

HEI Annual Conference Program  
April 29–May 1, 2018  
Chicago, Illinois

**Sunday, April 29, 2018**

**PRE-CONFERENCE WORKSHOP**

**9–11:30 AM Causal Modeling in Air Pollution Research and Policy**

Chairs: *Francesca Dominici*, Harvard T.H. Chan School of Public Health and HEI Research Committee; and *Katherine Walker*, Health Effects Institute

Recent years have seen a growing interest in the application of modeling methods to systematically explore causal relationships between air pollution and health. This session will bring together experts in causal modeling to introduce different methods, provide critical perspectives on their potential contributions and limitations, and discuss their interpretation within the broader context of how to understand whether an exposure is or is not causing effects. Open to all conference attendees.

- 9:00 Opening Remarks / Objectives  
*Katherine Walker and Francesca Dominici*
- 9:10 The Many Paths to Causality  
*Richard Scheines, Carnegie Mellon University*
- 9:35 Predicting and Evaluating Changes in Health Risks Caused by Changes in Air Pollution  
*Tony Cox, Cox Associates*
- 10:00 Approaches to Causal Inference in Observational Studies in Medical Decision Making  
*Sharon-Lise Normand, Harvard Medical School and Harvard T.H. Chan School of Public Health*
- 10:25 Break
- 10:45 Panel Discussion  
*Lianne Sheppard, University of Washington and HEI Review Committee, and Speakers*

**MAIN CONFERENCE**

**1:00 PM Ozone: Global Pollutant, Personal Effects**

Chairs: *Dan Greenbaum*, Health Effects Institute, and *Jana Milford*, University of Colorado–Boulder and HEI Review Committee

Ozone is a secondary pollutant that is regulated through the National Ambient Air Quality Standards (NAAQS), which are reviewed every five years; the next ozone review is due to start soon. This session will discuss challenges in controlling ozone levels, including atmospheric transport across continents and climate change, and the current science-based evidence that will contribute to the ozone health assessment. The session will end with a discussion of challenges facing those who must work to implement the ozone NAAQS.

- 1:00 Welcome and Introduction  
*Dan Greenbaum*

- 1:10 Global Dimensions to Regional Air Quality: Transboundary Transport and Climate Change  
*Arlene Fiore, Columbia University*
- 1:50 Recent Studies That Will Contribute to the Ozone Health Assessment and the Setting of the Standard
  - 1:50 Introduction  
*Jana Milford*
  - 2:00 Link Between Ozone and Health: Epidemiologic Evidence  
*Mike Jerrett, University of California–Los Angeles*
  - 2:30 Break
  - 2:50 Link Between Ozone and Health: Clinical Studies  
*Mark Frampton, University of Rochester Medical Center and HEI Review Committee*
- 3:20 Panel Discussion: How Does Scientific Knowledge and Uncertainty Inform Attainment Efforts at Ground Level?  
*Philip Fine, South Coast Air Quality Management District*  
*David Brymer, Texas Commission on Environmental Quality*
- 3:40 General Discussion

**3:55 PM Presentation of Student and Postdoc Travel Awards**

*Dan Greenbaum, Health Effects Institute*

**4:15 PM Poster Session 1**

**6:00 PM Opening Reception, Dinner, and Keynote Speaker**

*Venkat Sumantran, Chairman, Celeris Technologies, and coauthor of *Faster, Smarter, Greener: The Future of the Car and Urban Mobility**

**Monday, April 30**

**8:30 AM Health Effects of Traffic-Related Air Pollution: Assessing the Evidence in an Evolving and Complex World**

Chairs: *Francesco Forastiere, Lazio Regional Health Service, Italy; and Fred Lurmann, Sonoma Technology, Inc.*

This session will discuss important factors related to the design and interpretation of health studies of traffic-related air pollution. It is intended to aid the scope of a new systematic review to assess health effects of such air pollution, which will update HEI's 2010 literature review. The session will also introduce the Traffic Review Panel, as well as announce new HEI studies that will assess the health effects of traffic-related air pollution while taking into account other factors such as noise, socioeconomic status, and green space.

- 8:30 Introduction of Panel Members for the New Review of the Traffic and Health Literature  
*Bob O'Keefe, Health Effects Institute*
- 8:40 Traffic-Related Air Pollution: A Moving Target  
*Beth Conlan, Ricardo, United Kingdom*

- 9:10 Important Knowledge Gaps in Studying Health Effects of Traffic Exposure  
*Francesco Forastiere*
- 9:30 Comments from Stakeholders and General Discussion  
*Kathryn Sargeant*, U.S. Environmental Protection Agency  
*Kurt Karperos*, California Air Resources Board  
*Matthew Spears*, Engine Manufacturers Association
- 10:10 The New HEI Traffic and Health Studies  
*Hanna Boogaard*, Health Effects Institute
- 10:15 AM Break

**10:45 AM Air Pollution and Diabetes: What Is the Evidence?**

Chairs: *Barbara Hoffmann*, University of Düsseldorf, Germany, and HEI Research Committee; and *Ivan Rusyn*, Texas A&M University and HEI Research Committee

Diabetes and obesity, as well as air pollution, are known risk factors in the development of cardiovascular and respiratory diseases. Air pollution is associated with development of diabetes in adults, and there is some evidence that early-life exposure in children may be associated with diabetes later in life. This session will discuss the evidence, who is most susceptible, and what mechanisms are behind these observations.

- 10:45 Brief Introduction to the Session  
*Ivan Rusyn*
- 10:50 Overview of Evidence of a Link Between Air Pollution and Diabetes  
*Barbara Hoffmann*
- 11:10 Long-Term Exposure to Air Pollution and Type 2 Diabetes in Adults  
*Robin Puett*, University of Maryland
- 11:30 Early-Life Exposure to Air Pollution and Cardiometabolic Health Later in Life  
*Abby Fleisch*, Maine Medical Center
- 11:50 Mechanistic Insights into Air Pollution and Type 2 Diabetes  
*Sanjay Rajagopalan*, Case Western University
- 12:10 General Discussion

**1:30 PM Poster Session 2**

**3:15 PM Can We Rely on Environmental Health Research?**

Chairs: *Amy Herring*, Duke University and HEI Research Committee; and *Kiros Berhane*, University of Southern California and HEI Review Committee

Awareness has grown during the last decade that many scientific studies have not been reproducible and the problem seems to be particularly widespread in certain fields. Environmental standards are health based and there have been long-standing debates about replicability and reproducibility of the studies underpinning regulations (including data access, quality, and analyses), though arguably the recent debate has given this issue greater visibility. Reproducibility is the focus of several recent debates in scientific journals and also is reflected in congressional efforts at transparency. This session will describe the background on this issue, different perspectives on it, and approaches to addressing it.

- 3:15 Reproducibility and Replicability: Definitions and What They Imply  
*Steve Goodman*, Codirector of Meta Research Innovation Center, Stanford University

- 3:45 Choices and Consequences: Study Design, Data Analysis, Reporting, Interpretation  
*Amy Herring, Duke University*
- 4:15 Reproducibility and Air Pollution Epidemiology  
*Rick Burnett, Health Canada*
- 4:45 Panel Discussion  
*Ila Cote, Formerly of the U.S. Environmental Protection Agency*  
*Richard Smith, University of North Carolina–Chapel Hill*
- 5:30 PM** Free Evening

## Tuesday, May 1

### **8:30 AM Advancing Air Quality, Global Health, and Energy Science at HEI**

Research Committee Chair *David Eaton*, University of Washington–Seattle, and Review Committee Chair *James Merchant*, University of Iowa, will introduce the two committees and preside over a presentation of HEI’s research program, which includes traffic-related air pollution, low levels of exposure, accountability, and mechanisms of effect, as well as the expanding Global Health Program. Energy Research Committee Chair *George Hornberger*, Vanderbilt University, will join them to present HEI’s Energy Research Program, focused on the potential for human exposure and health effects from the development of oil and natural gas from unconventional resources.

#### **Part I: Progress on Air Quality and Global Health Science**

Chairs: *David Eaton, Jim Merchant*

- 8:30 Introduction of New Chair of the Research Committee  
*Dan Greenbaum, Health Effects Institute*
- 8:40 Introduction to Core Research and Review Committees  
*Chairs*
- 8:55 Presentation of 2017 Walter A. Rosenblith New Investigator Awards  
*Annemoon van Erp, Health Effects Institute*
- 9:05 Core Science Program: Traffic-Related Air Pollution, Low Levels of Exposure, Accountability, and Mechanisms  
*Rashid Shaikh, Health Effects Institute*
- 9:25 Global Health Program: GBD MAPS, Household Air Pollution, and Ports  
*Katy Walker, Health Effects Institute*

#### **Part II: Launching the HEI Energy Research Program and Initial Findings**

Chair: *George Hornberger*

- 9:50 Introduction to the Energy Research Committee and the Program  
*George Hornberger*
- 10:05 Progress on Systematic Review of the Human Health Literature Related to Unconventional Oil and Natural Gas Development  
*Anna Rosofsky, Health Effects Institute*
- 10:25 Plans for Exposure Literature Review and Research Planning  
*Donna Vorhees, Health Effects Institute*

10:45 AM Break

**11:15 AM The Power of Place: Pathways to Healthy Urban Living**

Chairs: *David Foster*, University of Wisconsin–Madison; and *Frank Kelly*, King’s College London, United Kingdom, and HEI Research Committee

More than half of the world’s population now lives in urban areas, and this number is expected to increase because of continuing population growth and urbanization. Air pollution and noise, along with interrelated factors such as physical inactivity, lack of green space, stress, and socioeconomic deprivation, are associated with adverse health. This session will explore how integrated urban design, transport planning, and new mobility and transportation technologies can improve city residents’ health and reshape cities in the future.

11:15 Keynote Speaker: Health of Urban Populations  
*Sandro Galea*, Boston University

12:00 Lunch

1:00 Interrelationships Between Urban Green Space, Air Pollution and Health  
*Jaime Hart*, Harvard T.H. Chan School of Public Health

1:30 Healthy Urban Living: Urban Design, Transport Planning, and Travel Choice  
*Lawrence Frank*, University of British Columbia, Canada

2:15 General Discussion

**2:30 PM Conference Adjourns**