

## ***How Disadvantage Gets “Under the Skin”: Using Epigenomic Methods to Better Understand & Address Health Disparities***

**October 2, 2017 (12:30 – 5:00 pm, followed by a cocktail reception)**

Joseph B. Martin Conference Center, 77 Avenue Louis Pasteur, Boston, MA 02115

### **SYMPOSIUM AGENDA & TOPICS TO BE COVERED**

#### **Welcome & Opening Remarks: 12:30 pm**

**Alexandra E. Shields, PhD**, Massachusetts General Hospital & Harvard Medical School

#### **Panel I: 12:35 – 1:45 pm**

Emerging issues in the measurement & analysis of epigenomic data, particularly with regard to addressing health disparities

**Andrea Baccarelli, MD, PhD**, Columbia Mailman School of Public Health (Moderator)

- Detection of cell-specific effects in methylation studies using a mixture of cell types (**Liming Liang, PhD**, Harvard T.H. Chan School of Public Health)
- The role of epigenetic factors in explaining health disparities: Some considerations for causal inference (**Linda Valeri, PhD**, McLean Hospital & Harvard Medical School)
- Interpreting small effect sizes in epigenomics (**Carrie Breton, ScD**, Keck School of Medicine of USC)
- Computational challenges measuring epigenetic changes over the lifecourse (**Allan Just, PhD**, Icahn School of Medicine at Mount Sinai)

#### **Panel II: 1:45 – 2:45 pm**

Epigenomic signals in relation to social and environmental influences

**Alexandra E. Shields, PhD**, Massachusetts General Hospital & Harvard Medical School (Moderator)

- Psychosocial stress and epigenomic modification (**Heather Burris, MD, MPH**, Perelman School of Medicine at the University of Pennsylvania & Children's Hospital of Philadelphia)
- Transgenerational epigenomic effects of trauma and stress (**Kerry Ressler, MD, PhD**, McLean Hospital & HMS)
- Epigenome-wide associations of PTSD: Findings from the Psychiatric Genomics Consortium (**Andrew Ratanatharathorn, MA**, Columbia Mailman School of Public Health)
- Environmental stressors (**Andrea Baccarelli, MD, PhD**, Columbia Mailman School of Public Health)

#### **BREAK: 2:45 – 3:00 pm**

#### **Panel III: 3:00 – 4:00 pm**

Transdisciplinary Roundtable: To what extent can epigenomics be a tool for addressing health disparities and social disadvantage? What kinds of questions can epigenomics research answer, and what kinds of questions are beyond its scope? Are there ways that epigenomics research could become more powerful in the quest to understand and address health disparities by bringing in methods/strategies from other disciplines?

**Evelynn Hammonds, PhD**, Harvard University (Moderator)

- Epigenomics & Environmental Health (**Andrea Baccarelli, MD, PhD**, Columbia Mailman School of Public Health)
- Distributive Justice (**Norman Daniels, PhD**, Harvard T.H. Chan School of Public Health)
- Psychiatry & Neuroscience (**Steven Hyman, MD**, Broad Institute of MIT and Harvard)
- Sociology (**Michèle Lamont, PhD**, Harvard University)
- Health Policy & Disparities Research (**Alexandra E. Shields, PhD**, Mass. General Hospital & Harvard Medical School)

#### **Break-Out Sessions & Reporting Back: 4:00 – 5:00 pm**

Small group discussions to come up with top ideas for future research that would most advance the field and contribute to our understanding of health disparities.

#### **Networking Reception: 5:00 – 6:00 pm**

## Planning Committee

### ***Andrea Baccarelli, MD, PhD*** (Co-Chair)

Leon Hess Professor and Chair, Department of Environmental Health Sciences, and Director, Laboratory of Precision Environmental Biosciences, Columbia Mailman School of Public Health

### ***Alexandra Shields, PhD*** (Co-Chair)

Associate Professor, Harvard Medical School & Massachusetts General Hospital  
Director, Harvard/MGH Center on Genomics, Vulnerable Populations, and Health Disparities

### ***Heather Burris, MD, MPH***

Assistant Professor of Pediatrics, Perelman School of Medicine at the University of Pennsylvania  
Attending Neonatologist, Children's Hospital of Philadelphia

### ***Dawn DeMeo, MD, MPH***

Associate Professor, Harvard Medical School

### ***Dana Dolinoy, PhD***

Associate Professor, University of Michigan School of Public Health

### ***Marie-France Hivert, MD, MMSc***

Associate Professor, Harvard Medical School

### ***Liming Liang, PhD***

Associate Professor, Harvard T.H. Chan School of Public Health

## Sponsors

### ***Harvard Catalyst Health Disparities Research Program***

The Health Disparities Research Program increases the prominence and impact of research on health disparities at Harvard. The program promotes health equity by facilitating new collaborative research, education, and training opportunities in the biomedical, clinical, health policy, and social sciences to address racial, ethnic, socioeconomic, gender, sexual orientation, and other disparities in health and healthcare. The program facilitates Harvard-wide research on health disparities through research and methods seminars, personalized consultations, networking events, and transdisciplinary symposia. The program also provides training and mentorship for junior faculty, fellows, and students interested in health disparities research. The Health Disparities Research Program works to increase the local and national impact of health disparities research by creating collaborations with local and national clinical and translational science centers and community partners. ([catalyst.harvard.edu](http://catalyst.harvard.edu))

### ***Harvard/MGH Center on Genomics, Vulnerable Populations, and Health Disparities***

The Harvard/MGH Center on Genomics, Vulnerable Populations, and Health Disparities, directed by Dr. Alexandra E. Shields, conducts interdisciplinary work at the intersection of genomics, epidemiology, and health disparities research, with a specific focus on the diseases prevalent in populations currently underserved in the health care system. The Center's goal is to analyze this intersection throughout the research trajectory, "from bench to bedside," with a focus on highly prevalent chronic conditions (e.g., cardiovascular disease, cancer, and hypertension) for which advances in treatment and prevention would have the greatest potential to improve our nation's health and reduce health disparities. The Center is a joint initiative of Harvard University and Massachusetts General Hospital/Partners HealthCare, engaging faculty from across the Harvard Community. ([cgvh.harvard.edu](http://cgvh.harvard.edu))

### ***Department of Environmental Health Sciences, Columbia Mailman School of Public Health***

The mission of the Department of Environmental Health Sciences at the Columbia Mailman School of Public Health, chaired by Dr. Andrea Baccarelli, is to protect and improve health by identifying, evaluating, and disseminating knowledge about the impact of environmental exposures and climate changes on human health and disease. Academic programs and research activities across disciplines develop public health professionals who will be leaders in solving local, national, and

global issues presented by environmental and climate challenges. Our faculty have a wide range of expertise needed to address the large spectrum of environmental health challenges our world is facing. Faculty research overlaps in common methodologies and underlying themes within a collaborative environment, yet is interdisciplinary and innovative in proposing novel scientific questions around public health. The vibrant research and educational environment of the Department houses three NIH-funded centers focused on both laboratory and community-based research to translate findings into updated public health policies. These include the Columbia Center for Children's Environmental Health, the NIEHS Center for Environmental Health in Northern Manhattan and the Superfund Research Program. ([mailman.columbia.edu/become-student/departments/environmental-health-sciences](http://mailman.columbia.edu/become-student/departments/environmental-health-sciences))

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