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Despite their many common scientific issues and concerns, investigators studying atmospheric sciences and those assessing the health impact of air pollution generally pursue isolated research programs and rarely collaborate. As a result, even basic knowledge is not always widely shared. In October 2011, leading experts representing both areas met at the Health Effects Institute in Boston, USA, for a two-day workshop designed to explore the various and multidimensional interactions between atmospheric chemistry and health effects. Participants identified the main areas in which integrated research is needed and discussed the benefits for environmental and health policy that would accrue from dealing with air pollution and atmospheric chemistry in a more unified way. They summarized recent findings on the role of atmospheric chemistry in epidemiology and toxicology and the health effects of individual and multiple components of the air pollution mixture; they also discussed the current status of and recent advances in atmospheric measurements and modeling most relevant to health effects research. One of the overarching conclusions of the workshop was that

particulate matter mass concentrations and ambient ozone levels have been exceedingly useful indicators for the complex mix of components in ambient air pollution and have provided the basis for epidemiologic research and risk assessment to support national and international air quality standards and guidelines. The experts further agreed that current science cannot identify definitively which specific components in these complex mixtures explain the adverse health effects that are so consistently observed. They were, however, optimistic that future research, and specifically closer inter-disciplinary collaboration of atmospheric scientists and health effects researchers, on measurements, emissions, modeling and statistical analysis of health outcomes, may provide the basis for more targeted emission controls of specific sources and components responsible for the health effects.

Representatives of the U.S. Environmental Protection Agency, the World Health Organization, and the European Commission reviewed ways in which atmospheric science and research on air pollution-related health effects currently inform policy

making. They discussed the potential contributions of an integrated research program to address air pollution and issues related to climate change, including the health effects of diverse short-lived greenhouse pollutants such as black carbon, sulfate particles, and ozone. Workshop participants plan to issue a report with copies of the presentations and prepare a summary of the major conclusions and recommendations for publication in a peer-reviewed journal.

The workshop was co-sponsored by the United Nations World Meteorological Organization (WMO), the European Commission's ACCENT program (European Network of Excellence on Atmospheric Composition Change), the international Commission on Atmospheric Chemistry and Global Pollution (iCACGP), the International Global Atmospheric Chemistry project (IGAC) and the Health Effects Institute. For further information on the workshop, contact Frank Dentener (frank.dentener@jrc.ec.europa.eu), Tong Zhu, Aaron Cohen, and Bert Brunekreef.