Statement for 2023 Arctic Coasts Workshop

Changes, Impacts, and Solutions - Working Towards a Resilient Future

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See Team affiliations in list of NSF NNA projects

A team of U.S. National Science Foundation (NSF) Navigating the New Arctic (NNA) projects, community representatives, and local, state, and federal government representatives developed a series of coastal related sessions over a Workshop of 3 days. It was an intentional effort to use transdisciplinary aims and participatory action for applied outcomes and deliverables. We developed our AOS statement by participatory action efforts across NNA researchers and community-based monitors.

Workshop sessions and our AOS statement were developed by transdisciplinary *experts* about coastal risks to consider and convey 1. lessons learned about mutually selected topics, 2. a list of best practices for science to action and based on relevant policies or politics, 3. consensus of interrelated processes/efforts for better preparedness and adaptation scenarios (includes community outreach and education), 4. better options for different Alaska communities based on discrete coastal situations (i.e., variety of socio-eco systems) and 5. support for resources, capabilities, and capacities to collaboratively proceed about solutions. An important purpose of our retreat was deliverables and times for implementation instead of only a report and recommendations. Our NNA team will report results, outcomes, and deliverables from our transdisciplinary and participatory sessions at AOS as an applied collaborative model. We want feedback at AOS about our workshop to assist *sticky* problems of disaster risk reduction in complex socio eco systems.

Our NNA team provided invitees a summary of our preliminary intentions and workshop content. In our invitational summary are broad objectives for transdisciplinary sessions over 3 days. Specific topics and format of sessions were a combined effort between invitees, i.e., academic and community experts. Development of our invitational summary and session topics were by a select team from NNA projects, in routine virtual discussions, and by all invitees from online forms, personal communications, and discussion webinars. Our NNA team members solicited academic and community invitees to consist of an equitable participation. Subsequently an online form, webinar, and collaborative documents made it convenient to

propose session topics by invitees. Selection of session and panel topics were by our NNA committee and submitted to invitees for revisions. Collectively invitees and our NNA team decided on five session topics.

Invitees unable to attend could virtually participate in introductory panels and conclusion readouts virtual, and an interactive online platform allowed constant input. A facilitator posted virtual records on our website and a link to our interactive platform. An online platform was to learn about and respond to topics of all virtual and daily breakout sessions. We plan to continue online interactions about lessons learned, best practices based on relevant policies, more adaptation scenarios, varied coastal situations, and more sources of support.

NNA team members facilitated panels and breakout sessions. Several breakout sessions each day focus on lessons learned, best practices based on relevant policies, more adaptation scenarios, varied coastal situations, and more sources of support. Breakout sessions consisted of a variety of socio eco participants (approximately twelve requested), a facilitator, audio recorder, note taker, a summary for read outs, and daily posts for an online forum. Participants could rotate in breakout sessions based on expertise, to learn more, and for relevant concerns.

See our list of NSF NNA projects involved as committee members, participants, and facilitators.

Workshop Co-organizers: The workshop will be an NNA theme workshop in 2023. It is co-organized by the following eight project teams:

- Conference: 2023 Arctic Coasts Workshop. OPP-2332253, PI: Ming Xiao.
- Convergence NNA: Coordinate a Transdisciplinary Research Network to Identify Challenges of and Solutions to Permafrost Coastal Erosion and Its Socioecological Impacts in the Arctic. OPP-1745369. PI: Ming Xiao

- NNA-CO: A Community Office for Coordination, Partnership, and Capacity-Building to Support Convergence Research in the Rapidly Changing Arctic. RISE-2040729. PI: Matthew Druckenmiller.
- Collaborative Research: AccelNet: Permafrost Coastal Systems Network (PerCS-Net) – a circumpolar alliance for arctic coastal community information exchange. OISE-1927553/ 1927137/1927373. Lead PI: Ben Jones; PIs: Ming Xiao, Craig Tweedie, Chris Maio, Andrey Petrov.
- RCN Arctic-COAST: Arctic COASTal Community and Environmental Resilience International Interdisciplinary Research Coordination Network. OPP-1441381. PI: Andrey Petrov.
- Convergence NNA: ANCHOR - Arctic Network for Coastal Community Hazards, Observations, and Integrated Research. OPP-1745508. PI: Thomas Ravens.
- NNA Track 1: Arctic impacts and reverberations of expanding global maritime trade routes. RISE-1927785. PI: Elise Miller-Hooks.
- Alaska Coastal Cooperative (funded by UAF; lead: Chris Maio)
- NNA Track 1: Arctic Rain on Snow Study (AROSS), PI: Mark Serreze, Co-PIs: Matt Druckenmiller, Julienne Stroeve; POC: Matt Druckenmiller
- NSF CoPe project "Large-scale CoPe Hub: Rising Voices, Changing Coasts: The National Indigenous and Earth Sciences Convergence Hub." AGS- 2103843. PI: Daniel Wildcat.

Invitational Sunnary to Arctic Coasts Workshop

Changes, Impacts, and Solutions - Working Towards a Resilient Future

Dates: October 9-11, 2023

Location: University of Colorado, Boulder

Attendees Size: ~60

Organizing Committee: Ming Xiao (lead), Matthew Druckenmiller, Chris Maio, Ben Jones, Casey Ferguson, Tom Ravens, Andrey Petrov, Elise Miller-Hooks, Anne Garland, James Temte, Celso Ferreira

Summary Statement: The Fall 2023 Arctic Coasts Workshop will bring together multiple stakeholder groups and NSF Navigating the New Arctic (NNA) project representatives to exchange knowledge and information regarding coastal hazard impacts, enhance collaborative networks, and produce and deliver tangible products that support community priorities and lead to outcomes well-beyond the single workshop. We will strive to actively engage participants in topics that include the current understanding of Arctic coastal changes and community impacts, local and Indigenous knowledge regarding the lived experience, and recent lessons learned and solutions. Participants are encouraged to get involved in the planning so that we can make this workshop a beneficial experience for all involved.

Goal: To bring together a dynamic group of experts to exchange knowledge regarding coastal hazards and impacts, strengthen and expand partnerships, and contribute towards actionable Arctic research and community resilience.

Tentative Objectives:

1. To provide an inclusive venue for open and productive relationship building between National Science Foundation NNA projects, communities, government agencies, students, and other research networks across the Arctic.
2. To support knowledge exchange with a focus on:
    a. community participant testimonies about ongoing conditions and impacts,
    b. latest science, observations, education, and strategies to address flooding, erosion, and permafrost thaw,

c. technologies, educational approaches, and available resources to mitigate and adapt to the changes.

d. social and economic aspects of the impacts and mitigation/adaptation strategies,

3. To contribute towards and support Arctic knowledge exchange networks that lead to actionable community-prioritized research and education activities,

4. To produce and deliver key products (for example, report, collaboration plan, proposals, etc.) that support shared participant goals and lead to outcomes well-beyond the single workshop.

Tentative Outcomes and Deliverables:

- Enhance knowledge exchange across multiple groups that leads to more effective communication and collaboration.
- Identify and document key strategies to address natural/social/engineering issues resulting from environmental changes.
- Develop a short paper or summary report that identifies best practices and outlines a strategy for future efforts and develop plans for presenting at multiple conference forums.
- Build collaborative proposal teams and identify convergent research topics prioritized by community members.
- Identify educational needs, challenges, and opportunities for students in Arctic coastal communities.

Logistics: Funding support will be provided to community and international participants including full travel support and a daily stipend if requested. Participants representing NNA projects will be expected to cover their own travel expenses. Additional support came from NSF for community and international participants.