



**Study of Environmental Arctic Change**

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**Communications Working Group  
Final Report**

**1 February 2017**

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## Executive Summary

The SEARCH Communications Working Group (CWG) was convened by the SEARCH Science Steering Committee (SSC) to develop a strategic communication plan for SEARCH by identifying key audiences, messages, tools, approaches and priorities to ensure an effective and consistent message throughout SEARCH projects (see Appendix A).

Membership of the working group was composed of representatives from SEARCH action teams, partners, and the Arctic research community to provide the needed expertise. A complete list of group membership and affiliations is provided in Appendix B. SEARCH Executive Director, Brendan Kelly, served as the Working Group Chair. Project management support was provided by ARCUS.

The ten-member group held ten virtual meetings since the beginning of their charge in March 2016 and provided periodic progress reports to the SSC.

The CWG considered the recommendations provided here carefully and deliberated over alternatives suggested in response to interim reports. Where specific language is suggested, scripts were refined through several thoughtful working group discussions.<sup>1</sup>

Here, we summarize the recommendations that require further input from the SEARCH SSC.

1. Adopt, reject, or send back for revision:
  - a. The graphic illustrating SEARCH communication pathways and key (i.e, priority) audiences (see Figure 1);
  - b. The CWG's key external audience suggestions:
    - i. Arctic researchers - emphasizing the need to make current communication channels more accessible to members of the social science, traditional knowledge, and commercial research communities
    - ii. Federal and Alaska State policy-makers involved in Arctic research agenda setting
    - iii. Alaskan indigenous communities

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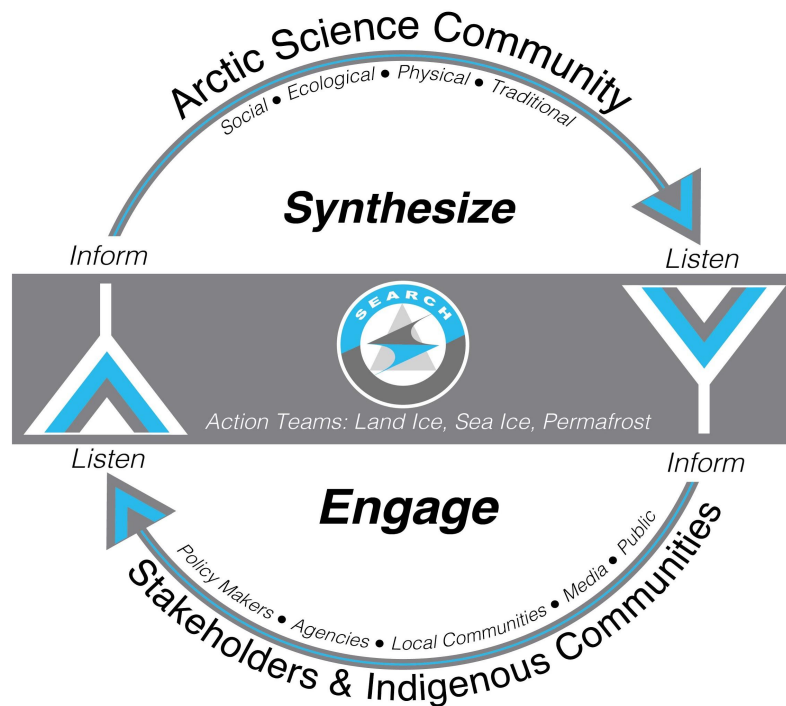
<sup>1</sup> "Many mission statements succumb to an over use of words in general, but especially jargon" (<https://topnonprofits.com/examples/nonprofit-mission-statements/>). We believe that our iterative approach to refining the mission statement and tag line allowed us to come up with clear and concise language (often a casualty of writing by committee). If further revision is desired, we recommend several iterations to ensure clear and crisp language.

- iv. Other stakeholders within local communities, the media, and the public critical to the work of SEARCH action teams and working groups
    - c. The suggested goals for SEARCH communications
    - d. The suggested “elevator speech” elements
    - e. The suggested mission statement revision
    - f. The suggested tag line
    - g. The prioritized list of communication approaches, tools, and formats.
2. Approve or reject the suggestion to make the Arctic Alerts briefing an annual event to communicate the state of the science to policy-makers and media audiences and, if approved, develop a plan for funding such an effort.
3. Approve or reject the suggestion to create a SEARCH community email list to serve the SEARCH SSC, action teams, and working groups as well as key stakeholders and advisors. If approved, develop a plan for implementation.
4. Approve or reject the suggestion that SEARCH should invest in formal communications training for SSC and AT members to increase the impact and effectiveness of briefings with the media, policymakers, and other audiences and, if approved, develop a plan for funding such an effort.
5. Designate a member from each action team and working group to serve as a Point of Contact to ensure team communication efforts are coordinated with the SEARCH project office. This should include clear communication of each team or group’s social media strategy.
6. Review the entire CWG report and identify any other CWG suggestions that you believe should be prioritized, revised, or set aside at this time. For example, a list of alternative communication approaches that the CWG has considered, but did not elect to prioritize at this time, is provided in Appendix C.

## Introduction

SEARCH facilitates system-scale understanding and communicates that understanding to help society respond to a changing Arctic. The convening power of SEARCH enables interdisciplinary action teams—currently organized around the topics of land ice, sea ice, and permafrost—and other scientists to listen to and inform agencies, policy- and decision-makers, and Arctic residents. SEARCH also communicates the state of Arctic science to the broader science community, media, indigenous communities and general public. SEARCH engages diverse stakeholder communities to understand their questions and to synthesize research to address those questions.

The CWG recommends that SEARCH adopts and uses a standard graphic for illustrating SEARCH communication pathways and key audiences. A proposed graphic is provided in Figure 1. This graphic emphasizes that the flow of information between SEARCH and the program’s key audiences should be continuous, iterative, and societally relevant.



**Figure 1.** Graphical interpretation of SEARCH communication pathways and audiences. SEARCH engages diverse stakeholder and indigenous communities to understand their concerns and questions and to synthesize research to inform those questions. The flow of information, thus, is continuous and iterative.

## **Key Audiences for SEARCH Communication**

The term audience is used to represent any community, group, or individual that receives information or uses products from SEARCH. Arctic science, stakeholder, and indigenous communities are equally important audiences with which SEARCH should maintain two-way communication (i.e., listen & inform). For the purposes of this report, we define stakeholders as the policy-makers, funding agencies, local communities, media, and general public detailed below. We purposefully include indigenous communities as a separate audience per that community's request.

### **1) The Arctic Science Community**

The Arctic Science community is inclusive of the academic and agency-based research community but also acknowledges the importance of traditional knowledge holders and their deep, holistic understanding of the Arctic at local scales. The four general disciplinary groups within the Arctic science community included in Figure 1 illustrate the inclusive nature of our community and are not meant to exclude other expertise nor suggest that knowledge remains in defined disciplinary silos. SEARCH does not currently communicate, however, in a balanced manner across disciplines and sectors. For example, the SEARCH town hall held annually at the fall meeting of the American Geophysical Union favors physical scientists. The CWG suggests increasing communication efforts with other members of the Arctic science community, specifically:

- Provide online participation for town halls and other public SEARCH events;
- Engage with social scientists and other non-physical disciplines to open pathways for communication in those communities;
- Engage researchers from commercial sectors in SEARCH working groups, action teams, and the Science Steering Committee;
- Post SEARCH announcements for public events and opportunities for participation on email lists or websites for disciplines that have received less SEARCH engagement; and
- Identify traditional knowledge exchange opportunities for SEARCH participation such as the annual Alaska Federation of Natives Convention.

While the CWG encourages SEARCH to expand its efforts to connect more broadly with the interdisciplinary Arctic research and stakeholder communities, the committee also recognizes that SEARCH does not have the resources to make every audience a priority. The committee encourages SEARCH to focus on communication activities that promote scientific collaboration and that engage stakeholders and decision-makers to make emerging scientific knowledge actionable. Thus, some audiences and activities may be less of a priority. For example, while K-12 science educators and their students are a significant Arctic research audience, tailoring

SEARCH communications specifically to meet their needs would pull SEARCH away from the program's core purpose. Similarly, although clear and compelling science communication is a critical component of "making science actionable", teaching educators is not the best use of SEARCH's limited resources. Instead, SEARCH should leverage programs such as Polar Educators International or COMPASS to fill these gaps.

### **Part I: SEARCH's Action Teams and Working Groups**

Productive communications across SEARCH's action teams and working groups requires a coordinated internal communication effort.

We recommend that each action team and working group designate an individual to assist the SEARCH project office in keeping the main SEARCH website content up-to-date, pass along SEARCH-relevant news items, and serve as a point of contact for developing special SEARCH communications and press releases.

The working group does not recommend a single website for all SEARCH-related activities as projects such as the Permafrost Carbon Network have already established well-developed brands of their own. Cross-posting key information on the main SEARCH website, however, would be an effective means of connecting different disciplines and teams. Integration of the SEARCH logo as well as establishing direct links between the main SEARCH webpages and any external site is encouraged.

The SEARCH action teams and working groups should develop social media strategies that share a common set of tools and hash tags to help promote online dialogues that are easily identified with SEARCH. For example, #ArcticChange may be a better tag than #search which is frequently used in technology. Social media can assist SEARCH in listening to key audiences and in sharing news. Individual SEARCH participants likely use social media in their own communications, and SEARCH should coordinate with those participants to establish an overall SEARCH presence in these forums. A recent ArcticInfo readership survey identified Facebook as a key communication platform.

### **Part II: SEARCH Partners**

SEARCH action teams and working groups are successful because of partnerships with a larger community of researchers, managers, and community members. SEARCH partners contribute time, expertise and resources to SEARCH activities and goals. As such, our partners are key audiences for SEARCH communication.

### **Part III: The Broader Arctic Research Community**

SEARCH-sponsored activities and forums engage Arctic researchers broadly. Optimizing interdisciplinary research to understand change in the Arctic requires broad and regular discussion of knowledge exchanges and other activities of SEARCH action teams and working groups. Although SEARCH efforts are concentrated in the United States, strong connections with key international organizations such as the International Arctic Science Committee (IASC) are also valuable and should be maintained.

## **2) Stakeholders and Indigenous Communities**

### **Part I: Core Stakeholders - Federal and Alaska State Policy-makers and Funding Agencies**

SEARCH has developed strong ties to federal agencies. Interagency Arctic Research Policy Committee (IARPC) collaboration teams provide effective forums for coordinating the research efforts of the agencies and SEARCH. Agency collaborators remain a key audience of SEARCH communications.

SEARCH should strengthen two-way communications with Alaska policymakers and other Arctic research funders and/or groups influencing the direction of Arctic research (e.g. industry and environmental grant-making foundations).

### **Part II: Alaskan Indigenous Communities**

SEARCH should prioritize engagement with Alaska's Arctic indigenous communities with a focus on the information needs of Arctic residents. SEARCH should also remain flexible to engage with international indigenous communities when such opportunities arise. Specific examples of ways to increase SEARCH engagement are provided in Appendix D.

### **Part III: Other Arctic Change Stakeholders (local communities, media, public)**

SEARCH action teams and working groups should individually prioritize key stakeholder groups. Action teams and working groups should re-evaluate which audiences are key as priorities evolve and clearly identify and articulate target stakeholders to SEARCH leadership. SEARCH subgroups must also ensure that stakeholder targets are included as part of SEARCH's iterative communication plans.



## **Key Goals of SEARCH Communication**

SEARCH's key communication goals, which follow the themes of *listening and informing*, are:

1. To communicate the state-of-the-science including advances, future directions, and needs to achieve SEARCH's science goals;
2. To listen and respond to requests for information, tools, and resources from key audiences and to provide science-based, accessible answers to questions;
3. To facilitate SEARCH networking among stakeholders, agencies, scientists, indigenous groups, and decision makers to achieve SEARCH's science goals and to better address stakeholder needs through Arctic research; and
4. To provide a consistent, unified, and concise message of SEARCH's mission and role in the Arctic community. (See the suggested brief mission statement, tagline, and elevator pitch below).

## **Key Topics for SEARCH Communication**

- Predictions of future land-ice loss and the impacts on sea level;
- Understanding and predicting the consequences of changing Arctic sea ice;
- Understanding how near-surface permafrost degradation will affect Arctic and global systems;
- Arctic community resilience, sustainability, and adaptation to environmental change;
- Arctic 2050/scenarios;
- Objectives, requirements, and needs of an Arctic Observing Network; and
- The societal and policy implications of Arctic environmental change.

## **Ensuring Coordinated Outward Communications Across SEARCH**

### **Five Key Elements of an Effective SEARCH Elevator Speech**

The SEARCH “elevator speech” needs to be adaptable for diverse audiences. Rather than a single, scripted speech, the CWG proposes adapting 5 key elements in brief explanations of SEARCH:

1. What is SEARCH about?

*SEARCH facilitates synthesis of Arctic science and communicates our current understanding to help society respond to a rapidly changing Arctic.*

2. What is SEARCH programmatically or institutionally, and who comprises SEARCH?

*SEARCH is a collaborative program of Arctic researchers, funding agencies, and others that promotes original and collaborative research, synthesizes research findings, and broadly communicates the results.*

3. Who are SEARCH’s partners?

*SEARCH engages Arctic stakeholders, indigenous leaders, residents, and policy-makers.*

4. What are the primary focus areas of SEARCH?

*SEARCH currently focuses on how shrinking land ice, diminishing sea ice, and degrading permafrost impact Arctic and global systems.*

5. Provide an example (or two) of a SEARCH accomplishment and/or ongoing activity that demonstrates SEARCH’s mission or underscores elements of the elevator statement, for example:

- Permafrost Carbon Network syntheses
- Arctic Alerts media roundtable and congressional briefing
- Working Group on Coastal Resilience
- Knowledge exchange workshops
- Arctic Futures 2050 scenarios
- Position papers synthesizing broad community input
- Making science accessible through knowledge pyramids

## **SEARCH Mission Statement and Tag Line**

The mission statement should be simple, jargon free, and easy to remember. Keeping it simple necessitates leaving details for longer documents. Avoiding jargon requires eschewing terms common only in scientific circles.

SEARCH's current mission statement:

*The SEARCH mission is to provide a foundation of Arctic change science through collaboration with the research community, funding agencies, and other stakeholders.*

should be replaced by:

*Advancing scientific understanding and collaboration to help society respond to a rapidly changing Arctic*

Recommended tag line:

*SEARCH: Advancing knowledge for action in a rapidly changing Arctic*

## **SEARCH Communication Training**

SEARCH should seek additional funding for training in science communication. It would benefit SEARCH to have trained, skilled individuals who can effectively communicate with the media, policy-makers, and other audiences. Expert training programs (e.g., COMPASS) are widely recognized as enhancing science communication skills within the climate change research community.

## **Suggested communication tools and formats**

### **SEARCH Email Lists and Electronic Communications**

As a first step toward a more robust and regular SEARCH-branded communication effort, a SEARCH community email list should be developed to serve the SEARCH Science Steering Committee, action teams, and working groups, as well as key SEARCH audiences. Members of the list should receive SEARCH updates developed for each Witness the Arctic newsletter. SEARCH leadership is also encouraged to develop a strategy for communicating directly with this broader SEARCH community on a regular basis (perhaps, for example, providing an annual plan update or establishing an online blog). A communications development cycle that ensures the regular production and delivery of quality content is believed to be the first step in establishing any broader standalone newsletter or communications

campaign that SEARCH may want to undertake in the future.

Communicating through existing collaborative forums such as Witness the Arctic or, alternatively, a stand-alone SEARCH blog is preferred over a print communication. Electronic media are more cost effective, ensure delivery to up-to-date addresses, and easily quantify audience engagement. Developing quality content would be a more effective use of resources than would be printing hardcopy newsletters.

### **Annual “Arctic Alerts” Briefing in Washington D.C.**

In August 2016, the Arctic Alerts 2016 committee provided the SSC with a comprehensive assessment of the effort. They judged the briefing successful at communicating the scientific community’s concern about extreme events in the Arctic, but they were less certain that the audiences fully shared those concerns. They recommended further effort to convey why rapid Arctic change matters to society at large. Their recommended approach was summarized as follows.

*Arctic Alerts 2016 was moderately successful in putting environmental changes in the Arctic in a whole-system context, but the committee recommends that future efforts should begin by laying out in some detail the overall story and take-home conclusions and only then assign elements of the presentation to particular presenters. The committee judged that greatest success was in conveying that SEARCH is an authoritative and reliable organization for observing, understanding, and communicating the significance of Arctic environmental change.*

The CWG suggests that Arctic Alerts become an annual event providing there is:

1. Sufficient planning time to ensure an effective event; and
2. The commitment of a panel of expert presenters, who are willing to contribute substantial time to develop and present their topics in the context of an overarching story free from jargon and tailored to the specific audience.

Congressional staffers provided useful feedback on Arctic Alerts presentations included in the Arctic Alerts 2016 report and summarized in Appendix E.

**The SEARCH Communications Matrix** is intended to provide a tool for internal communication and coordination between the SEARCH SSC, the Executive Director, action teams, and working groups. Beyond exemplifying the scope and diversity of SEARCH communication activities, the matrix ideally would assist action teams and working groups in individually prioritizing communication efforts, developing a communication strategy, and monitoring progress. Currently, several cells within

the matrix are highlighted **green** to signify their strategic importance to SEARCH fulfilling its mission of providing science-based *knowledge for action* as described in our NSF proposal. These are only suggestions. One intention is for this matrix to assist the action teams in developing their own priorities within the context of the full scope of SEARCH's commitments. Ideally, SEARCH communication priorities should be well defined with clear goals against which progress may be evaluated. For example, we here offer example definitions and goals for the suggested communication priorities and strategic tools currently in use, using phrases and definitions from the SEARCH proposal as much as possible. Expanded suggestions on how to "attend and engage" with local communities are provided in Appendix D.

**Science Briefs** concisely convey the *state of the science* within Arctic environmental change research. These short (1-2 page) summaries communicate the highest-level answers to specific questions, the importance of the topic, the implications of change, and the future direction of relevant research. The briefs are written for sophisticated but non-technical audiences including: Arctic residents, policy-makers, journalists, and scientists from other disciplines. They also point readers to more detailed information and resources including relevant scientific experts.

**White Papers** provide authoritative assessments of particular issues in Arctic environmental change. White papers may identify: existing gaps in science and/or observations; emerging research priorities; promising new models for research collaboration; or new opportunities for synthesis. With the intention of coordinating research and promoting scientific synthesis, SEARCH white papers are primarily written for agencies, inter-agency groups (e.g., IARPC), and the Arctic science community.

**Knowledge Exchanges** convene research scientists, agencies, and stakeholders to build bridges and promote communication. They facilitate the co-production of knowledge and information exchange. Knowledge exchanges may, for example, identify emerging issues, synthesize and improve access to existing datasets and model output, or link disconnected activities and programs. Knowledge exchanges are prerequisites for actionable science and, in this context, both inform and are informed by SEARCH synthesis reports.

**Synthesis Reports** advance a system-wide understanding of Arctic change through the scientific synthesis of data, model output, and projections. These reports are prepared by interdisciplinary teams that cut across: (1) the science community, agencies, and stakeholders, (2) the physical, ecological, and societal domains, and (3) the core research arenas within SEARCH. Synthesis reports may, for example, provide well-coordinated science to support the Arctic Observing Network and the development of Arctic Futures 2050 scenarios.

## SEARCH Communications Matrix – Audiences, Communication Products, and Formats Currently in Use

\* Green shading indicates areas of strategic importance; green text highlights CWG recommended tools/formats.

	Web content	Newsletters	PR/Advertising	Videos/Broadcasts	1-2 page summaries	White Papers	Information Exchanges	Synthesis Reports	Peer-reviewed Publications
Producer	ED; SSC; ATs; WGs; ARCUS	ED; ATs; WGs; ARCUS	ED; SSC; ATs; WGs; ARCUS	ED; SSC; ATs; ARCUS	ATs; WGs; & Synthesis Panels	ATs; WGs; Synthesis Panels	ATs; WGs	Synthesis Panels	ATs & Synthesis Panels
Arctic policy makers (POTUS, Congress, AK exec & legis.)		Witness the Arctic	Arctic Alerts		Science briefs; synthesis summaries		SEARCH ED & SSC targeted communications & meetings with key leaders	State of Arctic & topical reports	
Arctic agencies (Fed & AK; IARPC)	IARPC, ARCUS	Witness the Arctic; ArcticInfo	IARPC; PRB Listserv; SEARCH email list (recommended)	IARPC CT Meetings & Recordings, ARCUS Seminar/Webinars & Recordings	Science briefs; synthesis summaries	Topical reports	Attend and engage; IARPC CT Participation	State of Arctic & topical reports	
Arctic Research Community	ARCUS; Permafrost Carbon Network; Sea Ice Matters; Sea Ice Outlook	Witness the Arctic; ArcticInfo	ARCUS; ArcticInfo; Cryolist; IARPC; SEARCH email list (recommended)	AGU Town Halls (Not currently recorded or broadcast, but recommended)	Science briefs; synthesis summaries	Topical reports	Attend and engage (see Appendix D)	State of Arctic & topical reports	Journal articles; conference presentations & posters
Local Arctic Communities	Social Media (Facebook)	Witness the Arctic; ArcticInfo	ARCUS targeted communication to location or group specific contacts.	YouTube (via ARCUS - No SEARCH YouTube Channel exists currently)	Science briefs; synthesis summaries		Attend and engage (see Appendix D)		
Media	Social Media (Twitter)	Witness the Arctic	ARCUS Press Releases/ targeted communication / Arctic Alerts Press Briefings	Live seminars; YouTube	Science briefs; synthesis summaries		Arctic Alerts Press Briefings		

	Web content	Newsletters	PR/Advertising	Videos/ Broadcasts	1-2 page summaries	White Papers	Information Exchanges	Synthesis Reports	Peer-reviewed Publications
Producer	ED; SSC; ATs; WGs; ARCUS	ED; ATs; WGs; ARCUS	ED; SSC; ATs; WGs; ARCUS	ED; SSC; ATs; ARCUS	ATs; WGs; & Synthesis Panels	ATs; WGs; Synthesis Panels	ATs; WGs	Synthesis Panels	ATs & Synthesis Panels
non-Arctic policy makers			Press/media coverage		Topic briefs; synthesis summaries				
non-Arctic agencies			Press/media coverage		Topic briefs; synthesis summaries				
Global Science Community	ARCUS; Permafrost Carbon Network; Sea Ice Matters; Sea Ice Outlook; Social Media (Twitter)		Press/media coverage			Topical reports		State of Arctic & Topical reports	Journal articles; conference presentations & posters
General Public	ARCUS; Sea Ice Matters; Sea Ice Outlook; Social Media		Press/media coverage	YouTube	Topic briefs; synthesis summaries				

## APPENDIX A – SEARCH Communications Working Group Charge



### **Study of Environmental Arctic Change (SEARCH) Communications Working Group Charge**

*FINAL – Approved by SEARCH SSC 19 February 2016*

#### **Purpose**

The SEARCH SSC convenes *ad-hoc* working groups to bring in additional expertise and supplement the work of the SEARCH program. The SEARCH Communications Working Group will provide advice to the SEARCH SSC on a coordinated SEARCH communications strategy. The Working Group reports to the SSC.

#### **Membership**

Membership of the working group will be composed of representatives from various SEARCH groups, partners, and others to provide the needed expertise. The SSC will appoint a Working Group Chair. Project management support will be provided by ARCUS.

#### **Role**

The role of Working Group is to identify:

- Key goals and audiences for SEARCH communications efforts.
- Suggested communication tools/types and formats (web, printed, etc.).
- Mechanisms to ensure coordinated outward communications across all SEARCH components (e.g., action teams, overall program).
- Priorities for communication activities.

The Working Group is expected to provide a report of findings to the SEARCH SSC during a May meeting (could be done virtually, if needed).

#### **Term and Meetings**

Length of term: through June 2016. The SSC may extend the duration of the work group as needed.

The Working Group will meet via tele/web conference and communicate via email; the specific meeting schedule and formats may be determined by the group. No travel support is available for an in-person meeting of the Working Group.

Note that *implementation* of the recommended activities is not the purview of the Working group; however, members of the group may choose to contribute to the implementation of SEARCH communications activities on an individual basis.



## APPENDIX B – SEARCH Communications Working Group Members

CWG Member	Affiliation
Allen Pope	National Snow and Ice Data Center SEARCH Land Ice action team
Bob Bindschadler	SEARCH Science Steering Committee SEARCH Land Ice Action Team
Brendan Kelly (Chair)	SEARCH Executive Director SEARCH Sea Ice Action Team
Christina Schädel	Northern Arizona University SEARCH Permafrost Action Team
Jessica Rhode	Interagency Arctic Research Policy Committee
Olivia Lee	University of Alaska Fairbanks
Matthew Druckenmiller	Rutgers University SEARCH Sea Ice Action Team
<b>Staff:</b> Helen Wiggins, Brit Myers, & Lisa Sheffield Guy	Arctic Research Consortium of the U.S.

## APPENDIX C – Communication strategies considered, but not prioritized at this time

1. SEARCH Blog (precursor to SEARCH only newsletter which could be expanded if the of subscribers increases). A blog may not only serve as a communication tool and increase SEARCH visibility, but may also help to bring people into the SEARCH community by having invited guest contributors. Furthermore, a blog might be a useful accompaniment to developing SEARCH Communicators since it would be a place to practice communication.
2. SEARCH YouTube Channel for curated videos, interviews and other media.
3. SEARCH Annual Report (something for broader consumption, not just for NSF)
4. SEARCH Interdisciplinary Research Journal (highlighting the science undertaken by the SEARCH community - SSC, action teams, working groups, Sea Ice Prediction Network, Knowledge Exchange workshop participants - as well as best practices for community engagement and working with decision-makers)
5. Virtual community engagement events (taking inspiration from some of the things APECS has done like their virtual film festival). These could be as simple as hosting a SEARCH community of practice discussion group that meets via Zoom to talk about various themes (similar to IARPC Collaboration Teams but more oriented toward the scientific community or other Arctic stakeholders).
6. SEARCH Communication Fellows. SEARCH could host short (e.g., six months) undergraduate and/or graduate student communication fellows. These fellows could be offered internal or external professional development opportunities, work with SEARCH Communicators, and have the opportunity to write articles about SEARCH science (e.g., for Witness the Arctic, a SEARCH blog, op-eds, or other media outlets).
7. Policy Briefs for the SEARCH Community. Similar to how SEARCH is writing science briefs for policy communities, SEARCH could also facilitate or lead the writing of policy briefs for the science community—short and timely summaries of the policy landscape and budgetary process that include some commentary about opportunities for science to inform. This could be done in collaboration with policy insiders in Washington, DC (e.g., the individuals that SEARCH collaborated with for Arctic Alerts). The USARC has the "Legislative Action" section in their Arctic Update, but that is usually no more than a list, without much context.

## APPENDIX D - Expanded Suggestions for Green Matrix Cell to “Attend and Engage” with Local Communities

The CWG did not focus on providing guidance for how to engage with Arctic residents and indigenous communities. However the CWG recognized the importance of this particular audience and the need to facilitate the two-way communication presented in Figure 1. A few existing organizations and communication forums are suggested as a tool to help SEARCH action teams and working groups engage with local communities.

1. Monitor relevant community observations and act as expert consultants to respond to local environmental concerns through the Local Environmental Observer (LEO) network (registration required, and the LEO network will soon set up an alert system so that experts can be alerted to respond when a relevant observation/question arises)
2. Establish connections with Alaska Sea Grant Extension agents that visit with local communities and can relay community concerns to SEARCH
3. Engage through the Arctic Waterways Safety Committee
4. Establish a session through the Alaska Forum on the Environment or Alaska Federation of Natives
5. Attend/ sponsor an informational table at the Kawerak Regional Meeting
6. Attend / sponsor an exhibitor table at the annual Alaska Federation of Natives Convention in Anchorage, AK
7. Consult with village liaisons to assist with SEARCH communications (e.g., participation opportunities in knowledge exchange workshops)

North Slope Borough Village Liaisons: <http://www.north-slope.org/your-government/mayors-office/village-tribal-affairs>

## APPENDIX E – Recommendations from Congressional staffers in response to Arctic Alerts 2016

### Elements of a successful science briefing to Congressional staff:

- Tell personal stories
  - If possible, don't read your text – just tell your story
  - Smile, use humor
- Share your passion for your research
- Use photographs
- Ditch the jargon. All of it.
- Don't tell the audience everything you know in 5 minutes
- Be approachable
- Try more conversation, less presentation
- Include the audience
- Limit use of graphs and charts, specifically:
  - Don't use more than one data slide in a row
  - Don't put more than one chart per slide
- Limit text on slides, keep fonts large and legible
- Use metaphors and real-world examples to make scientific descriptions relatable (i.e., one ton of melted glacier = how many bath-tubs?)
- Connect the Arctic to lower latitudes, especially DC
- Share clear, strong implications for infrastructure, economy, etc.