

Management Plan for SEARCH Program and Science Support Project
Deliberative Draft, Revised
Version: 19 June 2014



I. INTRODUCTION

This document describes a draft plan for management of the Study of Environmental Arctic Change Program and the science support project referenced in the pending NSF award PLR-1331083, “Collaborative Research: Research, Synthesis, and Knowledge Transfer in a Changing Arctic: Science Support for the Study of Environmental Arctic Change (SEARCH)”.

The funding of this award would provide the resources to hold an in-person “kick off” meeting that gathers the SSC, Action Team leads, and other key participants to finalize the details of the governance and management structures and processes required to manage SEARCH. This in-person meeting is a key element of the planned activities, required to develop the fine details of program governance and project management in a collaborative, efficient manner. However, the present document reflects the vision and planning of the SSC and Action Team leadership and lays out the framework and details relevant to project evaluation, that will then be finalized at the kick-off meeting, with subsequent implementation.

The structure of the SEARCH program requires a management approach that addresses two intersecting aspects: 1. Management of the activities of the PI, Co-PI, and sub-awards that are part of the project proposal PLR-1331083, and 2. Management of the larger SEARCH program as a whole, which includes the governance structure and science activities summarized in the proposal as well as part of the proposal activities themselves. This document primarily addresses the former, but includes key milestones and measures of success of the latter. To the extent that we are able to before the kick-off meeting, we will discuss program and scientific milestones that are tabulated for both management categories in Sections V and VI.

The remainder of this document includes:

Section II: Expected Outcomes of the Kick-Off Meeting

Section III: Roles and Responsibilities

Section IV: Internal Communications Plan

Section V: Year 1 Milestones and Timeline

Section VI: Years 2-5 Milestones and Timeline

Section VII: References and Relevant Literature

Appendix 1: Draft SEARCH Executive Director Position Description (from original proposal)

A larger, more detailed and integrated plan that covers all aspects of SEARCH program management will be developed after the kick off meeting, where the SEARCH SSC, Action Teams and additional participants such as representation from ACADIS will develop governance details as well as specific SEARCH science tasks for Year 1. This program plan will integrate considerations from strategic planning, governance, project management, and desired scientific outcomes (Figure below).



II. EXPECTED OUTCOMES OF THE KICK-OFF MEETING

The kick-off meeting will be an ‘expanded internal’ meeting comprised of the SEARCH SSC, Action Team leads, and other key participants (agency representatives, potential Action team members, ACADIS leadership, etc.); it will be the first time this group meets together in person.

The expected outcomes of the kick-off meeting will include:

- Draft terms of reference and roles for the SSC, Action Teams, and any initial *ad hoc* working groups (final version will integrate comments by NSF and other SEARCH partner agencies and others).
- Draft terms of reference and roles for SSC officers (final version will integrate comments by NSF and other SEARCH partner agencies and others).
- Agreement on needed SEARCH program achievements or products for the first year of this project.
- Agreement on a recruitment strategy for hiring the Executive Director, and for identifying and recruiting new SSC members and chair and Action Team members.
- Agreement on SEARCH activities (led by the Action Teams and SSC) for the first year, focused on those related to the SEARCH science goals but also including data management issues, AON-related tasks, and other cross-cutting activities.
- A re-defined role for an Observing Change Committee, or similar group, with consideration that an AON Coordinator will not be supported under this grant.
- A basis for trust and good working relationships between all the components of SEARCH leadership.

The first SEARCH annual program plan, as discussed in the introduction of this document, will be developed immediately after the kick-off meeting and will integrate considerations and best practices from strategic planning, governance, and project management literature (e.g., Olson et al. 2008; PMI 2013). The annual program plan will include a more comprehensive timeline and

milestones for all SEARCH science goals and activities, as well as an external communications plan.

The SEARCH annual program plan will be revisited quarterly through a formal review process by the SSC (via tele/web conference) and revised as needed; this provides a process by which the SEARCH program can be nimble and responsive to emerging opportunities (e.g., new funding, a new relevant science program, IARPC activities, etc.) or changes in stakeholder needs; decisions on whether to pursue new opportunities, however, will be measured against whether they are consistent with the vision, mission, and science goals. The program plan will be the guiding document not only for the general direction of the SEARCH program, but also for the day-to-day project management and monthly reports from the project office; this will provide a process and structure that ensures that all activities—whether of ARCUS, UAF/IARC, an Action Team, or an SSC member—are consistent with, and can be measured against, the strategic directions of the program. This kind of process helps guard against the common practice of organizations developing strategic plans that are quickly shelved and forgotten (PMI 2014).

III. ROLES AND RESPONSIBILITIES

All roles and responsibilities will be revisited once a SEARCH Executive Director has been hired and familiarized with the program.

The overall vision for the program will be determined by the SEARCH Science Steering Committee (SSC); the SSC will set priorities for the SEARCH Executive Director. Until the time that the Executive Director is hired and in place, H. Eicken, PI, will oversee all SEARCH activities:

Hajo Eicken, PI (UAF) *(It is expected that the role of PI will transfer to the SEARCH Executive Director within a year after Eicken's term as SSC chair ends in 2015).*

- Oversee implementation of SEARCH support structure.
- Work with the SSC and NSF to finalize the details of a process for search and hire of the SEARCH Executive Director and chair the search committee for Executive Director hire.
- Serve as a liaison between UAF/IARC administration and SEARCH program (within the context of this project).
- Work with and mentor the newly hired Executive Director for a smooth transition to the new SEARCH structure.
- Oversight of the sub-award (Action Teams) budgets.
- Direct activities of relevant UAF administrative staff supporting the project.
- As SEARCH SSC Chair, Eicken is also responsible for the overall scientific leadership of SEARCH by the SSC; this evolving role will be further detailed in a new SSC Terms of Reference document finalized after the kick-off meeting.
- Responsible for NSF or UAF/IARC grant and reporting requirements for SEARCH activities at the PI's institution.
- Responsible for brief monthly reports on UAF/IARC SEARCH activities as part of the internal communications plan (see section III, below).

Helen Wiggins, Co-PI (ARCUS)

- Responsible for the implementation of project office activities described in the proposal (meeting planning, SSC support, communications, etc.) and corresponding budgets.
- Supervision of ARCUS staff or any contract staff working on SEARCH tasks.
- Responsible for tracking project milestones, monthly reporting of SEARCH accomplishments, and internal communications plan (see section III below).
- Responsible for NSF or ARCUS grant and reporting requirements for SEARCH activities at the co-PI's institution.
- Responsible for brief monthly reports on ARCUS' SEARCH activities as part of the internal communications plan (see section IV, below).

SEARCH Executive Director

- A draft job description for the Executive Director (ED) is included in Appendix 1.
- In general, the ED will direct all activities of the SEARCH Science Office (see Figure 2 of the SEARCH proposal).
- The ED will also provide overall direction of the priorities of ARCUS' SEARCH activities. With the ideal ED candidate, this relationship would be one of a collaborative nature. Direct supervision of ARCUS staff, including all personnel decisions, will remain the sole discretion of ARCUS management.
- A Memorandum of Understanding that specifies the lines of authority between the SEARCH ED and ARCUS PI and ARCUS staff will be developed when the ED is in place.

Managing the aspects of SEARCH program and project management (the lines of authority between the project PI, SEARCH SSC Chair and SSC, ED, Project Office, etc.) will present challenges, as SEARCH is being developed as a true virtual collaboratory with involvement of dispersed institutions and administrative bodies. The development of the program plan, terms of reference, and other guiding documents will provide the necessary clarity to minimize difficulties and provide a structure that facilitates program success.

IV. INTERNAL COMMUNICATIONS PLAN

An "internal" communications plan will provide a process by which the activities of the SEARCH science office (including its Executive Director) can be tracked and shared with the other governance components of SEARCH (e.g., the SSC) or others. For now, this plan focuses on ARCUS, the SEARCH SSC Chair (Eicken), and the SEARCH SSC members. Once the entire SEARCH governance processes are finalized and populated after the kick-off meeting, this plan will be enlarged to include the Action Teams and any other SEARCH committees. The key aspect of the internal communications plan will be *monthly reporting of science office activities*, which will be shared with the SSC and Action Teams, and a version posted on a new section the SEARCH website (called 'dashboard reports'). The monthly reports will be developed by ARCUS and the ED. In addition, monthly teleconferences between science office components/personnel (ARCUS, UAF) will be scheduled in addition to monthly SSC teleconferences. We expect to deliver biannual interim reports to NSF, as well.

Note that an external communications plan for two-way communication between SEARCH and the wider research, agency, and stakeholder communities will be completed after the kick-off meeting and based on the key target audiences and science goals of the first year.

V. YEAR 1 MILESTONES AND TIMELINE

This will be refined, and merged with a program-plan timeline, after the kick-off meeting. Milestone dates assume a 1 July 2014 start date for the project. This timeline is not meant to be a comprehensive task list.

The first year will focus on populating the full SEARCH governance structure, SSC rotations, developing an annual program plan, and ramping up science activities. The milestones below are not focused on the scientific activities of SEARCH (which will be developed with the first program plan), but rather the internal management and processes. In that context, the measure of success is essentially: “how well have we met milestones and commitments, and did we get the work done on time and on budget?” (*sensu* Kesler and Kates, 2011).

In developing both milestones and measures of success, we incorporate guidance from NSF-DPP, which we group into the following categories (A-F designating overarching objectives and G-K designating outcomes at the end of the 5-year project)

- A. Definition of a successful SEARCH program;
 - B. Program highly regarded internationally;
 - C. Clearly defined mode of operation and functioning secretariat;
 - D. SSC addressing white paper recommendations from panels;
 - E. Identifying and mapping SEARCH-related research;
 - F. Engagement with research community to identify research needed to pursue thematic goals.
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- G. AON guided by rigorous design/optimization process;
 - H. Progress in understanding and synthesis of Arctic change research;
 - I. Research community and agency engagement in SEARCH;
 - J. International framework for interaction with other research activities;
 - K. Independent evaluation of SEARCH.

These are referenced in the timeline below and in Section VI.

TASK/MILESTONE	TIMEFRAME	NOTES
PHASE I: “ROLL OUT & RAMP UP”		
Announcement of SEARCH funding and launch of new activities	July 2014	
Regular SSC Teleconferences	July 2014 (Monthly)	Already ongoing; will continue on this schedule
Planning calls between SSC Chair & Project Research Associate (O. Lee) and ARCUS	July 2014 (Monthly)	Already ongoing; will continue on this schedule
Finalize plan for Executive Director (ED)	August 2014	

search, convene hiring committee.		
Announce Executive Director Position	September 2014	
Kickoff Meeting (*see section VI below)	September 2014	
PHASE II: FINALIZE GOVERNANCE		
Finalize Terms of Reference for SEARCH committees (SSC, Action Teams, etc.) with input from NSF and others (C)	October 2014	Role of IPMC will need to be resolved, as well; and strategy for selecting next SSC chair (and any executive committee roles).
Finalize first Annual Program Plan (*see section VII below) (A, C, F)	November 2014	Includes well-defined desired outcomes (A)
Action Team Membership Fully Populated (C, I) -Action Teams to include researchers who are capable of serving as “bridges” between different communities (Understanding Arctic Change Task Force Report, 2012)	November 2014	
Action Team teleconferences begin	November 2014	
Rotation of some SSC membership (C)	November 2014	
SSC Decides on Nomination for new SSC Chair	December 2014	
Executive Director hired (C)	January 2015	
PHASE III: SCIENCE ACTIVITIES & FINALIZE TRANSITION TO NEW STRUCTURE		
Action Team science tasks underway (H)	November 2014-ongoing	Initial tasks likely to involve compiling background materials for synthesis
Begin monthly reporting on SEARCH tasks & activities (C)	November 2014	These reports will be developed by ARCUS, and also posted to the SEARCH website
Launch communications activities (e.g., mailing list, newsletter, new website functions, etc.) (I)	November 2014	Guided by the external communication plan, to be developed as part of the annual plan
Finalize SEARCH-related staff hires or contract hires at ARCUS	December 2014	
AGU Fall Meeting	December 2014	Likely will plan for SEARCH Town Hall, SEARCH session/poster/presentations, side meetings
Holidays	Late December	Everyone take a break!

	2014-early January 2015	
SSC Member rotations	January 2015	
Observing Committee rotations	January 2015	Committee role/rotations dependent on new Terms of Reference
First Quarterly Review of Program Plan; Revisit governance and internal management process; revise as needed (A, C)	March 2015	Review by SSC, Science Office
SSC Chair rotation	April 2015	Outgoing SSC Chair available to stay on in 6-12 month “past chair” role if part of governance structure finalized in fall 2014
Quarterly Review of Program Plan	June 2015	Review by SSC, Science Office
Annual Report to NSF	July 2015	Will include budget and annual plan for following year
New Incoming SSC Chair	Summer 2015	
Develop and distribute ‘annual report’ of SEARCH activities (A, C)	July 2015	
Quarterly Review of Program Plan	September 2015	Review by SSC, Science Office

VI. YEARS 2-5 MILESTONES AND TIMELINE

In the mid- to long-term (i.e., the latter three years of project duration), more specific milestones will emerge or change as the planned activities get underway.

TASK/MILESTONE	TIMEFRAME	NOTES
Development of recommendations for scientific activities that cut across Action Teams based on an analysis of SEARCH Panel white papers (including tracking of science commonalities between different activities mapped by the program) (D)	Years 1-2	
One or two conceptual studies and manuscripts to identify paths of effective knowledge exchange on Arctic change and a framework to anticipate and respond to Arctic change (E)	Year 2	Guided by SSC; developed by Action Teams
SEARCH AON white paper translated into specific guidance to AON PIs, NSF and other agencies on observing system	Year 2	Will require collaboration of NSF and other agencies.

implementation, including a mapping of ongoing activities onto priorities. (E, G)		
Activities implemented to lead up to Arctic Observing Summit 2016 (B, G, J)	Years 1-2	Will involve international partners and stakeholders
Assess engagement of research community and support of agencies and use these measures to guide future SEARCH strategy (I)	Year 2	
Track/map SEARCH-related research by developing/adapting measures of interdisciplinary synthesis and knowledge integration (Porter and Rafols 2009; Hicks et al. 2010) (E, H)	Years 2-4	This activity will also foster synthesis
External review of SEARCH program (K)	Year 2	
Work with other agencies and private sector to develop broader model of funding support of SEARCH activities and science office (C)	Years 2-3	
Identified specific data set collections and information products developed jointly with ACADIS and other data centers that allow synthetic evaluation of Arctic change and enhance understanding of key processes (H)	Year 2	Initial focus on permafrost
Action Teams and Observing Change Panel (or similar committee) evaluate status of AON (G)	Years 2-5	
Secured funding in support of Knowledge Exchange fellowships and meetings as a measure of broader agency and private sector support (I)	Year 2	
Progress in observing and understanding Arctic change is tracked by the Action Teams; this in turn is translated into specific research activities fostered or spawned from Action Teams (E, F, H)	Years 2-5	
Development/maintenance of partnerships with relevant foreign country & international programs; work with ISAC and other international bodies to form alliances for studies of Arctic change (J)	Years 2-5	
White paper on what insights from observations & predictions of Arctic change imply for Arctic policy at the national and international level (B)	Year 2-3	
Action Teams, SSC and Panels/Working Groups obtained support of Arctic Futures	Years 4-5	

meeting and process leading up to meeting (I, J)		
Each Action Team produced a culminating product(s) at the level of a review paper, published volume or equivalent to summarize activities and point to the future (H)	Year 5	

VII. REFERENCES & RELEVANT LITERATURE

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APPENDIX 1. DRAFT POSITION DESCRIPTION FOR SEARCH EXECUTIVE DIRECTOR

Draft as of January 2013 (Submitted with SEARCH Proposal)

The Executive Director, reporting to a SEARCH Science Steering Committee, will perform program management functions and forge cooperative relationships between academia, agencies, and stakeholders.

Specifically, the Executive Director will work with principals of the SSC and with Action Teams formed around the SEARCH five-year goals. He or she will work with the SSC to develop annual program plans to lay out measureable milestones for each year.

The Executive Director will also provide supervision of an Arctic Observing Network (AON) Coordinator, who will ensure that the interagency AON program is meeting the needs of the scientific and stakeholder communities.

Key Responsibilities

Build solid and thoughtful relationships with a broad range of SEARCH stakeholders

In partnership with the SSC provide leadership to and strategic direction for the program to carry out its mission; pursue established objectives and, over time, develop new responses to challenges and opportunities as they arise

Pursue and broaden existing agency alliances, develop relationships with untapped organizations that fit with the SEARCH mission

Monitor key developments that affect SEARCH interests, communicate implications to the SSC, with recommended action

Assume responsibility for ongoing evaluation of SEARCH program quality and effectiveness

Monitor and protect assets and operation so that the program remains in good financial health; continually assess the efficiency of management systems, both financial and programmatic

Support an open and participatory process

Assure an appropriate level of public visibility for SEARCH by effective speaking and writing

Identify ways to enhance communication across disciplines and constituencies to insure inclusiveness and cohesiveness of message and intent.

Personal Characteristics

Open-minded, with the flexibility necessary to provide direction in an evolving organization; comfortable with a strong and sustained diversity of opinions

Intellectually curious, with a willingness to work with and learn from others

An inspiring and service-oriented leader who has a long-term vision and can effect change, capable of imparting credibility, trust, integrity, enthusiasm and can motivate others

Good listener and consensus-builder, able to balance diverse perspectives and agendas while maintaining a sense of common purpose

A strategist and tactician who can anticipate and act on events and opportunities of benefit to the program