

**Environmental Mutagen Society  
38<sup>th</sup> Annual Meeting Agenda  
October 20-24, 2007  
Atlanta, Georgia**

**Saturday, October 20, 2007**

**8:00 AM – 12:00 Noon**

**On-Going Initiatives in Genetic Toxicology Testing and Risk Assessment Workshop**

*Chairpersons: Véronique T. Thybaud, Sanofi Aventis and Bhaskar Gollapudi, The Dow Chemical Company*

Introduction

*Speaker: Chair TBA*

Choice of *In Vivo* Follow-up Testing in Case of *In Vitro* Positive Findings

*Speaker: David Kirkland, Covance*

Relevance and Follow-up of Positive Results in *In Vitro* Genetic Toxicity Assays: An ILSI-HESI Initiative

*Speaker: Bhaskar Gollapudi, The Dow Chemical Company*

*In Vivo* Comet Assay: Update on the On-Going Validation Coordinated by JECVAM

*Speaker: Makoto Hayashi, National Institute of Health Sciences, Japan (Not confirmed)*

Dose-Response Curves in Genetic Toxicology: New Paradigm?

*Speaker: James T. MacGregor, Toxicology Consulting Services (Not confirmed)*

Application of 3R' Principle on Genetic Toxicology Evaluation: European Position for Cosmetics and Chemicals

*Speaker: Someone from ECVAM (To be identified)*

Application of 3R' Principle on Genetic Toxicology Evaluation: Impact on Industry and On-Going Initiatives

*Speaker: Marilyn Aardema, Procter & Gamble (To be confirmed)*

Discussion – Perspectives: Other On-Going Initiatives and Guideline Revisions

*Speaker: Véronique Thybaud, Sanof -Aventis*

**9:00 AM – 4:30 PM**

**Predicting Chemical Carcinogenicity Workshop**

*Chairpersons: Martyn T. Smith, University of California – Berkeley and Michael D. Waters, National Institute of Environmental Health Sciences, NCTR*

|                     |  |
|---------------------|--|
| 9:00 AM – 9:10 AM   | Welcome and Review of Workshop Objectives<br><i>Speakers: Martyn T. Smith, University of California – Berkeley and Michael D. Waters, National Institute of Environmental Health Sciences, NCTR</i>  |
| 9:10 AM – 9:20 AM   | Introduction of Participants<br><i>Speakers: Martyn T. Smith, University of California – Berkeley and Michael D. Waters, National Institute of Environmental Health Sciences, NCTR</i>   |
| 9:20 AM – 9:40 AM   | Cancer Biology - New Understanding<br><i>Speaker: TBA</i>  |
| 9:40 AM – 10:00 AM  | Cancer Biology – Implications<br><i>Speaker: Martyn T. Smith, University of California - Berkeley</i>  |
| 10:00 AM – 10:15 AM | Questions and Discussion   |
| 10:15 AM – 10:30 AM | Break  |
| 10:30 AM – 10:45 AM | Approaches of the Workgroup: Overview<br><i>Speaker: Michael D. Waters, National Institute of Environmental Health Sciences, NCTR</i>  |
| 10:45 AM – 10:55 AM | Questions and Discussion   |
| 10:55 AM – 11:30 AM | Presentation of Identified Modes of Action in Carcinogenesis<br><i>Speakers: David Eastmond, University of California – Riverside, Martha Sandy, California Environmental Protection Agency, and Nagalakshmi Keshava, U.S. Environmental Protection Agency</i> |
| 11:30 AM – 11:50 AM | Comments from Invited Discussants  |
| 11:50 AM – 12:00 PM | Comments from Participants   |
| 12:00 PM – 1:00 PM  | Lunch  |
| 1:00 PM – 1:45 PM   | Critical Issues in Distinguishing Between Modes of Action<br><i>Speakers: David Eastmond, University of California – Riverside, Martha Sandy, California Environmental Protection Agency, and Nagalakshmi Keshava, U.S. Environmental Protection Agency</i>    |
| 1:45 PM – 2:05 PM   | Comments from Invited Discussants  |
| 2:05 PM – 2:15 PM   | Comments from Participants   |
| 2:30 PM – 3:00 PM   | Synthesizing and Combining Information from Different Sources<br><i>Speakers: Jiri Aubrecht, Pfizer Inc., Michael D. Waters, National Institute of Environmental Health Sciences, NCTR, and Marc Jackson</i>   |
| 3:00 PM – 3:20 PM   | Comments from Invited Discussants  |
| 3:20 PM – 3:30 PM   | Comments from Participants   |
| 3:30 PM – 4:00 PM   | Future Directions: Implications for Research, Risk Assessments, and Public Policy<br><i>Speakers: Bob Sonawane or Kate Guyton, U.S. Environmental Protection Agency, and Vincent J. Cogliano, International Agency for Research on Cancer, France</i>          |

4:00 PM – 4:10 PM

Comments from Invited Discussants

*Speaker: Beatrice Poole*

4:10 PM – 4:20 PM

Comments from Participants

4:20 PM – 4:30 PM

Closing Comments

*Speakers: Martyn T. Smith, University of California – Berkeley and Michael D. Waters, National Institute of Environmental Health Sciences, NCTR*

**1:30 PM – 4:30 PM**

**Young Investigator Workshop: Anatomy of A Successful Grant Application and A Research Project**

*Chairpersons: James S. Felton, Lawrence Livermore National Laboratory and Meredith Crosby, Yale University*

TBA

*Speaker: Joann B. Sweasy, Yale University School of Medicine*

TBA

*Speaker: James S. Felton, Lawrence Livermore National Laboratory*

TBA

*Speaker: TBA*

**12:00 PM – 2:00 PM**

**Executive Board Meeting**

**2:30 PM – 4:30 PM**

**EMS Council Meeting**

**4:30 PM – 7:00 PM**

**Student and Post-Doc Poster Session and Welcome Reception**

**Sunday, October 21, 2007**

**6:30 AM – 8:00 AM**

**Special Interest Group Breakfast Meetings**

**8:00 AM – 8:45 AM**

**Topical Review: Technological Advances in the Assessment of Human Germ-Cell Mutations and Heritable Risk for Chromosomal Defects and Genetic Diseases**

*Speaker: Andrew J. Wyrobek, Lawrence Berkeley National Laboratory*

**8:00 AM – 8:45 AM**

**Topical Review: Food Mutagenesis and Dietary Supplements**

*Speaker: Lynnette R. Ferguson, University of Auckland Medical School*

**8:00 AM – 8:45 AM**

**Topical Review: The Mutagenicity and Carcinogenicity Risks Associated with Exposures to Bioterrorism Agents (Tentative)**

*Speaker TBD*

**9:00 AM – 11:00 AM**

**Preserving Chromosome Continuity When DNA Replication Encounters Damage Symposium**

*Chairperson: Larry H. Thompson, Lawrence Livermore National Laboratory*

- 9:00 AM – 9:20 AM            Mechanisms of Common Fragile Site Instability (BRCA1, ATR, FA proteins)  
*Speaker: Tom Glover, University of Michigan, Ann Arbor (Not Confirmed)*
- 9:20 AM – 9:40 AM            Role of Rad9 in Preserving Genomic Integrity  
*Speaker: Howard Lieberman, Columbia University (Not Confirmed)*
- 9:40 AM – 10:00 AM           Cell Cycle Dependence of DNA End-Joining  
*Speaker: David Chen, University of Texas, Dallas (Not Confirmed)*
- 10:00 AM – 10:20 AM           What Happens When Crosslinked DNA is Replicated? (ERCC1-XPF, FA proteins)  
*Speaker: Laura Niedernhofer, University of Pittsburgh Medical Center (Not Confirmed)*
- 10:20 AM – 10:40 AM           DNA Damage Responses and Their Interactions with the Replication Fork  
*Speaker: Paul Andreassen, Cincinnati Children's Hospital Medical Center, Cincinnati (Not Confirmed)*
- 10:40 AM – 11:00 AM           The Fanconi Anemia Pathway Limits the Severity of Mutagenesis  
*Speaker: Larry Thompson, Lawrence Livermore National Laboratory*

**9:00 AM – 11:00 AM**

**The Role of MiRNA in Carcinogenesis Symposium**

*Chairpersons: Olga Kovalchuk, University of Lethbridge and Catherine B. Klein, New York University School of Medicine*

- 9:00 AM – 9:30 AM            MicroRNAs and Cancer  
*Speaker: Carlo M. Croce, Ohio State University*
- 9:30 AM – 10:00 AM           Role of MicroRNAs in Genotoxic and Non-Genotoxic Carcinogenesis  
*Speaker: Igor Pogribny, National Center for Toxicological Research, FDA*

- 10:00 AM – 10:20 AM      Role of MicroRNAome in Radiation and Estrogen-Induced Breast Carcinogenesis  
*Speaker: Olga Kovalchuk, University of Lethbridge*
- 10:20 AM – 10:40 AM      MicroRNAs Induced by Inflammatory and Infectious Stimuli  
*Speaker: Mark Boldin, California Institute of Technology*
- 10:40 AM – 11:00 AM      TBA  
*Speaker: TBA*

**9:00 AM – 11:00 AM**

**Identification of Antimutagens, Mechanisms of Antimutagenicity, and Implications for Public Policy and Health Symposium**

*Chairpersons: Dan D. Levy, U.S. Food and Drug Administration and Daniel T. Shaughnessy, National Institute of Environmental Health Sciences*

- 9:00 AM – 9:30 AM      Identification of Antimutagens  
*Speaker: Errol Zeiger, Errol Zeiger Consulting*
- 9:30 AM – 10:00 AM      Mechanisms of Antimutagenesis  
*Speaker: Daniel T. Shaughnessy, National Institute of Environmental Health Sciences*
- 10:00 AM – 10:30 AM      Antimutagenesis Data and Food Ingredients  
*Speaker: Dan D. Levy, U.S. Food and Drug Administration*
- 10:30 AM – 11:00 AM      TBA  
*Speaker: TBA*

**11:00 AM – 12:45 PM**

**EMS Technology Lunchtime Workshop: Advances in COMET Technology and Applications for DNA Repair**

*Chairperson: TBA*  
*Speakers: TBA*

**11:00 AM – 12:45 PM**

**EMS Technology Lunchtime Workshop: Gene Transcription and Protein Expression Platform**

*Chairperson: TBA*  
*Speakers: TBA*

**11:00 AM – 12:45 PM**

**Marvin Legator Student Luncheon**

*Chairpersons: Joginder Nath, West Virginia University and Jonathan B. Ward, Jr., University of Texas Medical Branch*

Welcome and Orientation

*Speakers: Joginder Nath, West Virginia University and Jonathan B. Ward, Jr., University of Texas Medical Branch*

Careers in Research

*Speaker: James Gentile, Research Corporation*

Opportunities in the EMS

*Speaker: David DeMarini, U.S. Environmental Protection Agency*

**1:00 PM – 3:00 PM**

**Base Excision Repair as a Tumor Suppressor Mechanism Symposium**

*Chairpersons: Joann B. Sweasy, Yale University School of Medicine and Susan S.*

*Wallace, University of Vermont*

*Speakers: TBA*

**1:00 PM – 3:00 PM**

**Nanoparticles Toxicology Symposium**

*Chairpersons: Fanqing Frank Chen, Lawrence Berkeley National Laboratory and Nancy*

*Monteiro, North Carolina State University and University of North Carolina at Chapel Hill*

1:00 PM – 1:20 PM

Toxicogenomic Analysis of Nanoparticles

*Speaker: Fanqing Frank Chen, Lawrence Berkeley National Laboratory*

1:20 PM – 1:45 PM

Airborne Nanoparticle and Oxidation

*Speaker: Don Lucas, Environmental Energy Technologies Division, LBNL*

1:45 PM – 2:10 PM

Nanotoxicity Evaluation Platforms

*Speaker: Dave Hobson, NanoTox, Inc.*

2:10 PM – 2:35 PM

Dermal Exposure to Nanoparticles and DNA Damage

*Speaker: Nancy Monteiro, North Carolina State University and University of North Carolina at Chapel Hill*

2:35 PM – 3:00 PM

The Physical and Chemical Properties of Biological Active Nanoparticles

*Speaker: Vicky Colvin, Rice University*

**1:00 PM – 3:00 PM**

**The Research Legacy of Marvin S. Legator Symposium**

*Chairpersons: Joginder Nath, West Virginia University and Jonathan B. Ward, Jr.,*

*University of Texas Medical Branch*

1:00 PM – 1:05 PM

Welcome and Introduction

*Speaker: Joginder Nath, West Virginia University*

1:05 PM – 1:20 PM

The Legacy of Marvin Legator

*Speaker: Jonathan B. Ward, Jr., University of Texas Medical Branch*

1:20 PM – 1:50 PM

Mechanistic Studies in Genetic Toxicology

*Speaker: R. Stephen Lloyd, University of Texas Medical Branch (not confirmed)*

1:50 PM – 2:20 PM Genetic Biomonitoring  
*Speaker: Radim J. Sram, Institute of Experimental Medicine (not confirmed)*

2:20 PM – 2:50 PM Protecting Communities from Environmental Hazards  
*Speaker: Devra Davis, University of Pittsburgh Cancer Institute (not confirmed)*

**3:15 PM – 4:15 PM**

**Plenary Lecture**

Genetic Variability and the Challenges in Drug Development

*Speaker: Alan Roses, GlaxoSmithKline Pharmaceuticals*

**4:30 PM – 6:30 PM**

**Poster Session I**

**6:00 PM – 7:00 PM**

**Committee Meetings**

**Monday, October 22, 2007**

**6:30 AM – 8:00 AM**

**Special Interest Group Breakfast Meetings**

**8:00 AM – 8:45 AM**

**Topical Review: Non-Linear Mechanisms in Low-Dose Radiation Biology**

*Speaker: Jeffrey L. Schwartz, University of Washington*

**8:00 AM – 8:45 AM**

**Topical Review: Epigenetics in Cancer and Birth Defects**

*Speaker: Randy L. Jirtle, Duke University Medical Center*

**8:00 AM – 8:45 AM**

**Topical Review: The Mutagenic Hazards of Contaminated Soil and Water**

*Speaker: Paul A. White, Health Canada*

**9:00 AM – 11:00 AM**

**Nucleotide Pool Damage and its Biological Consequences Symposium**

*Chairpersons: Takehiko Nohmi, National Institute of Health Sciences and Margherita Bignami, Istituto Superiore Di Sanita*

9:00 AM – 9:30 AM

Introduction and the Roles of Y-family DNA Polymerases in Oxidative Mutagenesis

*Speaker: Takehiko Nohmi, National Institute of Health Sciences*

- 9:30 AM – 10:00 AM Metabolism and Incorporation of Exogenous 8-oxodG into DNA in Cell Culture and Mice: An Alternative Promutagenic Pathway Compared to Oxidation of Nucleotides and DNA  
*Speaker: Paul T. Henderson, Lawrence Livermore National Laboratory*
- 10:00 AM – 10:30 AM Defenses Against Damage in Nucleotide Pools and the Suppression of Carcinogenesis, Neurodegeneration, and Heart Failure  
*Speaker: Yusaku Nakabeppu, Kyushu University*
- 10:30 AM – 11:00 AM Role of Oxidative Damage in Neurodegenerative Diseases  
*Speaker: Margherita Bignami, Istituto Superiore Di Sanita*

**9:00 AM – 11:00 AM**

**Germ Cells and Transgenerational Effects Symposium**

*Chairpersons: Carole L. Yauk, Health Canada and Francesco Marchetti, Lawrence Berkeley National Laboratory*

- 9:00 AM – 9:30 AM Transgenerational Effects in Mammals: A Story of a Stable Instability  
*Speaker: Yuri E. Dubrova, University of Leicester*
- 9:30 AM – 10:00 AM Germ-Cell Mediated Genomic Instability: Fishing for Answers  
*Speaker: Richard N. Winn, University of Georgia*
- 10:00 AM – 10:30 AM Setting and Perturbing DNA Methylation Patterns in Male Germ Cells: Consequences for Fertility and the Next Generation  
*Speaker: Jacquetta Trasler, Montreal Children's Hospital Research Institute, McGill University*
- 10:30 AM – 10:45 AM Mainstream Tobacco Smoke Causes Paternal Germline DNA Sequence Mutation  
*Speaker: Carole Yauk, Health Canada*
- 10:45 AM – 11:00 AM Effects of Second-Hand Smoke on Male Germ Cells and Early Embryonic Development  
*Speaker: Francesco Marchetti, Lawrence Berkeley National Laboratory*

**9:00 AM – 11:00 AM**

**Challenges in Assessing Risk from Low-Dose Chemical Exposures Symposium**

*Chairpersons: Nagalakshmi Keshava, U.S. Environmental Protection Agency and Paul A. White, Health Canada*

- 9:00 AM – 9:10 AM Introduction: Challenges in Incorporation of Low-Dose Information in Risk Assessment  
*Speaker: Nagalakshmi Keshava, U.S. Environmental Protection Agency*

- 9:10 AM – 9:40 AM Use of Toxigenomics to Identify Carcinogenic MOA to Inform Dose-Response Decisions  
*Speaker: Jiri Aubrecht, Pfizer Inc.*
- 9:40 AM – 10:10 AM Availability of Data in the Low Dose Region and its Uses in Risk Assessment  
*Speaker: R. Julian Preston, U.S. Environmental Protection Agency*
- 10:10 AM – 10:40 AM Low-Dose Response and its Implication to Risk Assessment  
*Speaker: Syril Pettit, International Life Sciences Institute*
- 10:40 AM – 11:00 AM Application of Mode of Action and Dose-Response Information in a Chemical Mixtures Risk Assessment  
*Speaker: John C. Lipscomb, U.S. Environmental Protection Agency*

**11:00 AM – 12:45 PM**

**EMS Technology Lunchtime Workshop: Bioinformatics of Global Gene Expression**  
*Chairperson: Sanchita Battacharya, Lawrence Berkeley National Laboratory*

**11:00 AM – 12:45 PM**

**EMS Policy Lunchtime Workshop: Is It Time to Amend the Core Genetic Toxicity Test Battery?**

*Chairpersons: David M. DeMarini, U.S. Environmental Protection Agency, and David A. Eastmond, University of California - Riverside*

- 11:00 AM – 11:10 AM Introduction  
*Speaker: David A. Eastmond, University of California - Riverside*
- 11:10 AM – 11:35 AM A Historical Perspective on the Current Test Battery: Its Strengths and Weaknesses  
*Speaker: Errol Zeiger, Errol Zeiger Consulting*
- 11:35 AM – 12:00 PM European Legislation and the Need for More Predictive *In Vitro* Tests  
*Speaker: David J. Kirkland, Covance Laboratories Ltd*
- 12:00 PM – 12:25 PM New Strategies for Improving the Predictivity of Short-Term Tests  
*Speaker: Jiri Aubrecht, Pfizer Inc.*
- 12:25 PM – 12:45 PM Discussion

**1:00 PM – 3:00 PM**

**The Replication of Damaged DNA Symposium**

*Chairperson: Graham C. Walker, Massachusetts Institute of Technology and Richard D. Wood, University of Pittsburgh*  
*Speakers: TBA*

**1:00 PM – 3:00 PM**

**Assessment of the Technologies for Molecular Biodosimetry for Human Low-Dose Radiation Exposure Symposium**

*Chairperson: Matthew A. Coleman, Lawrence Livermore National Laboratory*

- 1:00 PM – 1:10 PM      Model Systems and Current Approaches in Biodosimetry  
*Speaker: Matthew A. Coleman, Lawrence Livermore National Laboratory*
- 1:10 PM – 1:40 PM      Rapid Assessment of Gene Expression Signatures for Iodosimetry  
*Speaker: Sally Amundson, Columbia University*
- 1:40 PM – 1:55 PM      Linking MN Assays and Gene Expression End Points?  
*Speaker: James D. Tucker, Wayne State University*
- 1:55 PM – 2:10 PM      Flow Cytometric Scoring of Radiation-Induced Micronuclei: Reticulocyte- and Lymphocyte-Based Approaches  
*Speaker: Stephen D. Dertinger, Litron Laboratories*
- 2:10 PM – 2:40 PM      Early-Phase Ionizing Radiation Response - Use of Protein Biomarkers for Triage Biodosimetry Applications  
*Speaker: Natalia I. Ossetrova, Armed Forces Radiobiology Research Institute*
- 2:40 PM – 3:00 PM      To Be Selected From Abstracts

**1:00 PM – 3:00 PM**

**Use of Genotoxicity Data in Mode of Action Analysis for Human Health Risk Assessment Symposium**

*Chairpersons: Nagalakshmi Keshava, U.S. Environmental Protection Agency and Kerry L. Dearfield, U.S. Department of Agriculture, FSIS, OPHS*

- 1:00 PM – 1:10 PM      Introduction: Overview of How Genetic Toxicology Information is Used in Risk Assessment  
*Speaker: Nagalakshmi Keshava, U.S. Environmental Protection Agency*
- 1:10 PM – 1:40 PM      Establishing a Carcinogenic Mode of Action Using Mutagenicity Data  
*Speaker: Rita Schoeny, U.S. Environmental Protection Agency*
- 1:40 PM – 2:10 PM      Use of Genotoxicity Data to Assess Linearity of Carcinogenic Response  
*Speaker: David A. Eastmond, University of California - Riverside*
- 2:10 PM – 2:40 PM      Cytogenetic Damage and Genetic Variants in Individuals Susceptible to Arsenic-Induced Cancer  
*Speaker: Ashok K. Giri, Indian Institute of Chemical Biology*

2:40 PM – 3:00 PM            Mode of Action Analysis to Address Heritable Mutations:  
Acrylamide as an Example  
*Speaker: Kerry L. Dearfield, U.S. Department of Agriculture,  
FSIS, OPHS*

**3:15 PM - 4:15 PM**  
**Plenary Lecture**  
*Speaker: TBA*

**4:30 PM – 6:30 PM**  
**Poster Session II**

**6:00 PM – 7:00 PM**  
**Committee Meetings**

**Tuesday, October 23, 2007**

**6:30 AM – 8:00 AM**  
**Special Interest Group Breakfast Meetings**

**8:00 AM - 8:45 AM**  
**Topical Review: DNA Repair at the Crossroads of Cancer and Aging: Rare Human  
Diseases and Genetic Susceptibility**  
*Speaker: Priscilla K. Cooper, Lawrence Berkeley National Laboratory*

**8:00 AM - 8:45 AM**  
**Topical Review: Mutagenicity and Carcinogenicity of Air**  
*Speaker: Larry D. Claxton, U.S. Environmental Protection Agency*

**9:00 AM – 11:00 AM**  
**Poster Session III**

**11:00 AM – 12:00 PM**  
**Plenary Lecture**  
**Dogs Chasing Cancer Clues**  
*Speaker: David J. Waters, Gerald P. Murphy Cancer Center Foundation*

**12:00 PM – 1:30 PM**  
**EMS Business Meeting**

**1:30 PM – 7:00 PM**  
**Free Afternoon**

**7:00 PM – 10:00 PM**  
**Society Banquet**

**Wednesday, October 24, 2007**

**8:00 AM - 8:45 AM**

**Topical Review: DNA Repair Machines**

*Speaker: John A. Tainer, The Scripps Research Institute*

**8:00 AM - 8:45 AM**

**Topical Review: TBD**

**9:00 AM - 11:00 AM**

**DNA Repair Platform Session**

*(Speakers to be chosen from submitted abstracts)*

**9:00 AM - 11:00 AM**

**Epigenetics and Germ Cells Platform Session**

*(Speakers to be chosen from submitted abstracts)*

**11:00 AM - 12:00 PM**

**Plenary Lecture**

**DNA Repair, Genetic Instability and Cancer: What are the Connections?**

*Speaker: Paul Doetsch, Emory University School of Medicine*

**1:00 PM - 3:00 PM**

**Mutagenesis and Carcinogenesis Platform Session**

*(Speakers to be chosen from submitted abstracts)*

**1:00 PM - 3:00 PM**

**Food Mutagens, Antimutagens, and Dietary Supplements Platform Session**

*(Speakers to be chosen from submitted abstracts)*

**3:15 PM - 5:15 PM**

**Epigenetic Deregulation in Early Processes of Carcinogenesis Symposium**

*Chairperson: Randy L. Jirtle, Duke University Medical Center and Hilde E. van Gijssel, Valley City State University*

3:15 PM - 3:45 PM

Epigenetic Programming of Stress Responses: Nurture via Nature

*Speaker: Michael Meaney, Douglas Hospital Research Centre (not confirmed)*

3:45 PM - 4:15 PM

Epigenetics and Human Behavioral Disorders

*Speaker: Arturas Petronis, The Krembil Family Epigenetics Laboratory (not confirmed)*

4:15 PM - 4:45 PM

Cancer Therapy by Targeting the Epigenome

*Speaker: Allen Yang, USC / Norris Comprehensive Cancer Center (not confirmed)*

4:45 PM - 5:15 PM

TBA

*Speaker: TBA*

**3:15 PM - 5:15 PM**

**Hot Topics in Human Genetics and Ecogenetics Symposium**

*Chairperson: John J. Mulvihill, University of Oklahoma*

- |                   |   |
|-------------------|---|
| 3:15 PM – 3:45 PM | Prenatal Genetics Including Assisted Reproductive Technologies<br><i>Speaker: TBA</i>                   |
| 3:45 PM – 4:15 PM | Really Treating Genetic Diseases: Enzyme Replacement and Gene Therapy<br><i>Speaker: TBA</i>            |
| 4:15 PM – 4:45 PM | Oncogenes and Human Malformation Syndromes<br><i>Speaker: TBA</i>                                       |
| 4:45 PM – 5:15 PM | Polygenic Estimation of Breast Cancer Risk<br><i>Speaker: John J. Mulvihill, University of Oklahoma</i> |