HEI Annual Conference 2020
WEBINAR SERIES

WEBINAR 1 - Tuesday, April 7

10:00 am **The Big Deal About Big Data, Causal Inference, and Accountability Research**
Chairs: *Jennifer Peel*, Colorado State University and HEI Review Committee; and *Kiros Berhane*, Columbia University and HEI Review Committee

Accountability research, or evaluating the effectiveness of interventions to improve air quality and public health, remains a topic of high interest. Although there have been some successes, showing effectiveness particularly at increasingly lower air pollution levels is challenging. This session will take stock of recent progress across the globe, including novel statistical approaches and big data; discuss the importance of accountability evidence for the causality debate; and explore what approaches are needed for future research.

10:00   Opening Remarks
Moderator: *Annemoon van Erp,* Health Effects Institute
10:05   Accountability Studies: Lessons Learned and Recommendations for Future Opportunities
Douglas Dockery, Harvard University, USA
10:30   Perspectives in Household Air Pollution Intervention Research in Middle- and Low-Income Countries
Jill Baumgartner, McGill University, Canada
10:55   Opportunities for Artificial Intelligence and Machine Learning in Environmental Health
Roger Peng, Johns Hopkins University, USA
11:20   The Big Deal About Big Data, Causal Inference, and Accountability Research: What's Next?
Neil Pearce, London School of Hygiene and Tropical Medicine, UK
11:45   Question and Answer Period
Moderators: *Kiros Berhane,* Columbia University, *and Jennifer Peel,* Colorado State University
12:00   Webinar ends

WEBINAR 2 – Wednesday, April 29

10:00 am **Particle Components and Associated Health Effects: Then and Now**
Chairs: *Frank Kelly,* King's College London and HEI Review Committee; and *Jeffrey Brook*, University of Toronto and HEI Research Committee

Evidence on the health effects of particulate matter has led regulatory agencies to establish mass-based ambient air quality standards for $PM_{2.5}$. However, interest remains high in whether some chemical components or physical characteristics of the PM mixture are of greater public health concern. This session will present the state of the science related to $PM_{2.5}$ components and other attributes, and discuss whether regulations based on any of these would be more protective of public health than the current PM-mass based approach.

10:00   Opening Remarks
Moderator: *Allison Patton,* Health Effects Institute
10:05   Beyond $PM_{2.5}$: Enduring questions about particle composition and physical characteristics
Frank Kelly, King's College London, United Kingdom
10:25   Remarks
Jason Sacks, U.S. Environmental Protection Agency

Bruce Copley, Independent Consultant
10:40   Integration of global and local datasets for particle composition exposure assessment
        Randall Martin, Washington University in St. Louis
11:00   Advances in contributions of toxicology to the understanding of particle component toxicity
        Flemming Cassee, RIVM, Netherlands
11:20   Advances in epidemiology of multiple PM components
        Helen Suh, Tufts University
11:40   Question and Answer Period
        Moderated by *Jeff Brook*, University of Toronto, Canada
12:00   Webinar ends

WEBINAR 3 – Tuesday, May 5

10:00am   **Understanding Ultrafine Particles and Health: How Can We Make Progress?**
        Chairs: *Allen Robinson,* Carnegie Mellon University and HEI Research Committee; and *David Foster,* University of Wisconsin–Madison and HEI Research Committee

The contribution of ultrafine particle (UFP) exposure to health effects of the air pollutant mixture is an unresolved issue in air pollution research. Recent reviews of the UFP literature continue to identify many of the same challenges in measurement, exposure assessment, and epidemiological studies that were previously identified by HEI's 2013 review. This session will summarize those challenges, discuss areas of progress, and identify issues that need to be resolved by targeted research.

10:00   Opening Remarks
        Moderator: *Eleanne van Vliet,* Health Effects Institute
10:05   Introduction
        Allen Robinson, Carnegie Mellon University
10:10   Ultrafine Particles: What Progress Have We Made and What Questions Remain?
        Lidia Morawska, Queensland University of Technology, Australia
10:25   Trends in Inter- and Intraurban Ultrafine Particle Levels in the U.S.
        Albert Presto, Carnegie Mellon University, USA
10:40   International Approaches to Vehicular Emissions Regulation: Expectations and Realities
        Tim Dallman, International Council on Clean Transportation (ICCT), USA
11:00   Ultrafine Particles in a Changing Landscape of Engines and Emissions Control
        Matti Maricq, Ford Motor Company, USA
11:15   Ultrafine Particles and Nervous System Effects: What Can Toxicological Evidence Tell Us?
        Barbara Buckley, U.S. Environmental Protection Agency, USA
11:30   Question and Answer Period
        Moderators: *Allen Robinson,* Carnegie Mellon University*, and David Foster,* University of Wisconsin–Madison
12:00   Webinar ends

WEBINAR 4 – Wednesday, May 13

10:00 am   **Brain Health and Air Pollution**
        Chairs: *Barbara Hoffmann,* University of Düsseldorf, Germany, and HEI Research Committee; and *David Savitz,* Brown University and HEI Research Committee

Globally, neurological disorders represent the second leading cause of death. While increasing evidence has emerged reporting an association between air pollution exposure and brain health throughout the life course, important research gaps remain. This session provides an overview of the relationship between air pollution and neurological effects in childhood and adolescence, and neurodegenerative disease in adulthood, as well as the physiological impacts on the brain that have been observed using recent neuroimaging techniques.

10:00   Opening Remarks
        Moderator: *Anna Rosofsky,* Health Effects Institute
10:05   Air Pollution and the Brain: Where Are We and Where Are We Going?
        Marc Weisskopf, Harvard University, USA
10:25   Developmental Exposures to Ambient Ultrafine Particulate Matter Produce Pathological and Behavioral Features Shared by Multiple Neurodevelopmental Disorders
        Deborah Cory-Slechta, University of Rochester, USA
10:45   A Multimodal MRI Approach to Studying Air Pollution Exposure and Adolescent Neurodevelopment
        Megan Herting, University of Southern California, USA
11:05   Are We Ready to Call Air Pollution Exposure a Risk Factor for Dementia? An Update on the Evidence
        Jennifer Weuve, Boston University, USA
11:25   Question and Answer Period
        Moderators: *Barbara Hoffman,* University of Düsseldorf, *and David Savitz,* Brown University
12:00   Webinar ends

WEBINAR 5 – Wednesday, May 20

12:00 pm   **Inequalities of Air Pollution Exposures and Associated Health Effects in the U.S.**
               Chairs: *Jana Milford,* University of Colorado and HEI Review Committee; and *Michael Jerrett,* University of California, Los Angeles and HEI Review Committee

A growing body of research has examined inequitable distribution of air pollution exposure across racial and socioeconomic groups in the United States. Questions remain about which population groups are inequitably exposed and likely to benefit from air quality improvements. This session will provide an overview of social determinants of health and exposure in the United States, air pollution inequality research to date, and applications in epidemiological research and policy decisions.

12:00   Opening Remarks
        Moderator: *Pallavi Pant*, Health Effects Institute
12:05   Introduction
        Michael Jerrett
12:10   Social Determinants of Health: Concepts and Methods Relevant to Air Pollution
        Sam Harper, McGill University
12:30   Quantifying Air Pollution Exposure Inequality: Methods and Challenges
        Jonathan Levy, Boston University, USA
12:50   The Role of Socioeconomic Status (SES) in Studies of Air Pollution and Health
        Jane Clougherty, Drexel University, USA
13:10   Assembly Bill 617 and the Quest for Democracy in Air Quality Management
        Veronica Eady, California Air Resources Board, USA
13:30   Question and Answer Period
        Moderator: *Jana Milford,* University of Colorado
14:00   Webinar ends