, The Hospital for Sick Children Toronto, Ontario*

10:30 AM – 10:50 AM BREAK

10:50 am – 11:20 AM ON THE RELATION BETWEEN HINDBRAIN MALDEVELOPMENT, CLINICAL FEATURES, AND NEUROBEHAVIOR IN JOUBERT SYNDROME AND DANDY-WALKER SYNDROME  
*Speaker: B.L. Maria, Department of Pediatrics, Neurology and Neuroscience, University of Florida College of Medicine, Gainesville, Florida*

11:20 am – 12:00 PM PSYCHIATRIC ILLNESSES IN ADULTS WITH 22Q DELETION SYNDROME  
*Speaker: A.S. Bassett, Dept. of Psychiatry, Centre for Addiction & Mental Health and University of Toronto, Toronto, Canada*

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9:00 AM – 12:30 PM **OTIS/Teratology Society Joint Symposium** – Salon a

## **Teratology of Obstetrical Procedures**

Organized by Karen Filkins, Department of Obstetrics and Gynecology, UCLA School of Medicine, Los Angeles, California

- 9:00 am – 9:15 am INTRODUCTION *Karen Filkins*
- 9:15 am – 10:00 am CHORIONIC VILLUS SAMPLING  
*Speakers: Lew Holmes<sup>1</sup>, and Karen Filkins<sup>2</sup>. <sup>1</sup>Genetics and Teratology Unit, Massachusetts General Hospital, Boston, Massachusetts; and <sup>2</sup>Department of Obstetrics and Gynecology, UCLA School of Medicine, Los Angeles, California*
- 10:00 am – 10:30 am EARLY AMNIOCENTESIS  
*Speaker: Douglas Wilson, Department of Obstetrics and Gynecology, Children's & Women's Hospital, University of British Columbia, Vancouver, British Columbia*
- 10:30 AM – 10:45 AM BREAK
- 10:45 am – 11:15 am PERCUTANEOUS UMBILICAL ARTERY SAMPLING (PUBS), REPRODUCTIVE TECHNOLOGIES, AND FETAL REDUCTION PROCEDURES  
*Speaker: Ron Wapner, MCP Hahnemann School of Medicine, MCP Hahnemann University, Philadelphia, Pennsylvania*
- 11:15 am – 11:30 am FETAL SURGERY  
*Speaker: Karen Filkins, Department of Obstetrics and Gynecology, UCLA School of Medicine, Los Angeles, California*
- 11:30 am – 12:00 pm BRACHIAL PLEXUS INJURY: AN *IN UTERO* PHENOMENON  
*Speaker: T.M. Goodwin, Maternal Fetal Medicine, University of Southern California, Los Angeles, California*
- 12:00 Pm – 12:30 Pm CONDUCT OF THE SECOND STAGE OF LABOR: OBSTETRICAL CHOICES AND THE RISK OF NEUROLOGIC INJURY  
*Speaker: Barry Schifrin, Tarzana, California*

12:30 am – 2:00 PM *Lunch on your own*

12:30 PM – 2:00 PM Past Presidents' Luncheon – Salon 3 (*By Invitation Only*)

12:30 PM – 7:30 PM Posters and Exhibits Open – Salle de Bal Centre (center ballroom)[top of page](#)

2:00 PM – 4:45 PM **Platform Session** – Salon a

### **Mechanisms of Abnormal Development**

*Chairpersons: Devendra Kochhar, Thomas Jefferson University, Philadelphia, Pennsylvania, and George Daston, Miami Valley Laboratories, Procter & Gamble, Cincinnati, Ohio*

- 2:00 pm – 2:15 pm RETINOIC ACID (RA) REGULATION OF GENES INVOLVED IN THE INDUCTION OF PROXIMODISTAL LIMB REDUCTION DEFECTS, AS ANALYZED BY MICROARRAY  
*R. Cimildoro<sup>1</sup>, P. Qin<sup>2</sup>, D.R. Soprano<sup>2</sup> and D.M. Kochhar<sup>1</sup>. <sup>1</sup>Thomas Jefferson University, Philadelphia, Pennsylvania; <sup>2</sup>Temple University School of Medicine, Philadelphia, Pennsylvania*
- 2:15 pm – 2:30 pm LOCALIZATION OF RETINOIC ACID-INDUCED APOPTOSIS IN THE ORGANOGENESIS STAGE MOUSE LIMB BUD  
*S.E. Ali-Khan and B.F. Hales, McGill University, Montréal, Québec, Canada*
- 2:30 pm – 2:45 pm *IN UTERO* VALPROIC ACID EXPOSURE ALTERS HOXA1 EXPRESSION IN THE RAT EMBRYO: MECHANISM OF TERATOGENICITY AND RELATIONSHIP TO AUTISM  
*C. Stodgell, J. Ingram, S. Gnall, and P. Rodier, University of Rochester, Rochester, New York*
- 2:45 pm – 3:00 pm TOXICOGENOMIC ANALYSIS OF THE EMBRYONIC RESPONSE TO METHYLMERCURY  
*T.B. Knudsen, J.H. Charlap, R.C. Craig, J. Lee, E. Cho and M.F. O'Hara, Department of Pathology, Anatomy and Cell Biology, Jefferson Medical College, Philadelphia, Pennsylvania*
- 3:00 pm – 3:15 pm MOLECULAR FINGERPRINT OF ESTROGEN ACTION IN THE FETAL RAT UTERUS  
*J.M. Naciff, M.L. Jump, S.M. Torontali, J.P. Tiesman, and G. P. Daston, Miami Valley Laboratories, Procter & Gamble, Cincinnati, Ohio*
- 3:15 pm – 3:30 pm BREAK
- 3:30 pm – 3:45 pm DEFECTIVE SIALYLATION IN SP2H MUTANT EMBRYOS  
*K. Glogarova and D. Buckiova, Institute of Experimental Medicine, Academy of Sciences of the Czech Republic, Prague, Czech Republic*
- 3:45 pm – 4:00 pm CU DEFICIENCY INDUCES OXIDATIVE DAMAGE IN MOUSE EMBRYOS  
*L. Lanoue, M.E. Beckers, C.L. Keen, R.B. Rucker and J.Y. Uriu-Adams, Nutrition Department, University of California at Davis, Davis, California*
- 4:00 pm – 4:15 pm CASPASE-3-INDUCED AUGMENTATION OF THE INTRINSIC, MITOCHONDRIAL APOPTOTIC PATHWAY  
*S.A. Little and P.E. Mirkes, University of Washington, Seattle, Washington*

- 4:15 pm – 4:30 pm TERATOGEN-INDUCED ACTIVATION OF CASPASE-6 AND CASPASE-7 IN DAY 9 MOUSE EMBRYOS  
*S.A. Little and P.E. Mirkes, University of Washington, Seattle, Washington*
- 4:30 pm – 4:45 pm ARSENIC-INDUCED NEURAL TUBE DEFECTS IN A C57BL/6J SPLOTCH HETEROZYGOTE CROSS  
*L.J. Martin, M.A. Loza, A.F. Machado, and M.D. Collins, UCLA, Los Angeles, California*

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2:00 PM – 4:45 PM **Platform Session II** (Joint with OTIS) – Salle de Bal Ouest (west ballroom)

### **Joint Teratology Society/OTIS Contributed Paper Session – Clinical Teratology and Epidemiology**

*Chairpersons: Cynthia Moore, Birth Defects and Genetic Diseases Branch, Centers for Disease Control and Prevention, Atlanta, Georgia, and Robert Felix, Department of Pediatrics, University of California-San Diego, San Diego, California*

- 2:00 pm – 2:15 pm REPORT OF FIRST POSITIVE FINDINGS FROM HOSPITAL-BASED AED PREGNANCY REGISTRY  
*L.B. Holmes and E. Lieberman, For the Scientific Advisory Committee of the AED (antiepileptic drug) Pregnancy Registry, Genetics and Teratology Unit, Pediatric Service, Massachusetts General Hospital, Boston, Massachusetts*
- 2:15 pm – 2:30 pm GENOTYPE AND GENE TRANSMISSION IN FAMILIES WITH EITHER AUTISM SPECTRUM DISORDERS (ASDS) OR JUVENILE DIABETES (JD)  
*C. Stodgell, L. Weitkamp, S. Hyman, H. Fong, M. O'Bara, and P. Rodier, University of Rochester, Rochester, New York*
- 2:30 pm – 2:45 pm EXCESS VARIANCE OF SUBCORTICAL BRAIN SHAPE IN FETAL ALCOHOL SPECTRUM DISORDERS: AN ANALYSIS BY LANDMARK LOCATION DATA  
*F.L. Bookstein<sup>1</sup>, P.D. Sampson<sup>2</sup>, P.D. Connor<sup>2</sup>, and A.P. Streissguth<sup>2</sup>. <sup>1</sup>University of Michigan, Ann Arbor, Michigan; <sup>2</sup>University of Washington, Seattle, Washington*
- 2:45 pm – 3:00 pm MORPHOMETRIC DIAGNOSIS OF FETAL ALCOHOL SPECTRUM DISORDERS BY CALLOSAL SHAPE  
*F.L. Bookstein<sup>1</sup>, P.D. Sampson<sup>2</sup>, P.D. Connor<sup>2</sup>, and A.P. Streissguth<sup>2</sup>. <sup>1</sup>University of Michigan, Ann Arbor, Michigan; <sup>2</sup>University of Washington, Seattle, Washington*

- 3:00 pm – 3:15 pm **IN UTERO HIV-1 INFECTION: ROLE OF PLACENTAL INFECTION**  
*R.K. Miller<sup>1</sup>, B.M. Polliotti<sup>1</sup>, T.S. Laughlin<sup>1</sup>, and M. Carneiro<sup>2</sup>. <sup>1</sup>Obs/Gyn, University of Rochester, Rochester, New York; <sup>2</sup>Maternidad Concepcion Palacios, Caracas, Venezuela*
- 3:15 pm – 3:30 pm **BREAK**
- 3:30 pm – 3:45 pm **EFFECT OF PERICONCEPTIONAL FOLIC ACID ON PHENOTYPES OF NEURAL TUBE DEFECTS—SINO-U.S. NTD PREVENTION PROJECT**  
*C.A. Moore<sup>1</sup>, Z. Li<sup>2</sup>, R.J. Berry<sup>1</sup>, S. Li<sup>2</sup>, J.D. Erickson<sup>1</sup>, S.X. Hong<sup>2</sup>, and A. Correa<sup>1</sup>. <sup>1</sup>Birth Defects and Genetic Diseases Branch, Centers for Disease Control and Prevention, Atlanta, Georgia; <sup>2</sup>National Center for Maternal and Infant Health, Peking University, Beijing, China*
- 3:45 pm – 4:00 pm **COLD SORES AND OROFACIAL CLEFTS**  
*P.A. Romitti, J.C. Murray, S. Daack-Hirsch and T.L. Burns, University of Iowa, Iowa City, Iowa*
- 4:00 pm – 4:15 pm **RISING TREND IN GASTROSCHISIS AMONG YOUNGER MOTHERS IN AUSTRALIA**  
*P.A.L. Lancaster and T. Hurst, AIHW National Perinatal Statistics Unit, Sydney Children's Hospital and The University of New South Wales, Sydney, Australia*
- 4:15 pm – 4:30 pm **NON-SYNDROMIC OROFACIAL CLEFTS AMONG THE OFFSPRING OF WOMEN WHO CONSUMED FOLIC ACID DURING EARLY PREGNANCY—SINO-U.S. NTD PREVENTION PROJECT**  
*Z. Li<sup>1</sup>, R.J. Berry<sup>2</sup>, S. Li<sup>1</sup>, C.A. Moore<sup>2</sup>, S.X. Hong<sup>1</sup>, L.Y. Wong<sup>2</sup>, and J. Gindler<sup>2</sup>. <sup>1</sup>National Center for Maternal and Infant Health, Peking University, Beijing, China; <sup>2</sup>Birth Defects and Genetic Diseases Branch, Centers for Disease Control and Prevention, Atlanta, Georgia*
- 4:30 pm – 4:45 pm **PREVENTION OF BIRTH DEFECTS AMONG WOMEN WHO CONSUMED FOLIC ACID SUPPLEMENTS DURING EARLY PREGNANCY—SINO-U.S. NTD PREVENTION PROJECT**  
*M.F. Myers<sup>1</sup>, Z. Li<sup>2</sup>, A. Correa<sup>1</sup>, S. Li<sup>2</sup>, R.J. Berry<sup>1</sup>, S.X. Hong<sup>2</sup>, C.A. Moore<sup>1</sup>, H. Wong<sup>2</sup>, and D.J. Erickson<sup>1</sup>. <sup>1</sup>Birth Defects and Genetic Diseases Branch, Centers for Disease Control and Prevention, Atlanta, Georgia; <sup>2</sup>National Center for Maternal and Infant Health, Peking University, Beijing, China*

5:00 PM – 7:30 PM **Poster Session II** – Salle de Bal Centre (center ballroom)

**Teratology Society Posters 35–65; NBTS Posters 46–61**

Coffee and breakfast on your own

8:15 AM – 3:00 PM Registration – Foyer Salon de Bal (ballroom foyer)

9:00 AM – 12:30 PM **Teratogen Update Workshop** – Salon b

*Organized by Lew Holmes, Genetics & Teratology Unit, Massachusetts General Hospital, Boston, Massachusetts*

9:00 Am – 9:45 Am DOSE-RESPONSE RELATIONSHIPS  
*Speaker: Tom Shepard, Central Lab for Human Embryology, Department of Pediatrics, University of Washington, Seattle, Washington*

9:45 am – 10:30 am MONITORING LEFLUNOMIDE (ARAVA®) AS A NEW POTENTIAL TERATOGEN  
*Speaker: Ken Jones, Department of Pediatrics, University of California at San Diego Medical Center, San Diego, California*

**10:30 AM – 11:00 AM Warkany Tea** – Foyer Salon de Bal (ballroom foyer)

11:00 AM – 11:45 AM PROBLEMS WITH INFORMING WOMEN ADEQUATELY ABOUT TERATOGENIC RISKS OF ISOTRETINOIN (ACUTANE®)  
*Speaker: Peggy Honein, Birth Defects & Pediatric Genetics Branch, Centers for Disease Control, Atlanta, Georgia*

11:45 AM – 12:30 PM NEW CANDIDATES FOR THE LIST OF HUMAN TERATOGENS  
*Speaker: Lew Holmes, Genetics & Teratology Unit, Massachusetts General Hospital, Boston, Massachusetts*

9:00 AM – 12:30 PM **Redox Regulation in Mechanisms of Teratogenesis Workshop** – Salon a

*Organized by Craig Harris, Toxicology Program, University of Michigan, Ann Arbor, Michigan*

9:00 AM – 9:10 AM INTRODUCTION  
*Craig Harris*

9:10 AM – 10:30 AM CELLULAR THIOLS AND REDOX-REGULATED SIGNAL TRANSCRIPTION  
*Speaker: Chandan K. Sen, The Ohio State University Medical Center, Columbus, Ohio*

**10:30 AM – 11:00 AM Warkany Tea**—Foyer Salon de Bal (ballroom foyer)

11:00 AM – 11:45 AM REDOX REGULATION OF LIMB OUTGROWTH IN THALIDOMIDE TERATOGENICITY  
*Speaker: Craig Harris, Toxicology Program, University of Michigan, Ann Arbor, Michigan*

11:45 AM – 12:30 PM REACTIVE OXYGEN SPECIES AND OXIDATIVE DAMAGE IN CHEMICAL TERATOGENESIS  
*Speaker: Peter Wells, University of Toronto, Toronto, Ontario*

9:00 AM – 12:30 PM **Foodborne Infections During Pregnancy Workshop** – Salle de Bal Ouest (west ballroom)

*Organized by Tom Flynn, U.S. Food and Drug Administration, Laurel, Maryland*

9:00 AM – 9:30 AM IMMUNOLOGY AT THE MATERNAL-FETAL INTERFACE—LESSONS FOR T-CELL TOLERANCE  
*Speaker: Andrew Mellor, Institute of Molecular Medicine and Genetics, Medical College of Georgia, Augusta, Georgia*

9:30 AM – 10:00 AM ADVERSE PREGNANCY OUTCOME IN NON-HUMAN PRIMATES EXPOSED TO *LISTERIA MONOCYTOGENES*—A MODEL FOR HUMANS  
*Speaker: Mary Alice Smith, University of Georgia, Athens, Georgia*

10:00 AM – 10:30 AM SALMONELLA SEPSIS AND SECOND-TRIMESTER PREGNANCY LOSS  
*Speaker: Tony Scialli, Department of Obstetrics & Gynecology, Georgetown University Medical Center, Washington, D.C.*

**10:30 AM – 11:00 AM Warkany Tea** – Foyer Salon de Bal (ballroom foyer)

11:00 AM – 11:30 AM TOXOPLASMOSIS DURING PREGNANCY—A SILENT KILLER  
*Speaker: Jose Montoya, Department of Medicine, Stanford University School of Medicine, Stanford, California*

11:30 AM – 12:00 pM EVOLVING WITH OUR FOOD—AN EVOLUTIONARY PERSPECTIVE ON MORNING SICKNESS  
*Speaker: Samuel Flaxman, Department of Neurobiology and Behavior, Cornell University, Ithaca, New York*

12:00 PM – 12:30 pM FOOD SAFETY ISSUES DURING PREGNANCY  
*Speaker: Eileen Parish, Center for Food Safety and Applied Nutrition, USFDA, Washington, D.C.*

12:30 am – 2:00 PM *Lunch on your own*

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2:00 PM – 4:45 PM **Platform Session III** – Salle de Bal Ouest (west ballroom)

## Mechanisms of Abnormal Development

Chairpersons: Philip E. Mirkes, Department of Pediatrics, University of Washington, Seattle, Washington, and Barbara Abbott, Reproductive Toxicology Division, USEPA, Research Triangle Park, North Carolina

- 2:00 PM – 2:15 PM TERATOGENIC RESPONSES OF TGF $\alpha$  KNOCKOUT FETUSES TO 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD)  
*B.D. Abbott<sup>1</sup>, A.R. Buckalew<sup>1</sup>, and P.L. Bryant<sup>2</sup>.*  
*<sup>1</sup>Reproductive Toxicology Division, EPA, Research Triangle Park, North Carolina; <sup>2</sup>Dept. Environ. Sciences & Engineering, UNC, Chapel Hill, North Carolina*
- 2:15 PM – 2:30 PM EXPRESSION OF TGF $\beta$  AND ECM PROTEINS IN EMBRYONIC MOUSE HEARTS EXPOSED TO HYPERGLYCEMIA *IN VIVO* AND *IN VITRO*  
*R.L. Leonard, D.J. Williams, and I.W. Smoak,*  
*Department of Anatomy, Physiological Sciences, & Radiology, College of Veterinary Medicine, NCSU, Raleigh, North Carolina*
- 2:30 PM – 2:45 PM EFFECTS OF LOW AND HIGH DOSE BISPHENOL A AND 17 $\beta$ -ESTRADIOL PRENATAL EXPOSURE ON ESTROGEN RECEPTORS  
*G. Schoenfelder, B. Flick, L. Mayr, C. Talsness, M. Paul and I. Chahoud, Inst. of Clinical Pharmacology and Toxicology, Benjamin Franklin Medical Center, FU Berlin, Germany*
- 2:45 PM – 3:00 PM MANDIBULAR REPATTERNING RESULTS FROM *IN UTERO* ANTAGONISM OF ENDOTHELIN RECEPTORS IN MICE  
*K.C. Brannen<sup>1,2</sup>, E.S. Hunter<sup>1,2</sup>, M.B. Rosen<sup>2</sup>, and J.M. Rogers<sup>1,2</sup>.* *<sup>1</sup>Curriculum in Toxicology, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina; <sup>2</sup>Reproductive Toxicology Division, NHEERL, USEPA, Research Triangle Park, North Carolina*
- 3:00 PM – 3:15 PM HALOACETIC ACIDS AND KINASE INHIBITORS PERTURB MOUSE NEURAL CREST CELLS *IN VITRO*  
*E.S. Hunter<sup>1</sup>, J. Smith<sup>2</sup>, J. Andrews<sup>1</sup>.* *<sup>1</sup>Reproductive Toxicology Division, NHEERL, USEPA, Research Triangle Park, North Carolina; <sup>2</sup>Department of Cell and Developmental Biology, UNC-CH, Chapel Hill, North Carolina*
- 3:15 PM – 3:30 PM BREAK
- 3:30 PM – 3:45 PM ROLE OF TOTAL RADICAL ANTIOXIDANT POTENTIAL IN VALPROATE INDUCED CONGENITAL MALFORMATIONS  
*M. Tariq, Arshaduddin, M., K. Al Moutaery and S. Al Deeb, Armed Forces Hospital, Riyadh, Saudi Arabia*

- 3:45 PM – 4:00 PM **ADHD—ASSESSMENT OF NEONATAL THYROXINE AS A BIOMARKER**  
*S.H. Lamm<sup>1,5</sup>, A. Nandedkar<sup>2</sup>, K. Japa<sup>2</sup>, S. Mosee<sup>2</sup>, M. Stein<sup>3</sup>, P. Magrab<sup>4</sup>, S. Lai<sup>1,5</sup>, S. Chang<sup>1,5</sup>, and O.P. Soldin<sup>1</sup>. <sup>1</sup>Consultants in Epidemiology and Occupational Health, Inc., Washington, DC; <sup>2</sup>Howard University, Washington, DC; <sup>3</sup>Children's National Medical Center, Washington, DC; <sup>4</sup>Georgetown University, Washington, DC; and <sup>5</sup>Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland*
- 4:00 PM – 4:15 PM **ADVERSE PRE- AND POSTNATAL EVENTS REPORTED TO FDA IN ASSOCIATION WITH MATERNAL ATENOLOL TREATMENT IN PREGNANCY**  
*S. Tabacova<sup>1</sup>, C.A. McCloskey<sup>2</sup> and C.A. Kimmel<sup>3</sup>. <sup>1</sup>National Center for Toxicological Research, FDA Rockville, Maryland; <sup>2</sup>Center for Drug Evaluation and Research, FDA, Rockville, Maryland; and <sup>3</sup>National Center for Environmental Assessment, USEPA, Washington, D.C.*
- 4:15 PM – 4:30 PM **EFFECT OF *IN UTERO* EXPOSURE OF DIOXIN ON DEVELOPMENT OF YOUNG IN RHESUS MONKEYS**  
*M. Yasuda<sup>1</sup>, K. Yamashita<sup>1</sup>, K.A. Matsui<sup>1</sup>, T. Ihara<sup>2</sup>, A. Oneda<sup>2</sup>, M. Inouye<sup>2</sup>, R. Nagata<sup>2</sup>, T. Takasuga<sup>3</sup>, and S. Kubota<sup>4</sup>. <sup>1</sup>Hiroshima University School of Medicine, Hiroshima; <sup>2</sup>Shin Nippon Biomedical Laboratories, Ltd., Kagoshima; <sup>3</sup>Shimadzu-Techno-Research Inc., Kyoto; and <sup>4</sup>Graduate School of Medicine, The University of Tokyo, Tokyo, Japan*
- 4:30 PM – 4:45 PM **CRANIOFACIAL MALFORMATIONS OBSERVED IN F1 PUPS OF SPRAGUE-DAWLEY (SD) RATS ADMINISTERED PROPYLTHIOURACIL (PTU) IN DRINKING WATER**  
*L. Nehrebeckyj<sup>1</sup>, Y. Wang<sup>1</sup>, J. Quance<sup>2</sup>, J. Kariya<sup>3</sup>, G.W. Wolfe<sup>1</sup>, and J. Bishop<sup>4</sup>. <sup>1</sup>TherImmune Research Corporation, Gaithersburg, Maryland; <sup>2</sup>PAI, Frederick, Maryland; <sup>3</sup>USEPA, Washington, DC; <sup>4</sup>NIEHS/NTP, Research Triangle Park, North Carolina*

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2:00 PM – 4:45 PM **Platform Session IV** – Salon a

### **Clinical Teratology and Epidemiology**

*Chairpersons: Gidoen Koren, Hospital for Sick Children, Toronto, Ontario, Canada, and Claudine Torfs, Public Health Institute, Berkeley, California*

- 2:00 PM – 2:15 PM RISK OF MALFORMATION AND DEVELOPMENTAL DELAY IN A COHORT OF CHILDREN AND ADULTS EXPOSED TO ANTIEPILEPTIC DRUGS *IN UTERO*  
*J.C.S. Dean<sup>1</sup>, S.J. Moore<sup>2</sup>, P.D. Turnpenny<sup>3</sup>, H. Hailey<sup>1</sup>, and D.J. Lloyd<sup>1</sup>. <sup>1</sup>Department of Medical Genetics, University of Aberdeen, Scotland; <sup>2</sup>Newfoundland and Labrador Medical Genetics Program, Memorial University of Newfoundland, St Johns, Newfoundland; <sup>3</sup>Clinical Genetics Service, Royal Devon and Exeter Hospital, Exeter, England*
- 2:15 PM – 2:30 PM STUDY OF PLACENTA OF CHILDREN BORN WITH CONGENITAL MALFORMATIONS  
*C. Stoll, Y. Alembik, B. Dott, and M.P. Roth, Génétique Médicale, Centre Hospitalo-Universitaire, Strasbourg, France*
- 2:30 PM – 2:45 PM A PROSPECTIVE STUDY OF ALCOHOL EXPOSURE DURING PREGNANCY: CORRELATION OF QUANTITY WITH FREQUENCY OF FEATURES CHARACTERISTIC OF FAS  
*C.D. Chambers, L. M. Dick, R.J. Felix, K.A. Johnson and K.L. Jones, UCSD, La Jolla, California*
- 2:45 PM – 3:00 PM ABSENCE OR REDUCTION OF SPECIFIC ARTERIES ASSOCIATED WITH CONGENITAL VERTICAL TALUS AND CLUBFOOT DEFORMITIES  
*D.R. Hootnick<sup>1,2,3</sup>, D.S. Packard, Jr.<sup>1</sup>, and E.M. Levinson<sup>4</sup>. <sup>1</sup>Department of Cell and Developmental Biology, <sup>2</sup>Department of Pediatrics, <sup>3</sup>Department of Orthopedic Surgery, Upstate Medical University, Syracuse, New York; <sup>4</sup>Department of Medical Imaging, Crouse Hospital, Syracuse, New York*
- 3:00 PM – 3:15 PM THE LONGITUDINAL COHORT STUDY OF ENVIRONMENTAL EFFECTS ON CHILD HEALTH AND DEVELOPMENT  
*C.A. Kimmel for the Longitudinal Cohort Study (LCS) Interagency Coordinating Committee. National Center for Environmental Assessment, U.S. Environmental Protection Agency, Washington, DC.*
- 3:15 PM – 3:30 PM BREAK
- 3:30 PM – 3:45 PM DOSE RESPONSE TO DICLECTIN® IN HUMAN PREGNANCIES  
*G. Atanackovic<sup>1</sup>, Y. Navoiz<sup>2</sup>, M. Moretti<sup>2</sup> and G. Koren<sup>2</sup>. <sup>1</sup>Duchesnay Inc., Laval, Canada; <sup>2</sup>The Motherisk Program, The Hospital for Sick Children, Toronto, Canada*

- 3:45 PM – 4:00 PM PREGNANCY OUTCOME FOLLOWING GESTATIONAL EXPOSURE TO LORATADINE AND OTHER ANTIHISTAMINES: A PROSPECTIVE CONTROLLED COHORT STUDY  
*O. Diav-Citrin<sup>1</sup>, S. Shechtman<sup>0</sup>, L. Moerman<sup>1</sup>, J. Arnon<sup>1</sup>, R. Wajnberg<sup>1</sup> and A. Ornoy<sup>1,2</sup>. <sup>1</sup>The Israeli Teratogen Information Service, Israel Ministry of Health; and the <sup>2</sup>Hebrew University Hadassah Medical School, Jerusalem, Israel*
- 4:00 PM – 4:15 PM MÖBIUS SYNDROME/SEQUENCE: A SUMMARY OF A BRAZIL STUDY  
*M.T. Miller<sup>1</sup> and L. Ventura<sup>2</sup>. <sup>1</sup>Department of Ophthalmology, University of Illinois at Chicago, Chicago, Illinois; and <sup>2</sup>Hospital de Olhos de Pernambuco, Fundação Altino Ventura, Recife, Brazil*
- 4:15 PM – 4:30 PM SOCIOECONOMIC STATUS AS A RISK FACTOR FOR THE BIRTH OF AN INFANT WITH DOWN SYNDROME (DS), ACCORDING TO THE MEIOTIC STAGE OF MATERNAL ORIGIN  
*C.P. Torfs and R.E. Christianson, Public Health Institute, Berkeley, California*
- 4:30 PM – 4:45 PM MATERNAL SUBFERTILITY AND CONGENITAL RENAL ANOMALIES  
*M.A. Honein and C.A. Moore, Birth Defects and Pediatric Genetics Branch, Centers for Disease Control and Prevention, Atlanta, Georgia*

2:00 PM – 4:45 PM **Platform Session V** – Salon b

### **Hazard and Risk Evaluation**

Chairpersons: L. David Wise, Merck Research Laboratories, West Point, Pennsylvania, and Edward Carney, The Dow Chemical Company, Midland, Michigan

- 2:00 PM – 2:15 PM MICROTIA AND HEARING DEFICITS IN CD-1 MICE FOLLOWING GESTATIONAL EXPOSURE TO ETHANE DIMETHANESULFONATE (EDS)  
*D.K. Tarka<sup>1,2</sup>, G.R. Klinefelter<sup>1,2</sup>, D.W. Herr<sup>3</sup>, and J.M. Rogers<sup>1,2</sup>. <sup>1</sup>University of North Carolina, School of Medicine, Curriculum in Toxicology, Chapel Hill, North Carolina; and USEPA, NHEERL, <sup>2</sup>Reproductive Toxicology Division and <sup>3</sup>Neurotoxicology Division, Research Triangle Park, North Carolina*
- 2:15 PM – 2:30 PM BIRTH WEIGHT IS NOT AFFECTED BY THE PRESENCE OF A SINGLE OR MULTIPLE NUCHAL CORD ENCIRCLEMENTS  
*J.C. Carey and W.F. Rayburn, Department of Obstetrics and Gynecology, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma*

- 2:30 PM – 2:45 PM EFFECT OF A COX-2 INHIBITOR, ROFECOXIB, ON CLOSURE OF THE FETAL RAT DUCTUS ARTERIOSUS  
*L.D. Wise, M.A. Cukierski, L.A. Shelly and D.H. Patrick, Merck Research Laboratories, West Point, Pennsylvania*
- 2:45 PM – 3:00 PM DOSE-RATE IS A CRITICAL DETERMINANT OF ETHYLENE GLYCOL DEVELOPMENTAL TOXICITY IN RATS  
*E.W. Carney, A.B. Liberacki, B. Tornesi and D.A. Markham, The Dow Chemical Company, Midland, Michigan*
- 3:00 PM – 3:15 PM SKELETON CHANGES IN DIFFERENT CARTILAGE AND BONE STAINING IN FETUSES EXPOSED TO PROPYPHENAZONE  
*F. Burdan, Experimental Teratology Unit of Human Anatomy Department, Medical University School of Lublin, Poland*
- 3:15 PM – 3:30 PM BREAK
- 3:30 PM – 3:45 PM *IN-UTERO* PROPYPHENAZONE EXPOSURE AFFECTS AN INCREASE OF THE ACTIVITY OF THE FETAL LIVER LYSOSOMAL CATHEPSIN B, D AND L  
*F. Burdan, T. Blicharski, R. Klepacz and A. Sek, Experimental Teratology Unit of Human Anatomy Department, Medical University School of Lublin, Poland*
- 3:45 PM – 4:00 PM A STUDY OF HYPERICIN-INDUCED TERATOGENICITY DURING ORGANOGENESIS USING A WHOLE RAT EMBRYO CULTURE MODEL  
*L.Y. Chan, P.Y. Chiu and T.K. Lau, Department of Obstetrics and Gynecology, The Chinese University of Hong Kong, Hong Kong*
- 4:00 PM – 4:15 PM MORPHINE- INDUCED CENTRAL NERVOUS SYSTEM DEFECTS IN MICE  
*A.R. Fazel and M. Jalali, Dept. of Anatomy, Mashhad University of Medical Sciences, Mashhad, Iran*
- 4:15 PM – 4:30 PM OCULOTERATOGENIC AND RELATED EFFECTS OF OPIOID DRUG DURING EMBRYONIC DEVELOPMENT IN MICE  
*A.R. Fazel and M. Jalali, Dept. of Anatomy, Mashhad University of Medical Sciences, Mashhad, Iran*
- 4:30 PM – 4:45 PM ORAL EXPOSURE IN DERMAL STUDIES: A CONFOUNDING FACTOR IN DRUG SAFETY EVALUATION  
*G. Millicovsky, S. Sista, and K. Albert. Biovail Technologies, Ltd., Chantilly, Virginia*

5:00 PM – 6:00 PM Business Meeting – Salle de Bal Ouest (west ballroom)

7:00 PM – 8:00 PM Banquet Reception – Foyer Salon de Bal (ballroom foyer)

Supported by: *Aventis Pharmaceutical, Inc.*

8:00 PM Banquet – Salle de Bal Centre (center ballroom)

Supported by: *WIL Research Laboratories, Inc.*

**Thursday, June 28**

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Coffee and breakfast on your own

8:15 AM – 12:00 PM Registration – Foyer Salon de Bal (ballroom foyer)

9:00 AM – 12:00 PM **Genome Symposium** – Salle de Bal Ouest (west ballroom)

### **Using Genomics to Study Birth Defects**

*Organized by Richard Finnell, University of Nebraska Medical Center, Omaha, Nebraska*

9:00 AM – 9:10 AM Introduction *Richard Finnell*

9:10 AM – 9:50 AM MTHFR MUTATIONS AND BIRTH DEFECTS IN MICE  
*Speaker: Rima Rozen, McGill University, Montréal, Québec*

9:50 AM – 10:30 AM A GENOMIC RESOURCE OF MOUSE MUTATIONS IN CELL SURFACE PROTEINS  
*Speaker: Bill Skarnes, University of California at Berkeley, Berkeley, California*

10:30 AM – 10:45 AM BREAK

10:45 AM – 11:25 AM ANALYSIS OF A GENETIC MODEL FOR DIABETIC EMBRYOPATHY IN THE MOUSE  
*Speaker: Claudia Kappen, University of Nebraska Medical Center, Omaha, Nebraska*

11:25 AM – 12:00 PM MOUSE MODELS OF FOLATE TRANSPORT DEFICIENCIES AND THEIR RELATIONSHIP TO COMPLEX CONGENITAL ANOMALIES  
*Speaker: Richard Finnell, University of Nebraska Medical Center, Omaha, Nebraska*

9:00 AM – 12:00 PM **Public Affairs Symposium** – Salons Jerry & Joyce

### **A Report Card on FDA's Efforts to Prevent Teratogenic Birth Defects**

*Organized by Tina Chambers, University of California-San Diego, San Diego, California, and Tom Collins, U.S. Food and Drug Administration, Chevy Chase, Maryland*

9:00 AM – 9:45 AM PRECLINICAL REPRODUCTIVE TOXICOLOGY—"THE WEDGE"  
*Speaker: David Morse, Center for Drug Evaluation and Research, USFDA, Rockville, Maryland*

9:45 AM – 10:30 AM POST-MARKETING SURVEILLANCE: AN UPDATE ON PREGNANCY REGISTRIES

*Speaker: Evelyn Rodriguez, Center for Drug Evaluation and Research, USFDA, Rockville, Maryland*

10:30 AM – 10:45 AM BREAK

10:45 AM – 11:20 AM PROGRESS REPORT ON THE PREGNANCY LABELING REVISION

*Speaker: Sandra Kweder, Center for Drug Evaluation and Research, USFDA, Rockville, Maryland*

11:20 AM – 12:00 PM MONITORING THE EFFECTIVENESS OF PREGNANCY PREVENTION PROGRAMS FOR KNOWN TERATOGENS

*Speaker: Tony Scialli, Department of Obstetrics & Gynecology, Georgetown University Medical Center, Washington, D.C.*

**12:15 PM – 1:30 PM James G. Wilson and F. Clarke Fraser Awards Luncheon** – Salle de Bal Centre (center ballroom)

1:30 PM – 4:00 PM Council II Meeting – Salon 8