



Richard Meserve, Distinguished Scientist, Leader, Tapped as New HEI Board Chair

Since its inception, the Health Effects Institute has been blessed with strong and dynamic leadership on its Board of Directors, no more so than in the position of Chair. Remarkably, through nearly 40 years of operation there have been only two Chairs of the HEI Board: the founding Chair, former U.S. Solicitor General of the United States, Archibald Cox; and Richard Celeste,



Richard Meserve.

former Governor of Ohio, Ambassador to India, and President Emeritus of Colorado College.

In 2020 Celeste, after a productive and satisfying tenure, informed the Board of his desire to step down

Continued on page 4



Richard Celeste.

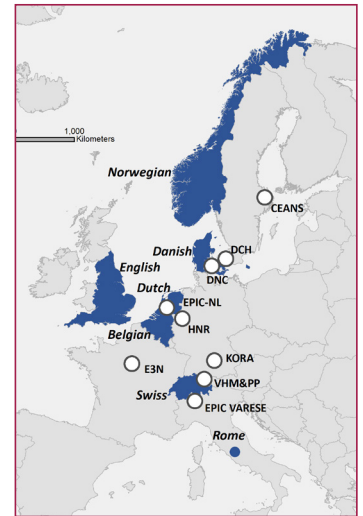
Major HEI Study in Europe Finds Evidence of Health Effects at Low Levels of Air Pollution

A new HEI study using data from 11 European countries reported that exposure to relatively low levels of fine particulate matter (PM_{2.5}), black carbon (BC), and nitrogen dioxide (NO₂) was significantly associated with natural-cause, cardiovascular, respiratory, and lung cancer mortality. This study contributes evidence of associations between exposures to relatively low levels of air pollution over many years and several important health outcomes.

The study was funded through HEI's program *Assessing Health Effects of Long-Term Exposure to Low Levels of Ambient Air Pollution* (RFA 14-3).

In [HEI Research Report 208](#), *Mortality and Morbidity Effects of Long-Term Exposure to Low-Level PM_{2.5}, BC, NO₂, and O₃: An Analysis of European Cohorts in the ELAPSE Project*, Bert Brunekreef at Utrecht University and colleagues describe the development of new exposure models for all of Europe at a spatial resolution of 100 m × 100 m for four pollutants, namely fine particulate matter (PM_{2.5}), black carbon (BC), nitrogen dioxide (NO₂), and ozone (O₃), as well as PM_{2.5} particle composition. They assigned estimates of these exposures to participants in two parallel sets of epidemiologic analyses:

- They analyzed a pooled cohort that included 15 conventional research cohorts (i.e., those for which individuals were invited to participate and to respond to question-



Brunekreef and colleagues examined data from 11 countries, including seven large administrative cohorts, shown here in blue, and a pooled cohort whose subcohorts are indicated with open circles. (From HEI Research Report 208)

Continued on page 4

HEI Welcomes Communications Director to Staff

HEI is pleased to welcome Tom Champoux to a new staff position, Director of Science Communications. Champoux joined HEI on July 26. He will expand on the roles filled by Hilary Polk, who retired in May as Managing Editor after many successful years on the staff.

HEI is rapidly growing in an era when the ways people prefer to receive news and information are undergoing dramatic change. Champoux will help the Institute develop strategies to more widely share its trusted, independent science on air pollution and health in

Continued on page 3

Also in This Issue...

Taking Steps Toward Action on Inclusiveness.....	2
HEI Launches Three New Studies on Wildfires and Effectiveness of Air Quality Policies.....	2
Stay Tuned for Research Funding News.....	2
Communicating the Science.....	3
Study Examines Role of Social Stressors in Air Pollution–Disease Links.....	5

Taking Steps Toward Action on Inclusiveness

In August 2020, HEI renewed and expanded its commitment to promoting diversity and inclusion in the field of environmental health with the release of its *Action Plan to Promote Inclusion*.

The *Action Plan* (available [here](#)) describes key steps to ensure a safe and welcoming environment for all at HEI and to include individuals from racial and ethnic groups who have been underrepresented in environmental health research.

The Plan sets goals for improving performance, monitoring progress, and reporting publicly and regularly on that progress and steps still to be taken.

Shortly after release of the *Action Plan*, many of HEI's own staff stepped forward to form a Diversity, Equity, and Inclu-

sion (DEI) Task Force that works with leadership to achieve the Plan's stated goals. HEI is pleased to report on some early steps taken to advance inclusiveness, both within the organization and through external work:

- Internally, HEI is in the process of recruiting a consultant to help ensure an inclusive and welcoming work environment. HEI also has begun to enhance efforts to diversify its staff, Board, expert committees and panels, and annual conference and webinar speakers.
- Externally, HEI continues to explore ways to reach out more effectively to scientists from underrepresented groups. This includes revising language on research and fellowship applications, expanding opportuni-

ties through a new or existing scientific fellowship program, and expanding efforts to engage individuals from underrepresented groups in HEI's review activities as well as external expert panels.

HEI leadership has been regularly communicating with staff about ongoing DEI efforts and is encouraged by the work of the Task Force in its first year. At the same time, HEI understands that bringing about meaningful and sustained institutional change requires an ongoing commitment. Therefore, it is now revisiting the August 2020 *Action Plan* to define a strategy that lays out top-priority initiatives and timelines for completing them. [HEI](#)

HEI Launches Three New Studies on Wildfires and Effectiveness of Air Quality Policies

The HEI Board of Directors recently approved funding for three new studies: one to be conducted as part of HEI's *Accountability* program to test whether air quality actions achieve cleaner air and better health, and two on the air and health impacts of wildfires.



HEI's Research Committee selected the three-year studies from among a total of 64 preliminary applications it had received in response to *RFA 20-1A, Health Effects of Air Pollution*, which solicited proposals for research on accountability, causal inference,

Continued on page 5

Stay Tuned for Research Funding News

Opportunities for Non-Tailpipe Particulates and More Coming This Fall

HEI is planning to issue a request for applications (RFA) this fall to solicit new studies on non-tailpipe vehicle emissions.

With reductions in tailpipe particulate matter (PM) emissions, there is increasing interest in non-tailpipe (i.e., non-combustion) sources of PM, specifically tire and brake wear and road dust. Because of composition changes in tires and brake parts, such emissions have been changing over time and have not been sufficiently studied or characterized. HEI is interested in new research to address the need for real-world exposure indicators unique for non-tailpipe PM emissions from motor vehicles and to assess potential impacts of such emissions on air quality, human exposure, and human health.

HEI also intends to reissue its annual RFA for the Walter A. Rosenblith New Investigator Award. This award supports creative investigators at the assistant professor or equivalent level who are interested in conducting research on the health effects of air pollution.

To stay informed of these and future funding opportunities, check our [Funding pages](#) or follow us on [Twitter](#). [HEI](#)

Health Effects Institute

75 Federal Street, Suite 1400
Boston, MA 02110, USA
Phone: +1-617-488-2300
Fax: +1-617-488-2335

www.healtheffects.org

State of Global Air: www.stateofglobalair.org

Richard A. Meserve, *Chair, Board of Directors*
Daniel S. Greenbaum, *President*

HEI is a nonprofit organization funded jointly by government and industry to research and evaluate the health effects of air pollution. An overview of HEI, information on its current research program, and all published HEI reports are available for downloading, free of charge, from the website.

Production Staff for Update:

Hope Green, *Editor*

David A. Wade, *Wadeink, Graphic Designer*

HEI in Spotlight at Major Meetings

As it does each year, HEI sponsored and played important roles at two major annual scientific meetings held virtually in August and early September: the annual conferences of the International Society of Exposure Science (ISES2021) and International Society for Environmental Epidemiology (ISEE2021).

The exposure science meeting focused on “Multisector Engagement for Addressing Emerging Environmental Exposures.” Several weeks in advance, on July 31, HEI’s Allison Patton joined other panelists for “Career Paths in Exposure Science,” a pre-conference workshop hosted by HEI.

The career event was geared toward graduate students, postdocs, and junior faculty and aimed to support participation by junior scientists and those from underrepresented groups.

At the epidemiology meeting, the theme was “Promoting Environmental Health and Equity in a Shifting Climate.”

During a panel discussion, HEI staff and members of the HEI Panel on Health Effects of Traffic-Related Air Pollution discussed preliminary findings from HEI’s systematic literature review.

In a separate presentation, HEI President Dan Greenbaum shared HEI’s perspective on the need for additional guidance in evidence synthesis in environmental health, as the Institute is actively considering new work in this area.

HEI scientist Yi Lu presented a poster featuring work from her dissertation on how school building environment and socioeconomic status affect students’ respiratory health, and in turn their academic performance and school attendance.

Sharing Initial Traffic Review Findings

The annual ISES and ISEE conferences also highlighted HEI’s [systematic review of traffic-related air pollution epidemiology](#).

HEI scientists Hanna Boogaard and Allison Patton presented methods and preliminary results from the systematic traffic review in an ISEE symposium, “Health Effects of Traffic-Related Air Pollution: Assessing the Evidence in an Evolving and Complex World.”

Patton presented the review in a virtual poster session at ISES, with a focus on implications for exposure assessment. Earlier this year, Boogaard shared initial results from the review at webinars hosted by the Center for Advancing Research in Transportation Emissions, Energy, and Health; and the National Academy of Sciences, Engineering, and Medicine (NASEM).

Impact of Getting Around

The NASEM workshop, “How We Move Matters,” featured sessions on three days in July exploring the science on environmental health challenges related to emerging transportation services, such as ride-hailing and delivery apps, automated vehicles, and e-scooters. Greenbaum (chair of the event’s planning committee) moderated a panel identifying research gaps, and in another session Boogaard helped explore potential consequences of changes in mobility choices. The agenda and recordings of the sessions are available at bit.ly/3hS9egV.

In Case You Missed These Webinars...

Recordings of other virtual meetings where HEI recently shared research and insight are available to the public, including the following:

HEI 2021 Annual Conference Webinar Series

In lieu of our annual conference in Boston, the [2021 HEI Annual Conference](#) was held virtually with a series of eight webinars in April and May.

Virtual Workshop on Air Pollution and Health in Southeast Europe

HEI, the International Society for Environmental Epidemiology, the European Respiratory Society, the Medical University of Plovdiv, Bulgaria, and environmental health institutions in Serbia jointly hosted [this workshop](#) in June.

Anticipatory Research for EPA’s Research and Development Enterprise to Inform Future Environmental Protection: The Road Ahead (Fifth Committee Meeting)

This videorecording of the [meeting’s second day](#) includes a July 29 panel discussion led by HEI President Dan Greenbaum on “Applying Data Science for Environment and Health Assessment.” [HEI](#)

NEW DIRECTOR OF SCIENCE COMMUNICATIONS (Continued from page 1)



Tom Champoux.

this evolving communications landscape. He will oversee and collaborate with staff maintaining HEI’s websites, social media, e-mail, and press and media outreach, as well as manage promotion of events such as webinars and HEI’s Annual Conference. At the same time, he will supervise publication of scientific reports and other traditional editorial projects.

Champoux has spent the past 15 years leading communications efforts for several Boston area nonprofits. Previously he was director of communications for the American Meteorological Society (AMS), where he worked with his staff and consultants to elevate the organization’s national profile as experts in weather, water, and climate science. This included promoting their monthly academic journals as well as annual reports on extreme weather events and global climate assessments.

At AMS, and at his previous job at the New England Historic Genealogical Society, Champoux developed comprehensive communications strategies. He also was responsible for gaining local and national media coverage and has led projects to redesign websites and track how effectively the organizations reached their audiences. [HEI](#)

wildland fires, and other topics. Fifteen teams were then invited to submit full applications.

Policy Impacts in Three Cities

The Accountability study will explore “Environmental and Health Benefits of Mobile Source and Electricity Generating Unit Policies to Reduce Particulate Pollution.” **Stefanie Ebel** (Emory University), **David Rich** (University of Rochester Medical Center), and their colleagues will evaluate the effect of selected policies that targeted emissions from motor vehicles and electricity generating units on PM_{2.5}, gaseous pollutants, PM_{2.5} components, and source-specific PM_{2.5} concentrations at six locations in Atlanta, New York City, and Los Angeles.

The investigators will compare changes in estimated PM_{2.5} composition resulting from the selected air quality policies during 2005–2019 and estimate the health benefits of the air quality policies over that period on cardiorespiratory emergency department visits and hospitalizations at each of the six locations.



Effects from Fires

For a study of “Australian Fires and Perinatal Health Risks,” **Michelle Bell** (Yale University) and colleagues in the United States and Australia will estimate daily exposure to PM_{2.5} from Australian wildfires using advanced fire modeling methods and emissions inventory. The investigators will then use a retrospective cohort study to estimate associations between adverse birth outcomes and those exposures.

In addition, this study will assess disparities in exposures and in health responses for potentially sensitive populations, such as those with low socioeconomic status and Aboriginal and Torres Strait Islander populations. Bell and colleagues will make their advanced modeling methods and emissions inventory publicly available.

Meanwhile, for a study on “Contributions of Prescribed Fire and Agricultural Burning to Air Quality and Health,” **Mehmet Talat Odman** (Georgia Institute of Technology) and colleagues will quantify the effects of prescribed and agricultural burning on daily PM_{2.5} and ozone levels in 4 km by 4 km grids in the southeastern United States.

Odman and colleagues will use a case-crossover design to examine associations between emergency department visits in a

national administrative dataset with PM_{2.5} and ozone associated with these burns using a source-apportionment approach. They will then estimate the excess emergency department visits that can be attributed to smoke exposure in the southeastern United States. [HE]

Study Examines Role of Social Stressors in Air Pollution–Disease Links

Air pollution exposures, social stressors, and health outcomes can all interact in studies of air pollution and health. Given that, disentangling the role of social stressors as modifiers or confounders of health effects is imperative to identify potentially vulnerable populations and to provide additional scientific evidence needed to inform mitigation measures.

Research Report 206, *Social Susceptibility to Multiple Air Pollutants in Cardiovascular Disease*, presents a study led by Jane Clougherty at Dornsife School of Public Health, Drexel University. This study examined whether the associations between community- and individual-level cardiovascular disease (CVD) events and ambient air pollutants vary with social stress.

Unique datasets included data on CVD events in all New York City hospitals, city wide fine particulate matter, nitrogen dioxide, sulfur dioxide, ozone, community-level social stressors, and noise disturbance.

The study demonstrated that variations in the social stressors in New York City were associated with CVD events, reinforcing the importance of considering such stressors in air pollution health analyses. At the same time, the study found that associations between pollutants and CVD were attenuated when adjusting for social stressors.

The HEI Review Committee complimented much of the investigators’ work, but the Committee disagreed with the investigators’ interpretation of some of their results that associations between air pollution and CVD were stronger in communities with higher stressor levels. The Committee recommended that future studies attempting to disentangle social stressors from air pollution effects on CVD events should build on steps Clougherty and colleagues have taken by further investigating important social stressor confounders and modifiers. [HE]

For more information on this study, contact Anna Rosofsky, arosofsky@healtheffects.org.

Follow HEI on Twitter and LinkedIn



SIGN UP: HEI NEWSLETTER ONLINE

For e-mail delivery of *Update*, visit www.healtheffects.org and look for “Sign up for HEI news.”