



National Institute of
Environmental Health Sciences

Environmental Risks for Psychiatric Disorders: Exploring Biological Mechanisms



March 21-22, 2017 | NIEHS Building 101, Rodbell Auditorium | Research Triangle Park, N.C.

AGENDA

DAY ONE – MARCH 21, 2017

- 8:30 – 9:00 a.m. **Registration**
- 9:00 a.m. **Brief Introduction to Workshop**
Jonathan Hollander, *NIEHS*
- 9:15 a.m. **Welcome**
Linda Birnbaum, *NIEHS*
- 9:30 a.m. **Keynote Address One:**
The Architecture of Risk for Psychiatric Disorders: The Implication of Multiple Risk Factors with Small Effects for Future Research
Speaker: John Gilmore, *University of North Carolina at Chapel Hill (UNC)*
- 10:20 a.m. **Session One:**
Genetic Architecture of Psychiatric Disorders: Implications for Environmental Etiologies
Chair: Tomas Guilarte, *Florida International University*
- 10:25 a.m. **Genetic Risk Architecture for Psychiatric Disorders: Update 2017**
Anjene Addington, *National Institute of Mental Health (NIMH)*
- 10:50 a.m. **Integrating GWAS and Epidemiological Data to Accelerate GxE Discovery in Psychiatry**
Jim Crowley, *UNC*
- 11:15 a.m. **Break**
- 11:30 a.m. **Epigenetics as a Potential Mediator and Biomarker in Exposure-Psychiatric Disease Associations**
Christine Ladd-Acosta, *Johns Hopkins University*
- 11:55 a.m. **Cell Type-Specific Mechanisms of Gene-Environment Interaction in Psychotic Disorders**
Mikhail Pletnikov, *Johns Hopkins University*
- 12:20 p.m. **PANEL DISCUSSION**
- 12:50 p.m. **Lunch**

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- 2:05 p.m. **Session Two:
Neuronal Mechanisms and Circuits Underlying Mental Disorder Susceptibility
Following Environmental Exposure**
Chair: Deborah Cory-Slechta, *University of Rochester*
- 2:05 p.m. **Brief Overview of Cellular, Molecular, and Neuronal Mechanisms Commonly Associated
With Mental Health Disorders**
Deborah Cory-Slechta, *University of Rochester*
- 2:15 p.m. **Marijuana Exposure and Schizophrenia Risk**
Beng Choon Ho, *University of Iowa*
- 2:40 p.m. **Translational Approach to Environmental Contaminants in Psychiatry:
Metals in Mice and Human Postmortem Samples**
Steven Szabo, *Duke University*
- 3:05 p.m. **Early Life Lead Exposure and Schizophrenia: An Environmental Model of
NMDA Receptor Hypofunction**
Tomas Guilarte, *Florida International University*
- 3:30 p.m. **Features of Developmental Exposures to Ambient Ultrafine Particles and Features
of Neurodevelopmental Psychiatric Disorders**
Deborah Cory-Slechta, *University of Rochester*
- 3:55 p.m. **PANEL DISCUSSION**
- 4:25 p.m. **Day One Summary and Closing Comments**
Cindy Lawler, *NIEHS*
- 4:40 p.m. **Adjourn for the Day**

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DAY TWO – MARCH 22, 2017

- 8:00 – 8:30 a.m. **Registration**
- 8:30 a.m. **Keynote Address Two:
Understanding Mental Illness Risk: the NIMH Perspective**
Joshua Gordon, *NIMH*
- 9:30 a.m. **Session Three:
Immune-Inflammatory Signaling and Mental Illness: Role of Environment**
Chair: Mady Hornig, *Columbia University*
- 9:30 a.m. **How Chronic Immune Dysregulation Leads to Behavioral Symptoms Among Patients With Mood Disorders?**
Ebrahim Haroon, *Emory University*
- 9:55 a.m. **The Role and Therapeutic Potential of Diet and the Gut Microbiota in Brain and Behavior**
Felice Jacka, *Deakin University*
- 10:20 a.m. **Autoimmunity and Neuropsychiatric Disorders: The Case for Microbial and Xenobiotic Triggers**
Mady Hornig, *Columbia University*
- 10:45 a.m. **Modulation of Microglia by Maternal Immune Activation: Relevance for Neuropsychiatric Disorders**
Staci Bilbo, *Harvard University*
- 11:10 a.m. **PANEL DISCUSSION**
- 11:40 a.m. **Lunch**
- 12:35 p.m. **Session Four:
Tool and Resource Advances for How to Model Environmental Factors in Psychiatric Disorders**
Chair: Cindy Lawler, *NIEHS*
- 12:35 p.m. **Explicating the Environment in the Research Domain Criteria (RDoC) Initiative**
Uma Vaidyanathan, *NIMH*
- 1:00 p.m. **Cognitive, Emotional, and Sensory Function in Adult Zebrafish is Impaired by Developmental Exposure to Drugs and Environmental Toxicants**
Edward Levin, *Duke University*
- 1:25 p.m. **Genes, Environment, and Behavior: Mouse Models of Psychiatric Disorders**
Sheryl Moy, *UNC*
- 1:50 p.m. **The Comparative Toxicogenomics Database: A Tool for Exploring Mechanisms of Environmentally Influenced Psychiatric Disorders**
Carolyn Mattingly, *North Carolina State University*
- 2:15 p.m. **PANEL DISCUSSION**
- 2:45 p.m. **Closing Remarks**
Gwen Collman, *NIEHS*
- 3:00 p.m. **Adjourn**