



## Environment and the Brain:

### The Inaugural Symposium for the Center for the Investigation of Environmental Hazards

Our understanding of the brain and its development is likely to greatly accelerate in the next decade with recent support from the National Institutes of Health and other organizations. Yet brain disorders such as autism, attention deficit hyperactivity disorder, and Alzheimer's continue to increase, suggesting environmental factors may be key drivers of these epidemics and providing opportunities for prevention. NYU School of Medicine is organizing a symposium to unite researchers across neuroscience, psychiatry, epidemiology and environmental science. The symposium, which is led by the Division of Environmental Pediatrics but also leverages a rich and diverse array of scientists across NYU Langone Health and the other schools of New York University, is intended to foster new thinking and collaborations examining how environmental factors (chemical, physical, social and otherwise) influence brain development across the lifespan.

The symposium will be paired with investigators from New York City involved in NIH's Environmental Influences on Child Health Outcomes (ECHO) Program, a large scale scientific initiative bringing together cohorts of children to examine early life environmental exposures and their effects of health and disease. We invite scientific presentations and posters across the two day symposium, both related to the broad domain of environmental influences and the brain, as well as from the NYC ECHO community.

These presentations and posters will complement a rich group of plenary speakers, including:

- Shoji Nakayama, MD, PhD, Head, Exposure Dynamics Research Section, Center for Health and Environmental Risk Research, National Institute for Environmental Studies, Japan
- Laura N. Vandenberg, PhD, Associate Professor and Graduate Program Director, School of Public Health and Health Sciences, University of Massachusetts-Amherst
- Albert Hofman, MD, PhD, Stephen B. Kay Family Professor of Public Health and the chair of the Department of Epidemiology at the Harvard T.H. Chan School of Public Health
- Kurunthachalam Kannan, PhD, Deputy Director of the Division of Environmental Health Sciences, Wadsworth Laboratories, NYS Department of Health and Professor, School of Public Health, Environmental Health Sciences, SUNY-Albany



Day 1: Friday, May 17, 2019

- 8:00am to 8:30am     **Registration**  
 Outside of Seminar Room  
 Coffee and Pastries/Fruit/Yogurt  
  
 Location: SB 1 03; Seminar Room
- 8:30am to 9:00am     **Welcome and Introduction**
- Catherine Manno, MD, Chair, Department of Pediatrics
  - Leonardo Trasande, MD MPP, Director, Division of Environmental Pediatrics, Vice Chair for Research, Department of Pediatrics
  - Judith S. Hochman, MD, Director, Cardiovascular Clinical Research Center
- Location: SB 1 03; Seminar Room
- 9:00am to 10:00am     Session 1: **Observing the Effects of Environmental Exposures on the Developing Brain – Perspectives from the Japan Environment and Children’s Study**  
 Shoji Nakayama, MD, PhD, Head, Exposure Dynamics Research Section, Center for Health and Environmental Risk Research, National Institute for Environmental Studies, Japan  
  
 Location: SB 1 03; Seminar Room  
 \*Coffee and refreshments available in lobby
- 10:00am to 11:00am     Session 2: **Endocrine Disruption and the Developing Brain: Insights from the Rodent**  
 Laura N. Vandenberg, PhD, Associate Professor and Graduate Program Director, School of Public Health and Health Sciences, University of Massachusetts-Amherst  
  
 Location: SB 1 03; Seminar Room  
 \*Coffee and refreshments available in lobby
- 11:00am to 12:00pm     Session 3: **Measuring Exposures that Affect the Brain, and Evaluating Exposure Sources**  
 Kurunthachalam Kannan, PhD, Deputy Director of the Division of Environmental Health Sciences, Wadsworth Laboratories, NYS Department of Health and Professor, School of Public Health, Environmental Health Sciences, SUNY-Albany  
  
 Location: SB 1 03; Seminar Room  
 \*Coffee and refreshments available in lobby
- 12:00pm to 1:30pm     Lunch  
  
 Location: MSB Large Conference Room

Day 1 Continued



## Environment and the Brain Symposium Agenda

1:30pm to 2:15pm

*Breakout Session Topic: **Chemical Exposures and the Brain: Insights from Environmental Toxicology***  
*Organizer: **Max Costa, Ph.D.***  
**Professor and Chair, Department of Environmental Medicine, NYU Langone Health**

*Location: SB G 06*

Talk 1  
**Early Life Electronic Cigarettes Exposures Change Brain Neurobiology and Induce Adult Behavioral Deficits in Mice**  
Judith Zelikoff, Ph.D., Professor, Department of Environmental Medicine, NYU Langone Health

Talk 2  
**Air Pollution Exposures and Neurodevelopmental Disorders**  
Deborah Cory-Slechta, Ph.D., Professor, Department of Environmental Medicine, University of Rochester Medical Center

Talk 3  
**Health Impact of Air Pollution on the Central Nervous System**  
Lung-Chi Chen, Ph.D., Professor, Department of Environmental Medicine, NYU Langone Health

*Breakout Session Topic: **New Modalities in Studies of Brain and Environment***  
*Organizer: **Clancy Blair, Ph.D., MPH***  
**Bezos Family Foundation Professor of Population Health, NYU Langone Health**

*Location: SB1 03*

Talk 1  
**Prenatal Stress Programming of Human Fetal Brain Development**  
Moriah Thomason, Ph.D., Associate Professor, Departments of Child and Adolescent Psychiatry and Population Health, NYU Langone Health

Talk 2  
**An Environmental-wide Association Study of Autism Spectrum Disorder**  
Tonya White, Ph.D., Associate Professor and Director of Pediatric Population Neuroimaging, Erasmus University

Talk 3  
**Brain-derived Extracellular Vesicles as a Novel Source of Bio-markers for Environmental Exposure to Metals**  
Diane B. Re, Ph.D., Assistant Professor Environmental Health Sciences Department, Columbia University

2:15pm to 3:00pm

*Breakout Session Topic: **Brain, Environment, and Immunity***  
*Organizer: **Alan Mendelsohn, MD, NYU Langone Health***  
*Location: SB G 06*

Talk 1  
**Immune and Glial responses to environmental toxins**  
Shane Liddelow, Ph.D., Neuroscience Institute, Assistant Professor, Department of Neuroscience and Physiology, NYU Langone Health

*Breakout Session Topic: **Environment through the Lens of Neuroscience***  
*Organizer: **Rob Froemke, Ph.D., NYU Langone Health***  
*Location: SB 1 03*

Talk 1  
**Specialized Neural Processing of Sensory Stimuli within Social Context during Infancy**  
Regina Sullivan, Ph.D., Professor, Department of Child and Adolescent Psychiatry, NYU Langone Health



HASSENFELD  
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HOSPITAL  
AT NYU LANGONE

## Environment and the Brain Symposium Agenda

Talk 2

**Phthalate Exposures in Pregnant Women with Systemic Lupus Erythematosus (SLE)**

Akhgar Ghassabian, MD, Ph.D., Assistant Professor, Departments of Pediatrics, Population Health and Environmental Medicine, NYU Langone Health

Talk 2

**Exercise Provides a Metabolite for a Healthy Brain**

Moses Chao, Ph.D., Skirball Institute NYU Langone Health

Talk 3

**Understanding Sudden Unexplained Death In Childhood (SUDC) and Investigating Potential Risk Factors**

Laura Crandall, Ph.D., Research Scientist, Department of Neurology, NYU Langone Health

Talk 3

**Exercise, Dopamine, and BDNF**

Margaret Rice, Ph.D., Professor, Department of Neurosurgery, Department of Neuroscience and Physiology, NYU Langone Health

3:00pm to 3:15pm

**Coffee break**

3:15pm to 4:15pm

**Plenary-Life Course Perspectives on Neurodegenerative Diseases**

Albert Hofman, MD, PhD, Stephen B. Kay Family Professor of Public Health and the Chair of the Department of Epidemiology at the Harvard T.H. Chan School of Public Health

Location: SB 1 03 & Seminar Room

4:30pm to 6:00pm

**Reception**

Location: Smillow MPR



**Day 2: Saturday, May 18, 2019**

9:00am to 10:00am **Introductory Remarks: What is ECHO**  
**Carol J. Blaisdell, MD, Senior Program Officer, Environmental Influences on Child Health Outcomes (ECHO), Office of the Director, National Institutes of Health**

Location: SB 1 03  
Light Breakfast Available

10:00am to 11:30am **Which NYC ECHO Centers are Participating, and How? | Interactive Discussion**

- Julie Herbstman, Ph.D., Associate Professor, Environmental Health Sciences, Co-Director, Molecular Epidemiology Certificate, Columbia University
- Cristiane Duarte, Ph.D., MPH, John P. Lambert, M.D. Professor of Child Psychiatry, Columbia University Irving Medical Center
- Judy Aschner, MD, Ph.D., Chair of Pediatrics, Physician in Chief for the Joseph M. Sanzari Children's Hospital At Hackensack, Meridian Health Hackensack University Medical Center
- Clancy Blair, Ph.D., MPH, Bezos Family Foundation Professor of Population Health, NYU Langone Health
- Leonardo Trasande, MD, MPP, Jim G. Hendrick, MD Professor and Vice Chair, Department of Pediatrics, Chief, Division of Environmental Pediatrics Professor of Environmental Medicine & Population Health, NYU Langone Health

11:45 am to 12:00 pm **Break**

12:00 pm to 1:00 pm **Flash Talks by ECHO Investigators: New Findings**

**Using Salivary Biomeasures To Examine The Biopsychosocial Links Between Environmental Risks And Health: Advances From The FLP/ECHO Study**

Jenna Riis, Ph.D., Assistant Professor of Psychological Science, Johns Hopkins Bloomberg School Of Public Health

**Prenatal Exposure to Traffic and Early Neurobehavioral Outcome of Preterm Infants**

Xueying Zhang, Postdoctoral Fellow at Icahn School Of Medicine, Mount Sinai Hospital

**Air Pollution Exposure and Thyroid Disruption During Pregnancy: Potential Impacts on Child**

Akhgar Ghassabian, MD, Ph.D., Assistant Professor At Departments Of Pediatrics, Population Health, and Environmental Medicine, NYU Langone Health



### **Vulnerabilities of Neurodevelopmental Disease Genes to Environmental Stressors**

Brandon Pearson, Ph.D., Assistant Professor of Environmental Health Sciences, Columbia Mailman School of Public Health

### **The Impact of Adverse Childhood Experiences on Cognitive Control and Substance Use Risk in Puerto Rican Children**

Tamara J. Sussman, Ph.D., Postdoctoral Research Fellow, Division of Child & Adolescent Psychiatry, Columbia University

### **Maternal Immune Activation is Associated with Fetal Behavior and Neonatal Functional Connectivity**

Marisa Spann, Ph.D., Assistant Professor of Medical Psychology, Columbia University Medical Center

1:00pm to 2:00pm

### **Discussions of ECHO Big Wins for NYC: Interactive Discussion**

NYC Collaborative Subnational/Multicohort Analysis or Sharing Common Resources

Lorna Thorpe, PhD, MPH, Professor of Epidemiology, Director of the Division of Epidemiology, Vice Chair of Strategy and Planning in the Department of Population Health, NYU Langone Health

William Yang  
Executive Director, New York City Children's Cabinet

Ito Kazuhiko  
Executive Director of Environmental Research, Bureau of Environmental Surveillance and Policy, New York City Department of Health and Mental Hygiene

2:00pm to 3:00pm

### **Community session: Interactive Discussion**

#### **How do we connect communities with ECHO and what is it doing?**

Israel Rocha, CEO NYC H+H Elmhurst, VP for OneCity Health

Lubna Ahmed, West Harlem Environmental Action

David Shuffler Jr., Executive Director of Youth Ministries for Peace and Justice (YMPJ)

Karen Blondel, Community leader, Resilient Red Hook

3:00pm to 4:00pm

### **Refreshments**