

# BRIDGING ARCTIC GATEWAYS 2023

## COLLABORATION WORKSHOP REPORT



This report is based on work supported by the National Science Foundation under Cooperative Agreement No. PLR-1928794. It documents activities and outcomes from the 2023 Bridging Arctic Gateways Workshop. All opinions, findings, and conclusions expressed in this report are those of the authors and do not necessarily reflect the views of any organization that provided support for the project or the endorsements of workshop participant home institutions, the ARCUS Board of Directors, or other members of the ARCUS consortium.

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**Suggested citation:** Myers, B., Veazey, A., Buurman, H., & Heberger Marino, A. 2024. Bridging Arctic Gateways 2023 Collaboration Workshop Report. Fairbanks, AK: Arctic Research Consortium of the U.S.

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## ACKNOWLEDGEMENTS

We extend our sincere appreciation to each participant of the Bridging Arctic Gateways workshop for the generous contributions of time, energy, and ideas that have significantly enriched this project. The workshop's realization was made possible through funding from the National Science Foundation's Office of Polar Programs, coupled with additional in-kind institutional support graciously authorized by Nettie La Belle Hamer (University of Alaska Fairbanks), Kody Varahramyan (University of Maine), and Helen Wiggins (Arctic Research Consortium of the U.S.). Workshop planning, facilitation, and reporting were expertly led by Alice "Pips" Veazey, Anne Heberger Marino, Helena Buurman, and Brit Myers. Special thanks are also due to Missy Wallace for her invaluable staffing and logistics contributions throughout the workshop. We are also grateful to the many individuals at both the University of Alaska Fairbanks (UAF) and NREL Cold Climate Housing Center who welcomed workshop participants to the UAF campus and into their laboratories. Finally, thank you to B. Zeb Polly for his graphic design of this publication's cover.

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# Executive Summary

This report, supported by the National Science Foundation under Cooperative Agreement No. PLR-1928794, encapsulates the proceedings and outcomes of the 2023 Bridging Arctic Gateways Workshop. Hosted by the Arctic Research Consortium of the U.S. (ARCUS), the University of Alaska Fairbanks (UAF), and the University of Maine (UMaine), the workshop aimed to establish and strengthen Arctic research connections between Alaska and Maine. Participants, including notable researchers and experts, engaged in collaborative discussions, tours, and presentations. The workshop identified key focus areas for future research collaboration, spanning Arctic field testing, technical innovation, higher education collaboration, the blue economy, workforce diversity, climate resilience, and more. Addressing barriers and acknowledging the need for inclusivity, the report outlines next steps, emphasizing strategic planning, securing funding for reciprocal visits, and expanding the initiative's influence. The report underscores the workshop's significance as a foundational step in building a comprehensive, cross-regional Arctic research agenda.

## Introduction

Change is taking place at a rapid rate across the planet, especially in the northern latitudes. The Arctic Ocean is projected to experience ice-free periods as early as 2035, a development unimaginable just decades ago. Global patterns will shift as nations seek to redefine trade routes, capture tourism business and consider territorial claims. This monumental change impacts all manner of life in the Arctic and surrounding areas and has implications for the future of global transportation, economic development, energy, telecommunications, national security, international trade, tourism, and more. Maine and Alaska are home to world-class research organizations and serve as the United States gateways to this changing Arctic, sharing common characteristics of remote and islanded communities, low populations, economic dependency on natural resources and more.

In response to the evolving Arctic "domain", the Arctic Research Consortium of the United States (ARCUS), the University of Maine (UMaine), and the University of Alaska Fairbanks (UAF) have come together to lead "Bridging Arctic Gateways", a partnership seeking to establish and strengthen Arctic research connections between Alaska and Maine, identify shared regional issues and opportunities for research coordination, and to develop a shared Arctic research agenda that enables enhanced collaboration between these two U.S. Arctic gateway regions. Supported by a small workshop grant from the National Science Foundation, the initiative was launched with an in-person workshop held 15-16 November 2023 at UAF. This workshop marks the initial step in developing a strategic and shared research agenda through determining mutually beneficial collaborative research goals, objectives and strategies.

"Bridging Arctic Gateways" emerged as a collaborative endeavor between ARCUS, UMaine, and UAF after a series of events in 2021-2022 provided a unique confluence of institutional leadership meetings, enhanced network ties, and a shared vision for the future of collaborative Arctic research. A central figure in these events was Dr. Alice "Pips" Veazey who joined the ARCUS Board in 2019 while serving as the Director of the Alaska NSF Established Program to

Stimulate Competitive Research at UAF. In 2021, Dr. Veazey transitioned from her position at UAF to become the Director of the newly established Portland Gateway at UMaine.

Major staffing transitions of this kind are often a disruptive force within the diffuse U.S. Arctic research network. Institutional knowledge, capacity, and the personal relationships that enable collaboration are often lost or diminished when a faculty member assumes another position or leaves an organization. However, both Dr. Veazey's network-centric approach and her sustained involvement with the ARCUS consortium supported the continuation of her Arctic research community leadership and aided in the development of new collaborative efforts across geographic and institutional boundaries.

From 2021 to 2022, Dr. Veazey led the ARCUS Interdisciplinary Research Committee, addressing collaborative Arctic research challenges and integrating UMaine into the ARCUS consortium. Simultaneously, Dr. Diane Hirshberg from the University of Alaska Anchorage collaborated with ARCUS to organize the inaugural UArctic North American members meeting in 2021, aiming to foster stronger ties among U.S. affiliates of the University of the Arctic (UArctic). The UArctic Assembly showcased Senator Angus King's commitment to advancing Maine's identity as a U.S. Arctic gateway as well as the influence and leadership of the New England Arctic Network institutions. Among these institutions were UMaine, the University of New Hampshire, the University of Southern Maine, and Dartmouth College from the ARCUS consortium.

Returning from the Assembly meeting, the ARCUS Board and staff were eager to continue building stronger linkages between New England institutions and other ARCUS members. This topic became a prominent discussion item during the 2022 ARCUS Annual Meeting (Myers, Wiggins, & Sheffield Guy 2022) and prompted ARCUS to propose "Bridging Arctic Gateways" as a workshop undertaken through the ARCUS Cooperative Agreement with the National Science Foundation's Office of Polar Programs in 2023.

The NSF provided core funding to ARCUS for the workshop with extensive in-kind support further extended to the project by UAF Vice Chancellor for Research Nettie La Belle-Hamer and UMaine Vice President for Research and Dean of the Graduate School Kody Varahramyan. ARCUS worked with Dr. Veazey to establish a project charter and identify the workshop leadership team that included: Pips Veazey and Anne Heberger Marino (UMaine), Brit Myers (ARCUS), Helena Buurman and Missy Wallace (UAF).

ARCUS' role as a bridging organization allowed it to serve as a unique linchpin in advancing the project. With established, long-term connections among the Arctic researchers and institutions involved, the consortium aided in maintaining and leveraging cross-network ties, recognizing gaps in U.S. Arctic research community connectivity, and mobilizing resources and expertise needed to address the untapped potential inherent in collaborative U.S. Arctic research.

## Workshop Development: Planning & Preparation

Workshop development was informed by several **key principles** aimed at fostering collaboration and creating a meaningful experience for participants.

First, guided by the UMaine Portland Gateway's proficiency in **systems convening**, the workshop's leadership team meticulously crafted a workshop agenda (Appendix A) with several objectives. These encompassed generating broader awareness, sharing inspiration across campuses, cultivating partnerships, fortifying existing Arctic research connections, pinpointing shared regional issues, identifying opportunities for mutually beneficial coordinated research, and initiating the development of a shared research agenda. In short, this strategic approach aimed to facilitate expanded collaboration and cultivate a unified vision among participants.

Second, workshop leads concentrated on fostering initial connections across a relatively small number of participants representing several core organizations. This approach of a **minimum viable consortium** involves assembling the smallest group necessary to kickstart and sustain a partnership. Opting for a smaller group at the outset offers several advantages when launching a complex new initiative. In addition to streamlining communication, this close-knit environment facilitates swift decision-making, nurtures a shared understanding of goals, and supports the rapid exploration of potential challenges and opportunities. This small group acts as a sturdy anchor, ensuring a resilient and stable foundation critical for the initiative's subsequent expansion and engagement efforts.

Third, the goal of enhanced collaboration relies heavily on the engagement of well-informed and highly engaged participants who can **serve as ambassadors** and advocate not only for their own research but also for broader research initiatives across the circumpolar North. This first workshop sought people with a history of interdisciplinary research specializing in Arctic issues who excel in their respective fields and have a track record of successful collaboration across institutional, sectoral, and disciplinary boundaries. The selection process was iterative so that the research interests of the initial round of invitees informed a second round of invitations to researchers who could potentially serve as disciplinary counterparts to individuals from the opposite gateway region.

The workshop organizers are clear that the participant list for this first gathering did not try to address all perspectives of Arctic research for reasons listed above. Many perspectives, including those of Arctic Indigenous community members, industry representatives, government agencies, other institutions, and various research disciplines, are critical to the next steps as the team grows. The majority of the workshop participants are actively engaged with local communities and the collective group recognized the crucial importance of collaborating with Indigenous scholars and community members. Despite these limitations, the workshop successfully convened a minimum viable consortium of skilled interdisciplinary research ambassadors to launch “Bridging Arctic Gateways”, providing a strong base for future expansion, outreach, and engagement efforts.

## Workshop Activities & Outcomes

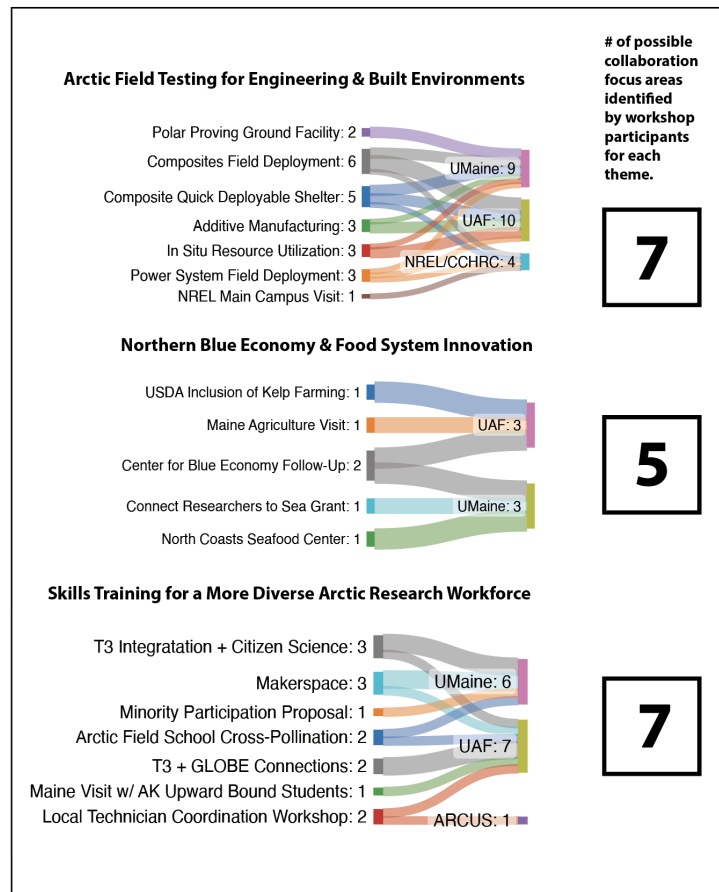
The workshop employed a multi-faceted and inclusive approach to co-create research themes and develop ongoing collaborative efforts.

Activities included:

- 1) A **Pre-Meeting Survey** (Appendix B) was conducted, seeking participant insights on existing and potential research ties between Alaska and Maine. The results, synthesized into thematic worksheets (Appendix C), guided subsequent small group discussions.
- 2) An **Introductory Online Meeting** provided a digital platform for participants to acquaint themselves and facilitated fine-tuning of the UAF attendee lineup based on UMaine interests.
- 3) In Fairbanks, UMaine participants had a firsthand experience delving into the cutting-edge research conducted at the University of Alaska Fairbanks (UAF) through a series of **Laboratory Tours**. This immersive exploration provided them with valuable insights into diverse fields, including glider technology, climate dynamics, and engineering expertise.
  - a) A visit to Dr. Seth Danielson's lab focused on glider technology, offering insights into cutting-edge tools and methods crucial for monitoring and researching Arctic environments. Understanding these technological advancements created common ground for further discussion exploring innovative approaches in data collection and analysis.
  - b) An introduction to Alaskan climate dynamics by Dr. Rick Thoman provided UMaine participants with a firsthand look at the complexities of the Alaskan climate system, enabling discussions informed by regional Arctic climate change impacts.
  - c) A tour of both the NREL Cold Climate Housing Research Center and UAF engineering facilities showcased expertise in addressing Arctic-specific challenges, emphasizing the practical application of engineering solutions. This exposure facilitated discussions on developing innovative materials to support sustainable and resilient infrastructures for use in both the Arctic and other extreme environments.
- 4) A brief **driving tour** was also undertaken to deliberately showcase the tangible and visible impacts of thawing permafrost on Fairbanks roads, homes, and infrastructure. Participants witnessed firsthand the environmental changes and challenges posed by the thawing permafrost, gaining a deeper understanding of the region's evolving landscape and its implications for ongoing and future research endeavors.
- 5) **Presentations** delivered by key speakers also played a helpful role in enriching the workshop's knowledge landscape.
  - a) Brenda Konar and Gwen Holdmann introduced topics related to Alaska's blue economy and mariculture, shedding light on sustainable practices and potential collaborative opportunities in this burgeoning field.
  - b) Cheryl Rosa, representing the United States Arctic Research Commission (USARC), shared essential perspectives on national Arctic research priorities. Her insights not only informed participants about overarching goals but also emphasized the importance of aligning collaborative efforts with broader national research objectives.
  - c) Michael Balazs enhanced the discussion with a presentation on community-engaged research, spotlighting the Alaska Coastal Cooperative's initiatives. Emphasizing community involvement in research, the presentation

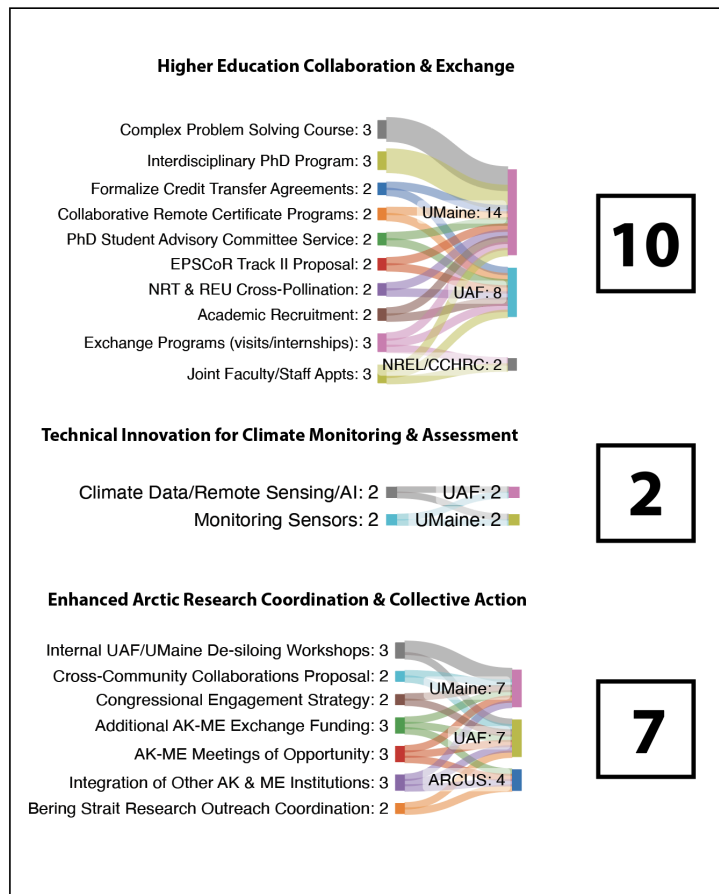
prompted discussions on the need for coordinated engagement with local communities.

- 6) During **small group discussions**, participants used **guiding worksheets** (Appendix D) with prompts and questions as frameworks for a more in-depth exploration of specific research themes. As new collaboration ideas surfaced during these discussions, **meetings of opportunity** were skillfully orchestrated to bring in other UAF expertise. These unplanned encounters between UMaine participants and a wider range of UAF faculty members provided a unique platform for participants to explore additional research themes beyond those explored in structured workshop sessions.
- 7) A **facilitated plenary discussion** served as a culminating activity on the final day of the workshop, leading to the **collective identification of promising topic areas for ongoing collaboration** and pinpointing contacts from each institution willing to lead activities (Fig. 1 & Fig. 2). Participants defined both short-term and long-term project timeframes, pinpointing potential obstacles for project sustainability and growth, and discussed upcoming meetings and events where “meetings of opportunity” might be used to bolster the alliance. This proactive and forward-thinking strategy underscores the workshop’s dedication not only to identifying collaborative priorities but also to laying a strong foundation for the effective implementation and growth of a wider partnership.



**Figure 1:** Activities identified for follow-up collaboration between ARCUS, UAF, UMaine, and NREL CCHRC workshop participants, grouped by thematic research area.





**Figure 2:** Additional activities identified for follow-up collaboration between ARCUS, UAF, UMaine, and NREL CCHRC workshop participants, grouped by thematic research area.

## Building Together: Barriers to Overcome

Workshop participants identified and discussed several barriers facing the ongoing Bridging Arctic Gateways initiative that will require concerted effort and innovative strategies to overcome. The group acknowledged that these challenges have been well-documented and are not unique to these projects. These challenges include:

- Funding Structures and Processes:** Navigating the intricate frameworks of diverse funding bodies such as NIH, NSF, DOD, and DOE as groups look to partner across projects and programs is challenging. The initiative will need to strategize on how to effectively work across these supporting institutions, considering the specific requirements and intricacies of each agency.

- **Human Capital and Champions:** Long-term success for this initiative will hinge on securing dedicated individuals and influential champions who are both committed to the initiative's objectives and also possess the influence to drive key decisions and garner support.
- **Internal University Processes:** Negotiating internal university processes marked by historical nuances, bureaucratic complexities, and cumbersome procedures is a significant barrier. The initiative must find ways to streamline these processes and foster a more agile and responsive environment.
- **Internal-External Interface Challenges:** A smooth interface between internal and external stakeholders is crucial. Ensuring that collaboration extends seamlessly beyond institutional boundaries demands strategic planning and effective communication strategies.
- **History of Colonialism and Resource Variability:** Recognizing and addressing the historical context of colonialism is imperative. Moreover, the variability and timeline of resources, particularly in Arctic communities, present challenges that need to be navigated with sensitivity and a focus on community well-being.

To tackle these barriers, the initiative will adopt a proactive stance, encouraging risk-taking and bold approaches. A creative mindset will be essential for devising innovative solutions to bypass or mitigate obstacles. Documenting and sharing successful strategies, including shared proposal templates, will help contribute to the collective knowledge base and foster a culture of collaboration and resourcefulness within the partnership. Overcoming these and other barriers encountered will require a multidimensional approach that encompasses strategic partnerships, innovative thinking, and a commitment to the initiative's overarching goals.

## Research Agenda Focus Areas

Post-workshop, organizers reviewed and synthesized the workshop notes and products generated during the event. This resulted in the development of a preliminary set of research focus areas that now lay the groundwork for future collaborative efforts between ARCUS, UAF, UMaine, and CCHRC.

Additionally, the focus areas identified will serve as a draft framework for the structured and purposeful engagement of other individuals and institutions with a shared interest in further developing collaborations between the U.S. Arctic Gateway regions of Alaska and the North Atlantic.

The research focus areas identified include:

- **Arctic Field Testing for Engineering & Built Environments**  
This theme focuses on conducting practical tests and experiments in the Arctic environment to assess the performance and suitability of engineering solutions and built structures. It involves field testing to understand the unique challenges posed by the Arctic conditions, such as extreme cold, permafrost, and remote locations. The goal is to

develop engineering and construction practices that are resilient and well-adapted to the specific challenges of the Arctic.

- **Technical Innovation for Arctic Climate Monitoring & Assessment**

This theme revolves around leveraging technological advancements, including the application of Artificial Intelligence (AI), to enhance the monitoring and assessment of the Arctic climate. It encompasses the development and deployment of innovative tools, sensors, and methodologies that integrate AI for gathering and analyzing data related to climate variables, ice conditions, permafrost dynamics, and other crucial indicators.

- **System Science Implications of Melting Ice**

Centered on the dynamic impacts of melting ice, this research theme explores the consequences of snowpack/snowmelt on terrestrial environments, advances in glaciology, climate modeling, and the vulnerability of tundra and boreal forests. The research seeks to unravel the intricate interactions between melting ice and the surrounding ecosystems, offering insights into the broader implications for the Arctic environment.

- **Arctic Law, Policy, Governance, & Security Strategies**

This research theme explores the interplay between Arctic policy, governance structures, and security dynamics, with a specific focus on shared challenges and joint efforts in the Alaskan Arctic and North Atlantic regions of the US. Investigating cross-regional implications of policy frameworks, governance models, and security strategies, the research emphasizes international collaborations, regulatory approaches, and diplomatic initiatives. It delves into the unique geopolitical dynamics and security challenges of both regions, aiming to identify synergies and areas of cooperation. Simultaneously, Arctic law addresses the complex regulatory landscape surrounding Arctic activities, considering indigenous rights, environmental protection, and international cooperation. This involves examining and developing legal frameworks tailored to the Arctic's distinctive geopolitical and environmental conditions. Collaborative efforts aim to establish effective and equitable legal structures supporting sustainable development and governance in the Alaskan Arctic and North Atlantic regions, contributing to comprehensive strategies for the sustainable development and protection of Arctic resources in the broader Alaskan-North Atlantic context.

- **Health Care & Medicine**

This theme emphasizes healthcare challenges related to remote healthcare delivery, indigenous health disparities, and the impact of climate change on public health. This area of research seeks to explore innovative medical practices, community-based health initiatives, and the integration of traditional knowledge into healthcare systems. The goal is to enhance healthcare resilience and responsiveness to the unique health needs of Arctic communities, fostering collaboration between medical professionals, researchers, and community stakeholders.

- **Northern Blue Economy & Food System Innovation**

Centered on advancing innovation in the blue economy and food systems in northern regions, this theme explores sustainable practices related to fisheries, mariculture, aquaculture, and coastal/marine ecosystems. It aims to promote economic development while ensuring the resilience and sustainability of food systems. The focus is on developing innovative approaches to address challenges such as climate change, resource management, and community well-being.

- **Coastal Community Climate Resilience**

Focused on enhancing the resilience of coastal communities to changing climate conditions, this research theme addresses critical aspects such as climate adaptation, sea-level rise, predictive climate models, coastal erosion, and community-led infrastructure and relocation strategies. By integrating scientific insights with community-driven approaches, the research aims to develop robust resilience measures that align with the unique challenges posed by climate change in coastal areas.

- **"Uniquely Rural" Knowledge Exchange Opportunities**

This research theme delves into the distinctive opportunities for knowledge exchange within rural contexts, emphasizing the embrace of rural development, tribal engagement, local food systems, and community-based monitoring. It explores the synergies and interconnectedness of these elements, fostering collaborative approaches that empower local communities and contribute to sustainable rural development.

- **Facilitation of Arctic Higher Education Collaboration & Exchange**

Focused on fostering collaboration and exchange initiatives within the higher education sector, this theme aims to strengthen ties between academic institutions active in Arctic research and education. It involves creating platforms, programs, and mechanisms that facilitate the exchange of students, faculty, and resources between universities in the Alaskan Arctic and the North Atlantic regions. Of particular relevance to this cohort of institutions are the current challenges brought on by regional demographic changes, questions about the value of higher education, decreased state funding to universities, and the different needs and desires of students. Higher education paradigms are changing, and state university systems are recognizing that they are not able to be all things to all people. One approach to maintaining a strong diversity of disciplinary expertise is to develop connections among partner institutions with complementary capacity.

- **Skills Training for a More Diverse Arctic Research Workforce**

This theme is dedicated to enhancing the skills and diversity of the workforce engaged in Arctic research (beyond university students and faculty). It involves initiatives to provide training, education, and opportunities for individuals from diverse backgrounds to contribute to Arctic research efforts. The goal is to build a workforce that is well-equipped, inclusive, and reflective of the broader communities involved in Arctic research.

- **Enhanced Arctic Research Coordination & Collective Action**

This theme emphasizes the importance of coordinated efforts and collective action in Arctic research. It involves establishing mechanisms for improved collaboration, communication, and information-sharing among researchers, institutions, and stakeholders. The goal is to enhance the overall efficiency and impact of Arctic research by fostering a collaborative ecosystem where collective efforts address common challenges and advance shared goals.

- **Cross-Regional Collaboration Benefits to Arctic Gateway Regions**

This research theme investigates and seeks to quantify the mutual benefits derived from collaborative initiatives in the Arctic, emphasizing the value of shared research agendas and the advantages and rewards brought to both regions through their participation in non-competitive cross-institutional collaboration activities.

The emergent collaboration themes outlined above reflect the richness of expertise among the event's participants and the participating institutions. They signify the depth of shared interests and potential areas where joint efforts could yield significant advancements. However, it's crucial to acknowledge that these themes are a snapshot, a reflection of the expertise present during this brief 2-day event, and that a wider net needs casting to incorporate a more comprehensive array of perspectives from the Alaskan Arctic and North Atlantic-focused research community.

As the workshop outcomes inform the ongoing creation of a shared research agenda, it becomes apparent that future endeavors should intentionally seek to broaden the spectrum of perspectives. Inclusivity and engagement with a more extensive network of researchers will be paramount to ensuring that the collaboration is comprehensive, representative, and reflective of the diverse challenges and opportunities present in both the Alaskan Arctic and the North Atlantic regions. The workshop laid the groundwork for a number of concrete partnership areas and the next steps involve expanding the conversation to include a more diverse array of voices, experiences, and expertise.

## Next Steps

The coming months are critical for the long-term success of the Bridging Arctic Gateways initiative. The leadership team aims to secure funding for a reciprocal trip to bring Alaskan researchers to Maine that will build on the enthusiasm and energy that the cohort generated during the Fairbanks workshop. Achieving this within the next year will be key in capitalizing on the cohort's synergy and bringing proposed projects to life. The potential for a reciprocal visit also presents an exciting opportunity to enrich discussion of identified thematic areas such as Arctic law and medicine (a particularly notable topic for two states currently lacking medical schools).

Strategic planning takes center stage as the team now works to identify and plan opportunistic meetings to advance their collective work. One short-term goal is the development of a session

proposal at the Arctic Circle Assembly in 2024. This venue is envisioned as a platform to showcase progress, exchange findings, and engage a wider audience in the initiative's goals.

The collective steps outlined here demonstrate a proactive approach toward expanding the initiative's influence, fostering collaboration, and ensuring sustained growth. Each element contributes to the overarching goal of creating a robust and impactful collaborative effort to align, connect, and support the distributed U.S. Arctic research community.

In summary, the workshop marks a notable first step in establishing a cross-regional Bridging Arctic Gateways research agenda. Upon reviewing the outcomes, the envisioned path forward involves addressing challenges and fostering meaningful programmatic partnerships among established partner organizations, while also expanding the discourse to include other regional contributors to Arctic research.

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## Appendix:

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## **Bridging Arctic Gateways Fairbanks Workshop**

**Fostering greater awareness, exchange, and convergence among research units at UMaine and UAF**

University of Alaska Fairbanks Troth Yeddha' campus  
BP Design Theater, 1764 Tanana Loop, Fairbanks, AK  
Akasofu Building, 2160 Koyukuk Dr, Fairbanks, AK

### **Tuesday, November 14, 2023**

- 2:52pm Most Mainers arrive at FAI, van transport to Sophie Station hotel
- 4:30 pm Pregame dinner or beverage @ Zach's Restaurant (optional)

### **Wednesday, November 15, 2023**

- 8:15 am Rental car transportation from Sophie Station to UAF campus
- 8:30 am Coffee and light breakfast at BP Design Theatre, JUB 401
- 9:00 am **Welcome to UAF and Land Acknowledgement**  
- Chancellor White  
- Vice Chancellor for Research La Belle-Hamer  
Location: BP Design Theatre
- 9:15 am **Introductions and agenda**  
- AKME organizing team; introduce new members  
Location: BP Design Theatre
- 9:45 am **Depart on Climate and Housing Field trip**
- 10:00 am **National Renewable Energy Lab (NREL)**  
- Led by Bruno Grunau  
Location: NREL

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*America's Arctic University*





- 10:45 am **"Local Climate Challenges" driving tour**
- 11:45 am **Climate stripes and climate projections**  
- Led by Rick Thoman  
Location: Akasofu 4th floor Climate Stripes hallway
- 12:30 pm **Lunch w/ keynote by Dr. Mike Sfraga**  
- CATERED  
Location: Akasofu 501
- 2:00 pm **Breakout groups discussion**  
- Facilitated by AKME organizing team  
Location: Akasofu 501
- 3:45 pm Coffee break
- 4:30 pm Breakout group discussion (continued)  
- Pump House bar
- 6:00 pm Dinner  
- Pump House, reservation under Missy Wallace, UAF



## **Thursday, November 16, 2023**

- 8:15 am Rental car transportation from Sophie Station to UAF campus
- 8:30 am Coffee and light breakfast in Akasofu 501
- 9:00 am **Alaska Coastal Cooperative project**  
- Overview by Matthew Balazs  
Location: Akasofu 501
- 9:30 am **Depart on Arctic oceans and engineering tour**
- 9:45 am **Gliders lab visit**  
- Led by Seth Danielson  
Location: Danielson Lab
- 10:15 am Transport to Usibelli Building
- 10:30 am **Aligning UAF engineering programs to UAF's experiential learning vision**  
- Led by Bill Schnabel and Jeremy Kasper  
Location: TBD
- 11:45 am **Mariculture in Alaska**  
- Led by Gwen Holdmann and Brenda Konar  
Location: BP Design theater right before lunch
- 12:30 pm **Lunch**  
- Catered  
Location: BP Design Theatre
- 1:30 pm **Breakout groups discussion**  
- Facilitated by AKME organizing team  
Location: BP Design Theatre
- 3:15 pm Coffee break
- 4:00 pm More breakout groups discussion (walk to UAF Wood Center)  
- UAF pub
- 5:45 pm Optional Dinner  
- Green's (reservation under UAF)

**Seth Campbell, Associate Professor / Director of Research**  
**University of Maine / Juneau Icefield Research Program**  
[scampb64@maine.edu](mailto:scampb64@maine.edu)

**Professional Links:**

<https://alpinesciences.net/>

<https://umaine.edu/earthclimate/people/seth-campbell/>

**What possibilities do you see when you think about connecting Maine and Alaska research?**

- Building collaborations and leadership for the U.S. in Sub-Arctic to Arctic Education and hands on training
- Building collaborations on Atmosphere-terrestrial-to Ocean systems research & development.

**What connections already exist between Maine & Alaska within your personal and professional networks?**

I previously worked as Director of Academics & Research for the Juneau Icefield Research Program (JIRP) in AK and due to program growth, I am now acting as Director of Academics. The academics have been run out of UMaine for the past six years. We intend to continue this relationship but are working to build partnerships among additional UAlaska and other institutions across the country. Additionally, we have one Dept of Defense (DoD) project funded (\$1.5 million) between UMaine, UAF, UAS, and JIRP currently and are waiting to hear on a \$9 million DoD proposal currently pending with colleagues from each of these institutions focused on snowpack properties and impact of snowmelt on the surrounding terrestrial environments of Alaska and Maine. Lastly, we at UMaine just signed an MOU with Wrangell Mountain Center to be the academic host for their summer program to re-commence in 2024.

**What do you think would be helpful for other workshop participants to know about you and the work you are involved with that may not be obvious in your bio?**

I spend much of my time working to develop learning opportunities and real STEM experiences for students and other early career professionals. I am particularly focused on supporting and championing students who have been disadvantaged (e.g. low income, first generation college, underrepresented, etc.). I believe that our world has a small army of incredible youth who want to make a positive difference on their communities and our environment. My goal is to help harness our existing resources more effectively to help these students reach their goals. I think there are an enormous number of opportunities between Alaska and Maine which have yet to be realized for the benefit of our communities, youth, and environment, and I am keen to work on searching out those opportunities with anyone I can.

**What do you think makes a good workshop?** Please integrate significant time for small group discussions. Talks from professionals are fine but they don't really lead to systemic collaborations.

**Tommy Sheridan, Associate Director**  
**University of Alaska Fairbanks Alaska Blue Economy Center**  
[tmsheridan@alaska.edu](mailto:tmsheridan@alaska.edu)

**Professional Links:**

<https://www.linkedin.com/in/tommy-sheridan>

**What possibilities do you see when you think about connecting Maine and Alaska research?**

I am interested in connecting UAF and UMaine capacities to coastal and rural Alaskan communities that are experiencing extreme social and economic disruptions due to changing climatic conditions and other global forces (i.e., Alaskan salmon fisheries and markets have recently collapsed due to global market conditions). I have expertise in the Alaskan seafood industry, and wish to make connections to innovations and innovators in Maine that may have lessons to share with Alaska.

**What connections already exist between Maine & Alaska within your personal and professional networks?**

I am highly connected within Alaska's seafood industry (please see LinkedIn), and am very involved with the development of Alaska's burgeoning mariculture (macroalgae and shellfish) industry...all of which has connections to Maine.

**What do you think would be helpful for other workshop participants to know about you and the work you are involved with that may not be obvious in your bio?**

Apart from my seafood and mariculture industry connections, I have been involved with (commercial) fishery sustainability certification processes as a consultant, and note similar conflict between fisheries and sustainability certification bodies in both Alaska and Maine:

<https://www.intrafish.com/shellfish/maine-lobster-fishery-withdraws-from-marine-stewardship-council-certification-process/2-1-1399034>

**What do you think makes a good workshop?**

My master's program at Oregon State University was titled "An Evaluation of Collaborative Salmon Fishery Management in Prince William Sound, Alaska." As part of this work, several constraints to collaborative salmon fishery management in PWS were identified, including a noted lack of individual and organizational capacity among the area's prospective collaborators. Our work identified several broad lessons to consider when collaborating, including: (1) the importance of selecting participants who possess relevant knowledge and who are willing to compromise, (2) an awareness and acceptance of the significant resources and time that collaborations require, (3) the availability of organizational capacity to support these endeavors, and (4) the availability of individuals with the credibility and skills required to effectively lead collaborations. I believe all of this holds true here: [https://ir.library.oregonstate.edu/concern/graduate\\_projects/dv140022t](https://ir.library.oregonstate.edu/concern/graduate_projects/dv140022t)

**Paul Mayewski, Director/Professor**  
**Climate Change Institute, University of Maine**  
[paul.mayewski@maine.edu](mailto:paul.mayewski@maine.edu)

**Professional Links:**

<https://climatechange.umaine.edu/people/paul-andrew-mayewski/>

**What possibilities do you see when you think about connecting Maine and Alaska research?**  
Identifying areas where we duplicate and/or complement our respective capacities and capabilities.

**What connections already exist between Maine & Alaska within your personal and professional networks?** I worked closely in planning and in the field with the Polar Ice Coring Office (PICO) when it was based at UAF - albeit quite a few years ago. I am familiar with several past and current UAF researchers.

**What do you think would be helpful for other workshop participants to know about you and the work you are involved with that may not be obvious in your bio?** My teams and I focus on ice core recovery and interpretation worldwide. We have extensive analytical capability re water/snow /ice chemistry. In recent years we have focused on water quality impacts of warming glaciers. We have unique climate analysis software and would like to partner this with AI investigations

**What do you think makes a good workshop?**

Stated products such as white papers and/or proposal plans.

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**Jeremy Kasper, Director**  
**Alaska Center for Energy and Power, University of Alaska Fairbanks**  
[jkasper@alaska.edu](mailto:jkasper@alaska.edu)

**Professional Links:**

<https://www.uaf.edu/acep/about/our-team/jeremy-kasper.php>

**What possibilities do you see when you think about connecting Maine and Alaska research?**  
Blue Economy, Fisheries, Oceanography, Marine Energy are all areas on mutual interest/expertise

**What connections already exist between Maine & Alaska within your personal and professional networks?** Existing joint UAF/UMaine NSF and DOE EPSCoR funded projects.

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**Brittany Smart, Energy Transitions Initiative Coordinator**  
**University of Alaska Fairbanks (UAF), Alaska Center for Energy and Power (ACEP)**  
[bsmart4@alaska.edu](mailto:bsmart4@alaska.edu)

**Professional Links:**

<https://www.linkedin.com/in/brittanylsmart/>

**What possibilities do you see when you think about connecting Maine and Alaska research?**  
Blue economy, arctic research, similar & changing environments, military-connected

**What connections already exist between Maine & Alaska within your personal and professional networks?** Unsure

**What do you think would be helpful for other workshop participants to know about you and the work you are involved with that may not be obvious in your bio?** Local government, policy development, military-community partnerships, energy transitions

**What do you think makes a good workshop?** I prefer hands on - think along the lines of Model UN, Mock Trial, etc.

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**Joshua Stoll, Associate Professor of Marine Policy**  
**School of Marine Sciences, University of Maine**  
[joshua.stoll@maine.edu](mailto:joshua.stoll@maine.edu)

**Brief Biography:**

Joshua is an associate professor in the School of Marine Sciences at the University of Maine. His research focuses on questions about coastal community resilience, ocean governance, fisheries policy, and food systems. Joshua is the co-founder of the Local Catch Network and has been working to elevate the role of seafood in local and regional food systems for more than a decade. He holds a B.A. in Environmental Studies from Bates College, a Masters in Coastal Environmental Management from Duke University, and a PhD in Ecology and Environmental Sciences from the University of Maine. Prior to returning to Maine, he was an early career research fellow in the Global Economic Dynamics and the Biosphere Program at the Royal Swedish Academy of Sciences in Sweden.

**What possibilities do you see when you think about connecting Maine and Alaska research?**  
I think about the biophysical and socioeconomic similarities between Maine and Alaska and the opportunities for cross-regional research that spans both geographies. Specifically, Maine and Alaska both have strong socioeconomic ties on aquatic and marine resources (blue foods) and are uniquely rural compared to other parts of the United States.

**What connections already exist between Maine & Alaska within your personal and professional networks?** My connections to Alaska grow out of more than a decade of partnership building and programming in rural, coastal, and tribal communities through the Local Catch Network. Established in 2011, Local Catch Network is a hub for knowledge exchange, peer-to-peer learning, technical assistance, research, and collaboration created to strengthen local and regional seafood systems in North America. Anchored at the University of Maine, the network recognizes seafood as an important part of local and regional food systems and takes the perspective that coastal communities and small businesses play a critical role in responding to climate threats by building diverse, resilient, and prosperous food systems that support healthy people and the environments where they work and live. Today, the network is made up of more than 2,000 people, including 500 seafood businesses, technical assistance providers, researchers, and community-based organizations with long-standing partnerships and deep roots in Maine, Alaska, and beyond.

**What do you think would be helpful for other workshop participants to know about you and the work you are involved with that may not be obvious in your bio?** This fall, colleagues and I launched a new National Research Traineeship program that focuses on interdisciplinary, marine-based ecosystem science. Leveraging the Gulf of Maine as an extraordinary living laboratory, our NRT, "Ecosystem science in the face of rapid ocean change: a convergence approach," aims to empower the next generation of scientists, managers, policymakers and changemakers in a new, convergent approach to marine and coastal ecosystem science. I am interested in finding ways to leverage this 5-year opportunity to build Maine-Alaska connections.

**What do you think makes a good workshop?** I find that the most beneficial workshops have good facilitation and a balance of activities that keep people engaged.

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**Brit Myers, Strategic Engagement Director**  
**Arctic Research Consortium of the U.S. (ARCUS)**  
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**Professional Links:**  
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**What possibilities do you see when you think about connecting Maine and Alaska research?** I see the possibility of the collective U.S. Arctic research community having greater influence with & more ability to provide input to circumpolar/international Arctic efforts & governing bodies. Maine is more accessible to Greenland/Iceland/Europe, where a number of international Arctic activities take place. It is not always as easy for Alaskan-based researchers to travel to these locations... and I think this is at least a small part of why we see a large presence of New England organizations & researchers taking part in UArctic, for example, relative to the number of Arctic research organizations active in AK. Greater alignment of U.S. Arctic research interests across these two gateway regions has the potential to increase the

collective influence of U.S. involvement in the Arctic in many ways and I'm excited to see this group come together to explore the opportunities.

### **What connections already exist between Maine & Alaska within your personal and professional networks?**

- ARCUS includes member organization from both Alaska (U AK Fairbanks, U AK Anchorage, U AK Southeast, ABR, Alaska Ocean Observing System, Kawerak, NREL's CCHRC, NOAA GML's Barrow Observatory, Sitka Sound Science Center, Ted Stevens Center, UIC Science, WWF US Arctic Program) and Maine (University of Maine & University of Southern Maine).
- University of the Arctic includes members from both Alaska (AK Pacific U, Anchorage Museum, CCHRC, Ilsiagvik College, Institute of the North, U AK Anchorage, U AK Fairbanks, U AK Southeast, ) and Maine ( UMaine, UMaine Fort Kent, U Southern Maine). ARCUS is also a UArctic member. Interactions occur via various UArctic thematic networks. Notably, however, exchanges between AK & ME schools are NOT enabled by the UArctic North2North program, which only facilitates international exchanges.
- The Arctic Education Alliance also brought University of Southern Maine participants to UAF in 2022 for knowledge exchange activities: <https://www.aea.uaf.edu/alaska-us-greenland-knowledge-exchange-2022>
- Bigelow Lab is partnering w/ UAF on deep sea exploration - <https://www.bigelow.org/science/lab/deep-biosphere/cobra.html> .
- Ocean Renewable Power Company's Next-Generation River Power System Project (UAF is a Partner w/ the Maine based company) - <https://www.energy.gov/eere/water/articles/river-currents-power-remote-alaskan-village> "ORPC's Maine Tidal Energy Project is "the first commercial, grid-connected tidal power project in the country, and the first ocean energy project in all of the Americas to deliver power to a public grid," and is actively pursuing project development in Alaska."
- Senate Arctic Caucus: [https://www.legistorm.com/organization/summary/128934/Senate\\_Arctic\\_Caucus.html](https://www.legistorm.com/organization/summary/128934/Senate_Arctic_Caucus.html)
- UMaine Hudson Museum's recent work to repatriate Alaska Indigenous artifacts
- Maine & AK Researchers Involved in the National Science Foundation's Navigating the New Arctic Program (& who may cross paths through NNA Investigator meetings):
  - UMaine researchers are involved in the NNA "Systems Approaches to Understanding and Navigating the New Arctic (SAUNNA)" project <https://www.arcus.org/nna/projects/2021713>
  - Ralph Pundt from the Maine Maritime Academy involved in the NNA "Arctic Impacts and Reverberations of Expanding Global Maritime Trade Routes" project which also includes Thomas Ravens from UAA as a team member: <https://www.arcus.org/nna/projects/1927785>
  - Nicholas Record. David Emerson, Alex Michaud from Bigelow Laboratory have been involved in the NNA project "Interactions of the Microbial Iron and



Methane Cycles in the Tundra Ecosystem" which has a field site in AK at Toolik Field Research Station: <https://www.arcus.org/nna/projects/1754379>

- Phylogeneticists & Ecologists who study species ranges across AK and ME. For example, Marine biologists who study species like the Arctic char which have wide circumpolar Arctic distribution or Ornithologists who track the migration routes of birds like the Blackpoll Warbler through flyways that come up along the US East Coast from South America and then head NW to AK or entomologists who study the expansion of tick-borne diseases and their impact on other species such as moose.
- Daniel Hayes & Wouter Hantson (UMaine) involved with NASA's Arctic-Boreal Vulnerability Experiment (ABOVE), DOE's Next Generation Ecosystem Experiment (NGEE-Arctic) and the NSF Permafrost Carbon Network.
- David Reidmiller (Gulf of Maine Research Institute) involved with the Permafrost Carbon Network.
- Peary-MacMillan Arctic Museum and Arctic Studies Center at Bowdoin College
- Michael Retelle (Bates College) former ARCUS Board Chair
- Anne Henshaw - Former Programme Officer for the Oak Foundation & lead for the Arctic Funders Collaborative
- Jennifer Heidrich & Erin Towns - former PolarTrec program teachers from Edward Little High School in Auburn, Maine
- University of New England (UNE) North program- <https://www.une.edu/UNE-North>
- Maine's Biodiversity Research Institute's research program on mercury found in Arctic shorebirds Program - <https://briwildlife.org/where-we-work/>

**What do you think would be helpful for other workshop participants to know about you and the work you are involved with that may not be obvious in your bio?** ARCUS has a keen interest in understanding who is taking part in various Arctic research communities (and who is not). I have quite a bit of information/social network data on who engages with ARCUS programs, current NSF Investigators, Navigating the New Arctic project teams, participants in research communities like IARPC Collaborations, the Permafrost Carbon Network, the Sea Ice Prediction Network (etc). I'd love to put this kind of data to use in identifying ways to bring different segments of the U.S. Arctic research community together in new and helpful ways.

**What do you think makes a good workshop?** Activities to help people see one another more clearly, build trust, and connect as complete human beings (PPTs alone don't do this). Skilled facilitation that can take groups from expansive discussions to concrete action plans and work activities. Participants willing and inspired to invest their time, leadership capabilities, and intellectual energy in developing meaningful products together.

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**Brenda Konar, Director Alaska EPSCoR and Professor of Marine Biology**  
**University of Alaska Fairbanks**  
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**Professional Links:**

<https://www.uaf.edu/cfos/people/faculty/detail/brenda-konar.php>  
<https://www.alaska.edu/epscor/>

**What possibilities do you see when you think about connecting Maine and Alaska research?**  
I think both states have strong mariculture interests that could be complimentary.

**What connections already exist between Maine & Alaska within your personal and professional networks?** I work with a researcher at Bigelow.

**What do you think would be helpful for other workshop participants to know about you and the work you are involved with that may not be obvious in your bio?** Because of my EPSCoR hat, I am very interested in connecting UA researchers with Maine researchers, even outside of my area of expertise.

**What do you think makes a good workshop?**  
A solid agenda that results with action items.

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**Cameron Carlson, Dean College of Business and Security Management**  
**University of Alaska Fairbanks**  
[cdblson@alaska.edu](mailto:cdblson@alaska.edu)

**Brief Biography:**

This is a second career after retirement from the Army in 2006. I have been a program director, associate dean and now serve as the Dean for CBSM. My research interests are primarily focused on homeland defense/security and emergency management, arctic security, irregular warfare, human security, climate security and resilience.

**What possibilities do you see when you think about connecting Maine and Alaska research?**  
That is what I would like to explore.

**What connections already exist between Maine & Alaska within your personal and professional networks?** I know Pips Veazey...

**What do you think makes a good workshop?**  
The ability to develop some collaborative relationships for future work.

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**Adam St. Gelais, Aquaculture Innovation Specialist**  
**University of Maine Aquaculture Research Institute**  
[adam.st@maine.edu](mailto:adam.st@maine.edu)

**Professional Links & Brief Biography:**

<https://www.researchgate.net/profile/Adam-St-Gelais>  
<https://www.linkedin.com/in/adam-st-gelais-18b6394b/>

Adam St. Gelais is a marine ecologist and aquaculture scientist based at the Aquaculture Research Institute at the University of Maine. Adam's research is highly applied and collaborative with a broad focus on the ecology and economy of low trophic level aquaculture, most recently with a particular focus on seaweed farming. His research and professional background is diverse, spanning coral reef ecology, fisheries, marine resource management, and graduate and undergraduate program development. Adam came to the U Maine Aquaculture Research Institute from the University of New England (UNE) where he served as an Aquaculture Research Scientist, Graduate Faculty in Ocean Food Systems, and as the Assistant Director for Science at the UNE Institute for North Atlantic Studies (UNE North). At UNE North, he helped to launch a transdisciplinary Institute recognizing Maine's connection and integration with other arctic nations, and focused on linking the university's expertise to partners across the north Atlantic arctic region. Adam is interested in exploring avenues to achieve triple bottom line sustainability in low trophic level aquaculture, and understanding how aquaculture environment interactions framed by a changing climate can impact this goal. When not in the lab or in the field, you can find Adam outside with his partner and two young daughters, probably surfing or boating to a new island to explore.

**What possibilities do you see when you think about connecting Maine and Alaska research?**

I see key parallels between Maine and Alaska in ocean foods production; in fisheries and perhaps even more so in aquaculture/mariculture. Despite our great geographic separation and disparities in scale between the two locations, there are great biophysical and cultural similarities that should serve as a foundation for collaborative research. Moreover, the divergences between our two states may be areas where even more can be gleaned from working closely.

**What connections already exist between Maine & Alaska within your personal and professional networks?**

In recent years my research focus has centered on seaweed farming. I have worked on several large scale research projects focused on this, including a DoE funded MARINER project in Maine. Several other MARINER projects were also funded in Alaska. Over the years I have made connections with growers in Southeast Alaska (Craig) and Growers, researchers and extension professionals working in seaweed based in Kodiak.

**What do you think would be helpful for other workshop participants to know about you and the work you are involved with that may not be obvious in your bio?**

I am particularly interested in issues of scaling and climate in extractive (low trophic level) Aquaculture. Both of these I feel will be key areas of collaboration between ME and AK with regards to ocean farming.

**Gayle Zydlewski, Director Maine Sea Grant & Professor of Marine Sciences**  
**University of Maine**  
[gayle.zydlewski@maine.edu](mailto:gayle.zydlewski@maine.edu)

**Brief Bio:**

Dr. Zydlewski received a bachelor's degree in biology and marine biology from the University of Massachusetts, Dartmouth, a master's degree in zoology from the University of Rhode Island in Zoology, and a PhD in Oceanography from the University of Maine. She served as a National Research Council postdoctoral research fellow at the USGS Conte Anadromous Fish Research Center and was a Supervisory Fisheries Biologist at the USFWS Abernathy Fish Technology Center. She started as research faculty in the School of Marine Science, studying and working with graduate students on diadromous fish science as it relates to their management on the east coast of the US as well as alternative energy/fish interactions, as well as teaching vertebrate biology and fisheries oceanography at the University of Maine since 2007. Gayle has been the Director of the Maine Sea Grant Program since 2018 and is currently serving as the co-chair of the UMaine MARINE Initiative steering committee. As Sea Grant Director she supports a program of 20 professionals working to meet the program's mission to support the responsible use and conservation of coastal resources in order to sustain thriving coastal communities and ecosystems by funding and supporting research relevant to the state's needs.

**What possibilities do you see when you think about connecting Maine and Alaska research?**

Coastal community resilience and climate adaptation: Approaches for co-producing knowledge / conducting participatory research or community-based monitoring with Indigenous and/or rural communities Knowledge exchange / collaboration around coastal resilience capacity building, technical assistance, planning, policy, and decision-making, including on community-led relocation / managed retreat / site expansion Malinda leads the Alaska Tribal Resilience Learning Network, would be interesting to explore possible applications of this model in Maine Exploring and incorporating social dimensions (including social vulnerability / resilience) in climate research, assessments, and planning Searun Fish Approaches for AK Sea Grant to support research and management of diadromous species at state and tribal jurisdictions. Seaweed - Projects/collaborations with AK that I'd like to work on and see a potential need for- Infrastructure and working waterfronts - similar to ME, AK's kelp industry is reliant on existing working waterfront and fisheries infrastructure, however AK is set up for different operational scales and models. There's a lot ME could learn from how AK is approaching/prioritizing incorporating kelp into working waterfronts, particularly how they envision and are planning for scale and how they plan to match this with processing. (Currently, there are minimal processing opportunities for kelp in AK, but the supply is quickly growing. With the slow leasing process, we're looking at the possible opposite scenario in ME.) Adam (ARI) is interested in this work as well and also has connections in AK that we've discussed could be helpful. Harvest equipment/vessels tech transfer/development - In the past few years, AK has been leading the way on developing low-tech/high-volume harvest vessels and fisheries vessel modifications to allow for more efficient harvest. With harvest effort/labor as the #1 cost driver for kelp farming in ME, collaboration to learn from these efforts may have significant benefit to the sector in

ME, where the industry is currently utilizing existing fishing vessels for harvest but with minimal efficiency/efforts around modifications. Further - how can equipment/gear modifications target both efficiency and increase accessibility/safety for different body types on the water, as we think about a more diverse sector. I'm not sure if this second bit factored into AK efforts, but I'd be curious to learn more and collaborate on this. Generally - distributions/markets for kelp. Also, I've heard lots of enthusiasm from AK and ME farmers around electrification. Also, I'd love to understand the mariculture development landscape playing out in Alaska right now - there seems to be lots of significant state support going toward developing seaweed/shellfish farms. How does this support/funding work? Who is it benefitting? What are the long term goals and how does this relate to our sector in ME? Shellfish and Fisheries AK has done tons of work in fisheries and aquaculture safety. If we are going to do any of this work in the future, they'd be great to learn from. Shellfish production systems, particularly longlines and suspended cages for oysters and scallops....to include bioeconomic analyses of different production systems. Fabrications, vessels, shipboard equipment, processing equipment, including solar-driven systems. The integration of farming and fishing: especially how these are presented to the public as simply tools in the toolbox to produce seafood. AK always seems to do a great job of summarizing and documenting their research and development work: manuals and other products to really lead a prospective farmer or fisherman into a new venture. These are really nice examples to pay attention to. Stock enhancement. Salmon is the big example: are there lessons learned that might be applied to Maine? Connections between average, everyday citizens and seafood: it's so common for people in AK to know how to process and prepare fisheries products, but even here in Maine - where that knowledge was traditionally strong - it seems to be getting weaker and weaker as fewer people have connections to the coast and to seafood. Programming to help Maine citizens to get comfortable again, and even find joy in preparing seafood. AK Sea Grant and their partners in developing and implementing programs for young fishermen and for safety at sea, both of which have a lot of potential to grow here. For ex: Alaska's Young Fishermen's summit coming up in December. Also their FishBiz program is a great model. Maine Sea Grant has established connections that could be strengthened and built upon (see question 8). We also have a network of research we fund that may be natural fits for further connectivity and opportunity.

**What connections already exist between Maine & Alaska within your personal and professional networks?** The following are areas where Maine Sea Grant staff connect with others in Alaska. Sea Grant Focus Area: Resilient Communities and Economies. Colleagues and projects include: Malinda Chase, Tribal Climate Liaison, AK Climate Adaptation Science Center, UAF. Elena Sparrow, Education Outreach Director International Arctic Research Center, UAF. I worked with Malinda and Elena on the Reaching Arctic Communities Facing Climate Change project, which was part of the PoLAR Partnership - we are in communication regularly and have talked about finding ways to continue collaborating on climate adaptation and coastal resilience in Indigenous communities. Katie Spellman, Research Professor, IARC-UAF. Katie works closely with Malinda and Elena and leads really cool projects called Winterberry and Alaska Berry Futures (maybe opportunities to do similar work in Maine?). Syverine Bentz, Coastal Training Program Coordinator, Kachemak Bay NERR. Syverine is co-leading a project on Cultural Ecosystem Services that includes Chris Feurt at the Wells NERR - I contributed to a

project presentation during my time at Wells and think their framework could tie into a lot of our work (more of a would like to work on) Tourism - I used to connect a lot with Terry Johnson (he retired a few years ago and has since passed away)- his work was at the intersection of fisheries, tourism, and recreation and he helped me think through a lot of stuff for our programming in this area. I am not sure who replaced him in this work but AK SG continues to have great models in supporting the business and technical boating sides of these types of businesses. Lots of potential for collaboration on this front. Sea Grant Focus Area: Sustainable Fisheries and Aquaculture: fostering connections and knowledge exchange between AK and ME producers in aquaculture (recent MAIC Farmer to Farmer grants, partially Hub-funded, sent David Leith and Kristin Isfeld to AK). Strong and developing connections between AK and ME exist within the growing seaweed sector. AK and ME are uniquely positioned as the only two states currently producing farmed seaweed at commercial scale (500,000+ lbs annually) - there is increasing interest in knowledge sharing and technical transfer opportunities between the two states around nursery technology, farming and harvest equipment, processing and product development, infrastructure/distribution and market opportunities, and more. Currently, ME-based processors are working with and purchasing kelp from AK to increase supply to meet ME processing capacity, solidifying supply chain relations between the states. More on future opportunities under the next question. Colleagues and past/current projects (Seaweed) include: (Current) The Seaweed Hub AKSG: Melissa Good, Aaron Jones, Quentin Fong. I've worked with Melissa, Aaron, and Quentin on the Seaweed Hub Phase I and Phase II. Melissa has provided perspectives from AK and has facilitated connections to AK stakeholders. Outside of the Hub, I've worked with Aaron on farm equipment/design/harvest when he was at NHSG. (Past) Market Opportunities workgroup The following AK stakeholders were participants in the Seaweed Hub market opportunities workgroup, which I facilitated and met continuously from 2020-2022 Marcos Sheer, Kelp Farmer, Sea Grove Kelp Erik Obrien, The Denali Commission Weatherly Bates, Kelp/Oyster Farmer, Alaska Shellfish Farms (Current): Business and Economic Planning for Seaweed Aquaculture Systems in the United States. Melissa Good, AKSG. Worked together on developing business planning tools for multiple scales of seaweed businesses (nursery to harvest), and will be piloting these tools in 2023/2024. (Past): Proposal for Sea Grant Early Stage Propagation RFP: "Sustainable, Speedy Seeding and Optimizing Propagation of East and West Coast Kelp Species". This proposal was not successful, but a major activity of the work was to develop connections between ME and AK around emerging nursery practices and technologies. I worked closely with the project team (including AK-based members below) to develop the proposal and extension activities, and submitted the proposal through MESHG. Schery Umanson, University of Alaska Michael Stekoll, University of Alaska Lexa Meyer, Blue Evolution Alf Pryor, Alaska Ocean Farms (Past) 2023 National Seaweed Symposium - AK-based participants and speakers that were invited and I made connections with through the symposium. In some cases, we worked with WWF to fund their travel to the event, and all were speakers. During and after the symposium, I heard a lot of enthusiasm from AK participants around hosting events like this more often/regularly and about possibilities to have a national event in Alaska. Keolani Booth, Tribal Councilman, Metlakatla Indian Community. Keolani is working with the Southeast Sustainable Partnership on a nursery project to diversify seaweed species farmed to include black seaweed (nori/Pyropia) which has significant importance to

Metlakatla people. Opportunities here for connection to the species diversification work being done in the Northeast, and of particular interest because of past nori work Alicia Bishop, NOAA Fisheries Aquaculture Coordinator Alaska Regional Office Nick Mangini, Kelp Farmer, Kodiak Island Sustainable Seaweed Nick has been involved in a number of R&D projects, specifically around equipment and gear modifications. He's hosted a number of ME based farmers in AK on exchange trips and has been very supportive of Sea Grant work and collaboration. Lia Heifetz, Kelp Harvester/Product Producer, Co-Founder, Barnacle Foods Shellfish & Fisheries - Sea Grant connections: Sunny Rice and Gabe Dunham (fisheries related topics: markets, products, safety etc) Melissa Good, Aaron Jones and Quentin Fong: mariculture of shellfish, mariculture products and processing, marketing Greg and Weatherly Bates: shellfish and seaweed production, equipment/processing/products, etc. Eric Wyatt: Blue Starr Fisheries: shellfish production Rod Jensen: Safety Cove Shellfish: shellfish production/equipment, fisheries Kate Sullivan: Director, Southeast Alaska Regional Dive Fisheries Association (SARDFA)

**What do you think would be helpful for other workshop participants to know about you and the work you are involved with that may not be obvious in your bio?** The Maine Sea Grant program has cross-cutting principles that guide our work and may not be obvious in the previous answers: Center and Prioritize Efforts to Address the Impacts of Climate Change by leveraging and integrating climate-related expertise, resources, and partnerships in every aspect of our research, extension, community engagement, and education programming. Champion Diversity, Equity, Inclusion, Justice, and Accessibility (DEIJA) by seeking and engaging diverse perspectives to enhance understanding and enable our program to pursue its vision and mission with equity and integrity. Enhance coastal community resilience by fostering the ability of coastal communities to effectively respond to economic, social, and environmental change.

**What do you think makes a good workshop?** Plenty of small group discussion time to find similar values and interests in building opportunities.

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**Daisy Huang, Associate Professor, College of Engineering and Mines, Department of Mechanical Engineering Alaska Center for Energy and Power  
University of Alaska Fairbanks**  
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**Professional Links:**

<https://www.uaf.edu/experts/daisy-huang.php>

<https://www.uaf.edu/acep/about/our-team/daisy-huang.php>

**What possibilities do you see when you think about connecting Maine and Alaska research?**  
Commonalities with cold weather, dispersed communities, rural challenges

**What connections already exist between Maine & Alaska within your personal and professional networks?** Pips. :) And Reinaldo, kind of.

**What do you think would be helpful for other workshop participants to know about you and the work you are involved with that may not be obvious in your bio?** I have a broad range of interests. :) I am more interested in overall community security rather than specific technologies. Different communities may have different solutions.

**What do you think makes a good workshop?**

Establishing sustained connections among people and research groups.



Keywords

# "BLUE ECOSYSTEM/BLUE ECONOMY INNOVATION"

SOMETHING SEPARATE OR SPECIFIC TO KELP INDUSTRY INNOVATION NEEDED?

Fisheries, salmon/diadromous fish management, fisheries collapse, Mariculture, Aquaculture, Coastal/Marine Ecology, Kelp, Lower Trophic Level Extraction, mariculture location management/leasing, kelp processing/harvesting tech transfer, & vessel modification, Marine Biology, Working Waterfronts, Marine Workforce Development, Fisheries Sustainability Certification, Carbon Sequestration (kelp/deep ocean), expanding maritime trade and production, vessel energy, tidal energy, energy/fish interactions, oceanography, impacts of Arctic/North Atlantic ocean current circulation change, deep ocean exploration, Arctic ports

## ALASKA PATHFINDERS

University of Alaska Fairbanks

- \* Alaska Blue Economy Center
- \* Alaska Center for Energy & Power
- \* College of Ocean & Fisheries Sciences (Schery Umanzor, Michael Stekoll, )

### Other Pathfinders: From Alaska

- \* Alaska Sea Grant (M. Good, A. Jones, Q. Fong, S. Rice and G. Dunham, G. Bates, W. Bates)
- \* Alaska Fisheries Development Foundation
- \* Mariculture Restoration Consortium
- \* Alaska Conservation Council
- \* Alaska Seafood Marketing Institute
- \* Alaska Longline Fisheries Association
- \* University of Alaska Anchorage
- \* SE Alaska seaweed growers
- \* Barnacle Foods (Lia Heifetz)
- \* Taco Loco
- \* Prince William Sound Science Center
- \* The Denali Commission
- \* Sea Grove Kelp
- \* Alaska Shellfish Farms
- \* Blue Evolution/Kodiak Kelp Company
- \* Alaska Ocean Farms
- \* Metlakatla Indian Community (Keolani Booth)
- \* Southeast Sustainable Partnership
- \* NOAA Alaska Regional Office (Alicia Bishop)
- \* Kodiak Island Sustainable Seaweed (Nick Mangini)
- \* Blue Starr Fisheries (Eric Wyatt)
- \* Safety Cove Shellfish (Rod Jensen)
- \* Southeast Alaska Regional Dive Fisheries Association (Kate Sullivan)

### Other Pathfinders: Alaska Regional Focus

- \* World Wildlife Fund

### Connecting Projects (projects with existing AKME connections)

- \* Alaska Blue Economy Center
- \* Local Catch Network
- \* Crustal Ocean Biosphere Accelerator
- \* Arctic Impacts of Expanding Maritime Trade Routes
- \* DoE MARINER Projects
- \* Next-Gen River Power System Project
- \* MAIC Farmer to Farmer Grants (David Leith & Kristin Isfeld)
- \* National Seaweed Hub
- \* Business and Economic Planning for Seaweed Aquaculture Systems in the United States.
- \* Sustainable, Speedy Seeding and Optimizing Propagation of East and West Coast Kelp Species

### Inspiring Projects (no current AKME connection but could serve as a model for the other region)

- \* Alaska's New EPSCoR Proposal
- \* Searun Fish
- \* Alaska Young Fishermen's Summit
- \* Alaska FishBiz Program
- \* National Seaweed Symposium (next one AK??)

### New Collaborative Research Project Ideas

## MAINE PATHFINDERS

University of Maine

- \* Aquaculture Research Institute

### Other Pathfinders: From Maine

- \* Maine Sea Grant
- \* New England Ocean Cluster
- \* Ocean Renewable Power Co.
- \* Bigelow Laboratory
- \* Maine Maritime Academy
- \* Maine Aquaculture Innovation Center (MAIC)

### Other Pathfinders: North Atlantic Regional Focus

# "COLLABORATIVE FIELD RESEARCH TRAINEESHIPS"

Keywords

Arctic field training, education, youth empowerment, access & diversity, student & faculty exchange, insights from the "greatest graduate school experience" debate

## ALASKA PATHFINDERS

University of Alaska Fairbanks



Other Pathfinders: From Alaska

- \* University of Alaska Southeast
- \* Wrangell Mountain Center
- \* T3 Alliance/Upward Bound
- \* NREL CCHRC
- \* Alaska Sea Grant
- \* ARCUS

Other Pathfinders: Alaska Regional Focus

### Connecting Projects (projects with existing AKME connections)

- \* Juneau Icefield Research Program
- \* Arctic Education Alliance
- \* PolarTREC Program Alumni
- \* 42\* North/New England Arctic Network
- \* UArctic (North2North)
- \* PolarSTEAM

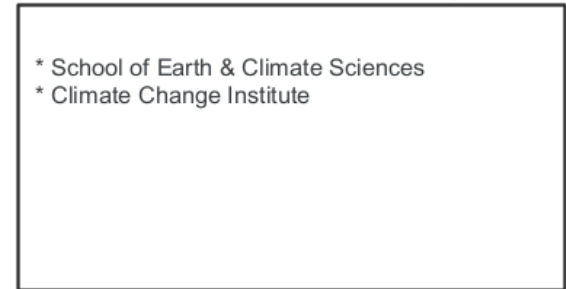
### Inspiring Projects (no current AKME connection but could serve as a model for the other region)

- \* SAUNNA: Systems Approaches to Understanding & Navigating the New Arctic (NRT)
- \* Ecosystem Science in the Face of Rapid Ocean Change: A Convergence Approach (NRT)

### New Collaborative Research Project Ideas

## MAINE PATHFINDERS

University of Maine



- \* School of Earth & Climate Sciences
- \* Climate Change Institute

Other Pathfinders: From Maine

- \* University of Southern Maine
- \* Edward Little High School (Auburn, ME)

Other Pathfinders: North Atlantic Regional Focus

# "MELTING ICE"

## Keywords

Snowpack/snowmelt impacts on terrestrial environments, ice core recovery & interpretation, glaciology, snow/ice/water chemistry, climate modeling & analysis, permafrost carbon/methane cycles, tundra & boreal forest vulnerability, melting ice impacts on infrastructure

## ALASKA PATHFINDERS

University of Alaska Fairbanks

- \* International Arctic Research Center
- \* Geophysical Institute
- \* Toolik Field Station

Other Pathfinders: From Alaska

- \* University of Alaska Southeast
- \* NREL's Cold Climate Housing Research Center

Other Pathfinders: Alaska Regional Focus

## Connecting Projects (projects with existing AKME connections)

- \* Seth Campbell's DoD funded snowpack research
- \* U.S. Ice Drilling Program
- \* NASA ABoVE
- \* Permafrost Carbon Network
- \* NGEE Arctic
- \* Navigating the New Arctic

## Inspiring Projects (no current AKME connection but could serve as a model for the other region)

## New Collaborative Research Project Ideas

## MAINE PATHFINDERS

University of Maine

- \* School of Earth & Climate Sciences
- \* Climate Change Institute
- \* School of Forest Resources (Daniel Hayes & Wouter Hantson)

Other Pathfinders: From Maine

- \* Gulf of Maine Research Institute (David Reidmiller)
- \* Bates College (Michael Retelle)

Other Pathfinders: North Atlantic Regional Focus

Keywords

# "UNIQUELY RURAL" KNOWLEDGE EXCHANGE OPPORTUNITIES

Rural development, human services, Tribal Engagement, Local Food Systems, retaining "traditional" knowledge (such as fish harvest/use), Emergency Response, Military-Connected Communities, Dealing w/ visitors (tourism), energy transitions, cold climate energy & housing, converter-dominated power systems, community-based monitoring, local histories/culture/ socioeconomic profiles, "dispersed community", "community security", unique community solutions, place-based talent

## ALASKA PATHFINDERS

University of Alaska Fairbanks

\* Alaska Center for Power & Energy

Other Pathfinders: From Alaska

\* NREL's Cold Climate Housing Research Center

### Connecting Projects (projects with existing AKME connections)

- \* STORM: Data-Driven Approaches for Secure Electric Grids in Communities Disproportionately Impacted by Climate Change
- \* Arctic Education Alliance
- 42\* North/New England Arctic Network
- \* ARCUS Community & Citizen Science in the Far North Community of Practice & 2024 Virtual Conference

### Inspiring Projects (no current AKME connection but could serve as a model for the other region)

- \* Alaska Tribal Resilience Learning Network

### New Collaborative Research Project Ideas

Other Pathfinders: Alaska Regional Focus

## MAINE PATHFINDERS

University of Maine

\* Hudson Museum

Other Pathfinders: From Maine

- \* University of Southern Maine
- \* Oak Foundation (or Anne Henshaw)
- \* Bowdoin College/Peary-MacMillan Arctic Museum

Other Pathfinders: North Atlantic Regional Focus

# "COASTAL COMMUNITY CLIMATE RESILIENCE"

## Keywords

climate adaptation, sea-level rise, coastal erosion, community-led relocation, managed retreat, working waterfronts, technical assistance, resilience capacity building, policy & decision-making, social dimensions of climate change, rural emergency response, rural response to coastal extreme weather events, food system response to climate change

## ALASKA PATHFINDERS

University of Alaska Fairbanks

- \* Alaska Center for Climate Assessment & Policy
- \* International Arctic Research Center (Elena Sparrow/Katie Spellman)
- \* Alaska Coastal Cooperative

Other Pathfinders: From Alaska

- \* AK Climate Adaptation Science Center (Malinda Chase)
- \* Katchemak Bay NERR (Syverine Bentz)

Other Pathfinders: Alaska Regional Focus

## Connecting Projects (projects with existing AKME connections)

- \* PoLAR Partnership Reaching Arctic Communities Facing Climate Change
- \* National Estuarine Research Reserve (NERR) System Coastal Ecosystem Services Project

## Inspiring Projects (no current AKME connection but could serve as a model for the other region)

- \* Winterberry & Alaska Berry Futures

## New Collaborative Research Project Ideas

## MAINE PATHFINDERS

University of Maine

- \* Climate Change Institute

Other Pathfinders: From Maine

- \* Maine Sea Grant
- \* Wells NERR (Chris Feurt)

Other Pathfinders: North Atlantic Regional Focus

# "ARCTIC COLLABORATION BENEFITS TO AK/NORTH ATLANTIC REGIONS "

## Questions:

Why is having a shared AKME or broader Alaska Arctic/North Atlantic research agenda valuable to the institutions/regions that take part? What value does participation in non-competitive cross-institutional collaborations with an Arctic focus bring to the organizations/individuals that participate & the missions they serve? How do we maximize this value?

## ALASKA PATHFINDERS

University of Alaska Fairbanks



Other Pathfinders: From Alaska

- \* University of Alaska Southeast
- \* NREL's Cold Climate Housing Research Center
- \* ABR Inc
- \* Alaska Ocean Observing System
- \* Alaska Pacific University
- \* Anchorage Museum
- \* Ilisagvik College
- \* Institute of the North
- \* Inuit Circumpolar Council Alaska
- \* Kawerak
- \* NOAA GML Barrow Observatory
- \* Sitka Sound Science Center
- \* Ted Stevens Center
- \* UIC Science
- \* University of Alaska Anchorage

Other Pathfinders: Alaska Regional Focus

## Connecting Projects (projects with existing AKME connections)

- \* AKME Bridging Arctic Gateways Workshop
- \* Arctic Research Consortium of the U.S.
- \* UArctic
- \* 42\* North/New England Arctic Network
- \* Navigating the New Arctic
- \* IARPC Collaborations
- \* U.S. Ice Drilling Program
- \* NASA ABoVE
- \* Permafrost Carbon Network
- \* NGEE Arctic
- \* Navigating the New Arctic
- \* All Other Projects Identified in Previous Slides

## Inspiring Projects (no current AKME connection but could serve as a model for the other region)

## New Collaborative Research Project Ideas

## MAINE PATHFINDERS

University of Maine



Other Pathfinders: From Maine

- \* University of Southern Maine
- \* University of Maine at Fort Kent
- \* Bowdoin College
- \* University of New England
- \* Maine Maritime Academy
- \* Bigelow Laboratory

Other Pathfinders: North Atlantic Regional Focus

## Discussion Table Reports

### Table Topic: Food Systems

Participants: Jodie, Brenda, Adam, Josh

Application: Built environment for extreme environments in support of sustainable food systems

What questions are you asking and why are they potentially important to both regions?

How is climate impacting resources?

How do we deal with a lack of capacity?

How do we help communities?

To what extent can we \_\_\_\_ local and regional self-reliance?

How do we convince policy-makers that seafood is part of food systems?

How to recognize Indigenous food systems? “Integrated” food systems

What factors related to this are similar and different between the two regions?

Both: Research fatigue, expert-focused seafood system, food security/health issues, especially among marginalized communities. small-scale marketing/farms.

18x bigger, isolated (AK)

What do we not know yet? What people/perspectives might be missing?

We do not know the role climate change will play in shifting food systems.

What resources, tools, and data, do you already have? What might be possible working together?

Product development

Food system (supply change) capacity and relationships

Supply chain includes production, post-harvest, distribution, and consumption.

### Table Topic: Distributed Arctic Research/Education Consortia

Participants: Seth, Adam, Helena, Matthew

What questions are you asking and why are they potentially important to both regions?

How do we make connections between high school, college, and professional settings?

What are the avenues for funding?

How do we link scientific discovery and courses?

How to bolster a greater US program for polar research?

Where can experiential learning happen (i.e. where are the facilities, and dorms where programs can happen?)

What data will be collected that communities will use?

What factors related to this are similar and different between the two regions?

New England regional efforts, including 42 Degrees North

University structure (similar)

Upward Bound programs: AK has 5; Maine has 7.

PFAS is an issue in both places.

What do we not know yet? What people/perspectives might be missing?

Communities were not represented at this discussion.

What resources, tools, data, do you already have? What might be possible working together?  
Field schools and stations in Toolik, Juneau Icefield Research Project, Rural campuses, ACC, T3.

Community connections, Upward Bound, Other organizations in state that provide infrastructure to help facilitate.

Other Points:

Issue: Funding (not personnel)- agencies keep disallowing education funding.  
EPSCoR Track II proposal?

**Table Topic: Community-Driven Research**

**Participants: Nettie, Brit, Gayle**

What questions are you asking and why are they potentially important to both regions?

A broad range of questions: Important: 1. Without early inclusion, solutions won't be accepted or functional. 2. Skills transfer needs to be built in. 3. What does a framework look like and how is it built/ maintained? Cooperative Extension Model? Also talking about moose & ticks, climate hazards, coastal infrastructure, WWF, Citizen science, visiting scientists/post-docs.

What factors related to this are similar and different between the two regions?

Climate hazards have a lot of cross-over between AK-ME. AK Is forced to be ahead, but collaboration would help. Geographic scope is different, coastal erosion exacerbated in AK. Both states have a climate plan.

What do we not know yet? What people/perspectives might be missing?

How to fund coordination and champions?

How do we fund a stable infrastructure?

How do we get cooperation and compliance from outside?

What resources, tools, data, do you already have? What might be possible working together?

Integration/community-controlled conversation.

Need to connect KSMC with KALI (Kodiak Archipelago Leaders Institute)

Other points:

Increased base funding for existing community-based research and networking them.

Cooperative Extension Model: 1. Staff who live in the community. 2. Know the community and their (scientific) speciality 3. Staff becomes a liaison into the community.

**Table Topic: Sustainable Built Environment in Extreme, Remote Conditions**

Participants: Cody, Bruno, Bill, Jeremy

What questions are you asking and why are they potentially important to both regions?

Built environment and materials for extreme remote environments.

What factors related to this are similar and different between the two regions?

Shared Juneau icefield project

Alaska is a more extreme and colder environment, also more remote.



Treat Island (Maine) highest number of freeze/thaw cycles in the world.  
Corrosive salt environment in Maine.  
In Maine, they do not have as many Indigenous aspects to their work.

What do we not know yet? What people/perspectives might be missing?

Coastal challenges of innovative solutions.

Large goal” coalesce the group on theme

Narrow goal: Field test , expand campsite projects

What resources, tools, data, do you already have? What might be possible working together?

New opportunities