

Challenges and opportunities for using data for multiple pollutants in air pollution epidemiological studies

Co-Chairs:

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Aim and short description: Air pollution is a complex mixture of various chemicals derived from many different sources. In recent years, monitoring programs have dramatically expanded the number of measured pollutants, resulting in corresponding dramatic increases in the number of pollutants that can be related to health responses in epidemiological studies. Methods are needed that allow for comprehensive and integrated examination of the relationship of these pollutants on health, while taking into account the often strong correlations and the varying degrees of measurement error for the various pollutant measures. The development of these methods is critical to our ability to understand which subset(s) of pollutants are of greatest concern for public health. This symposium brings together several researchers who have considered the use of multiple pollutants in an effort to identify specific components or groups of pollutants most highly associated with adverse health impacts.

Presentations:

1. Statistical methods for environmental health studies of multiple pollutants
Speaker: Francesca Dominici, Harvard School of Public Health, Boston, MA
2. Methods for estimating health effects of multi-pollutant mixtures in cohort studies
Speaker: Sverre Vedal (Corresponding Author), Adam Szpiro (Co-Author), University of Washington, Seattle, WA.
3. Associations of source-resolved particulate air pollution mixtures and Cardiorespiratory Emergency Department visits in St. Louis, MO-IL
Speaker: Stefani Sarnat¹ (Corresponding Author), Jeremy A. Sarnat¹, Andrea Winquist¹, Jay R Turner², James J Schauer³, Mitchel Klein¹, Paige E Tolbert¹ (Co-Authors). ¹Emory University, Atlanta, GA; ²Washington University, St. Louis, MO, ³University of Wisconsin-Madison, Madison, WI.
4. Attempts to discriminate among combustion sources in assessing the health effects of air pollution
Speaker: Dr. Rebecca Klemm (Corresponding Author), Klemm Analysis Group, Washington, DC; Dr. Ron Wyzga (Co-Author), EPRI, Palo Alto, CA
5. The relationship between pollutant properties and hospital admissions in Atlanta, GA
Speaker: Helen Suh (Corresponding Author), NORC at the University of Chicago, Boston, MA; Antonella Zanobetti, Joel Schwartz, Brent Coull (Co-Authors), Harvard School of Public Health, Boston, MA
6. Applying alternative exposure metrics in a multipollutant epidemiological study
Speaker: Haluk Ozkaynak, U.S. Environmental Protection Agency, Office of Research and Development, National Exposure Research Laboratory, Research Triangle Park, NC, USA.