



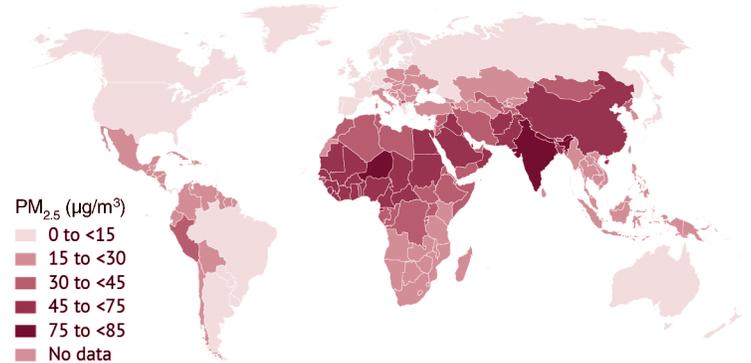
HEI's Progress on Promoting Inclusion

Starting with its August 2020 [announcement](#), HEI has been [taking steps](#) to promote inclusion of individuals from racial and ethnic groups that have been underrepresented for generations in environment and health research. Those actions are now well underway.

HEI's Board of Directors is building on its past success in recruitment of diverse members to diversify further in the future. At the same time HEI scientific staff are proactively seeking out and providing — in every aspect of HEI's scientific endeavors — opportunities to elevate and advance the careers of scientists from underrepresented groups. This includes making a concerted effort to identify these scientists; inviting them to serve as reviewers, committee and panel members, and speakers at HEI conferences and webinars; and seeking their participation in HEI's Rosenblith New Investigator and Annual Conference Travel Award programs.

This fall HEI's committees worked with scientific staff to develop and implement programs that will foster interest in HEI research funding from underrepresented groups, enhance their ability to apply for funding, and encourage and reward HEI-funded research teams with diverse members.

Also, more broadly, HEI is reviewing its hiring practices and policies to identify, recruit, and provide a welcoming environment for underrepresented scientists and other staff members, and to diversify its procurement of goods and services. 



More than 90% of the world's population lives in areas that exceed the World Health Organization Air Quality Guidelines of 10 µg/m³.

Worldwide Reach for State of Global Air 2020

The *State of Global Air 2020*, the fourth edition of HEI's flagship report and website with global data on air quality and its health impact, was launched on October 21 to widespread interest and coverage around the world.

The newly redesigned State of Global Air website provides both air quality and health-impact data by country and region, based on the most recent, rigorously developed, and peer-reviewed data available from the Institute for Health Metrics and Evaluation's Global Burden of Disease (GBD) project. The site offers exposure and health-impact data for ambient particulate matter (PM_{2.5}), ozone, and household air pollution.

For the first time, the *State of Global Air 2020* also provides worldwide estimates of [infant mortality that can be attributed to air pollution](#). A short video produced for the site features experts Beate Ritz (University of California, Los Angeles), Susan Niermeyer (University of Colorado), and Raphael Arku (University of Massachusetts, Amherst).

Here are key findings in the 2020 report:

- Air pollution (PM_{2.5}, ozone, and household air pollution) is estimated to be the fourth leading risk factor for mortality worldwide. Overall, 6.67 million deaths were associated with air pollution in 2019. Despite improvements in mortality rates, the world's most populous countries, India and China, continue to bear the highest burdens of disease.

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HEI Grateful to David Foster for Committee Service

David Foster, an internationally renowned expert on vehicle engineering and emissions, stepped down recently from the [HEI Research Committee](#). After generously agreeing to stay on for an extra year after his second term expired, he completed his work with the committee this past fall.

Foster is the Phil and Jean Myers Professor Emeritus of Mechanical Engineering, Engineering Research Center, at the University of Wisconsin, Madison. He joined the HEI Research Committee in 2011 and, over the years, made many contributions



David Foster.

to HEI's research planning and oversight. He was instrumental in the Diesel Epidemiology Panel review, resulting in HEI's [Special Report 19](#), and in all of HEI's research on technology and fuels.

Foster served on the committee for two four-year terms, as normally allowed by HEI bylaws. Given his unique skills and experience, the HEI staff and Board of Directors asked him to stay on for an additional year to ensure continuity in the work he was undertaking.

"With his practical and extensive knowledge of engineering and emissions, Dave educated his fellow committee members and informed every aspect of HEI's research work," said Dan Greenbaum, HEI's president. "We will miss his insight and contributions — and wish him well!" [HEI](#)

Communicating the Science

Virtual and Visible at Annual ISEE, ISES Events

As always in late summer and fall, HEI played important roles at two recent major annual scientific meetings — even as the proceedings for both were held virtually for the first time ever.

In August, HEI cosponsored the virtual 32nd annual conference of the International Society for Environmental Epidemiology. Among the HEI scientists participating were Hanna Boogaard, who cochaired and presented in a symposium "How Great is GRADE? Taking Stock of GRADE for Evidence Review in Environmental Epidemiology," and Pallavi Pant, who cochaired a session on "COVID-19 and the Environment: Early Lessons from the Americas and Europe."

In September, HEI cosponsored the virtual 30th annual conference of the International Society for Exposure Science, whose theme was "Changing Exposure, Climate, and Health: From Science to Policy." Donna Vorhees of HEI-Energy — a separately funded affiliate of HEI — presented a case study highlighting the value of improved integration of exposure and health research related to unconventional oil and natural gas development.

Also during the exposure science conference, HEI scientist Allison Patton discussed a paper that she coauthored, "Reductions in Traffic-Related Black Carbon and Ultrafine Particle Number Concentrations in an Urban Neighborhood during the COVID-19 Pandemic." Presented during both conferences were preliminary results from HEI's systematic review of the epidemiological literature on the health effects of long-term exposure to traffic emissions.

Lessons for India

In other work originating during the pandemic, HEI scientists Pallavi Pant and Katy Walker recently contributed a commentary to a policy brief by the Delhi-based Collaborative Clean Air Policy Centre (<https://ccapc.org.in/>) series examining how officials and scientists can best communicate air pollution-linked risks in India in light of COVID-19.

The pandemic-related shutdowns in India produced stunning improvements in air quality not seen in years and, with it, the opportunity to shed light on relationships between air pollution and health. Recent evidence from the United States and other countries suggesting a link between exposure to air pollution

and more severe outcomes from COVID-19 has particular relevance for India, where both air pollution and rates of chronic and infectious diseases are high. However, Pant and Walker emphasized the importance of a careful scientific approach to studying the relationships among the pandemic, air quality, and health.

Pant and Walker's full commentary, "COVID-19, Air Pollution and Health: Lessons for India," appears at bit.ly/3iRTMiW. Pant also recently chaired a session titled "Beyond Monitoring & Measurement: Interpreting Data" at the India Clean Air Summit 2020 (caps.cstep.in/events/#/). The summit focused on the use of data to build evidence to inform policy decisions on air pollution.

Keeping It Cleaner

HEI's Dan Greenbaum was among the speakers in a September WWF-India [webinar](#) "Clean Air — the New Normal: Linking Air Pollution & Climate Change." The interactive session was part of a WWF-India "Nature Matters" 10-webinar series celebrating their 50 years of contributing to knowledge on the Indian environment — and covering a range of emerging issues and long-term solutions in conservation and sustainable development.

Speakers deliberated on how air quality gains witnessed during the COVID-19 lockdowns could be sustained over the long term. Ajay Mathur, director of The Energy Research Institute, gave an overview of the issues facing India in both air quality and climate. Greenbaum summarized what is known about the health effects of air pollution in India and globally, and the growing awareness of possible links between air quality and COVID-19. He cited the availability of many measures for improving air quality — and the progress India is beginning to make. Overall, the panel emphasized the importance of jointly tackling the air pollution health crisis and climate change.

Brussels Workshop Report Published

The November 2020 issue of the *European Respiratory Journal* contains a [summary report](#) of a joint scientific meeting of HEI, the World Health Organization, the European Respiratory Society, and the International Society for Environmental Epidemiology. The [meeting](#), "Air Pollution and Health: Recent Advances to Inform the European Green Deal," was held in Brussels, Belgium, last January and was a key step in evaluating whether to update Europe's air quality policies. The workshop was followed on the second day by a separate briefing to the European Parliament summarizing these issues. [HEI](#)

- Air pollution is associated with more deaths than many better-known risk factors such as malnutrition, alcohol use, and physical inactivity.
- In 2019, exposure to ambient PM_{2.5} and household air pollution contributed to nearly 500,000 infants dying in the first month after birth, most of them in sub-Saharan Africa and Asia.
- While average global PM_{2.5} exposures declined slightly over the past decade, there has been little progress in the most polluted regions of the world, and amid growing and aging populations, PM_{2.5}'s burden of disease has continued to rise. In several sub-Saharan African countries including Nigeria, outdoor PM_{2.5} and ozone levels are increasing.
- Globally, there has been progress in one important exposure: the proportion of people cooking with solid fuels declined by 11% in the last decade. At the same time, nearly half of the world's population — a total of 3.8 billion people — continued to be exposed to household air pollution in 2019. Most of them live in just 17 countries.

HEI spread the word on its release of the *State of Global Air 2020* through enhanced communications tools, including a video, social media, and factsheets on particular countries (see www.stateofglobalair.org/resources). A webinar, held on November 5, drew participants from around the world.

Making Headlines

Highlights of the new State of Global Air results were reported by hundreds of media outlets and in multiple languages throughout the world, including *Hindustan Times*, *New Delhi Times*, and *Mint (India)*; *Guardian (UK)*; *Straits Times (Singapore)*; and *Latest Nigerian News*.

About State of Global Air

The State of Global Air, www.stateofglobalair.org, is a collaborative effort between HEI and the Institute for Health Metrics and Evaluation at the University of Washington, with expert input from the University of British Columbia. On the interactive State of Global Air website, visitors can explore and compare trends in air quality and health from 1990 to 2019. This year's report was based on the publication of the latest GBD results in *The Lancet* medical journal earlier in October. [HEI](#)

Connect with the State of Global Air on Facebook and Twitter ([@HEISoGA](https://twitter.com/HEISoGA)).

HEI 2020 Travel Awardees to Present in December 3 Webinar

HEI is excited to be able to showcase the HEI 2020 Travel Awardees' work in a webinar on December 3 from 3 p.m. to 4:30 p.m. EST. Each year, HEI invites abstract submissions from students or postdocs and then sponsors travel for several award winners to our Annual Conference to present posters detailing their latest research.

While HEI earlier this year hosted a series of webinars in lieu of its Annual Conference in response to the COVID-19 pandemic, it was unable to feature the work of its 2020 Student and Postdoc Travel Award winners. HEI is happy to announce the separate Travel Awardee webinar, which is open to the public.

Congratulations to the following winners of the HEI Travel Award 2020:

Farnaz Fouladi, PhD, *University of North Carolina, Charlotte*

Yan Lin, PhD, *Duke University*

Laura Matchett, *McMaster University*

Matthew Raifman, *Boston University*

Jiayuan Wang, PhD, *University of Massachusetts, Amherst*

Qing Ye, PhD, *Massachusetts Institute of Technology*

Register for the webinar at bit.ly/3noKNHK. For more information, contact Joanna Keel (jkeel@healtheffects.org).

HEI Annual Conference 2021 is Going Virtual!

Hold the dates April 25–27 and stay tuned for details

www.healtheffects.org/annual-conference

HEI Welcomes Dan Crouse to Staff

Dan Crouse, a health geographer and environmental epidemiologist, recently joined HEI as a consulting senior scientist. Crouse specializes in novel methods of exposure assessment and describing environmental determinants of



Dan Crouse.

health. He has played a major role in studies on the characteristics of built environments (e.g., air pollution, greenness, and walkability indices) and their potential effects on mortality, adverse birth outcomes, and incidence of cancer. He holds a Ph.D in health geography from McGill University in Montreal, Quebec, and a master's degree in environmental studies from the University of Waterloo, Ontario. After earning his Ph.D, he spent five years as an epidemiologist at Health Canada, where he led the first Canadian national-level, population-based cohort study to investigate the risks of mortality associated with long-term exposure to ambient air pollution. Before joining HEI he was a research associate at the University of New Brunswick in Fredericton. [HEI](#)

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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.

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Awards for Excellence in Aerosol Research

The American Association for Aerosol Research (AAAR) recently honored three members of the HEI community for their distinguished scientific work.

Allen Robinson of the [HEI Research Committee](#) received AAAR's 2020 [David Sinclair Award](#) for sustained excellence in aerosol science and technology. The award closely followed another career achievement: during the summer, [Robinson](#) was named the Raymond J. Lane Distinguished



Allen Robinson.

University Professor of the Department of Mechanical Engineering at Carnegie Mellon University.

AAAR named **Manabu Shiraiwa**, an HEI Walter A. Rosenblith New Investigator, as the recipient of the 2020 [Kenneth T. Whitby Award](#) for outstanding contributions to aerosol science and technology by a young scientist. Shiraiwa's proposal "Formation of Reactive Oxygen Species by Organic Aerosols and Transition Metals in Epithelial Lining Fluid" was selected



Manabu Shiraiwa.

for funding under HEI's [Rosenblith award program](#) in 2018.

Xiaoliang Wang of the Desert Research Institute, who led a [2019 HEI study](#) on vehicle emissions in tunnels, received AAAR's 2020 [Benjamin Y.H. Liu Award](#) for outstanding contributions to aerosol instrumentation and experimental techniques.



Xiaoliang Wang.

HEI congratulates all the recipients! 