

Short Statement for the 2016 Arctic Observing Summit

Submitted to Theme 4: Actor and Stakeholder engagement and needs in sustained Arctic observations

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Communicating why sea ice matters: A focus of the SEARCH Sea Ice Action Team (SIAT)

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Introduction

With dramatic reductions in arctic sea ice observed over the last several decades, various efforts and organizations have emerged as leaders in providing information on the state of sea ice, relying primarily on the use of remote sensing, modeling, buoy networks, and coastal observations. Similarly, interdisciplinary and cross-cultural “communities” of scientists, arctic residents, and stakeholders have developed to address questions pertaining to understanding the driving mechanisms, rate of loss, and implications. Such efforts extend far beyond the geophysics of sea ice and far beyond Arctic boundaries to address climate-weather linkages, arctic ecosystems, coastal community well-being, commercialization of the Arctic, geopolitics, etc. Arctic sea ice loss has morphed into an icon of global climate and environmental change with a seemingly endless stream of emerging “stakeholders” and “decision-makers”. Despite this high-profile nature, there does not yet exist a coherent source of accessible, comprehensive, and timely information that synthesizes the connections between the science, key societal issues, the specific values and operational environments of stakeholders, and why the general public should care about arctic sea ice. Encouragingly, however, the major foundational building blocks for such a source exist. Here, we describe an evolving effort to work toward this need, in full recognition that such an endeavor is reliant on mobilizing the scientific prowess, integrity, experience, and energy of interdisciplinary arctic observing and research communities.

Background

The Study of Environmental Arctic Change (SEARCH)¹, ongoing since the early-2000s, aims to develop scientific knowledge to help society understand and respond to the rapidly changing Arctic. Through collaboration with the research community, funding agencies, national and international science programs, and other stakeholders, SEARCH facilitates research activities across local-to-global scales, with increasing emphasis on addressing the information needs of policy and decision-makers. SEARCH’s recent shift toward a “Knowledge to Action” vision has led to focused Action Teams, one of which is addressing changing arctic sea ice². The SEARCH Sea Ice Action Team (SIAT), with a focus on science communication, hosted its first workshop³

¹ <https://www.arcus.org/search-program>

² SEARCH’s other two Action Teams are focused on land ice, primarily the Greenland Ice Sheet, and permafrost.

³ The workshop summary is available at:

https://www.arcus.org/files/page/documents/23272/siat-strategy-workshop-summary_201509291.pdf

in Bristol, Rhode Island in September 2015 to develop a strategy for mobilizing the research community to organize, synthesize, and disseminate scientific knowledge for a broad range of arctic sea ice stakeholders.

Communication Strategy

Key elements to the SIAT's communication strategy are to (1) support and promote SEARCH and the SIAT as a trusted and timely source of information about arctic sea ice and impacts of its loss, (2) develop sustained and sophisticated dialogues between the research community and decision-makers, (3) co-communicate the importance and state-of-the-art of arctic research using a range of voices, including those beyond scientists, and (4) build complementary collaborations with arctic-focused institutions, research programs, and scientists.

The core product of the strategy will be a website to comprehensively communicate why and how *Sea Ice Matters*. This website will provide tiered access to sea ice information, organized across a series of high-level topics via a hierarchical, pyramid structure based on increasing levels of scientific complexity. This resource will depend on collaboratively developed, peer-reviewed, and concisely edited scientific content, which will serve to coordinate the scientific community, disseminate important findings to broad audiences, and provide a take-away "go-to" resource for decision-makers and the media. In addition, *Sea Ice Matters* will facilitate and host guest perspectives from across both the science and stakeholders communities and provide timely scientific information on emerging high-interest topics, such as notable weather events or recent high-profile science publications.

Tracking and evaluating how scientific information from arctic science reaches stakeholders and informs decisions are critical for interactions that allow the research community to keep pace with an evolving landscape of arctic decision-makers. Therefore, evaluating SIAT activities through targeted outreach and user feedback represents a strategic focus for the team. Furthermore, the Team hopes to establish connections with those in the science community with similar interests in evaluation, recognizing that there is considerable potential for such practice to grow within the arctic, climate, and cryospheric research communities. A recent NSF workshop report on *Motivating Research on the Science Communications Front*⁴, which focused primarily on the cryosphere, recommended that "improved understanding on how bureaucracies affect the translation of science communication into the decision-making process requires new research". SEARCH's efforts may establish important case studies to support such future research as well as illuminate the breadth of relevant institutions.

Next Steps

The SIAT's science communication endeavor will require organizing complementary interests and efforts within SEARCH and across related organizations and broader science communities. The Team is currently developing a prototype website and accompanying resources (e.g., concise primers on how sea ice relates to specific societal topics) to demonstrate the full concept for the *Sea Ice Matters* resource. The Team will facilitate feedback, for example, through SEARCH, the Interagency Arctic Research Policy Committee (IARPC) Collaborations effort, and, ideally, during discussions at the 2016 Arctic Observing Summit.

⁴ Vorosmarty, C.J, Davidson, P.A., Muir, M.A.K. and Sandford, R.W., eds. 2015. *Motivating Research on the Science Communications Front: Conveying the Nature and Impacts of Rapid Change in Ice-Dominated Earth Systems to Decision Makers and the Public*. Workshop summary, Washington, DC, Nov. 12-14, 2014, 48 p.