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
• Dr. Catherine Manno, Chair, Department of Pediatrics
• Dr. Leonardo Trasande, Director, Division of Environmental Pediatrics, Vice Chair for Research, Department of Pediatrics,
• Dr. Judith S. Hochman, Director, Cardiovascular Clinical Research Center
NYU Langone Health

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
## Environment and the Brain Symposium Agenda

### Day 1 Continued

#### 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 of the 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

#### 2:15pm to 3:00pm

**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:** SB 1 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., Director of Pediatric Population Neuroimaging, Erasmus University

- **Talk 3**  
  - Brian-derived extracellular vesicles as a novel source of bio-markers for environmental exposure to metals  
  - Diane B. Re, Ph.D., Assistant Professor EHS Department, Columbia University

**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
**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 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 2**  
**Exercise provides a metabolite for a healthy brain**  
Moses Chao, Ph.D., Skirball Institute  
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

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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
Environment and the Brain Symposium Agenda

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 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 Biomarkers To Examine The Biopsychosocial Links Between Environmental Risks And Health: Advances From The FLP/ECHO Study
Jenna Riis, Assistant Professor Of Psychological Science; Ph.D., 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
Environment and the Brain Symposium Agenda

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 In The 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 (In Psychiatry), Columbia University Medical Center

1:00pm to 2:00pm  
Discussions of ECHO big wins for NYC  
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  
How do we connect communities with ECHO and what is it doing?

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

Genesis Abreu  
West Harlem Environmental Action Bi-lingual Community Organizer and a Pediatric Environmental Health Scholar at Mount Sinai

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
Environment and the Brain Symposium Agenda