5.075 air Pollution in the Arctic: Climate, Environment and Societies (PACES).

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Abstract:

Air pollutants in the Arctic have impacts on climate change, ecosystems, regional air quality, and human health. Rapid changes to and complex interactions within the Arctic environment due to global warming and socio-economic drivers mean that there is an urgent requirement to improve understanding of sources of Arctic air pollutants. Changes in atmospheric aerosol particles and tropospheric ozone have likely contributed substantially to rapid warming of the Arctic over recent decades. Increased accessibility due to reducing sea-ice is leading to increased local pollutant emissions from activities such as oil and gas extraction or shipping. Local Arctic communities are already being affected by sources of air pollution, which may continue to grow as economic and industrial development continues in the region. It is crucial to improve quantification of the relative contributions of different pollutant sources to provide a sound scientific basis for sustainable solutions and adaptive strategies. Deficiencies in predictive capability and a lack of observations at high latitudes present major challenges to advancing this understanding, and to making credible near- and long-term projections of Arctic environmental change.

This poster will describe a new international initiative - **air Pollution in the Arctic: Climate Environment and Societies (PACES)** (see www.igacprojects.org/PACES), focused on building capacity for future research on Arctic air pollution. We will present the key scientific motivating factors behind the establishment of PACES, and our plans for addressing current uncertainties and deficiencies in our understanding of sources, processing and fate of air pollutants in the Arctic, and their impacts on human health, ecosystems and climate. These plans include development of strategies for targeted field observations addressing key processes, improving predictive capability, improving observational capacity in the Arctic, particularly in Russia, and in the vertical, and via

establishment of collaborations between physical scientists, social scientists and local residents.