



# Navigating the New Arctic Community Office

## ARCTIC OBSERVING SYSTEMS & TECHNOLOGY CONVERGENCE WORKING GROUP

May 2023-May 2024

In the Arctic, data and observing systems are critical infrastructure, and Indigenous Knowledge Systems are observing systems. Our group raises awareness of understanding the importance of low-cost, open-source, and community-based methods of data collection for comprehensive observation systems in the Arctic. We hope to drive progress forwards in this topic. Our goals as a working group center around three major topics:

1. Advanced understanding of low-cost and open-source technologies that can be used in community-based/citizen science research approaches.
2. Identification of environmental data requirements for infrastructure development (e.g. relocation/managed retreat from erosion and storm recovery) and appropriate data collection methods.
3. Support development of skills required for researchers applying community-based monitoring/observing approaches in the Arctic.

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### CWG past activities

- We held a 2-part workshop session at the Navigating the New Arctic Annual Community Meeting (Washington DC) and the Arctic Observing Summit (Edinburgh, Scotland). The goal of these sessions was to pull attendees from diverse disciplines, career-stages and knowledge systems together to shed light on existing technologies and avenues for deploying and scaling low-cost technologies for the broadest use by researchers, stake- and rights-holders. At the AOS session we heard from four Early Career Researchers (ECRs) (supported by the AOST CWG) who highlighted challenges and opportunities associated with the future of emerging low-cost technologies and community-based research. This included the participation of an Indigenous ECR. Themes discussed included innovative observing systems, the need for affordable, durable and easily fixable sensors that can be made renewable-powered wherever possible, and the need for youth and community engagement in collaborative, solution-oriented research. Experiences of the ECRs attending the event can be read on the Arctic Observing Systems and Technology Working Group website. In the second half of the session, we deployed breakout groups to address three key questions that addressed the three topics outlined above.
- WG members (Epstein, Rosado Murillo, and Shaban) held a Community-Based Environmental Monitoring camp at Ilisagvik College for Alaska high-school students (predominately Indigenous from small communities). Students were trained to assemble and deploy low-cost particulate matter monitoring sensors. This facilitated a capacity sharing component where researchers at all levels and from a variety of disciplines trained local students, and in turn learned from the students. Student were able to provide input to the development of an app for visualizing environmental monitoring data, in collaboration with Animikii Indigenous Technology.



## UPCOMING ACTIVITIES & OPPORTUNITIES

- Developing a summary report and publication following the NNA-CO annual meeting 2-part workshop
- Continuing to work with the Fostering Indigenous-Led Research Working Group to support the Cultural Camp.
- Collaborate with ELOKA (Exchange for Local Observations and Knowledge of the Arctic) to support efforts to document community-based monitoring programs in the Arctic.
- Working Group member participation in the International Conference on Arctic Research Planning (ICARP) planning process and presenting at Arctic Science Summit Week (ASSW) in Boulder, CO in 2025.
- Developing a report following the Community-Based Environmental Monitoring Training camp at Ilisagvik College. This will include lessons learned and recommendations to support similar training events in the future.
- Continue the development of an application for visualization of environmental monitoring data with Animikii Indigenous Technology.
- Member representation at Alaska GeoSummit, Alaska Tribal Conference on Environmental Management (ATCEM), Alaska Forum on the Environment (AFE). Reports will be presented back to working group team members and uploaded onto the website following the events.



[Arctic Observing Systems & Technology CWG webpage](#)

## WORKING GROUP MEMBERS

- Howard Epstein (Experienced co-lead), University of Virginia, [hee2b@virginia.edu](mailto:hee2b@virginia.edu)
- Louise Mercer (Early Career co-lead), Northumbria University, [louise.mercer@northumbria.ac.uk](mailto:louise.mercer@northumbria.ac.uk)
- Casey Brayton (Early Career co-lead), Columbia University, [cbrayton@ldeo.columbia.edu](mailto:cbrayton@ldeo.columbia.edu)
- Leeza Pickering, Northumbria University, [Leeza.o.pickering@northumbria.ac.uk](mailto:Leeza.o.pickering@northumbria.ac.uk)
- Mirella Shaban, University of Virginia (graduate student), [qwe2qh@virginia.edu](mailto:qwe2qh@virginia.edu)
- Mackenzie Nelson, University of Virginia (graduate student), [kus5qy@virginia.edu](mailto:kus5qy@virginia.edu)
- Luis Felipe Rosado Murillo, University of Notre Dame (Assistant Professor), [Irosadom@nd.edu](mailto:Irosadom@nd.edu)
- Ranjan Datta, Mount Royal University, [rdatta@mtroyal.ca](mailto:rdatta@mtroyal.ca)
- Tash Haycock Chavez, Cooperative Institute for Research in Environmental Sciences (CIRES), [natasha.haycock-chavez@colorado.edu](mailto:natasha.haycock-chavez@colorado.edu)
- Nora Nieminski, Alaska DNR, [nora.nieminski@alaska.gov](mailto:nora.nieminski@alaska.gov)
- Vanessa Raymond, University of Alaska Fairbanks, [vraymond@alaska.edu](mailto:vraymond@alaska.edu)



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[nna-co.org](http://nna-co.org)



[contact@nna-co.org](mailto:contact@nna-co.org)