**Study of Environmental Arctic Change (SEARCH)**



**Planning Meeting**

19– 21 November 2015

Seattle, Washington

**Meeting Notes**

**Meeting Theme**: Discussion of SEARCH future plans

**Science Steering Committee/Action Team Goal:** Define Year 2 activities, outcomes, potential partnerships for science themes, Arctic observing, crosscutting initiatives, and implementation plan.

**Day 1: Thursday, 19 November 2015 (SSC, Action Team Leads & Agency Guests)**

1. **Overview of SEARCH Directions, Activities, and Structure (Hajo Eicken, Caspar Ammann, Brendan Kelly)**

* See meeting presentation slides: <https://www.arcus.org/search-program/meetings/2015/ssc-november/documents>

1. **Alaska’s Arctic Policy (Craig Fleener, Arctic Policy Advisor, State of Alaska)**

* Alaska’s Arctic Policy was adopted in April 2015 (see: http://www.akarctic.com/wp-content/uploads/2015/01/AAPC\_Exec\_Summary\_lowres.pdf)
* The Alaska Arctic Policy Commission (made up of 10 legislators and 16 experts throughout AK) are developing reports to further guide and strengthen AK’s Arctic Policy.
* SEARCH can support Alaska achieve its policy goals for the Arctic by conducting activities that support: economic development, enhanced state security, stakeholder collaboration, building the capacity of science and research to promote community resilience.
* The Commission’s Climate Change Sub-Cabinet is focused on attending to the impacts of Arctic change.
* Although some of the Commission’s science activities have been shelved for a while, there is still a desire/commitment to promote knowledge sharing to help Alaska prepare for the future.
* Craig remains available to help researchers better understand Alaska’s needs.
* Good research will be critical for the development of Alaska’s infrastructure plan for the next 20-40 years.
* Although IARPC Collaboration Teams promote connections at the federal level, a mechanism for making connections at the State level are still needed.
* SEARCH is seen as a mechanism that the Commission can leverage to connect with the right people; meetings like this are good venues to connect with the State.

1. **U.S. Arctic Executive Steering Committee (AESC) (Mark Brzezinski, AESC Executive Director, virtually)**

* The agenda of the Arctic Executive Steering Committee has been developing over the past year and has been informed by individuals present at the SEARCH planning meeting such as Brendan Kelly, Jeremy Mathis and Simon Stephenson.
* President Obama is dedicated to following through on the 40 commitments he made during his recent visit to Alaska for the Department of State’s GLACIER conference. These include the high profile commitments such as new icebreakers, changing Mt. Denali’s name, establishing the role of the Denali Commission as well as a number of other items such as launching a youth engagement program to promote an Arctic way of life and supporting a community-based observing session at the Arctic Observing Summit at the University of Alaska Fairbanks in March 2016.
* Goals for the Arctic Executive Steering Committee include:
  + Developing a unity of purpose among agency operations in the Arctic
  + Setting priorities
  + Evaluating progress on identified goals
  + Advancing coordination between stakeholder groups, including scientific community, state/local, tribal, international, and non-governmental organizations
  + Supporting the Arctic Council’s U.S. Chairmanship
* The steering committee is working to make internal Arctic policy-making process more coordinated as indicated through the development of its gaps and overlaps assessment of the almost-30 agencies/entities that have responsibilities in the Arctic. The public manifestation of this assessment will be shared with the public in January via an annual implementation report.
* More is needed to support pan-arctic observing and data sharing and President Obama could execute leadership in support of this in the coming months.
* The science ministers of the Arctic countries have never convened before and there is a good chance a meeting like this could happen in 2016
* The AESC will be doing something important in 2016, to be announced, and will need SEARCH’s help.
* It will be important to think opportunistically about how to advance promising initiatives that will be catalytic for the future.

1. **SEARCH and Arctic Observing Activities**
   * SEARCH’s Arctic Observing Engagement and Vision: [Hajo Eicken]
     + See meeting presentation slides: <https://www.arcus.org/search-program/meetings/2015/ssc-november/documents>
   * Preliminary take-homes from Arctic Observing Open Science meeting   
     (Craig Lee)
     + A bottom-up approach has been advancing Arctic observing and synthesis knowledge
     + There is a need to improve the exploitation of research. A transition from results to product development is needed.
     + Improved communication and coordination across boundaries happens through grass-roots connections.
     + Advances in autonomous observing technologies have transformed approaches to sustained observations.
     + More needs to be done to develop our approaches to international Arctic Observing coordination.
2. **Agency Comments: How Can SEARCH Strengthen Arctic Observing?**

* Eric Kasischke, NASA:
  + Although the Arctic Observing Framework that Hajo presents talks about integration, it doesn’t reference a number of key data sets and processes that are out there. For example, NASA satellite data, NOAA, ARM, remote sensing data archived at NSIDC.
  + Other agencies need to be included in the report.
  + The Arctic Boreal Vulnerability Experiment (ABoVE) program includes many of the items outlined in the Arctic Observing Framework SEARCH outlines:
    - NASA engages researches from 109 different organizations
    - It serves as a platform for interdisciplinary research
    - It cares about societal impacts
    - It plans to engage stakeholders from the very beginning (see, for example, the stakeholder workshop being planned for January in Anchorage)
    - Ted Schuur is a member of the ABoVE team.
* Jeremy Mathis, NOAA:
  + In the future, NOAA-OAR will be looking to place more grounded technology in the Arctic that will support a move away from research cruises.
  + New moorings and autonomous vehicles will create observing nodes that other researchers can leverage with additional observing instrumentation.
  + SEARCH can support these kinds of collaboration and help bring academic partners into these activities to take advantage of NOAA resources.
* Neil Swanberg, NSF:
  + Neil has been an advocate for SEARCH within NSF since 2000 and has pushed SEARCH to hone its focus over this time. SEARCH’s AON focus could still benefit from additional refinement.
  + The “AON” to which the community refers cannot be NSF-AON, as the resources available within NSF-AON are limited (e.g., $10M)
  + There is a significant need for prioritization. First by identifying driving science questions, AON could benefit from EARCH with identifying foci – synthesis, and identification of the data needed to do synthesis.
  + SEARCH could serve as a type of Research Coordination Network for observations.
  + SEARCH/NASA/NOAA are perhaps more suited than NSF would be to parsing out all the intertwined observing activities (data synthesis, process studies, etc.) to establish observing priorities.
  + SEARCH is starting to embark into areas that NSF is less familiar with/outside our traditional comfort zone, so should engage other agencies.
* Sandy Starkweather, IARPC:
  + There is still a lot of confusion about how to engage with IARPC and what can be achieved in the interagency space. SEARCH can offer a more unified voice/distilled ideas for the scientific community within the IARPC Collaboration Teams and come forward in the IARPC forum with ideas.
    - For example, permafrost has a network – could other communities benefit from a more formal network?
  + Research community engagement with IARPC is what will make IARPC “look good”.
  + IARPC should be used as a kickstarter venue.
  + IARPC is starting a re-visioning process. The research community’s vision is needed to provide support for high-level policy drivers. Providing this collective vision is something SEARCH can support.
  + New IARPC working group – SIRTA: Systematic Improvement for Reanalysis in the Arctic. Reanalysis is a key tool that everyone is using that is inherently dependent on the quality of the observing network. Could an effort to systematically improve reanalysis be used to prioritize a wish list for Arctic Observing?

1. **Arctic Observing Discussion**

* Prioritization is challenging. Could this be informed from the bottom-up while simultaneously receiving top-down coordination vision/support? Scientists may be good at identifying what is “interesting” from a research standpoint but not as good at identifying what is “important” from a community/decision-maker standpoint.
* NASA’s decadal survey was able to successfully identify observing priorities. It wasn’t easy but it did produce a prioritized list. This is possible. Once the list was produced the community didn’t challenge the decisions that were made. Everyone felt like they had an opportunity to be included.
* The SEARCH Implementation workshop produced a list of priorities that were still too broad for NSF needs.
* Clearly defined questions will support greater prioritization and drive what research needs to be done.
* Prioritization will help coordinated groups develop well-informed proposals to NSF.
* A desired outcome for NSF is better proposals from coordinated groups, and an informed panel. SEARCH could be the ‘organizational glue’. Proposals are still fairly compartmentalized; SEARCH could help scientists collaborate with others, make connections across disciplines.
* Prioritization different from “giving advice”.
* Some feel that Arctic stakeholders should have ultimate say in prioritization and that—whatever mechanism is used to make decisions—you must engage the people who will have to live with the consequences of decisions made. Any advancement around SEARCH’s ability to listen to the needs of Arctic communities will support prioritization.
* Another opportunity for SEARCH is to “link things together that haven’t been linked before”. SEARCH can offer a platform for crosscutting activities as well as processes that link to stakeholders.
* Scenarios are one method that has been used to identify and understand the important variables in a system. Another is to focus on vulnerabilities (hold the climate fixed and see what the repercussions on society might be). Still another approach is to work on achieving desired outcomes.
* The U.S. Navy requires improved modeling capacity and predictive ability to support their operations in the Arctic, as do other agencies. Everyone uses weather forecasting.
* USARC’s mandate is to figure out priorities. We are not working from a completely blank slate. However, the broad policy goals that are iterated over and over again are often still too broad to effectively guide the use of limited resources.
* There has been progress made in Arctic Observing at the subsystem level, the focus now needs to be on putting those pieces together.
* In terms of SEARCH, a great deal of prioritization has already taken place. SEARCH’s refined science questions (which drive Action Team activities) underwent both extensive community and NSF review.
* Priorities and “enterprise” are two different things. Federal enterprise does not have to map to SEARCH priorities and vice versa.
* Prioritization will require researchers to focus beyond themselves, see across disciplines. Some researchers may need to give up collecting data/learn to do it in a different way or to spend more time thinking about the implications of that data.
* SEARCH has a role to play in raising the visibility/importance of Arctic Observing at the regional executive level. Some agencies will see the connections their mandates have to Arctic Observing more easily than others.
* There is some tension between the long-term observing activities needed to understand change and the prioritized commitments that President Obama made during his visit to Alaska. Not all of those commitments will require marshaling the scientific community to achieve, some do. We can, at least, assist in mapping current science to those goals. We need to be careful of “zigzags”, trading long-term perspectives for short-term goals.
* Engaging with stakeholders and policy-makers may be asking a lot of researchers with few resources that are trained primarily in conducting research and writing papers.
* The Arctic Observing Open Science meeting demonstrated the value of convening the research community to discuss Arctic Observing prioritization. SEARCH should endeavor to convene similar meetings every 2-3 years. These meetings (and the Observing Change Panel) can be used for the iterative assessment of Arctic Observing priorities.
* Although the Observing Change Panel has scientific expertise, this does not necessarily mean the current OCP has the necessary capacity to undertake an iterative assessment of the entire Arctic Observing landscape. Is outside expertise needed to support this goal?

1. **SEARCH Year 2 Plans** 
   * **Land Ice Action Team (Fiamma Straneo, virtually)**
     + See meeting presentation slides: <https://www.arcus.org/search-program/meetings/2015/ssc-november/documents>
     + Discussion:

* The Land Ice Action Team would welcome NOAA participation at their upcoming Greenland Ice Sheet Ocean Observing System (GrIOOS) workshop.
* The GrIOOS workshop will be used to identify ~10 key/representative observing sites on the margins of the Greenland Ice Sheet and its ocean interface.
* The GrIOOS observations would be of a very different nature than those that will be captured by NASA’s Oceans Melting Greenland (OMG) mission which will be capture high precision elevation measurements via aircraft. To promote a coordinated effort, however, there will be one OMG scientist at the GrIOOS workshop
* Sensitivity experiments show that the flow of information into existing models is not quite working within this context. Not all water from the melting ice sheet enters at the surface, much of it happens at great depth where glaciers are grounded. We don’t yet know how to factor these realities into current models.
  + **Permafrost Action Team (Ted Schuur)**
    - See meeting presentation slides: <https://www.arcus.org/search-program/meetings/2015/ssc-november/documents>
* Discussion
  + Are the current observations for permafrost sufficient?
    - In the process of conducting syntheses, you see a lot of holes. Simple mapping exercises show you vast areas where there is no data. However, there is still a lot to be done with what data do exist.
    - There are 118 international institutions involved in the Permafrost Carbon Network. It includes Russians and Europeans. There is currently some Chinese interest as well as they have started thinking about Tibetan permafrost.
    - 2/3 of the data that is synthesized comes from published data, 1/3 of the data isn’t published and you won’t find in places like ACADIS.
    - The PCN is bringing agencies into the room to make sure they are asking the right questions. For example, Cathy’s work on where the Arctic will become wetter/drier seeks to address a specific DOE science question and she is conducting this effort through the PCN in an effort to engage the broader community.
    - Flora hasn’t been broken out as a stand-alone science synthesis focus for the Permafrost Action Team because it is already inherent in the work of the PCN.
  + **Sea Ice Action Team (Henry Huntington)**
    - See meeting presentation slides: <https://www.arcus.org/search-program/meetings/2015/ssc-november/documents>
    - Discussion
* There will be a need to evaluate what impact communication activities are having and to establishing a usability and usefulness assessment/protocol.
* The 1-page documents will be a way for scientists to read across disciplines. This will help with crosscutting synthesis activities.
* Could opportunities also be developed for journalists to engage in a more immersive sea ice experience?
* Is the sea ice action team membership sufficient?
  + The Sea Ice Action Team membership itself doesn’t have to represent everyone. The team is working to bring the sea ice community together in a number of ways:
  + Guest contributions to communication products will be solicited from the broader community.
  + The Sea Ice Prediction Network is another component of SEARCH’s sea ice efforts that expands SEARCH’s community of sea ice researchers.
  + SEARCH/Caspar is also currently exploring an additional collaboration through NCAR that would help bring weather verification tools into climate models. This would have a sea ice interface as well.
  + SIAT will consider whether other stakeholders should be added to the group.
* Arctic Matters is a PRB initiative; Sea Ice Matters may be a collaboration opportunity to explore further with them. Bob Rich could assist in brokering that connection.
* There will be a meeting of the Sea Ice Team at AGU to check-in on their 1-page document development and test the team's thinking about the products.
* Would be useful if the SIAT documented interactions with journalists to help determine what topics the media is/isn’t interested in.
* The SIAT may also want to consider a timeline for a more developed synthesis product in time X.

1. **Knowledge Exchange: Connecting and Capacity Building (Bob Bindschadler)**

* See meeting presentation slides: <https://www.arcus.org/search-program/meetings/2015/ssc-november/documents>
* Discussion
* SEARCH promotes the concept that interaction is needed at the person-to-person level and that it is not sufficient to simply publish/send around a handful of PDF documents. NASA figured out that the best way to launch satellites was to actually get engineers and researchers in the same room together.
* Stakeholders aren’t always paid to meet with scientists but many do have skin in the game because they rely on the information scientists provide.
* Certain ways/formats of presenting information may not work for all stakeholders. For example, global climate change models do not present information in the operational time scales that managers may need.
* There is a well-developed literature/research on engaging stakeholders in natural resource management.
* Often the principles of good stakeholder engagement boil down to the specifics of an individual project. Here, however, we are discussing SEARCH at a more programmatic level.
* From a programmatic perspective SEARCH can encourage Action Teams to move in this direction.
* If the SSC/Others can suggest specific stakeholders to engage that would be very helpful.
* ARCUS is developing a more robust infrastructure that will help SEARCH support its networking activities.
* Advising policymakers moves SEARCH away from the core activities that NSF supports. Applied stakeholder engagement may be something that other agencies are better aligned to support.
* There may be a need to enlist other people who specialize in stakeholder engagement in each of the Action Teams.
* Communication can be seen as a parallel track for the Action Teams to assist in the generation of community knowledge exchange.

**Day 2: Friday, 20 November 2015 (SSC, Action Team Leads & Agency Guests)**

1. **Impressions & Key Points from Day 1**
   * There is a diversity of expectations for SEARCH across the agencies.
   * SEARCH needs to find a sweet spot between science synthesis and more in-depth stakeholder engagement.
   * There is an opportunity to assist agencies with the illumination of Arctic Observing gaps & overlaps.
   * There are legal mandates that constrain agencies but there are also leaders within agencies that can and will support a broader Arctic Observing coordination effort. IARPC exists to help with this.
   * SEARCH has traditionally engaged with NOAA-OAR due to the early involvement of John Calder with SEARCH. There are a number of other groups within the agency that SEARCH would benefit from engaging with. Stephen Volz, Assistant Administrator for NOAA’s National Environmental Satellite, Data and Information Services (NESDIS), recently indicated an interest in becoming more involved in the Arctic. The National Weather Service might be another good partner. The Climate Program Office (Sandy Lucas) is also interested in extreme sea ice changes.
   * With Uma serving as the Director of NOAA’s Cooperative Institute for Alaska Research (CIFAR) it would be a good short-term objective for SEARCH to link to NOAA’s Arctic efforts through the institute.
2. **Science Communication Activities (Matthew Druckenmiller)**
   * See meeting presentation slides: <https://www.arcus.org/search-program/meetings/2015/ssc-november/documents>
   * Discussion
     + One of SEARCH’s crosscutting activities could be to develop an assessment protocol for the program’s knowledge to action efforts.
     + 99% of scientists are not qualified to conduct formal program evaluations. Outside expertise would need to be brought in.
     + Website metrics are a simple approach that could be taken to assess the usefulness of the information SEARCH is putting out.
     + If the goal is to maximize website hits, however, formal academic evaluation may not be what SEARCH needs. Instead, we might want to consider a marketing campaign. An audience would need to be developed before an evaluation takes place anyway. These methods, however, would not help SEARCH understand if the information it is putting out is being used in decision-making.
     + Another option would be to start with expert narrative feedback directly from a target audience.
     + Should be explicit about how evaluating communication activities, and discuss with other Action Teams.
     + A more formal evaluation might not happen in the next year, but there may be someone interested in putting a proposal to do that in the out-years.
3. **Decisions and Planning of SEARCH Year 2 Activities**

For each activity area/theme, where do you think you’ll be at the end of the 5 years? Where does each activity area need help?

* **Land Ice (Discussion with Fiamma Straneo)**
  + Main objective is an international GrIOOS with multi-agency support then sharing GrIOOS data with end users.
  + Fiamma hesitant to say that the GrIOOS will ultimately result in sea-level rise estimates at regional scales that are the focus of many stakeholders/decision-makers because regional modeling is so complex.
  + There is great uncertainty with the current Greenland ice sheet data/models being used to inform the IPCC/other predictions. GrIOOS would help “keep everyone honest”. The next step to reducing uncertainty is to ensure data is available and being collected so models can be checked.
  + The LIAT can also contribute to Scenarios 20505 development
  + In 2005 Richard Alley emphasized the need for SEARCH to consider land-ice loss in the context of lower-latitude linkages. That need still remains. How much of the LIAT’s focus should be on Arctic vs. global stakeholders concerned with sea level rise?
  + SEARCH has a role to play in enabling the links that would have a hard time being developed on their own. For example, making sure sea level rise is considered in the development of Nome’s deep-water port.
  + The main LIAT deliverable for year 2 will be the GrIOOS workshop report including a design and implementation plan for the observing system. After this, work will need to be done to publicize the report and engage partners in implementing the system. SEARCH can assist with the circulation and publicity of the GrIOOS report/observing system internationally.
  + As the LIAT moves forward, they can draw on other SEARCH/AOOSM efforts to help articulate how GrIOOS will address key science questions for both scientists and stakeholders – and make clear that the ultimate goal of GrIOOS is to reduce uncertainty around sea level rise.
* **Sea Ice (Discussion with Henry Huntington)**
  + The SIAT is trying to provide more relevant information about sea ice to the stakeholders who need it and to do a better job communicating the info we do have.
  + Hill staffers may be a good initial target audience for testing the 1-page overview documents.
  + The SSC can support the SIAT by continuing to build the SEARCH brand, cultivating inter-agency support, and building links between the Action Teams.
  + With limited SIAT resources, other SIAT affiliates besides Henry & Jen may need to take a lead on some activities. For example, Marika Holland might be able to take the lead on synthesis efforts.
  + SEARCH can assist the SIAT by aligning the Sea Ice Prediction Network activities with those of the Sea Ice Action Team.
* **Permafrost (Discussion with Ted Schuur)**
  + Ted referenced Slide 12 from his presentation on the first day of the meeting. See meeting presentation slides: <https://www.arcus.org/search-program/meetings/2015/ssc-november/documents>
  + SEARCH can help the AT leverage additional funding opportunities for workshops. (The PCN have workshops every 6 months. These are important to the productivity of the group.)
  + SEARCH can assist the ATs in connecting with people/stakeholders.
  + SEARCH can assist the ATs in the development of workshops/activities/synthesis opportunities that cut across the Action Teams. This would also support the ATs’ efforts to identify new science topics and engage with new groups of people.
  + Borrowing from the SIAT model, SEARCH can help identify topics for 1-page overview documents.
  + Recognizing that NSF is a stakeholder, SEARCH can help the AT target products for NSF and assist the AT in the best way to provide useful input regarding observing network design.
  + SEARCH can assist with the ATs outreach efforts (e.g. Arctic Encounter symposium).
  + Assist with funding support for post-doc opportunities that have already been identified by the Permafrost Action Team
  + SEARCH can assist the AT by becoming more familiar with the synthesis activities that the Permafrost Action Team has already planned so that they can assist with communications, facilitating collaboration and seeking out additional support. The AT has 2-page scoping documents on these activities that the SSC other ATs can reference. Ted confirmed that stakeholders were engaged to make sure they were targeting the right science synthesis questions. Caspar emphasized the importance of this step.
  + The Action Team leads have a lot of demands on their time (SEARCH SSC calls, other funder calls, Action Team member coordination, etc.) and do not always have time to sit in on the IARPC collaboration team calls. SEARCH can help the Action Team’s stay more connected to the IARPC teams.
  + Brendan emphasized that the ATs should not be shy about coming to him about their needs. He is happy to work his networks to find interest that can support their efforts.
* **Observing (Discussion with Craig Lee)**
  + The Open Science Meeting received a lot of positive feedback and many participants stated that they thought it was a long-overdue activity and that they felt there was a need for more regular meetings like AOOSM. Perhaps every other year? Smaller focused meetings in between? This would require resources. AOOSM funding this year came in the form of an NSF supplement grant to the ARCUS cooperative agreement.
  + Regular meetings would provide a mechanism for the regular evaluation of observing needs – something that the Arctic research community does not currently have. We could plan for a regular schedule to bring this community together.
  + What strategy for the OCP would best support this? A standing body? A rotating OCP membership?
  + A standing OCP supports decadal scale planning and vision for Arctic observing. There are “fashions” in science and there is a risk that people will lose sight of multi-decadal observing efforts if those priorities are not defended. However, the OCP is due for a membership rotation and the SEARCH planning meeting presents an opportunity to rethink the strategy for OCP. Is there an overlap here with the IARPC Observing Collaboration Team that needs to be explored, for example?
  + If the OCP was tasked with providing OSTP with a set of priorities for long-term observing (that has the weight of the US Science community behind it) in advance of the ministerial meeting it might be able to do this but work would need to begin now.
  + Mark Brzezinski’s promise of a ministerial meeting could be used as a carrot to encourage the observing community to work toward observing prioritizations. SEARCH’s existing framework for AON design and implementation could be a jumping off point. However, community buy-in will be key and that will take time.
  + Could we ask Mark for support to bring the community together?
  + Ultimately what will be needed is a well-reasoned statement about what it would cost if we don’t make specific observations. If SEARCH’s OCP doesn’t provide this kind of information another group like AMAP will likely fill that void. We shouldn’t paralyze ourselves with perfect idealistic product.
  + Best case would be to have something ready to share with regard to community Arctic observing priorities at the Arctic Observing Summit in March 2016. . Can SEARCH provide a white paper to put in hopper of AOS?
  + The Action Teams can play a role in winnowing down big lists of AON priorities. We know, for example, that the current AON doesn’t serve the Land Ice team well. However, this would still not address the set of long-term core observations that are needed beyond AT process studies.
  + **Scenarios**
* The scenarios/Arctic 2050 work SEARCH is planning ties in well with what we heard from both Mark Brzezinski and Craig Fleener.
* Scenario development is a powerful process for deliberatively engaging stakeholders and for fertilizing an exchange of diverse ideas and perspectives.
* Scenarios are often generated around a focusing question (e.g. What are the key factors/drivers that will control Arctic shipping in 2050? In the context of a changing Arctic, what do governments need to do to promote community health?). These questions serve as a lens for “scanning the broader landscape”.
* A goal for scenarios development is to understand under what contexts/circumstances certain variables become important (x is important if y but not if z).
* The proposed Action Team 1-page synthesis papers will be useful starting documents for scenario development.
* SEARCH’s scenarios should focus on each of the Action Team themes.
* SEARCH products and activities in the years to come should feed into a culminating scenario development project. Workshops undertaken in year two will help with the identification of stakeholders that should be engaged in scenarios development.
* SEARCH will need to identify a champion within the SSC to shepherd these activities and to refine SEARCH’s goals/planning related to the activity.
* Hajo Eicken and Amy Lovecraft teach a course at UAF on scenarios development and will assist in the exploration of synergies between the UAF-affiliated group and SEARCH.
* Not all the physical scientists who are currently a part of SEARCH have a background/experience in scenarios development. This may be another skill set that we want to bring into the SSC/Action Teams with new members.
  + **SEARCH / Interagency Arctic Research Policy Committee (IARPC) interface**
    - Although IARPC has begun a re-visioning process it is important to keep in mind that it will be working within the framework of its current plan over the next few years.
    - Dee felt that SEARCH’s scope shouldn’t be broader than IARPC’s – but that SEARCH should work to shape IARPC’s goals and framework to optimize efficiency. The scientific community/SEARCH and IARPC shouldn’t have two different frameworks.
    - Brendan hopes SEARCH can inform IARPC but does not see SEARCH’s role as becoming an IARPC 2.0 for the scientific community. Some of the language that is used to describe SEARCH has a tendency to characterize SEARCH as a “quasi-IARPC”, attempting to provide an all-encompassing representation of the academic community.
    - The IARPC Collaboration Teams are the interface that SEARCH needs to engage. However, we don’t want to just “listen”, we want to make sure SEARCH is involved in driving team agendas as well.
    - The scientific priorities that SEARCH has defined guide where SEARCH should be engaging with the collaboration teams.
    - Is there an opportunity to support IARPC’s Arctic Observing Collaboration Team through the identification of an additional co-chair who could speak to the academic research community’s priorities?
    - The Land Ice Action Team’s effort to establish GrIOOS is a project that should be brought to the IARPC CTs. SEARCH needs to think about presenting the internationally-vetted workshop report to the CTs and using IARPC as a forum to discuss the fact that GrIOOS is beyond NSF’s means and that interagency and international cooperation is needed to implement the system.
  + Roles of SSC, Action Teams, & Executive Office
* SEARCH leadership needs to assist in the development of an overall SEARCH brand. Some thoughts on how to facilitate this:
  + Production of a SEARCH Newsletter
  + Guidance for others about how to participate in SEARCH
  + A shared SEARCH elevator speech used by everyone
  + Making sure that wherever Action Team websites are housed that it seems like you are on a centralized SEARCH website.
    - Convening a subcommittee focused on connecting all the pieces necessary for a well-branded SEARCH website was proposed.
* The Action Teams planning focus will be more short-term while the SSC/Executive Director should focus on long-term vision/goals for the program.

**Adjourn Open Session**

1. Break Out Sessions
   * SEARCH’s Arctic Observing and Action Team year 2 program plans were outlined by the following teams:
     + Sea Ice: Henry Huntington, Matthew Druckenmiller, Steve Vavrus
     + Land Ice: Uma Bhatt, Lisa Sheffield-Guy, Robert Bindschadler
     + Permafrost: A. David McGuire, Christina Schädel, Brit Myers
     + Arctic Observing: Brendan Kelly, Craig Lee, Hajo Eicken, Caspar Ammann, Dee Williams, Bob Rich, Helen Wiggins
   * Guidance provided to the Action Team’s by Caspar Ammann:
     + Outline how the AT will bring people together and develop new knowledge production/scientific networks.
     + Outline how the AT will advance science (processes or synthesis products)
     + Link the AT’s efforts back to the observing needs of the scientific community (identification of key data/observing needs and guidance for long-term observing priorities).
     + Outline the AT’s Knowledge to Action efforts (how the AT will connect science to particular outcomes).
   * Post-Break Out Session Discussion
     + A melting Greenland Ice Sheet (contributing to ½ of global sea level rise & also responsible for ½ our uncertainty) has impacts that are not just restricted to the Arctic and the Land Ice Action Team does need to give some of their attention to these global connections.
     + Sea Ice is also focused on global connections, for example, via the CLIVAR mid-latitude weather connections task team (Steve, Uma & Jennifer all part of this group).
     + Is another “branch” of the LIAT needed to focus on these kinds of stakeholder connections/communications?
     + The Land Ice AT probably has everyone it needs. It may still need a geodesist.
     + Caspar asked if the SSC could task the LIAT with the development of the Knowledge to Action/communication activities for the year 2 plan. Bob agreed that these could be developed.
     + Henry emphasized that the SSC could support the ATs by holding the long-term vision for the SEARCH ATs – looking beyond year 2 and across the ATs.

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  + A shared SEARCH elevator speech used by everyone
  + Making sure that wherever Action Team websites are housed that it seems like you are on a centralized SEARCH website.
* Convening a subcommittee focused on connecting all the pieces necessary for a well-branded SEARCH website was proposed.
* There is also value is SEARCH participating in/sponsoring panels/etc. at meetings. This is one way to support early-career scientist involvement, for example. Could more be done to support early career researchers?
* For the ongoing AON/AOS prioritization effort, Brendan will seek expertise/input from a NOAA professional with expertise in iterative evaluation assessments.
* Re: developing an Arctic Observing product, SEARCH could re-visit it’s top priorities, provide a brief summary/state of the field, ask if the priority questions have been resolved and identify what additional observations may still need to be done.

1. Review of Next Steps & Timeline
   * To ensure release of funds by March 2016, SEARCH’s Year Two Program Plan will need to be ready before the American Geophysical Union meeting (December 14th).