**Goal: Ice-diminished Arctic Ocean & Consequences**

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| --- | --- | --- | --- | --- |
| 2013 | 2014 | 2015 | 2016 | 2017 |
| Exchange program 1A | Open Science Meeting 1A | Exchange program 1B | Open Science Meeting 1B | Transition to new themes? |
|  | Scenario development |  | Scenario development |  |
|  | Data products | Data products | Data products |  |
|  | Value-added report card | Value-added report card | Value-added report card | Value-added report card |
| Coordination with other networks |  |  |  |  |
| Networking |
| Newsletter |
| High-level Communication  |
| SEARCH for Answers |

**1. Regular/Annual Science Meetings**

**SEARCH Open Science Meeting 1A – Ice-diminished Arctic Ocean**

* Theme 1: Consequences of ice-diminished Arctic Ocean: State of the sea ice vs. ecosystem change; synthesize findings from sea-ice prediction network activities at seasonal to interannual timescales – state of the Arctic ice cover and evolution over next decade; summarize/synthesize findings of other research (e.g., NOAA-SOAR) with focus on marine ecosystem change driven by sea ice; explore plausible consequences of ice-diminished Arctic Ocean on ecosystems on 5-10 year time scale;
* Theme 2: Geographic/paleo-analogs for sea ice in a warming Arctic: Exploring lessons for ecosystem managers, regulators & policymakers;

**SEARCH Open Science Meeting 1B– Ice-diminished Arctic Ocean & Warming and thawing near-surface permafrost & policy implications**

* Synthesis of three SEARCH goal themes (1, 2 & 4)
* Identification of emerging issues that helps define SEARCH 5-year goals and associated research

**2. Exchange/visiting scientist**

**Immersion fellowship 1A**

* Agency representative (e.g., USGS, USWFS) visits with academic research group(s) focused on sea ice/climate paleo-studies and modeling to explore potential value of paleo-record and geographic analogs for management of protected marine species (e.g., walrus, polar bear)
* Junior researcher with background in sea ice paleostudies and/or modeling (mentored by advisor at academic home institution and SEARCH SSC or Panel member) joins respective agency to gain insight into translation of management mandates into science questions, and specific information needs that analog studies and modeling may satisfy with respect to marine living resource management
* Summary reports from these two exchanges/internships form basis for session(s) at Open Science Meeting 1A

**Immersion fellowship 1B**

* Agency representative (e.g., USACE, NPS, USGS) visits with academic research group(s) focused on coastal processes that link SEARCH goals 1 (ice-diminished Arctic Ocean) and 2 (Thawing Permafrost) to identify relevant datasets and being synthesis from the perspective of agency management and information needs with respect to warming permafrost and changing ice cover and their joint impact on coastal zone
* Junior researcher with background in coastal dynamics, sea ice or land processes (mentored by advisor at academic home institution and SEARCH SSC or Panel member) joins respective agency to gain insight into translation of management mandates into science questions, and specific information needs that long-term observations and modeling can provide with respect to coastal zone management
* Summary reports from these two exchanges/internships form basis for session(s) at Open Science Meeting 1A

**3. Networking**

**Analyzing and improving knowledge transfer across disciplinary and sector boundaries**

* Map information flow and collaborative connections across sea ice prediction network, ecosystem impacts research community (e.g., NOAA SOAR) and into/across agencies and stakeholder communities prior to and after Open Science Meetings and other key activities
* Evaluate impact of scientific information and knowledge transfer in terms of adoption or use in research or operational settings (through network analysis, survey and meta-analysis of research and data products)
* Recommend (and implement) improvements to enhance efficacy of knowledge transfer, utility of data and information products and scientific advances across disciplines and transformative research

**4. What is the Arctic future in 2050?**

**Collaborative scenario development: Arctic futures 2040**

* In conjunction with Open Science Meeting 1A (either prior or after) create an online/telecommunications framework that fosters collaborative, iterative development of scenarios focusing on SEARCH Goal 1, consequences of an ice-diminished Arctic
* Framework interfaces stakeholders and research community in an interative process: (1) Stakeholders identify questions of concern to them related to consequences of an ice-diminished Arctic by 2040, (2) Research community develop independent scenarios (incl. narratives, visuals, data and information products, model output) of ice-diminished Arctic Ocean futures 2040 using collaborative on-line tools, (3) Stakeholders review scenarios and potentially refine questions or ask new ones, (4) researchers explore ways in which data and information products can address questions of stakeholders and refine scenarios based on input, (5) further iterations as necessary, (6) summary documents are written up and translated by communication experts into products for different audiences (policymakers, general public etc.)

**5. Data Products**

* Output and recommendations from Open Science Meeting, Immersion Fellowship and Collaborative Scenario Development, provide input to ACADIS and other data centers in creating data and information products that address key questions raised by stakeholders and scientific community
* Data Product Showcase competition highlights innovative approaches to data product generation & use

**6. Value-added Arctic Report Card**

* Based on outcomes of Open Science Meeting and other activities create an interdisciplinary, cross-sector assessment of implications and longer-term projections (with a focus on specific regions, e.g., North American Arctic) for ice-diminished Arctic Ocean from sea-ice prediction network that builds on Arctic Report Card (with input to the planning process from Report Card leadership)
* Use value-added report card as a means to engage agencies and stakeholders and demonstrate value of SEARCH as Think Tank and resource (SEARCH for Answers)

**7. Newsletter, blog, communication**

* Announce Fellowship opportunities and highlight resulting findings/outcomes (target audience scientific community and agencies)
* Announce Open Science Meeting and summarize outcomes and next steps (target audience scientific community, agencies and stakeholders)

**8. “High-level” Communications**

* Science Office representation (part-time) in DC area to inform and coordinate with agencies on key activities and strategies related to SEARCH activities and goals in the context of IARPC, USARC, Arctic Council, congressional committees and staffers and other organizations
* Explore potential support through existing interagency fellowship programs

**9. “SEARCH for answers!”**

* Building on other activities outlined above (and sea ice prediction network linkages) SEARCH implements a formal process for organizations to pose expert (i.e., not outreach) questions about Arctic environmental change
* Activity starts modestly but is designed to eventually accommodate small studies that build on SEARCH linkages across sectors and disciplines in a fashion that is different from (and complementary to) other programs such as National Academies Panels
* Guiding principle for this activity is to build SEARCH as a means to convey impartial, authoritative, cutting-edge insights into key Arctic questions or concerns

*Other activities for which external funding support from other agencies and private sector will be sought or is in place:*

**Citizen Science & stakeholder engagement:** Implemented as part of the Sea Ice Outlook and follow-up programs with focus on sea ice prediction