International Global Atmospheric Chemistry (IGAC): 2015 Activities

Our key publications in 2015 included	Melamed, M.L., Monks, P.S., Goldstein, A.H., Lawrence, M.G., Jennings, J., (2015). The international global atmospheric chemistry (IGAC) project: Facilitating atmospheric chemistry research for 25 years. *Anthropocene* 12, 17-28. doi: 10.1016/j.ancene.2015.10.001 Kaiser, J.W., Keywood, M., eds. (2015). Interdisciplinary Research Aspects of Open Biomass Burning and its Impact on the Atmosphere. Special issue of *Atmospheric Environment* 121, 1-112.
Our headline finding or activity in 2015	A highlight for IGAC in 2015 was the formation of the new air Pollution in the Arctic: Climate, Environment and Societies (PACES) activity. Air pollution is a physical and socioeconomic driver of global change in the Arctic that impacts both the natural and human environment. As a results of two workshops held in January and September 2015, *Arnold et al.*, 2016 describes the overarching research actions of PACES, which include: (1) the development of transdisciplinary approaches combining social and economic research with investigation of the chemical and physical aspects of Arctic air pollution, (2) increasing the quality and quantity of observations in the Arctic through long-term monitoring and field missions, and (3) developing improved predictive capability by increasing model complexity for the region.
How our work contributed to 1) Science, 2) Policy and 3) Society. Who are the key users of this new knowledge?	PACES contribution to science is to identify the key scientific research issues in the Arctic in regards to air pollution and to establish research actions to address those issues. PACES contribution to policy is to identify the sources of Arctic air pollution and its impact on climate, ecosystems and human health. This scientific knowledge will help local communities, national governments, regional governing bodies (e.g., Arctic Council) and international governing bodies (e.g., United Nations Framework Convention on Climate Change, UNFCCC) establish sound policy to reduce the impacts of air pollution in the Arctic. PACES contribution to society is by providing robust scientific knowledge to policy-makers and engagement with local communities and to present findings and explore risks and benefits to Arctic communities, while at the same time examining sustainable pathways in a changing environment.
We engaged with these stakeholders/ societal partners/external users in 2015	PACES is also sponsored by the International Arctic Science Council. PACES works with a variety of societal partners, including the World Meteorological Organization, Arctic Council Arctic Monitoring and Assessment Programme, Task Force on Hemispheric Transport of Air Pollution, U.S. Department of Energy, U.S. National Oceanic and Atmospheric Administration, International Arctic Systems for Observing the Atmosphere, International Study of Arctic Change, Aleut International Association, Inuit Circumpolar Council and Alaska Native Tribal Health Consortium, amongst others. PACES has engaged the forementioned societal partners through a series of three workshops over a course of a year that included representatives from these organizations.

How we co-designed research questions or co-produced knowledge with other disciplines or societal partners in 2015	An excellent example of IGAC's co-design and co-production of knowledge with other disciplines or societal partners has been the formation of the IGAC Monsoon Asian and Oceania Networking Group (MANGO). In June 2015, IGAC MANGO held a workshop for developing the scientific needs and questions for the atmospheric chemistry community in the Monsoon Asia and Oceania region. The workshop included a variety of societal partners including Task Force on Hemispheric Transport of Air Pollution, Regional Resource Centre for Asia and the Pacific, UN Environment Programme/Acid Deposition Monitoring Network in East Asia/ Climate and Clean Air Coalition/Asia Pacific Clean Air Partnership, Clean Air Asia, South Asian Network for Development and Environmental Economics, Southeast Asia Regional Research and Information Network and Global Observation for Forest Cover and Land Dynamics. The goal was to make sure societal partners were co-designing MANGO and co-producing its scientific needs and questions from the very beginning.
Our new activities for 2016 include	In 2016, IGAC will continue to facilitate atmospheric chemistry research towards a sustainable world by fostering community, building capacity and providing leadership. In particular, the biennial IGAC Science Conference will occur 26-30 September 2016 in Breckenridge, CO, USA. The IGAC Science Conference highlights IGAC's efforts to foster community by bringing together 600 top international scientists, industry leaders, policy makers and early career scientists from around the world. IGAC is continually evolving to meet the needs of its international atmospheric chemistry community and has an open door policy for those wishing to initiate new activities, working groups and events.
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How to contact us	**Megan Melamed:** megan@igacproject.org