

# What does the changing climate mean for air quality and public health planning and exposure mitigation?

Health Effects Institute Annual Conference 2024

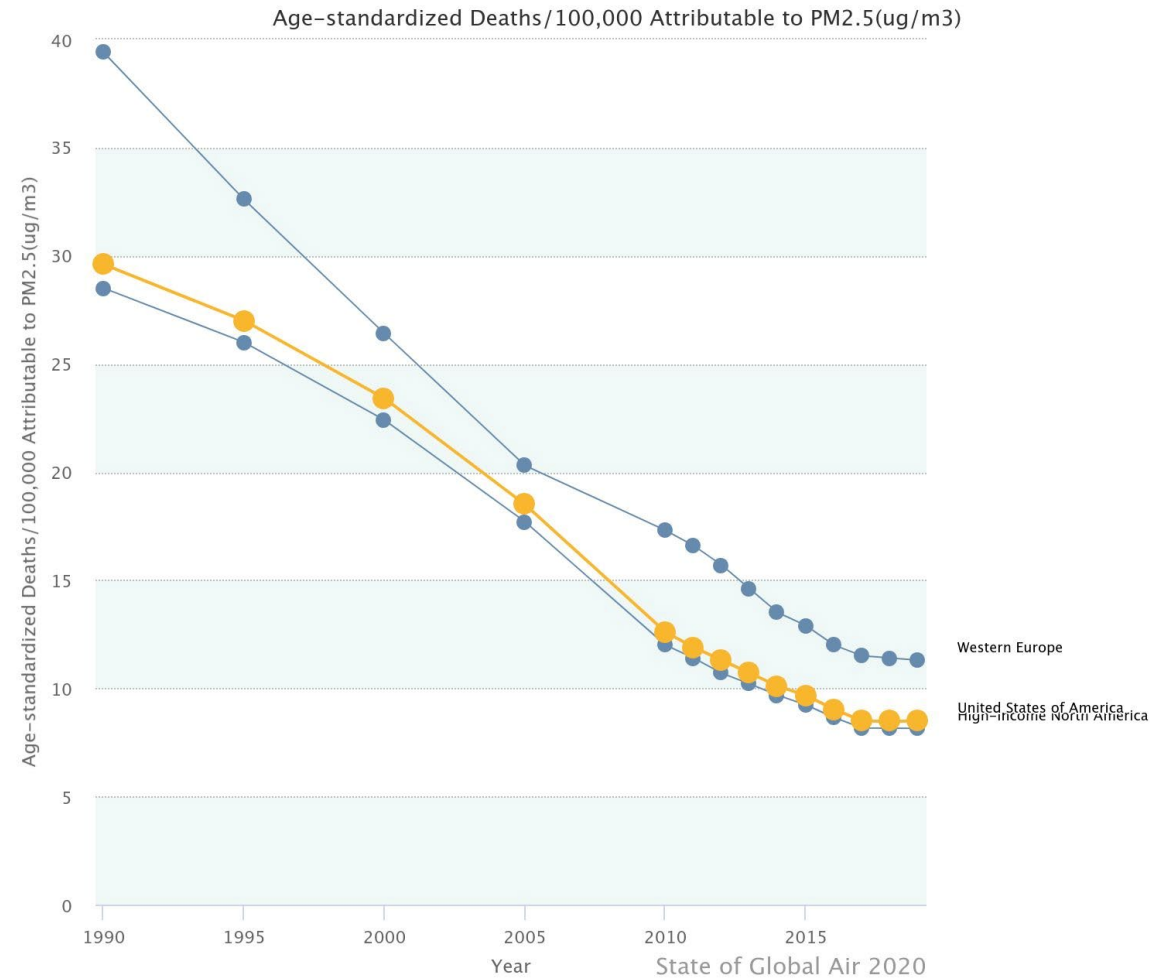
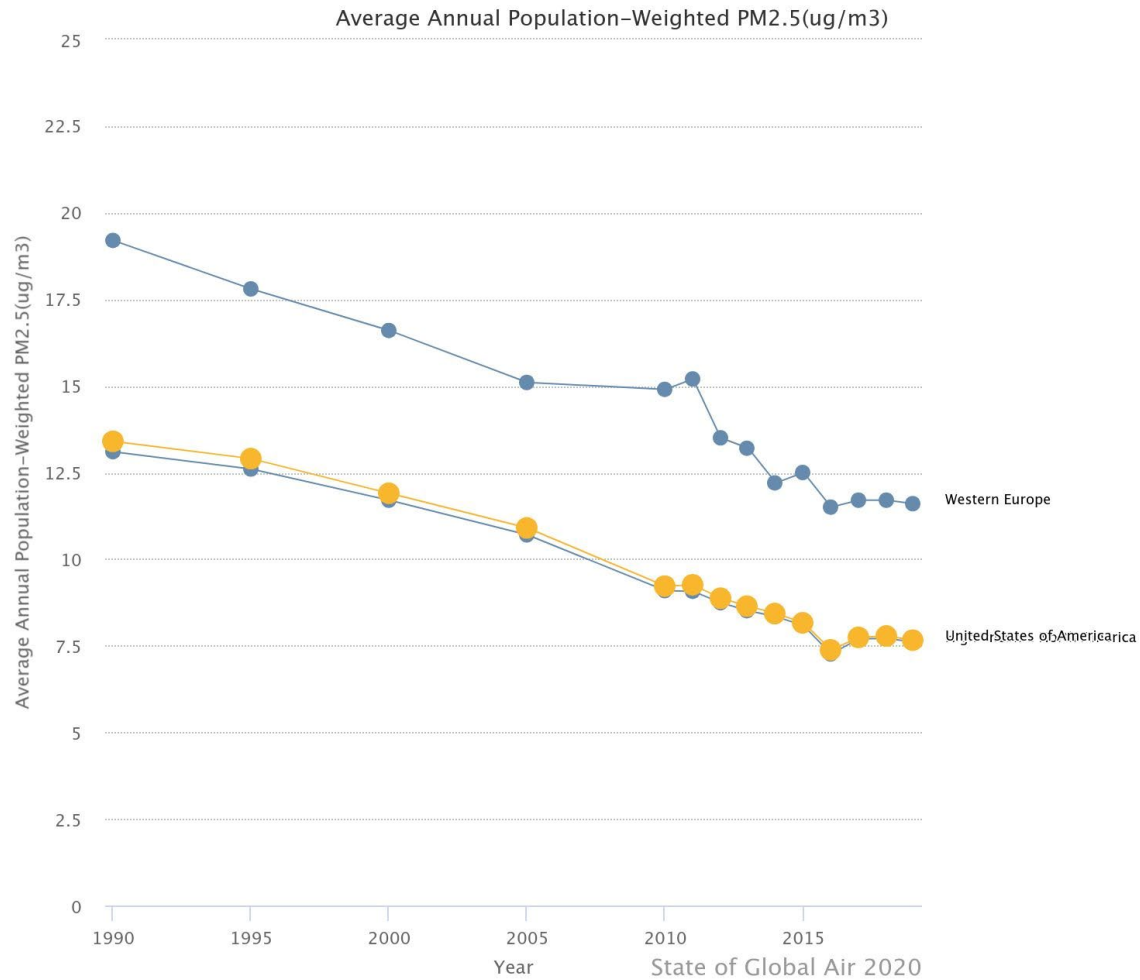
Chaired by

Gregory Wellenius, Boston University

Sara Adar, University of Michigan



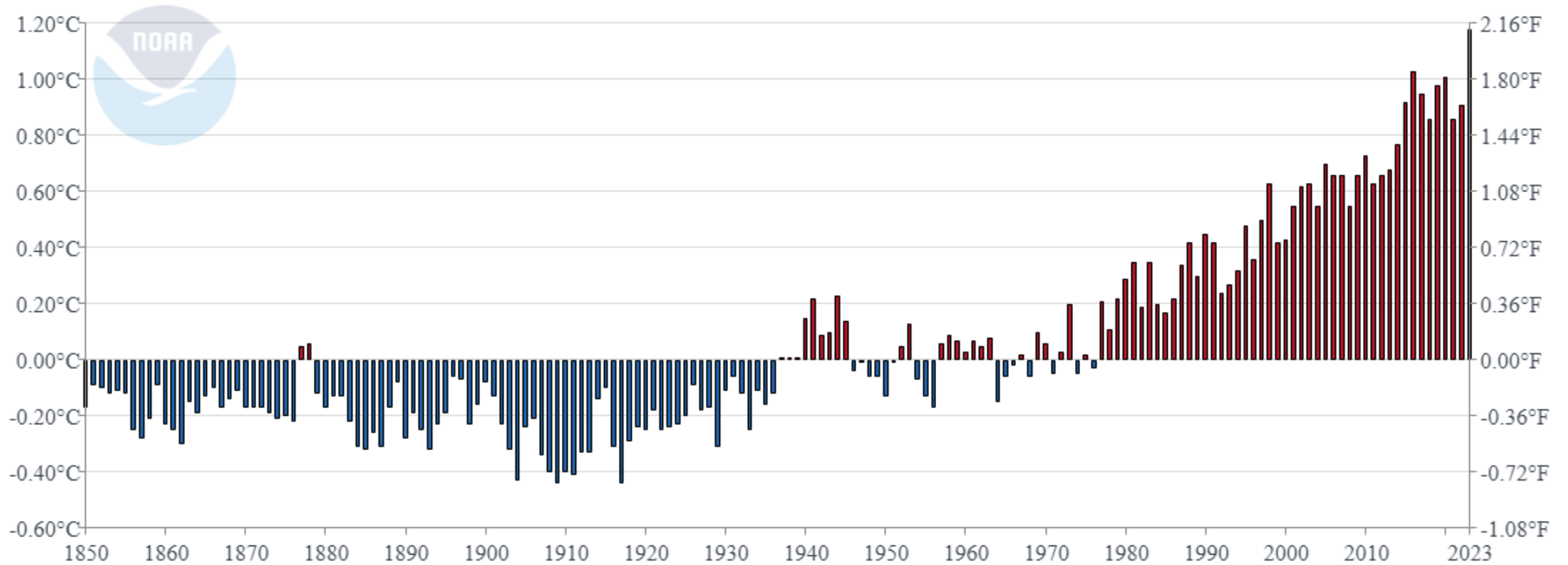
# Gains in Air Pollution and Health in High Income Countries



# Continued Climate Change

## Global Land and Ocean

January-December Temperature Anomalies



# Climate change

## Health risk

### Vulnerability factors

- Demographic
- Geographical
- Biological factors & health status
- Sociopolitical
- Socioeconomic
- Health system capacity
- Gender & equity

### Climate-related hazards

- Extreme weather events
- Heat
- Sea level rise
- Air pollution
- Vector distribution & ecology
- Water scarcity
- Reduced food production

### Exposure

- People & communities
- Health workforce
- Infrastructure
- Energy systems
- Water systems
- Food systems
- Health systems

Environmental threats and GHG emissions

## Health outcomes



Injury and mortality from extreme weather events



Heat-related illness



Respiratory illness



Water-borne diseases and other water-related health impacts



Zoonoses



Vector-borne diseases



Malnutrition and food-borne diseases



Noncommunicable diseases (NCDs)



Mental and psychosocial health



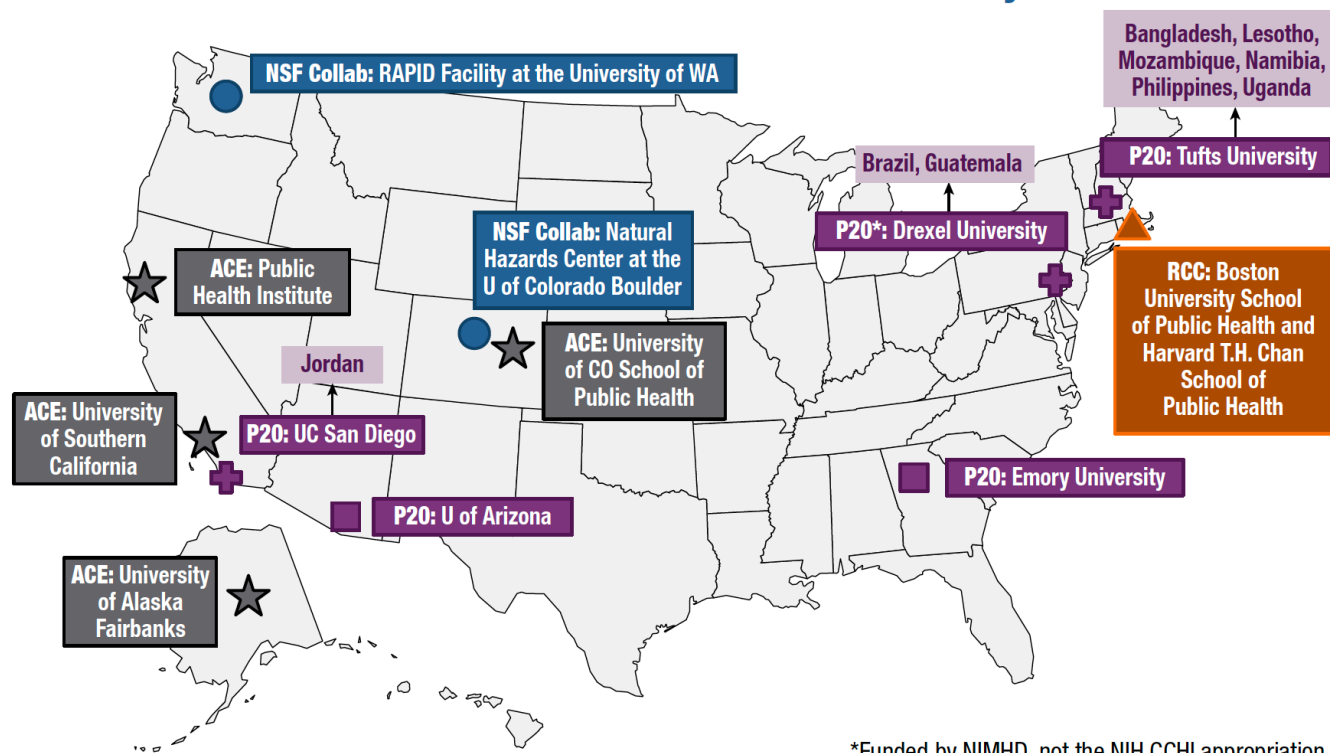
Impacts on health care facilities



Effects on health systems

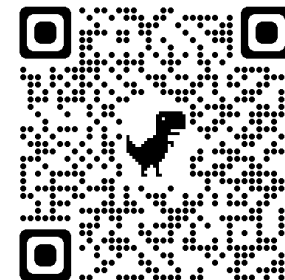
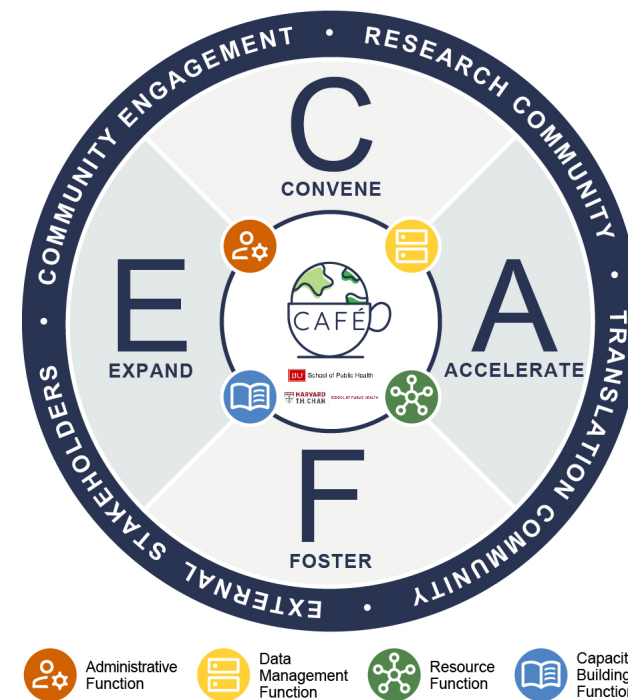
# Growing Investments in Climate Change and Health

## NIH CCH Centers Across the Country



\*Funded by NIMHD, not the NIH CCHI appropriation

- NSF Collaboration (NSF Collab)
- ▲ Research Coordinating Center (RCC)
- ★ Alliance for Community Engagement (ACE)
- Exploratory Grants for Climate Change and Health Research Center (P20)
- ⊕ *International Focus*



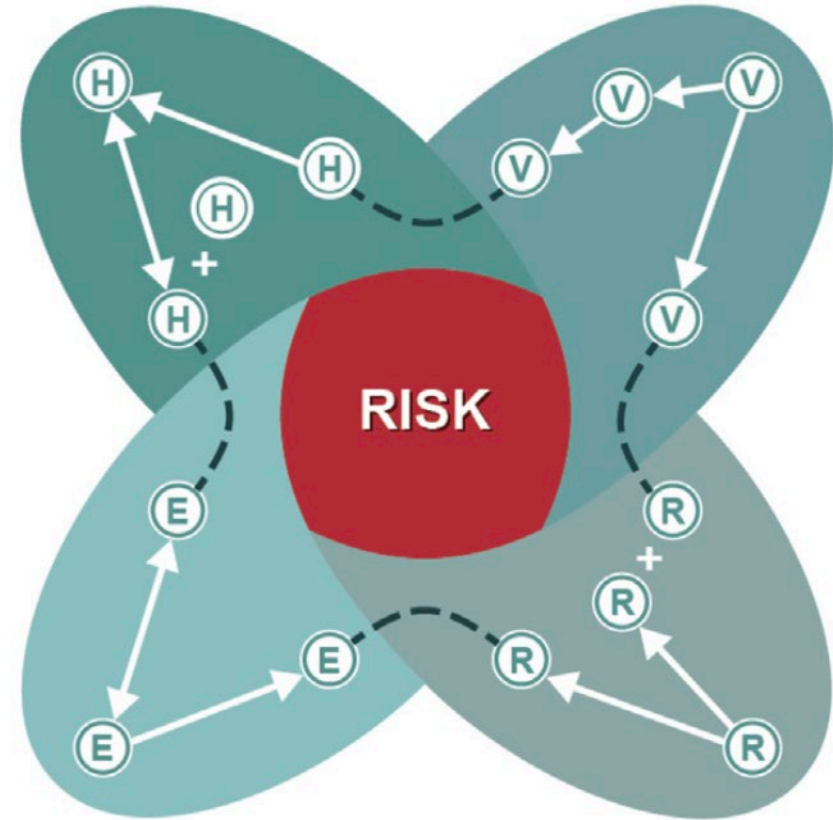
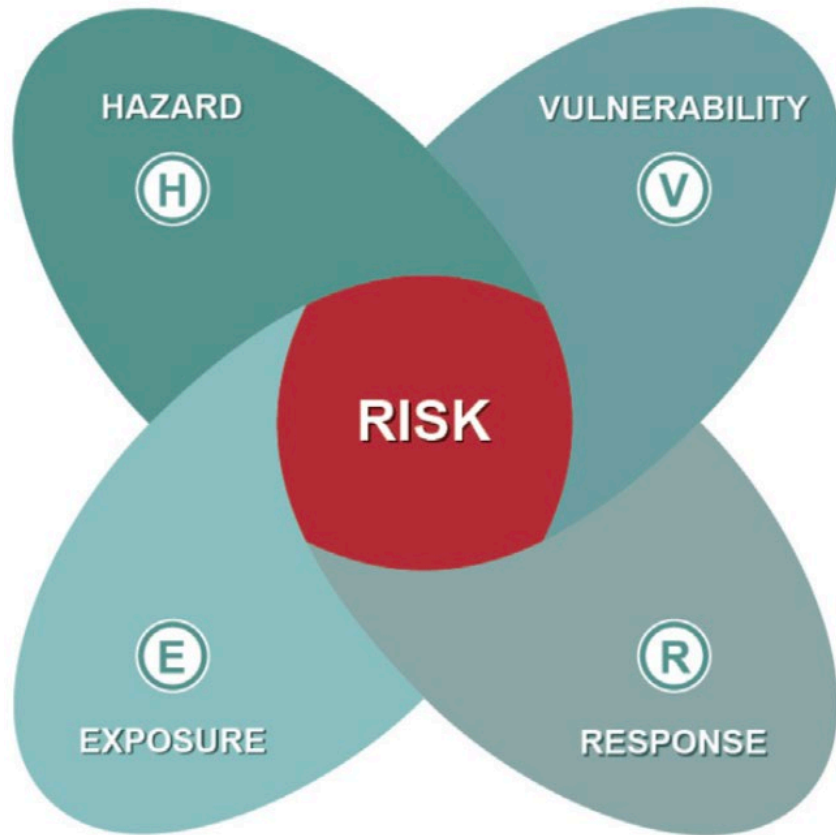
**STRATEGIC RESEARCH PLAN**  
**2025–2030**

*Air Quality, Climate, and Health*

A changing climate substantively affects air quality, including sources and composition of air pollution, geographic distribution of air pollutants, and duration of exposure. A better understanding is needed of the health effects associated with the changes in air pollution exposures related to a changing climate. In addition to exposure questions, air pollution might serve as an effect modifier or interact with other climate-related factors, such as exposure to heat.



# Risk at the Intersection of Hazard, Exposure Vulnerability, and Response



# Speakers and Panelists



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**Makoto Kelp**  
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Morocco



**Alex Ndyabakira**  
Kampala Capital  
City Authority,  
Uganda