

# Virtual ACOM Seminar

## Global Sources of Air Pollution, Public Health Impacts, and Why You Should Care About Emission Inventories

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**Date: Monday, November 1st, 2021, 3:30pm – 4:30pm**

**Links: <https://operations.ucar.edu/live-acom>**

### ABSTRACT

Long-term exposure to outdoor fine particulate matter (PM 2.5 ) is attributable to over 4 million deaths each year. Understanding the sources of PM 2.5 pollution in a given location can help to inform the development of effective air pollution control policies. Leveraging recent advances in air quality modeling, bottom-up emission inventories, remote sensing, and public health data, our interdisciplinary team conducted a comprehensive assessment of air pollution sources and the attributable disease burden across over 200 countries and sub-national regions. Our study approach provides results with consistent coverage across each country, and for the first time, also quantifies the global health impact of multiple individual fuel types, including coal and solid biomass. Results reveal that dominant sources of PM 2.5 vary both between and within each country and identify multiple options for improving air quality in the most polluted regions. Fossil fuels alone contribute to 27% (1 million deaths) of the total global PM 2.5 disease burden. Combined with the PM 2.5 pollution from residential biomass combustion, results suggest substantial public health benefits from replacing traditional energy sources.

In this presentation, I will first focus on the study methods, main results, and the policy relevance. In the last part, I will discuss the importance of detailed emission inventories to this type of mitigation analysis, new emission methodology efforts by the IPCC, parallels and differences between air pollutant and greenhouse gas inventories, and lessons learned on the relevance of inventories to international climate policy after a year working as a science policy fellow in Washington D.C.