

Charting the Course for a  
**New England Arctic Network**  
(NEAN)

Materials from the kick-off event  
October 3, 2018

The University of New Hampshire  
Durham, NH

[nearctic.net](http://nearctic.net)

#neanconvergence



## Acknowledgements

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Please contact [katharine.duderstadt@unh.edu](mailto:katharine.duderstadt@unh.edu) or [info@nearctic.net](mailto:info@nearctic.net) with questions or comments.

Authors: Katharine Duderstadt, Robin Alden, Paul Berkman, Jennifer Brewer, Jack Dibb, Larry Hamilton, Ruth Varner, Cameron Wake.

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## I. Introduction

This report summarizes discussions from the October 3, 2018 kickoff meeting of the **New England Arctic Network (NEAN)** at the University of New Hampshire (UNH). This event served as a follow-up to the March 2018 event, "Preparing for a Northwest Passage: a Workshop on the Role of New England in Navigating the New Arctic" (NSF #17443460). Both events pair two of NSF's 10 Big Ideas, *Navigating the New Arctic and Growing Convergence Research at NSF* to address socioeconomic and environmental links between New England and the Arctic.

The consensus among workshop participants is that a regional, multi-institutional network based in New England will uniquely address links between Arctic change and the natural, social, and built systems within the North Atlantic Arctic region. The New England Arctic Network combines the wealth of academic expertise in Arctic research across New England with researchers, stakeholders, and external partners concerned with environmental, economic, and social impacts, providing an ideal community for anticipating and responding to Arctic change and its impacts on the eastern coast of North America.

The specific objectives of the October 3, 2018 kickoff event were to:

1. Develop the foundation for a shared vision for the network
2. Discuss opportunities for collaboration in research and education
3. Identify specific research initiatives to initiate convergent collaborations

The group reiterated the urgent need to expand the nation's focus to study and respond to change associated with the North Atlantic sector of the Arctic, including New England and the Gulf of Maine. A regional approach has an ideal structure to provide leadership in supporting science and informed decision-making in the Arctic. A strategy based on the United Nations Sustainable Development Goals that features international, interdisciplinary, and inclusive elements will enable the New England Arctic Network to contribute to science policy and options for informed decision-making. Engagement among representatives involved with science, traditional and practical knowledge, decision making, policy, and governance will foster transformative research, collaborative learning, and policy development.

Education programs will be structured around New England Arctic Network collaborations, sharing existing opportunities, and one-on-one relationship building. Research initiatives will be organized around working groups, to identify and define collaborative convergent projects related to Arctic change and to build teams that will successfully seek out sources of support to conduct projects at the intersection of Arctic natural and built environments and social systems.

Complete notes, presentations, and materials from this NEAN event are available at [nearctic.net](http://nearctic.net).

## 2. Developing a Foundation for a Shared Vision

The original vision for New England Arctic Network was drafted as part of an NSF – Research Coordinated Network (RCN) proposal submitted on 1 May 2018. While we now know that the proposal was not selected for funding, we are still waiting to read the individual and panel reviews. As a result, the discussion below represents an interim step and will be integrated with what we learn from the reviews. We expect to share a more complete version of our New England Arctic Network vision, goals, and objectives soon after we read through the reviews. Our plan is then to resubmit some form of the New England Arctic Network RCN proposal in response to the recent Navigating the New Arctic solicitation (proposals due February 14, 2019)

Our original goal was to **foster connections and research collaborations among people living and working in the North Atlantic Arctic via the development and evolution of the New England Arctic Network**. To pursue this goal, we proposed three broad objectives:

- Identify and coordinate convergent, North Atlantic Arctic research efforts;
- Engage Arctic and other North Atlantic coastal communities; and
- Communicate findings broadly across the New England Arctic Network and beyond

The broad goal and objectives provided a framework to discuss what the vision for the New England Arctic Network should be. Overall the comments and discussion at the October 3<sup>rd</sup> meeting supported the original goal/objectives, but provided additional detail and perspectives. These are summarized below:

1. What is the spatial extent of the network? This was a tension in the original proposal, and this point will likely be mentioned in the reviews. The discussion confirmed that there is considerable value and opportunity for New England individuals and institutions that are actively focused on the Arctic to collaborate more frequently and effectively. If we rise to this challenge – New England could be as strong a region as any in the USA in Arctic expertise and knowledge. And while our focus will still be on the North Atlantic sector of the Arctic (this makes sense because we are filling a critical gap) it does not preclude work in the other regions of the Arctic, nor does it preclude work on mid-latitude issues that are significantly influenced by change in the arctic (e.g., sea level rise in the northeast US; changing vernal windows in mid-latitudes)
2. There are emerging anchor institutions for New England Arctic Network. These are currently represented primarily by education and research institutions; these relationships need to be strengthened. We should also work to broaden the sectors represented by these anchor institutions. Individual members also need to be broadened beyond primarily academics to include other non-governmental organizations, government (at multiple levels), and business.
3. There were many activities or tasks identified that the New England Arctic Network should consider to enhance collaboration across New England. This includes (in no particular order):
  - a frequently updated directory of who is doing what, where in the Arctic
  - smart and effective forms of information and data exchange; made accessible to researchers, decision makers, Arctic residents, etc.
  - engage stakeholders not only in the Arctic, but those who are Arctic impacted
  - enhance interdisciplinary activities (proposals, research, and many other things)

- connect efforts to the UN's Sustainable Development Goals
- operate across a continuum of urgencies (over crisis to sustainability time scales)
- improve research efficiency through sharing/use of observations platforms, engagement, education
- work hard at being inclusive
- collaborate on observation networks and data sharing
- host events; have different institutions across New England host those events; we need to spend time getting to know each other. Perhaps pursue an east coast version of UW Arctic Encounter Symposium

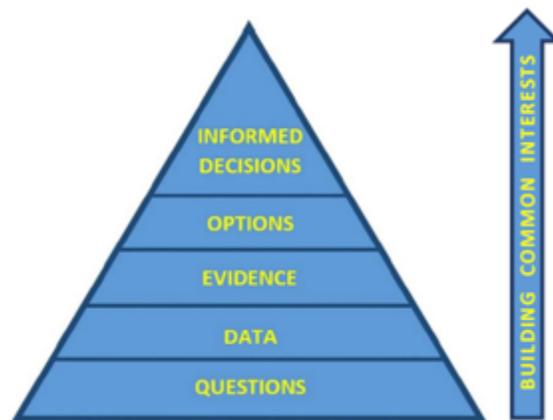


### 3. Science Diplomacy

*(ask Paul to edit)*

Paul Berkman discussed the potential for the New England Arctic Network to contribute toward science diplomacy and informed decision-making in the new Arctic. A regional entity such as NEAN provides a sweet spot in granularity that is small enough to be free from the geopolitics of national deliberations, yet large enough to address diverse interests.

The Arctic as a system has already changed, largely because of sea ice melt, driving the need for a blend of science and diplomacy to assess and adapt to associated risks. Paul Berkman presents a conceptual model where science and diplomacy are a process, with the apex the goal of informed decision-making. Science can pursue the question, data and evidence required to provide holistic options, without advocacy, for diplomacy. An interdisciplinary, international, and inclusive approach is essential to balance national interests with common interests and benefit people on a global scale and throughout generations. In addition, there is a need to think across spatial scales, from local to global, as well as across timescales, representing a continuum of urgencies from security to sustainability which requires thinking over many generations.



Adapted from Figure S2 of [Berkman et al. \[2017\]](#)  
(also at <https://sites.tufts.edu/sciencediplomacy/policy-forum/>)

Science, with its objectivity, has a unique capacity to build on common interests. Regional networks such as NEAN, focusing on the Arctic and based on the United Nations Global Goals for Sustainable Development, have an opportunity to pursue the science needed to inform decisions aimed at promoting cooperation and preventing conflict. This science-based network can provide leadership by asking questions that resonate with stakeholders, compelling them to find solutions. Policy frameworks such as the Arctic Council’s “Agreement on Enhancing International Arctic Scientific Cooperation”—negotiated and developed by ministries of foreign affairs yet with “science” in the title – can provide an initial opportunity for NEAN to participate in the global dialogue between the diplomats and the scientific community.

## 4. Public Engagement

*The New England Arctic Network recognizes that we need to engage with communities that are or will be impacted by Arctic change.*

Network members have diverse understandings of what publics they might engage with, what form engagement might take, and the benefits of such engagement. Engagement among those involved with science, practical knowledge, decision making, policy, and governance is a pivotal design feature of a NEAN that fosters convergent research, collaborative learning, and policy development. At the same time, causal chains among these groups vary widely, resulting in diverse mental models, perspectives, and starting points for engagement. Mechanisms for facilitation and capacity-building will therefore also be varied. Network strategies to enhance and accelerate engagement need to be flexible and adaptive. They need to operate and inform multiple levels and venues of network activity. Many network members understand that engagement is necessarily a mutually cooperative process in which all parties are potentially both knowledge makers and knowledge users (rather than a one-way process of science-to-application) and a few have experience operationalizing this approach. However, many groups need further support in order to move forward with effective implementation. Options for next steps include:

- 1) Seeking expertise in science-public engagement.
- 2) Designing and seeking funds for engagement fellowships. These fellowships might resemble short term staff positions or skill development opportunities for individuals wishing to develop engagement skills. Fellowships might be designed for university faculty, staff, or non-academic partners.
- 3) Seeking funds for some array of network capacity-building activities, trainings, workshops, field visits, and campus visits. These events could be designed by a team of staff, fellows, network members, and/or engagement partners. They could also be designed through a competitive proposal/review process.



## 5. Education, Training, and Outreach

We learned how much each individual institution is doing regarding formal and informal education as well as outreach related to their Arctic activities. The breadth and depth of these activities are impressive and incorporate stakeholders from both the public (K-12, museums, science centers) and academic (undergraduates and graduate students) arenas. We expect that individual institutions will continue to do this work. However, we encourage interested institutions to expand their reach as well as partner in new ways with the New England Arctic Network. network.

We propose three structural areas to help manage New England Arctic Network education and outreach:

1. Network-wide collaborations
2. Sharing what each NEAN partner is doing
3. One-on-one relationship building

The Education and Outreach Working Group (NEAN EOWG) led by Ruth Varner (UNH), Cameron Wake (UNH), Cara Condit (Coast Guard) and Seth Campbell (UMaine) will begin to build on these areas.

1. Network-wide collaborations  
We propose to build co-organized educational opportunities like: a joint Arctic minor program for undergraduates; field training programs, summer programs & workshops for students, K-12 teachers, and other professionals; regional conferences, regional REU and RET programs; student exchanges among Arctic communities and network institutions.
2. Sharing of existing programs: The NEAN network, through our list serve and web presence, is an opportunity for institutions to be able to reach out beyond their usual audience to include and share upcoming Arctic related events, courses and activities. It is important that at annual meetings of the network include sessions focused on education and outreach, involving talks that highlight new projects or recent successes and poster sessions for all to present education and outreach projects.
3. One-on-one relationship building: We expect that once network members have a better idea of what each other is doing in this area of education and outreach they will reach out to each other to look for opportunities to work on specific projects. The NEAN EOWG can also communicate with the NEAN community about potential funding opportunities for this work.
4. Pursuing a new Thematic Network on “Regional Collaboration” through University of the Arctic

## 6. Research Working Groups

We heard much enthusiasm about creating a number of subgroups to sustain and build on the momentum the New England Arctic Network is developing. The number of these subgroups, and their focal areas, are expected to change over time. We also anticipate that many New England Arctic Network members will be interested in being active participants in more than one subgroup, this is great and we will do what we can to facilitate.

### 6.1. Working Group Topics

Initially, based on discussion at the 2 large meetings, we are suggesting that 6 working groups be created; Stakeholder Engagement, Education, and 4 different Research Topical Areas. Each of the Research WG's is meant to be quite broad to allow everyone to see a place for themselves in one or more of them. Individuals from the New England Arctic Network community can sign up for one or more of these working groups at [nearctic.net](http://nearctic.net) ([direct link to signup](#)).

Working titles of the four NEAN Working Groups are:

- R1 Links between Arctic change and infrastructure from New England to the Arctic
- R2 Links among Arctic warming, permafrost, hydrology, coastal processes, and communities
- R3 Observing the physical and biological impacts of Arctic change on the Arctic Ocean, Western North Atlantic, and Gulf of Maine
- R4 Connections between Arctic and mid-latitude communities; Sharing lessons learned

Example of initiatives each group might tackle are listed below, noting that the foci of these groups may broaden, or sharpen, based on discussions among members. And it is certainly possible that additional working groups will form in the future as interests within NEAN evolve.

- R1 Documenting infrastructure at risk from rising sea level and coast erosion. Mitigation/protection of at-risk infrastructure. Development of new/enhanced infrastructure to accommodate increased marine traffic. Socio-economic assessment of all the above (what gets “saved” or improved, where does new investment go, who directly and indirectly benefits, who is adversely impacted, how are these decisions made and funded, etc.)
- R2 What happens to the coupled water and carbon cycles when more of the water stays liquid year round? What are the direct impacts of permafrost thaw and altered hydrology on Arctic communities? How do these changes modify the ecosystems and ecosystem services communities rely on?
- R3 Arctic change seems to be having major impact on physics and biology of Gulf of Maine, and presumably all waters between there and the high Arctic, but the connections are not well understood. More spatially distributed observations, using a range of established and emerging technologies, are required to understand the processes controlling these linkages, and to provide early warning of future, perhaps unexpected, changes. Where should sensors be sited for biggest, fastest, return? Which technologies should be

avored? What are the trade offs between many, simpler, cheaper devices between a few very sophisticated and expensive instruments or rovers?

R4 This group is meant to tackle the idea that the Arctic is likely the last frontier, ripe for exploitation. How can Arctic communities be empowered to ensure that they benefit from increased activity in their homes? Tourism and resource extraction has potential to severely degrade the Arctic environment, with profits accruing to distant corporations/nations. How can the historic colonial pattern be avoided this time? On the other hand, Arctic communities (or at least some members of them) see the opening of the Arctic as potential economic boom and their desires for enhanced prosperity and security must be recognized. Can the Arctic be developed in a way that preserves adequate ecosystems to support traditional communities and cultures and enhances their situations?

We note that R3 is already off and running, lead by Jen Miksis-Olds and Neal Pettigrew. All of the other research WG have one individual willing to co-chair the group, but they all need help. Please register your interest in any/all of the WG, and especially let us know if you are willing to help get one or more of them off to a roaring start.

## 6.2. Working Group Criteria

The *primary objective* of each New England Arctic Network Working Group (WG) is to identify and define collaborative convergent projects related to Arctic change and their impacts on the broadly defined focus area of the specific WG. The *goal* is to build teams that will successfully seek out sources of support to conduct the project(s). This document specifies the criteria and protocols for these Working Groups.

I. Working Groups should consider framing the challenge / issue by:

- Identifying and engaging stakeholders to understand how impacted communities view the challenge(s) and what they want to know in the near and longer term (stakeholders can, and should be encouraged to, join the WG).
- Describing the current knowledge of the topics based on previous work by, and experiences of, members of WG and the broader literature.
- Defining key gaps in that knowledge base and how to close such gaps most efficiently.
- Assess whether the WG has the necessary skills and tools to make swift progress, then strive to strength team by inviting additional experts to join the WG.

II. Working Groups are expected to generate ideas that can serve as the basis for proposals and/or pitches to foundations for funding of projects, seek out all such sources of support, and respond to announcements of opportunity. It is likely that self-selected subgroups will form within WG to develop specific proposals.

III. Suggested criteria for creating/maintaining a Working Group include:

- WG must have at least two co-Chairs willing to lead for a minimum of one year.
- WG must have at least two additional members.

- WG should strive for multidisciplinary membership and actively seek non-academic members.
- WG should meet at least quarterly, ideally monthly.
- One WG member should take notes during each meeting. Notes should be posted to the NEAN website within a week after each working group meeting. Notes should include:
  - Date of meeting/call.
  - Participants (names and affiliations).
  - Topics discussed (can be a list – notes do not need to be word-for-word).
  - Decisions that were made.
  - Agreed upon next steps, who is responsible for them, and what the deadlines are.
- Each WG Chair or designee should present an update on their work at NEAN semi-annual meetings.
- In order to join a WG, individuals simply need to contact either co-chair and request being added.
- New members of any WG will automatically be considered members of NEAN and will be added to mailing lists so they will be made aware of all network activities.

## 7. Structure and Tools for Collaboration

Many recommendations from the meeting focused on enhancing communication across the network. NEAN will initially implement the following structure and tools in order facilitate information sharing and collaboration, with the expectation that these activities will evolve over time. This structure will leverage shared resources and opportunities to address NEAN-wide collaborations and encourage one-on-one relationship building. In addition to smart information sharing, participants will have the opportunity to communicate current work (in-person and virtually) through seminars, topical based meetings, and larger workshops and symposiums.

### *7.1. New England Arctic Network website and monthly newsletters*

The New England Arctic Network website, [nearctic.net](http://nearctic.net), will serve as a portal for virtual collaborations, evolving according to network needs. Information will include:

- An archive of past meetings, workshops, and activities.
- Announcements of upcoming network and Arctic-related events, including seminars.
- Links to institutions and individuals within the growing New England Arctic Network community.
- Access to Education, Stakeholder, and Research Working Groups.
- An updated list of funding opportunities.
- A New England Arctic Network Discussion Forum.
- Links to Arctic sites such as [IARPC Collaborations](#).
- Links to external datasets and data protocols.

Monthly email newsletters to the New England Arctic Network community will highlight upcoming events, new funding and student opportunities, upcoming proposal and abstract submission deadlines, and research from the network community.

The New England Arctic Network website is currently being hosted by UNH on the OpenScholar platform. To address limitations of this platform, links are provided to more robust community collaboration resources such as [IARPC Collaborations](#), the NSF [Arctic Data Center](#), and [SAON](#).

*7.2. Targeted Directory of Human Infrastructure and Resources:* There has been a consistent call for ways to rapidly locate and identify the unique tools, methods, and ways of thinking used by individual members of the New England Arctic Network community in Arctic research. In addition, many institutions within the network host programs, facilities, and organizational structures that could more widely benefit network initiatives or serve as models for new projects. The NEAN website will provide external links to both institutional and personal webpages along with simple taxonomy searches.

*7.3. Identifying Existing Networks, Databases, and Resources to Improve Efficiency:* New England Arctic Network participants have emphasized the need to identify best practice for data collection, management, and archiving to support collaboration and facilitate data sharing. These practices include sharing knowledge with stakeholders and those impacted by change (e.g. policy makers, communities, voters). As a consequence, information needs to be made accessible in

many different formats, especially when bringing research back to local communities. While NEAN will strive to develop strategies for data sharing, including recommendations for data access, formats, and metadata, it will not serve as a stand-alone data repository. Instead, the NEAN website will provide links to data archives outside of this network.

*7.4. Discussion Forum:* A New England Arctic Network discussion forum is available through the NEAN website (using the Boardhost platform) and includes sub-forums for each working group. Participants can view the discussions without signing in, but will need to create an account in order to post to the form or receive email updates.

*7.5. Student Opportunities:* While the New England Arctic Network Education Working will strive to enhance existing programs and develop new Arctic education and training initiatives, it is anticipated that many ad hoc opportunities will arise for student research and scholarship. Please send announcements for opportunities to [info@nearctic.net](mailto:info@nearctic.net) to post on the website or contact New England Arctic Network community members directly who might be interested.

*7.6. Semi-Annual New England Arctic Network Workshops/Conferences:* In-person or virtual gatherings of the full network community two times per year will allow the network to grow, ensure continuity of progress among the working groups, and enable multi-institutional response to anticipated Arctic funding opportunities. Feedback indicates a desire for large scale conferences, such as an East Coast version of the Arctic Encounter Symposium at the University of Washington, and the New England Arctic Network will continue to pursue support to fund these types of large events. While UNH plans to take advantage of internal support to continue to strengthen the network, it would be valuable to have the next meetings hosted at other institutions around New England. Until the network becomes fully funded, it is clear from the past two workshops that many participants are willing to support their own travel to attend one-day meetings.

*7.7. Working-Groups and Topical Meetings:* Ideally, working groups will meet monthly following the model of the virtual meetings of IAPRC Collaborations on the Zoom platform. In addition, a low-cost means of encouraging collaboration and engagement might include 1-day topical in-person gatherings that provide a venue to present current work of researchers, students, and community members. It will also be useful to take advantage of large meetings such as AAAS, AGU, AAG, AMS, OSM, etc. to host science meetings and informal social gatherings of New England Arctic Network researchers. As opportunities arise, please share via the network website and monthly newsletters.

*7.8. Shared Seminars:* Many New England institutions host Arctic-related seminars throughout the year. New England Arctic Network encourages sharing these seminars as virtual webinars or as videos linked through the network website. UNH plans to open its Arctic Seminars to network members and will seek permission from speakers either to attend virtually or to post as a video archive.

*7.9. Social Media (#neanconvergence):* The New England Arctic Network currently has the following social media presence

Website: [nearctic.net](http://nearctic.net) (alias for <https://mypages.unh.edu/ne-arctic-convergence>)

Twitter: New England Arctic Network @neanconvergence  
Facebook: New England Arctic Network @neanconvergence

*7.10. Growing the New England Arctic Network:* There are many opportunities to pursue funding to develop the NEAN. UNH plans pursue additional funding sources to support this growing network, such as NSF RCN or NSF NNA Track 2. It would also be worthwhile to consider teaming with international partners for New England Arctic Network submissions to NSF's AccelNet or EU's Horizons 2020. In order to achieve sustainable support for the network, it is important to include some level of funding for network activities in individual proposal budgets. This support could be to fund workshops, working group meetings, seminars, or outreach events hosted under the New England Arctic Network umbrella at PI/co-I institutions or could add to the central operating budget (currently at UNH but potentially branching off to another institution or as a regional NGO). Example text for Broader Impacts and Budget Justifications are provided in subsequent pages. Please share additional ideas and examples as they develop.

## **8. Next Steps**

The best means of growing and sustaining the success of New England Arctic Network will be to tackle interesting and thought-provoking questions that have long term value. While developing initiatives, it is critical to maintain a convergent solutions-oriented approach, holistic methodology (international, interdisciplinary, and inclusive), and strive for justice, equity, and sustainability.

The New England Arctic Network has been established.

It's time to start acting like a Network!

Below are some examples for text that might be included in the Broader Impacts or Budget Justifications sections of future proposals to help support New England Arctic Network activities. Please share additional ideas and examples as they develop and let the network organizers know if funds have been requested to support the network.

### **Broader Impacts**

This project will support research capacity-building activities associated with the New England Arctic Network (NEAN). This inclusive and interdisciplinary network of researchers, community stakeholders, and external partners leverages expertise throughout the region to pursue specific and compelling convergence research initiatives linked to the Arctic. By expanding research, scholarship, and training opportunities beyond individual institutions, NEAN strives to attract diverse and innovative leadership to promote the sustainable develop and resilience of communities both within the Arctic and globally. Consolidating the methods, tool, and ways of thinking from multiple disciplines and research communities will enable convergent research at the intersection of social systems, natural environments, and built environments. This network will also share efforts to build and sustain long-term relationships with local communities and organizations in the Arctic and develop international research partnerships.

## **Budget Justification**

This project requests \$3500 to support a New England Arctic Network working group meeting concerning the theme of xxxxxx. (Travel for 10 participants: ground transportation \$1000, 1 night lodging \$1500; catering and venue \$1000)

The project requests \$3000 to support a 1-day stakeholder and community engagement event jointly hosted by the New England Arctic Network and *Stakeholder Organization*. The goal of this event will be to discuss expectations, objectives, and potential outcomes of this project, with a focus on identifying common research interests, initial planning, and strategies for data collection and analysis. (Travel for project co-Is and senior personnel: transportation \$300, lodging \$700; catering and venue \$1500; materials \$500; professional staff salary support \$500).

This project requests \$500 for a catering and materials to support an open community meeting of the New England Arctic Network at the Fall 2020 American Geophysical Union meeting in San Francisco, CA. We plan to request meeting space through the Arctic Research Consortium of the U.S. (ARCUS).

This project requests \$5000 to help support the organizations and administrative structure of the New England Arctic Network (nearctic.net). This includes supporting professional staff salary to development of web-based collaboration tools, organizing webinars and working group meetings, writing reports, and providing administrative support for network wide research development and education programs.

## Appendix A: Agenda

### Charting the Course for the New England Arctic Network (NEAN)

Wednesday October 3, 2018

The University of New Hampshire  
Memorial Union Building (MUB 330/332)

*Goal:* Explore activities and next steps for the New England Arctic Network, responding to links between Arctic change and North America's East Coast with a particular focus on the North Atlantic, New England, and the Gulf of Maine.

*Objectives:*

1. Discuss opportunities for collaboration in research and education
2. Develop the foundation for a shared vision for the network
3. Identify specific research initiatives to kick off convergent collaborations

*Products:*

- A plan for the New England Arctic Network
- Updated web presence to facilitate collaboration – [nearctic.net](http://nearctic.net)

8:00 Breakfast

8:30 **Introduction**

- Welcome and agenda overview – *Kathy Duderstadt*
- Brief Participant Introductions and Arctic research updates (1 min each)

9:00 **Follow-up from NSF NNA NE-Arctic Convergence Workshop** – *Kathy Duderstadt*

- NE-Arctic Workshop Report

9:15 **Developing a Foundation: New England Arctic Network (NEAN)** -- *Cameron Wake*

- Overview of proposed NSF North Atlantic Arctic Network (NAAN) RCN
- Preliminary discussions for a shared vision for NEAN

10:00 Break

10:15 **Science Diplomacy and the Role of NEAN**– *Paul Berkman*

- Integrating science diplomacy into NEAN
- The role of New England in informing national and global decision-making in the Arctic

10:45 **Stakeholder Engagement** -- *Robin Alden and Jennifer Brewer*

- Strategies for engaging stakeholders at the outset in planning research projects
- Leveraging existing relationships and building new connections

11:15 **NEAN Education and Training Activities** – *Ruth Varner*

- Presenting Arctic education initiatives at participating institutions
- Ideas for shared courses, seminars, research experiences, outreach activities
- Knowledge transfer and co-production of knowledge with local and Indigenous communities

12:00 Lunch

12:30 **NEAN Research Activities** – *Jack Dibb and Larry Hamilton*

- National priorities in funding Arctic research and upcoming opportunities.
- Where can interdisciplinary and inter-institutional collaborations most effectively enhance opportunities?
- How can this network strengthen current research efforts at participating institutions?

1:30 **Summary, Next Steps, and Conclusions**

- Recap of main ideas and next steps from the day's discussions
  - Developing a Shared Vision – *Cameron Wake*
  - Science Diplomacy – *Paul Berkman*
  - Stakeholder Engagement – *Robin Alden and Jennifer Brewer*
  - Education and Training – *Cameron Wake*
  - Research – *Jack Dibb and Larry Hamilton*
- Information Sharing, Communication, Products, Next Meetings – *Kathy Duderstadt*

2:00 Meeting Ends

2:30 **Environmental Science Seminar** – Dr. Susan Natali, Woods Hole Research Center  
“Shifting Carbon Dynamics in the Arctic and Implications for Global Climate”  
James Hall G46

**[nearctic.net](http://nearctic.net)**

**#NEAN**



This workshop is funded by NSF award #1744346 in support of NSF's 10 Big Ideas, specifically Growing Convergence at NSF and Navigating the New Arctic



## Appendix B: Participants

Robin Alden	Maine Center for Coastal Fisheries
Ted Ames	Maine Center for Coastal Fisheries Bowdoin College
Catherine Ashcraft	Natural Resources and the Environment, UNH
Robyn Barbato	Cold Regions Research and Engineering Laboratory
Paul Arthur Berkman	Science Diplomacy Center, Fletcher School of Law and Diplomacy, Tufts University
Jennifer Brewer	Geography, UNH
Elizabeth Burakowski	Earth Systems Research Center, UNH
Seth Campbell	School of Earth and Climate Science, University of Maine
Cara Condit	US Coast Guard Academy
Alix Contosta	Earth Systems Research Center, UNH
Zoe Courville	Cold Regions Research and Engineering Laboratory
Steve Couture	Administrator, NHDES Coastal Program
Eshan Dave	Civil and Environmental Engineering, UNH
Jack Dibb	Earth Systems Research Center, UNH
Jennifer Dijkstra	Center for Coastal and Ocean Mapping, UNH
Stacey Jarvis Doherty	Natural Resources and the Environment, UNH
Katharine Duderstadt	Earth Systems Research Center, UNH
Claire Eaton	Natural Resources and the Environment, UNH
Jessica Ernakovich	Natural Resources and the Environment, UNH
Diane Foster	Ocean Engineering, UNH
Chris Gerbi	School of Earth and Climate Science, University of Maine
Melissa Gloekler	Coastal Response Research Center, UNH
Jennifer Jacobs	Civil and Environmental Engineering, UNH
Larry Hamilton	Sociology, UNH
Natalie Kashi	Natural Resources & Earth Systems Science, UNH
Nancy Kinner	Civil and Environmental Engineering, UNH
Genevieve LeMoine	Peary-MacMillan Arctic Museum & Arctic Studies Center, Bowdoin College
Jeff Levine	City of Portland, Maine

Thomas Lippmann	Center for Coastal and Ocean Mapping, UNH
Jennifer Miksis-Olds	School of Marine Science and Ocean Engineering, UNH
Mark Milutinovich	Research Office, UNH
Hannah Munro	Earth Sciences, UNH
Susan Natali	Woods Hole Research Center
Jared Oren	Cold Regions Research and Engineering Laboratory
Erich Osterberg	Earth Sciences, Dartmouth
Michael Palace	Earth Systems Research Center, UNH
Donald Perovich	Thayer School of Engineering, Dartmouth
Clarice Perryman	Natural Resources and Earth Systems Science, UNH
Rebecca Pincus	US Naval War College
Theresa Ridgeway	Research Computing Center, UNH
Bianca Rodriguez-Cardona	Natural Resources and Earth Systems Science, UNH
Joe Salisbury	Ocean Process Analysis Lab, UNH
Kristen Schild	Climate Change Institute, University of Maine
Justine Stadler	EPSCoR, UNH
Ruth Varner	Earth Systems Research Center, UNH
Cameron Wake	Earth Systems Research Center, Sustainability Institute, UNH
Simone Whitecloud	Cold Regions Research and Engineering Laboratory
Gayle Zydlewski	Maine Sea Grant, University of Maine