

# Welcome

---

## Virtual Workshop on Health Applications for Satellite-Derived Air Quality

Session 4: Roundtable discussion on the future of satellite remote sensing of air quality in health applications

May 18, 2022 | 10:00 AM – 11:30 AM EDT

For the full program, please visit: <https://tinyurl.com/HEISatelliteWorkshop>.

We welcome you to share your work at <https://www.surveymonkey.com/r/3W56PPC>.



@HEIresearch



# Before we begin

---

All attendees are muted (view-only) for the duration of the webinar.

Please submit questions via the Q&A function at any time.

If you experience any logistical difficulties, please contact us using the “Chat” box.

Please share your work on satellites, air quality, and health at  
<https://www.surveymonkey.com/r/3W56PPC>.

Webinar slides and video will be posted on the HEI website:  
<https://tinyurl.com/HEISatelliteWorkshop>.

# The Health Effects Institute

An independent, nonprofit corporation chartered to provide *policy-relevant, high-quality, and impartial science*

Funded jointly by government and the worldwide motor vehicle industry and, occasionally, private foundations

Funds research that is selected, conducted, overseen, and reviewed independently of HEI's sponsors

Does not take policy positions



## RESEARCH REPORT

HEALTH  
EFFECTS  
INSTITUTE

Number 208  
September 2021

### Mortality and Morbidity Effects of Long-Term Exposure to Low-Level PM<sub>2.5</sub>, BC, NO<sub>2</sub>, and O<sub>3</sub>: An Analysis of European Cohorts in the ELAPSE Project

Bert Brunekreef, Maciej Strak, Jie Chen, Zorana J. Andersen, Richard Atkinson, Mariska Bauwelinck, Tom Bellander, Marie-Christine Boutron, Jørgen Brandt, Iain Carey, Giulia Cesaroni, Francesco Forastiere, Daniela Forastiere, John Gulliver, Ole Hertel, Barbara Hof, Hvidtfeldt, Nicole Janss, Ketzel, Jochem Klompr, Amar Mehta, Gabriele P, Ole Raaschou-Nielsen, I, Schwarze, Torben Sigsg, Weinmayr, Kathrin Wolf



## RESEARCH REPORT

HEALTH  
EFFECTS  
INSTITUTE

Number 211  
January 2022

### Assessing Adverse Health Effects of Long-Term Exposure to Low Levels of Ambient Air Pollution: Implementation of Causal Inference Methods

Francesca Dominici, Antonella Zanobetti, Joel Schwartz, Danielle Braun, Ben Sabath, and Xiao Wu



## RESEARCH REPORT

HEALTH  
EFFECTS  
INSTITUTE

Number 210  
December 2021

### Global Burden of Disease from Major Air Pollution Sources (GBD MAPS): A Global Approach

Erin McDuffie, Randall Martin, Hao Yin, and Michael Brauer



# HEI Research Committee



**David A. Savitz, Chair**

Professor of Epidemiology, School of Public Health, and Professor of Obstetrics and Gynecology, Alpert Medical School, Brown University



**Jeffrey R. Brook**

Assistant Professor, Occupational & Environmental Health Division, Dalla Lana School of Public Health, University of Toronto, Canada



**Amy H. Herring**

Sara & Charles Ayres Professor of Statistical Science and Global Health, Duke University



**Barbara Hoffmann**

Professor of Environmental Epidemiology, Institute for Occupational, Social, and Environmental Medicine, University of Düsseldorf, Germany



**Heather A. Holmes**

Associate Professor, Department of Chemical Engineering, University of Utah



**Neil Pearce**

Professor of Epidemiology and Biostatistics, London School of Hygiene and Tropical Medicine



**Ana M. Rule**

Assistant Professor and Director, Environmental Exposure Assessment Laboratories, Department of Environmental Health and Engineering, Johns Hopkins School of Public Health



**Ivan Rusyn**

Professor, Department of Veterinary Integrative Biosciences, Texas A&M University



**Evangelia (Evi) Samoli**

Associate Professor of Epidemiology and Medical Statistics, Department of Hygiene, Epidemiology and Medical Statistics, School of Medicine, National and Kapodistrian University of Athens, Greece



**Gregory Wellenius**

Professor, Department of Environmental Health, Boston University School of Public Health

## HEI staff work with the Research Committee on:

- Strategic planning
- Defining research needs in Requests for Applications (RFAs)
- Selecting and overseeing funded studies

# Workshop Agenda

---

**Setting the stage for trusted, high-quality satellite remote sensing data of air quality in health applications**

Wednesday April 20, 2022, 10:00 AM to 12:00 PM EDT

**Global applications of satellite-derived air quality data**

Friday April 29, 2022, 9:00 AM to 11:00 AM EDT

**Pushing the methodological limits on satellite use in health applications**

Thursday May 5, 2022, 1:00 PM to 3:00 PM EDT

**Roundtable discussion on the future of satellite remote sensing of air quality in health applications**

Wednesday May 18, 2022, 10:00 AM to 11:30 AM EDT

# Workshop guiding questions

---

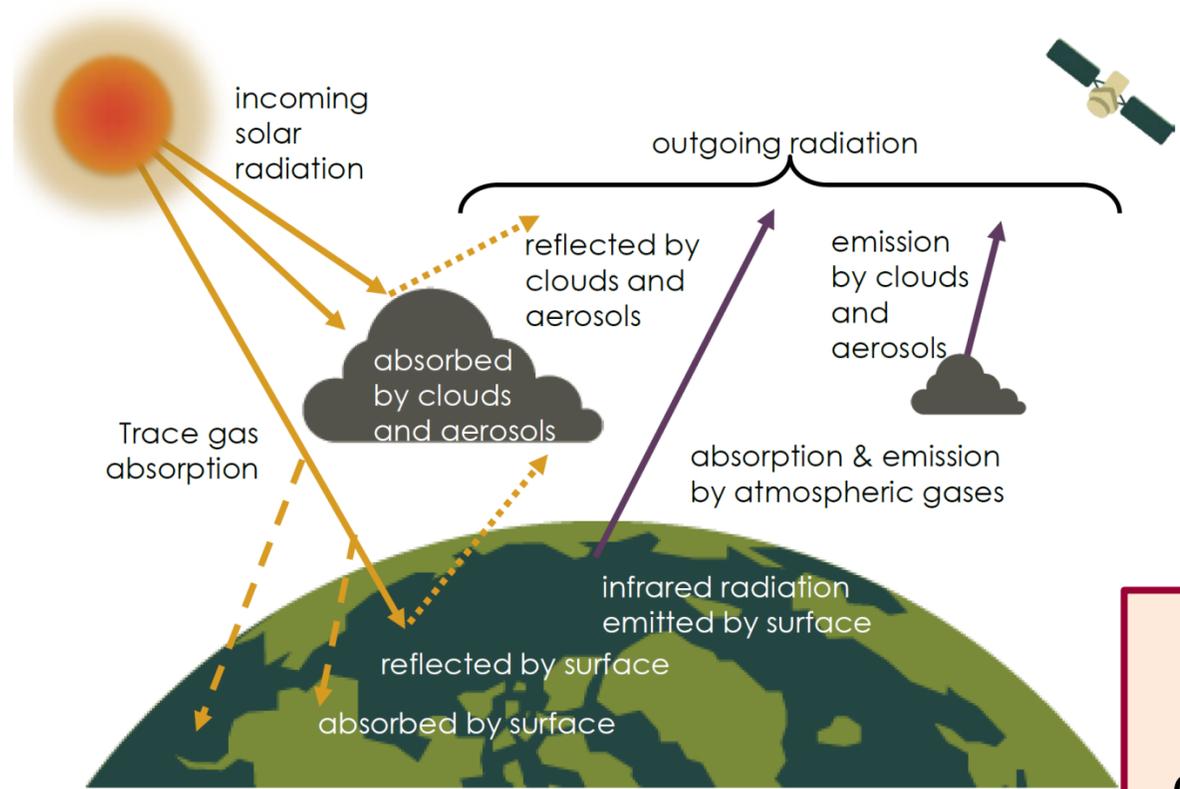
What opportunities do satellite-based products bring for advancing knowledge on air quality and health and what are the challenges?

What is coming in the future from satellite observations and how can they help address these challenges?

How well do we appreciate the limitations of the satellite products and how do we interpret those in the context of health impacts and burden estimates?

How far can we take satellite products?

# Session I: Setting the stage for trusted, high-quality satellite remote sensing data of air quality in health applications



Capacity development opportunities to improve the utilization of satellite remote sensing for health applications and communications

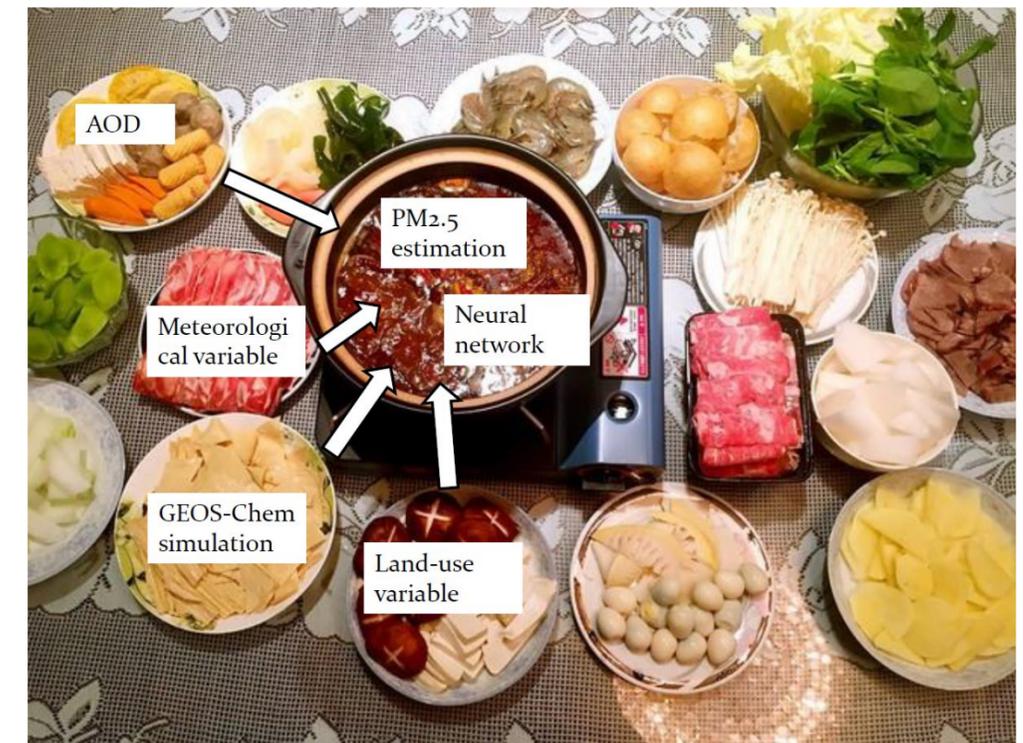
**Ana Prados**  
Battelle

Application of satellite-derived air quality estimates for epidemiology studies in data-rich areas

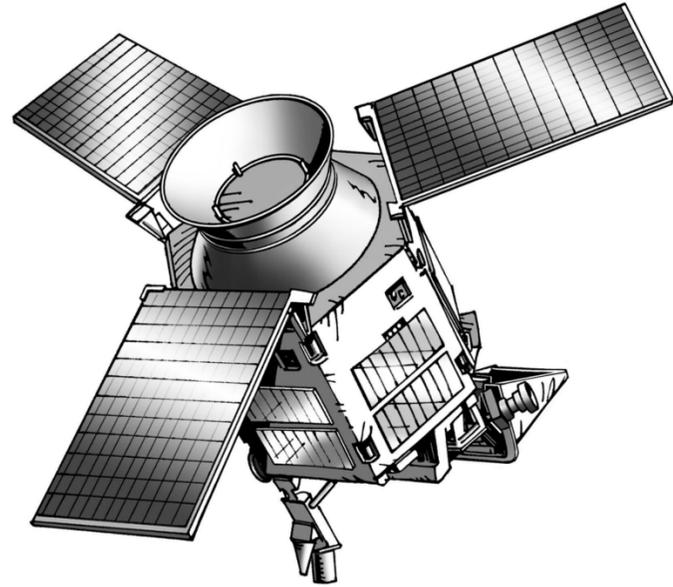
**Qian Di**  
Tsinghua University

Satellite remote sensing for air quality and health

**Yang Liu**  
Emory University



## Session 2: Global applications of satellite-derived air quality data



Examples of application to air quality and health from around the world at various stages of uptake

Satellite data for air quality exposure assessment and epidemiology

Representativeness and usefulness of satellite and ground-based data for monitoring air quality

**Aaron van Donkelaar**  
Washington U. in St. Louis

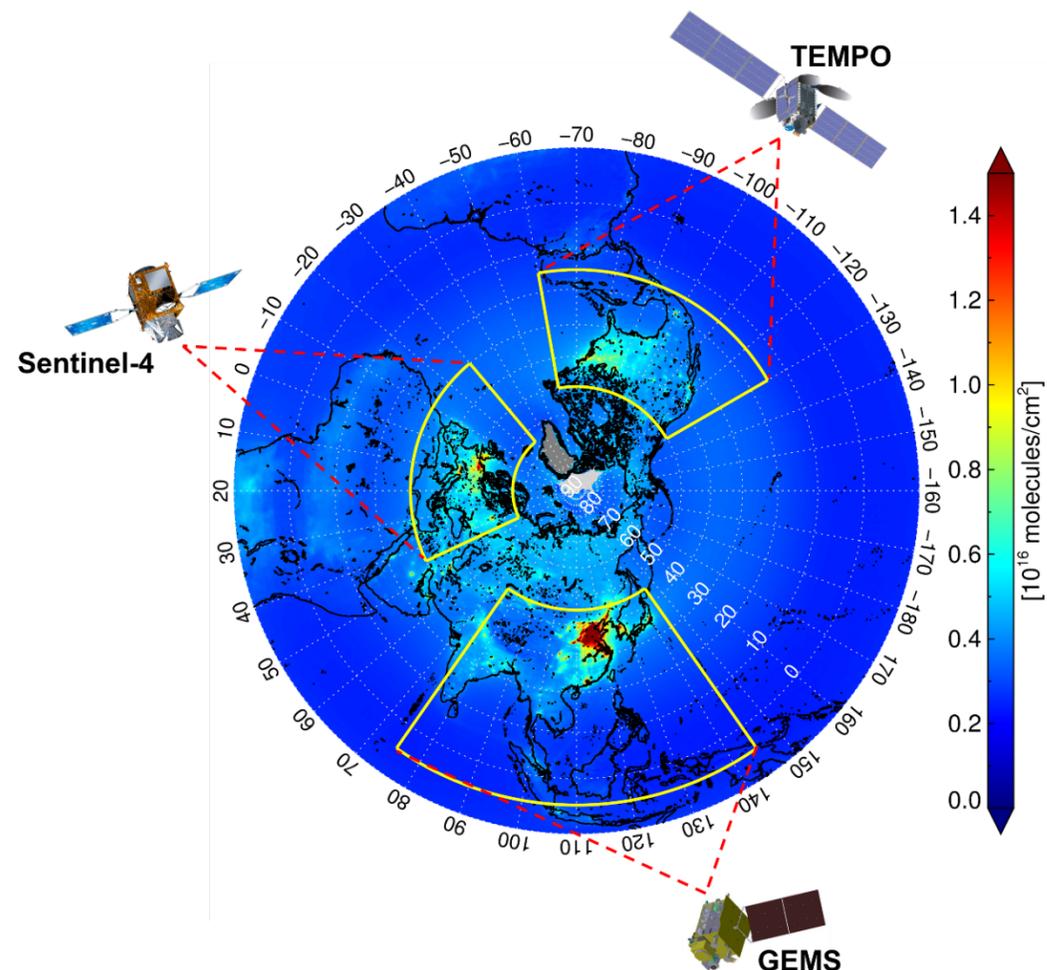
**Yuming Guo**  
Monash University

**Laura A. Rodriguez**  
UIS, Colombia

**Sagnik Dey**  
IIT – Delhi, India

**Rebecca Garland**  
U. Pretoria, South Africa

# Session 3: Pushing the methodological limits on satellite use in health applications



Observing nitrogen dioxide air pollution inequality in U.S. cities from space

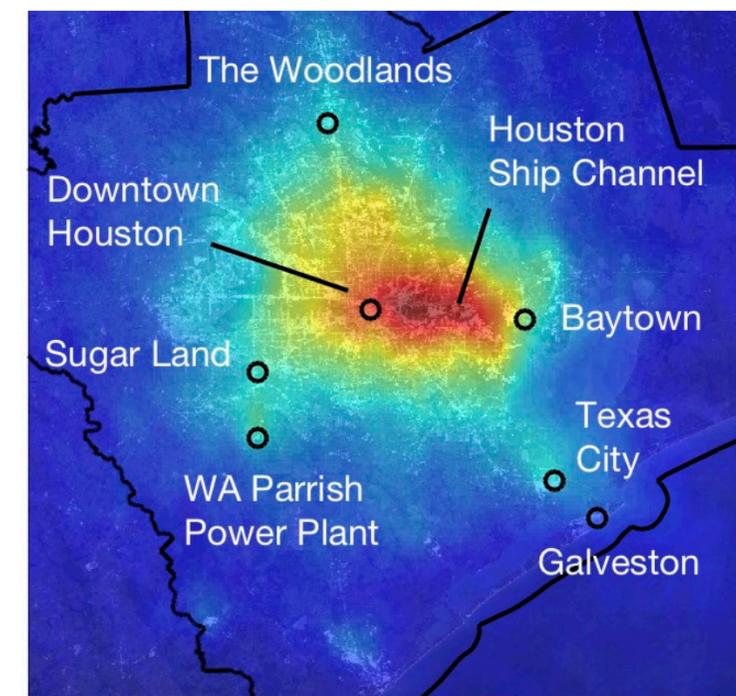
**Sally Pusede**  
University of Virginia

Interpretation and improvement of air quality data from Geostationary Environment Monitoring Spectrometer (GEMS)

**Heesung Chong**  
Center for Astrophysics, Harvard & Smithsonian  
**Jhoon Kim**  
Yonsei University, Korea

Quantifying and communicating uncertainty in air quality estimates

**Dan Goldberg**  
The Milken Institute School of Public Health at the George Washington University



# Session 4: Roundtable discussion on the future of satellite remote sensing of air quality in health applications

---

## Panelists



**Dr. Eloise Marais**  
University College  
London, UK and HEI  
Global Health  
Oversight Committee



**Dr. Colette Heald**  
Massachusetts Institute  
of Technology, USA



**Dr. Tracey  
Holloway**  
University of  
Wisconsin—  
Madison and leader  
of NASA HAQAST



**Dr. Laura Judd**  
National  
Aeronautics and  
Space  
Administration  
(NASA), USA



**Dr. Yang Liu**  
Emory University

# Thank you for joining us!

---

**Setting the stage for trusted, high-quality satellite remote sensing data of air quality in health applications**

Wednesday April 20, 2022, 10:00 AM to 12:00 PM EDT

**Global applications of satellite-derived air quality data**

Friday April 29, 2022, 9:00 AM to 11:00 AM EDT

**Pushing the methodological limits on satellite use in health applications**

Thursday May 5, 2022, 1:00 PM to 3:00 PM EDT

**Roundtable discussion on the future of satellite remote sensing of air quality in health applications**

Wednesday May 18, 2022, 10:00 AM to 11:30 AM EDT

Slides and recordings for all sessions will be posted on the HEI website. If you haven't already done so, we welcome you to share your work at <https://www.surveymonkey.com/r/3V56PPC>.



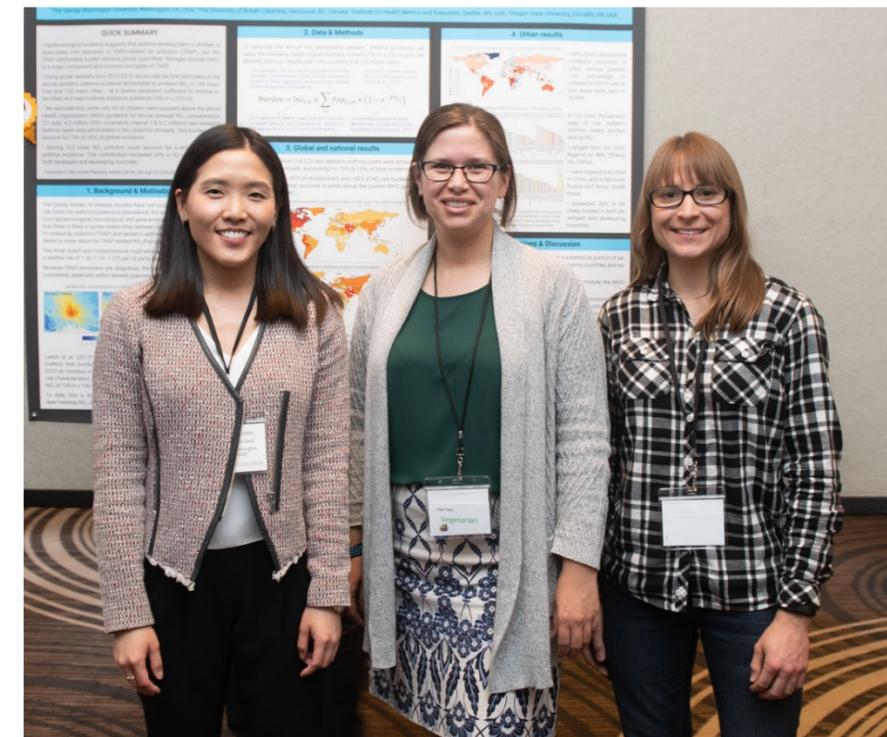
# HEI Annual Conference

June 26-28, 2022 • Washington, DC



## ***Session topics Include:***

- ***Risks to population health***
- ***Issues of environmental justice***
- ***Air pollution and climate change***
- ***Cutting-edge research methodologies***



<https://www.healtheffects.org/annual-conference>

