

## Workshop report: ALaskan Pollution and Chemical Analysis (ALPACA) project

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Other PACES and local organizers: Bill Simpson (UAF), Jingqiu Mao (UAF), Kerri Pratt (U. Michigan)

### Key Figures

Workshop dates	14 – 16 May 2018
Location	Fairbanks, Alaska, USA
IASC Funding	cross-cutting: 4,500 SHWG for AWG: 2,000 AWG: 1,000 Total: 7,500 EUR
Other sponsors	IGAC, NSF, NOAA, UAF
Participants	~40 participants 9 countries represented Scientists, local residents, citizen representatives, regulatory agencies
Webpage	<a href="https://alpaca.community.uaf.edu/">https://alpaca.community.uaf.edu/</a>

### Purpose of the Workshop

**The air Pollution in the Arctic: Climate, Environment and Societies (PACES) initiative has been developed as a bottom-up community activity to address deficiencies in our understanding of sources, processing and fate of Arctic air pollution (see <https://pacesproject.org/>). PACES WG2 focuses on interactions between Arctic air pollution and societies. Approaches to address key research questions under consideration are observational studies guided by community concerns, investigation of local air quality in Arctic communities, and feedbacks between economic development, air pollution and environmental change in the Arctic. A first city has been identified for a major international field study: Fairbanks, Alaska, USA. The IASC co-sponsored workshop brought together the scientific and local air quality communities to discuss ideas how to investigate the air pollution problems of Fairbanks. The outcome of the workshop is to write a whitepaper on the ALaskan Pollution and Chemical Analysis (ALPACA) project. The whitepaper serves as basis to acquire funding for a large scientific study.**

Specifically, the ALaskan Pollution and Chemical Analysis (ALPACA) project seeks to close knowledge gaps in understanding of atmospheric chemical mechanisms occurring under cold and dark conditions. These gaps are exacerbated by lack of knowledge of emissions and by wintertime meteorology, which causes stagnation and hinders mixing between cleaner background and polluted air masses. In addition, there are limited measurements in regions with sub-freezing temperatures and low to absent photochemistry.

Scientific highlights:

- Fairbanks is the most polluted city in the USA in terms of particulate matter in winter.
- The emission sources of the particulate matter and precursors thereof are not fully understood, and hence require investigation.
- The cold and dark environment in the wintertime Arctic creates very specific conditions under which atmospheric processes occur that are still largely unknown. ALPACA will tackle these knowledge gaps specifically.

Attachments:

- Slides
- Agenda
- Local newspaper article