

I. INTRODUCTION

The Arctic Research Consortium of the U.S. (ARCUS) is a U.S. 501(c)(3) not-for-profit corporation that serves the Arctic research community. ARCUS envisions strong and productive connections among U.S. and international Arctic researchers, educators, Indigenous and traditional knowledge holders, Arctic residents and local experts, and other stakeholders to improve understanding of the changing Arctic. Membership is open to all those organizations engaged in Arctic research or stakeholders to it, including academic, research, government, Indigenous, and corporations.

ARCUS has held an Annual Meeting nearly every year since its inception in 1988. This open meeting serves as an important opportunity for the ARCUS Board of Directors and staff to connect with ARCUS members, partners, and others from the wider Arctic research community to share updates, explore common issues, and discuss collaboration opportunities.

The 2020 ARCUS Annual Meeting was held virtually on Thursday, 29 October 2020. The meeting brought together more than 128 individuals from the Arctic research community, including 41 attendees from ARCUS Member Institutions and 26 ARCUS Individual Members. 100% of ARCUS' 28 Member Institutions participated in the event—either through meeting attendance or through the pre-meeting submission of Institutional Member reports. The move to an online meeting format in 2020 was, in part, necessitated by the COVID-19 pandemic. However, the decision to host a virtual meeting was also consciously made prior to COVID-19 travel restrictions to encourage participation of the widely-distributed and diverse ARCUS membership and Arctic research community. The choice was also made out of concern for the barriers many individuals face with regard to in-person meeting participation—especially when the ARCUS Annual Meeting is held as a side-event to the American Geophysical Union Fall Meeting, a conference dominated by physical and natural scientists from academia.

The goals of the 2020 ARCUS Annual Meeting were to:

- Bring members of the ARCUS research community together to meet, talk, and connect;
- 2. Hear a diversity of ideas to inform ARCUS activities; and
- 3. Discover who may be interested in working together after the meeting.

II. ARCUS & INSTITUTIONAL MEMBER UPDATES

The meeting structure focused on breakout group discussions, rather than presentations, so several resources were developed and shared before the meeting, including the organization's new Strategic Plan Goals and Objectives for 2020-2025 and an overview video presentation introducing ARCUS developed and recorded by ARCUS Board President Dave Cairns, ARCUS Executive Director Helen Wiggins, and ARCUS Strategic Planning Committee Chair Peter Webley. Representatives from each ARCUS Member Institution were also invited to submit updates on the Arctic research within their organizations as well as any potential opportunities for collaboration with other ARCUS community members. Seventeen institutions contributed an update.



All ARCUS and institutional member updates are available at : <u>https://www.arcus.org/annual-meetings/2020</u>.

III. BREAKOUT THEMES & DISCUSSION REPORTS

This section of the meeting report summarizes the main themes and key take-aways from the meeting's breakout group conversations. The breakout session themes were:

- 1. Co-production & Indigenous/Traditional Knowledge
- 2. Interdisciplinary Research Networking & Team Building
- 3. Outreach to Broader Audiences
- 4. Arctic STEM Education (from K-12 to Postgraduate Level)
- 5. COVID-19 Challenges in Arctic Research and Education
- 6. Diversity, Inclusion, and Belonging

1. Co-production & Indigenous/Traditional Knowledge

Many Arctic researchers are interested in engaging Arctic Indigenous and Traditional knowledge holders and communities in research efforts. However, Indigenous organizations have expressed concern about the overwhelming influx of recent proposal collaboration requests they have received, many from researchers with little or no research co-production experience or prior relationships with the communities being approached (e.g., Alaskan Indigenous Organization Navigating the New Arctic Comment Letter to the National Science Foundation). This tension between the western scientific community and Indigenous communities has been further complicated in the past year by COVID-19 health and safety concerns that have significantly limited outsider access to many Alaska Native communities.

As a result, many Arctic researchers are now looking for ways to more respectfully and equitably include Indigenous collaborators in research projects and avoid unnecessary disruption of Indigenous communities.

The two Co-Production & Indigenous/Traditional Knowledge breakout groups at the ARCUS Annual Meeting highlighted

access organizations interdisciplinary being level well all value lot being agencies important Work Arctic some having more community social build help see new one leadership audience forward often use go building field data across needs science working because sure ways group people creating going opportunities students involved years support local issues about together internet knowledge around other different challenges ARCUS co-production other different set on any resources audiences still between Communities best information issue connect like communication

Figure 1. Word cloud of all the notes taken during the ARCUS Annual Meeting break-out group discussions.

the need for the wider research community to adopt good coproduction practices with Indigenous collaborators, such as:

- Include Indigenous partners as equal members of research projects from the very beginning and compensate them for their contributions to a project, including proposal development.
- Invest in meaningful long-term relationships, building trust, and learning as much as you can about a community.
- Provide support for the time it takes to develop and maintain relationships.
- Build greater flexibility into project timelines and outcomes for co-produced research.
- Promote parity between western and Indigenous knowledge systems.
- Better coordinate and minimize research pressures on communities.

Ideas for ARCUS Community Efforts

Based on breakout discussion notes, ideas for ongoing ARCUS community efforts around this theme include:

- Provide resources and training to encourage wider awareness and adoption of good co-production practices.
- Promote greater levels of coordination for researchers working on projects in similar geographic areas; help people leverage existing connections before they separately approach an Indigenous partner or community.
- Co-produce a product with Indigenous partners that illustrates the value of place-based knowledge.
- Encourage more co-produced research efforts focused on interior Alaska, and/or highlight that this region is often underrepresented in research.

2. Interdisciplinary Research Networking & Team Building

Addressing many of the complex Arctic research questions and societal challenges requires contributions from multiple disciplines and perspectives. Trends in research funding are also encouraging the formulation of more interdisciplinary Arctic research projects. However, barriers of communication, methodological differences, and different norms and practices surrounding data use can all make the benefits of interdisciplinary research hard to attain.

Despite the many challenges, the large number of meeting participants who elected to discuss the theme of "Interdisciplinary Research Networking & Team Building" (more than any other break-out theme) indicates that this topic is of considerable interest and importance to the ARCUS community.

Ideas for ARCUS Community Efforts

Based on breakout discussion notes, ideas for ongoing ARCUS community efforts around this theme include:

- Host interdisciplinary training, networking, and research collaboration opportunities, including showcasing of good interdisciplinary research examples.
- Encourage the involvement of early-career researchers and junior faculty in interdisciplinary activities.
- Support the development of decision frameworks to connect research to societal values and priorities.
- Take a lead role in the development of interdisciplinary research plans.
- Identify and communicate interdisciplinary research funding opportunities.
- Promote open sharing of data through formats and platforms that enable greater access and use.
- Serve as a bridge between scholars and communities with research needs.



3. Outreach to Broader Audiences

Researchers are often challenged with the need to communicate the relevance of their science to different audiences, both inside the Arctic and beyond. However, they may not have adequate training or financial or technical support for these efforts. Researchers are trained to communicate with other researchers, and it is hard to change communication styles. Items written for peer-reviewed papers are often repurposed rather than being tailored specifically for a new group. Outreach efforts to broader audiences may also default to one-way information flows (telling an audience what the research is) rather than engaging in twoway communication where feedback is also invited to inform the science.

During the breakout discussion on the "Outreach to Broader Audiences," participants emphasized keeping in mind the unique needs, interests, and communication preferences of your audience. They also discussed how to make these details more discoverable to the wider Arctic research community.

Ideas for ARCUS Community Efforts

Based on breakout discussion notes, ideas for ongoing ARCUS community efforts around this theme include:

- Provide training resources for Arctic researchers interested in learning new communication skills.
- Create a network of Arctic research communication specialists who understand what is needed to connect successfully with specific audiences/regions and would be willing to provide guidance to others.
- Provide information on translation services to assist researchers interested in sharing materials in their audience's first language.
- Develop and/or showcase course curriculum that can be integrated in schools.
- Gather information from various target audiences on what communication methods are preferred.

4. Arctic STEM Education (from K–12 to Postgraduate Level)

There is keen interest in the Arctic from learners of all ages. Many different segments of the Arctic research and education community are independently developing and/or looking for tools and resources to support Arctic-related K–16 education. More sharing and communication is needed between students, educators, and organizations involved in K-16 education.

Ideas for ARCUS Community Efforts

Based on breakout discussion notes, ideas for ongoing ARCUS community efforts around this theme include:

- Share existing resources to support the advancement of Arctic related K–16 education.
- Establish a working group/network of PolarTREC alumni, partner organizations, universities, institutions, students (including rural Arctic students), faculty, researchers, and others to focus on Arctic-related K–16 education to:
- · Share and/or build relevant resources;
- Connect individuals/organizations looking for or developing those resources; and
- Work to scale those resources up, as necessary.



5. COVID-19 Challenges in Arctic Research and Education

Without a doubt, the COVID-19 pandemic is forcing a rapid restructuring of the Arctic research enterprise. It has caused tremendous upheaval in both the personal and professional lives of Arctic research community members and communities—with long-term consequences that remain hard to predict. Faced with the compounding challenges of travel bans and work-fromhome requirements, many researchers are continuing to look for innovative ways to maintain datasets and to collaborate with community partners from afar. Others are working to develop new best practices that might allow them to return safely to the field. Many are hopeful that positive change—promoting stronger norms of research co-production and collaboration with local communities—might prove to be the silver lining behind all this disruption.

Ideas for ARCUS Community Efforts

Based on breakout discussion notes, ideas for ongoing ARCUS community efforts around this theme include:

- Lead the way in reshaping Arctic research with other Arctic science organizations, addressing the issues brought to the surface by COVID-19.
- Advocate for training for local residents interested in performing research.
- Help researchers understand and work within current COVID-related restraints in communities.
- Work with others to develop best practices for how to move around safely in the Arctic.
- Develop a white paper on the lack of connectivity and internet/Zoom costs in Alaskan communities (that can be used to justify funding requests to cover these oftenexorbitant costs).
- Assist in sharing and awareness of any research data collected in 2020 and other existing data.
- Help the growing number of people relying on existing data with data discovery, sharing, access, and awareness of data repositories, such as the Arctic Data Center.

6. Diversity, Inclusion, and Belonging

Lack of diversity and inclusiveness in Arctic research—and Arctic research leadership positions in particular—remain a concern to many in the community. Many systemic barriers continue to stand in the way of efforts to diversify in the Arctic research community workforce. Much more can and should be done by the Arctic research community to overcome these barriers so that Arctic research can benefit from the unique talents, knowledge, capabilities, and perspectives of individuals and groups who have traditionally been excluded.

Ideas for ARCUS Community Efforts

Based on breakout discussion notes, ideas for ongoing ARCUS community efforts around this theme include:

- Helping Arctic research employers and projects recruit a more diverse pool of candidates.
- Explore institutional barriers and attempt to better understand the tensions between the promotion of diversity and inclusion and the backlash/resistance (often politicized) to those movements.
- Provide guidance to employers, universities, and other organizations on what can be done to enable inclusive environments for polar research.

"This was my first time attending an ARCUS meeting, and I feel it was very worthwhile in terms of learning about the organization and meeting a couple of people. I also felt very welcomed."

IV. NEXT STEPS

The ARCUS Annual Meeting served as a forum to discuss common needs of the ARCUS community and as a launch point for new ARCUS collaborations. As a next step, in early 2021 ARCUS staff will be contacting individuals who expressed interest to join working groups around themes discussed at the meeting. These working groups will explore concrete actions we can collectively undertake to implement the ideas summarized in this report. A wider invitation to join working groups will also be circulated to Annual Meeting participants and other ARCUS community members. In addition, the ARCUS staff and board will continue to address the themes discussed through our existing funded activities.

V. APPENDICES

<u>1. Meeting Evaluation Results</u>

An anonymous meeting evaluation survey was completed by 24 participants.

For rating how well the meeting met the stated goals (see figure below), 88% of the respondents felt the meeting was excellent

or very good in meeting the goal of "Bring people together to meet, talk, and connect." For the goal "Hear a diversity of ideas to inform future activities", 79% of respondents rated the meeting as excellent or very good. The respondents rated the goal of "Discover who may be interested in working together after the meeting" as less successful, with 50% rating it as very good or excellent, and 42% rating it as good.



Figure 2. Meeting evaluation results for the 2020 ARCUS Annual Meeting.

All of the respondents felt the quality of the breakout sessions were good, very good, or excellent; 88% of the respondents agreed or strongly agreed that the meeting provided quality opportunities to interact with those they did not normally interact with. In open comment responses for what worked well at the meeting, a common theme was the welcoming and inviting atmosphere and success of the breakout group discussions.



For example:

"Very welcoming, inviting, inclusive atmosphere"

"I loved the breakout rooms... and I found it to be really enjoyable!"

"This was my 'first time' so I was not sure what to expect. It was a very welcoming environment and easy to contribute to."

"The breakout groups [were] great"

In open comment responses for what didn't work well, suggestions for improvements included needing more time in breakout groups and additional time or methods for networking with others.

2. Meeting Organizers, Discussion Facilitators, & Participants

ARCUS would like to sincerely thank our planning committee and wonderful group of breakout discussion facilitators for loaning their time and talents to the 2020 ARCUS Annual Meeting.

Thank you all very much for your help making this year's event meaningful and productive!

Annual Meeting Planning Committee

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Breakout Discussion Facilitators

Sara Bowden (IARPC Collaborations) David Cairns (Texas A&M University & ARCUS Board President) Kaare Erickson (UIC Science & ARCUS Board Member) Judy Fahnestock (ARCUS) Craig Fleener (Eleventh Air Force & ARCUS Board Member) Adrian Gall (ABR, Inc. & ARCUS Board Member) Jasper Hardesty (Sandia National Laboratories & ARCUS Board Member) Victoria Herrmann (Georgetown University & ARCUS Board Member) Diane Hirshberg (University of Alaska Anchorage & ARCUS Board Member) Meredith LaValley (IARPC Collaborations) Olivia Lee (University of Alaska Fairbanks) Julie Loisel (Texas A&M University) Molly McCammon (Alaska Ocean Observing System) Julie Raymond-Yakoubian (Kawerak, Inc. & ARCUS Board Member) Cheryl Rosa (US Arctic Research Commission & ARCUS Board Member) Hazel Shapiro (IARPC Collaborations) Lisa Sheffield Guy (ARCUS) Stacey Stoudt (ARCUS) Betsy Turner-Bogren (ARCUS) Janet Warburton (ARCUS) Helen Wiggins (ARCUS)

ation : Myers, B., Wiggins, H., Sheffield Guy, L. (eds). 2020 ARCUS Annual Meeting Report. Arctic Research Consortium of the US (ARCUS), Fairbanks, Alaska. 2020 port layout and graphic design: B. Zeb Polly. ARCUS.

Individual Participants:

To view a list of all 2020 ARCUS Annual Meeting participants, please visit:

https://www.arcus.org/files/meeting/attendees/2020 arcus annual meeting arcus.pdf

Participating ARCUS Member Institutions

ABR, Inc. Alaska Ocean Observing System Arizona State University **Cold Climate Housing Research Center** Consortium for Ocean Leadership Dartmouth College Fletcher School, Tufts University Kawerak, Inc. Michigan State University Norwegian Polar Institute Russian State Hydrometeorological Institution **Rutgers University** Sandia National Laboratories Smithsonian Arctic Studies Centre **Texas A&M University** The George Washington University UArctic **UIC Science** UiT: University of Tromso University of Alaska Anchorage University of Alaska Fairbanks University of Lapland University of Northern British Columbia University of Virginia University of Washington **US Arctic Research Commission** Woods Hole Oceanographic Institution Woodwell Climate Research Center



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