



2021 ANNUAL REPORT



Dear ARCUS Members, Friends, and Colleagues,

At the end of another year of disruption and uncertainty, we want to take the time to appreciate all that we have to celebrate and be proud of.

We embraced all-virtual gathering spaces this year and held events on Virtual Speed Networking, Arctic Research Collaboration, Engaging Rural and Alaska Native Undergraduates and Youth in Arctic STEM, Community and Citizen Science in the Far North, and others. As you'll see in this report, we continued to deliver projects and products across the spectrum of our communication, research coordination, and education efforts. We assisted organizations like the Inuit Circumpolar Council Alaska and Kawerak, Inc. to help make their virtual meetings the best they could be. We leaned into designing activities that were accessible to those across disciplines and perspectives, and experimented with ways to embody a spirit of "come as you are" in all that we do.

As we end this year, we know that many of us are reflecting on how we can take the lessons of the year and continue to build and nurture this wonderful community that is working together to advance Arctic research and education. On behalf of the ARCUS staff, Board, Members, and Partners, please know that we are grateful for your ongoing perseverance, your creativity, and your many contributions to advancing collaborative Arctic research and education efforts during a challenging time.

We look forward to continuing our work with you in the new year and know that all we've been doing together to adapt and grow in 2021 will continue to strengthen future Arctic research community endeavors for many years to come.

Sincerely,

David Cairns
Board President, ARCUS

Helen Wiggins,
Executive Director, ARCUS

Cover photo credit: Jennifer Baldacci (PolarTREC 2017), Courtesy of ARCUS

Report Content:

Pg 2: Strategic Goals & Objectives (2020-2025)
Pg 3: Staff
Pg 4: Board of Directors
Pg 5-6: Member Institutions
Pg 7: Partner Organizations
Pg 8: Committee Volunteers & Individual Members

Pg 9-10: ARCUS Cooperative Agreement
Pg 11: Virtual Conference & Early Career Awards
Pg 12: Sea Ice for Walrus Outlook
Pg 13: Arctic Research Collaboration Workshop
Pg 14-15: Research Support Highlights
Pg 16-17: Education Highlight & PolarTREC
Pg 18: Financial Report

STRATEGIC GOALS & OBJECTIVES (2020–2025)

Goal 1: Facilitate and Support Arctic Research Collaboration

- **Objective 1.1:** Provide Resources and Promote Innovative Practices for Collaborative and Interdisciplinary Research
- **Objective 1.2:** Connect and Support the Arctic Research Community Around Shared Topics of Interest
- **Objective 1.3:** Partner with Other Arctic Organizations to Catalyze and Broaden Networking Opportunities
- **Objective 1.4:** Promote Exchange, Collaboration, and Co-Production Between the ARCUS Community with US-Based Arctic Indigenous Community Members

Goal 2: Enhance the Effectiveness of Arctic Research Communication

- **Objective 2.1:** Increase Information Exchange and Knowledge Sharing Within the ARCUS Community
- **Objective 2.2:** Amplify and Share Arctic-Related Research, Knowledge, and Issues with Diverse Audiences
- **Objective 2.3:** Work with ARCUS Members to Prioritize and Address the Critical Needs of the ARCUS Community
- **Objective 2.4:** Build Awareness of and Cultivate Group Identity Between ARCUS, our Members, and our Partners

Goal 3: Educate K-16 Students and Formal and Informal Educators about the Arctic, and Engage them in Arctic Research

- **Objective 3.1:** Develop Professional Training Opportunities for Arctic Educators
- **Objective 3.2:** Champion Culturally Responsive Arctic Education and Outreach
- **Objective 3.3:** Foster Arctic Citizen Science and Community-Based Research
- **Objective 3.4:** Encourage Arctic Youth Involvement in Arctic Research Activities and Learning

Goal 4: Secure Resources to Support the ARCUS Mission

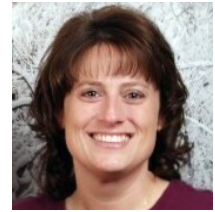
- **Objective 4.1:** Expand and Sustain a Diverse and Inclusive ARCUS Membership
- **Objective 4.2:** Strengthen ARCUS' Organizational Capacity
- **Objective 4.3:** Diversify ARCUS' Funding Sources
- **Objective 4.4:** Grow Reserves to Adapt and Respond to New Opportunities

ARCUS STAFF



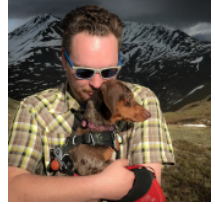
Helen Wiggins
Executive Director
helen@arcus.org
Wasilla, AK

Brandi Austin
Director of Finance & HR
brandi@arcus.org
Fairbanks, AK



Kristi Weiss-Ackels
Accountant
kristi@arcus.org
Fairbanks, AK

B. Zeb Polly
Systems Administrator
zeb@arcus.org
Fairbanks, AK



Ronnie Owens
Information Technology Director
ronnie@arcus.org
Bellingham, WA

Judy Fahnestock
Project Coordinator
judy@arcus.org
Madbury, MA



Joed Polly
Video Production & Content Manager
joed@arcus.org
Somerville, MA

Stacey Stoudt
Project Manager
stacey@arcus.org
Anchorage, AK



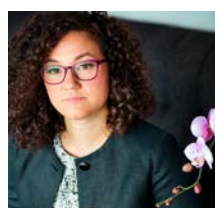
Kuba Grzeda
Project Coordinator
kuba@arcus.org
Fairbanks, AK

Janet Warburton
Education Project Manager
warburton@arcus.org
Anchorage, AK



Betsy Turner-Bogren
Project Manager
betsy@arcus.org
Fairbanks, AK

Vanessa Raymond
ICC Alaska Information
Archivist & Data Advisor
brit@arcus.org
Fairbanks, AK



Lisa Sheffield Guy
Project Manager
lisa@arcus.org
Pescadero, CA

Brit Myers
Project Manager
brit@arcus.org
Vashon, WA



ARCUS BOARD OF DIRECTORS



Audrey Taylor
University of Alaska Anchorage
artaylor@uaa.alaska.edu
Term End: 2022

David Cairns (President)
Texas A&M University
cairns@tamu.edu
Term End: 2022



Adrian Gall
ABR, Inc
agall@abrinc.com
Term End: 2022

Cheryl Rosa
US Arctic Research Commission
crosa@arctic.gov
Term End: 2022



Timo Koivurova
University of Lapland
timo.koivurova@ulapland.fi
Term End: 2022

Diane Hirshberg (Treasurer)
University of Alaska Anchorage
dbhirshberg@alaska.edu
Term End: 2023



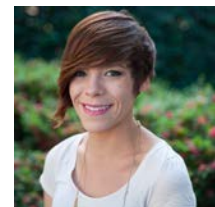
Kaare Erickson
Ikaagun Engagement, LLC
sikuaq@ikaagun.com
Term End: 2023

Jasper Hardesty
Sandia National Laboratories
joharde@sandia.gov
Term End: 2021



Julie Raymond-Yakoubian
(Member-at-Large)
Kawerak, Inc.
juliery@kawerak.org
Term End: 2021

Victoria Herrmann
Georgetown University
vh159@georgetown.edu
Term End: August 2021



Pips Veazey
University of Maine
alice.veazey@maine.edu
Term End: 2023

Craig Fleener
Alaska Tribal Broadband &
11th Air Force
chizhur@gmail.com
Term End: 2021



Peter Webley (Secretary)
University of Alaska
Fairbanks
pwwbley@alaska.edu
Term End: 2020

ARCUS MEMBER INSTITUTIONS



Represented By:
David Cairns, cairns@tamu.edu
Julie Loisel, julieloisel@tamu.edu

www.tamu.edu



Represented By:
Stephen Déry, stephen.dery@unbc.ca
Gary Wilson, gary.wilson@unbc.ca

www.unbc.ca



Represented By:
Nalân Koç, nalan.koc@npolar.no

www.npolar.no/en



Represented By:
Arja Rautio, arja.rautio@oulu.fi
Kirsi Latola, kirsi.latola@uarctic.org

www.uarctic.org



Represented By:
Cheryl Rosa, crosa@arctic.gov
John Farrell, jfarrell@arctic.gov

www.arctic.gov



Represented By:
Matthew Jull, mjull@virginia.edu
Howard Epstein, hee2b@virginia.edu

www.virginia.edu



Represented By:
Gunhild Hoogensen Gjorv, gunhild.hoogensen.gjorv@uit.no
Alf Håkon Hoel, alf.hakon.hoel@uit.no

www.en.uit.no/startside



Represented By:
Carin Ashjian, cashjian@whoi.edu

www.whoi.edu



Represented By:
Nagruk Harcharek, nagruk.harcharek@uiccs.com

www.uicalaska.com/arctic-experts/science-support



Represented By:
Robert Holmes, rmholmes@woodwellclimate.org
Anna Liljedahl, aliljedahl@woodwellclimate.org

www.woodwellclimate.org



Represented By:
Diane Hirshberg, dbhirshberg@alaska.edu
Thomas Ravens, tmravens@alaska.edu

www.uaa.alaska.edu



Represented By:
Brian Vasel, brian.vasel@noaa.gov
Christine Smith, christine.smith@noaa.gov

www.gml.noaa.gov



Represented By:
Melanie Bahnke, contact@kawerak.org
Julie Raymond-Yakoubian, julieri@kawerak.org

KAWERAK, INC.
www.kawerak.org



Represented By:
Shauna BurnSilver, shauna.burnsilver@asu.edu
Stephanie Pfirman, spfirman@asu.edu

www.asu.org

ARCUS MEMBER INSTITUTIONS



Represented By:
Adrian Gall, agall@abrinc.com
Gerald Frost, jfrost@abrinc.com

www.abrinc.com



Represented By:
Robert Orttung, rorttung@gwu.edu
Dmitry Streletskiy, strelets@gwu.edu

www.gwu.edu



Represented By:
Sheyna Wisdom, wisdom@aoos.org
Holly Kent, kent@aoos.org

www.aoos.org



Represented By:
Nettie LaBelle-Hamer,
nettie.labellehamer@alaska.edu
Peter Webley, pwebley@alaska.edu

www.uaf.edu



Represented By:
Timo Koivurova,
timo.koivurova@ulapland.fi
Johanna Ikävalko
johanna.ikavalko@ulapland.fi

www.arcticcentre.org



Represented By:
Marya Rozanova-Smith,
marya.rozanova@gmail.com
Valeriy Mikheev, v.mikheev-rshu@yandex.ru

www.rshu.ru/eng



Represented By:
Lisa Busch, lbusch@sitkascience.org
Melissa Hamilton,
mhamilton@sitkascience.org

www.sitkascience.org



Represented By:
Åsa Rennermalm,
asa.rennermalm@gmail.com

www.rutgers.edu



Represented By:
Jack Hébert, jack@cchrc.org
Bruno Grunau, bruno@cchrc.org

www.cchrc.org



Represented By:
Jasper Hardesty,
joharde@sandia.gov
Mark Ivey, mdivey@sandia.gov

www.sandia.gov



Represented By:
Alan Leonardi,
aleonardi@oceanleadership.org
Allison Hays,
ahays@oceanleadership.org

www.oceanleadership.org



Represented By:
Ed Blanchard,
ed@atmos.washington.edu
Craig Lee, craiglee@uw.edu

www.washington.edu



DARTMOUTH

www.dickey.dartmouth.edu/arctic-environment

Represented By:
Melody Brown Burkins,
melody.b.burkins@dartmouth.edu
Ross Virginia,
ross.virginia@dartmouth.edu

Learn more & become part of
the ARCUS community at:
[https://www.arcus.org/arcus/
member-information](https://www.arcus.org/arcus/member-information)

ARCUS PARTNER ORGANIZATIONS

National Science Foundation Office of Polar Programs

Many ARCUS activities are supported by the National Science Foundation's Office of Polar Programs under Cooperative Agreement No. PLR-1304316 and Cooperative Agreement No. PLR-1928794.

Association of Polar Early Career Educators (APECS)

ARCUS and APECS have a Memorandum of Understanding that acknowledges the joint commitment of both organizations to the professional development of early career polar researchers. Additionally, APECS serves as a partner in the newly funded Early Career Travel Awards.

Eskimo Walrus Commission

The Eskimo Walrus Commission partners with ARCUS to produce the Sea Ice for Walrus Outlook (SIWO). SIWO is a resource for Alaska Native subsistence hunters, coastal communities, and others interested in sea ice and walrus.

National Weather Service - Alaska Region

The National Weather Service - Alaska Region partners with ARCUS to produce the Sea Ice for Walrus Outlook (SIWO).

Alaska Native Science & Engineering Program (ANSEP)

ARCUS partners with ANSEP by serving as a host to ANSEP Summer Bridge students (high school graduates) or Fellows (University of Alaska Fairbanks undergraduate students).

Alaska Natural Resource & Outdoor Education Association (ANROE)

ARCUS and ANROE have a Memorandum of Agreement that establishes a partnership to collaborate on the development and delivery of natural resource education content and resources.

Interagency Arctic Research Policy Committee (IARPC)

ARCUS administers NSF funding to the Interagency Arctic Research Policy Committee's secretariat. Additionally, ARCUS works with the IARPC secretariat to support community-driven research initiatives emerging from IARPC Collaboration Teams.

Inuit Circumpolar Council - Alaska (ICC-Alaska)

ICC-Alaska is a co-lead with ARCUS on the Arctic Indigenous Scholars Program, which creates opportunities for Indigenous scholars to educate and inform policy- and decision-makers in Washington, DC. Additionally, ARCUS has detailed a staff member to ICC-Alaska to forge stronger partnerships and add capacity at the hosting organization.

Smithsonian Arctic Studies Center

The Smithsonian Arctic Studies Center provides D.C. host support for the ARCUS Indigenous Scholars Program and hosts full-day visits from the scholars.

Polar Educators International (PEI)

ARCUS provides in-kind secretariat support for PEI, which is an international professional network for everyone who educates in, for, and about the polar regions.

Anchorage Museum

The Anchorage Museum and others have partnered with ARCUS to host the Anchorage Arctic Research Summit.



Learn More: <https://www.arcus.org/arcus/partners>

COMMITTEE VOLUNTEERS & INDIVIDUAL MEMBERS



COMMUNITY & CITIZEN SCIENCE CONFERENCE STEERING COMMITTEE

Annette Bombosch
Kaare Sikuqaq Erickson
Roberta Tuurraq Glenn
Lisa Sheffield Guy
Janet Warburton

Dennis Davis
Audrey Taylor
Katie Spellman
Kuba Grzeda
Erica Chenoweth

ARCUS is deeply grateful to the many individuals who supported our efforts in 2021 through countless volunteer hours, membership dues contributions, & active participation in ARCUS programs and events!

ARCUS MEMBERSHIP COMMITTEE

Adrian Gall
Brit Myers
Audrey Taylor
Katherine Schexneider

James Hemsath
Timo Koivurova
Jasper Hardesty

Victoria Herrmann
Sasha Leidman
Helen Wiggins

EARLY CAREER AWARDS COMMITTEE

Lavanya Ashokkumar
Josephine-Mary Sam
Lisa Sheffield Guy

Claire Griffin
Jiake Zhou
Helen Wiggins

Julie Loisel
Stacey Stoudt

POLARTREC ADVISORY COMMITTEE

Regina Brinker
Sarah Crowley
Dieuwertje Kast

Janet Warburton
Judy Fahnestock
Dominique Richardson

Gary Wesche
Marilyn Sigman
Alex Eilers

ANNUAL MEETING COMMITTEE

David Cairns
Jim Hemsath
Brit Myers

Audrey Taylor
Helen Wiggins
Katherine Schexneider

Sasha Leidman
Kuba Grzeda

2021 ARCUS INDIVIDUAL MEMBERS

Anne Kari Meisingset
Rebecca Atwood
Victoria Herrmann
Danielle Verna
Katherine Schexneider
Julie Raymond-Yakoubian
Stanislav Ksenofontov
Kaisa Holloway Cripps
Muhammad Asaduzzaman
Michael Weintraub
Bernadette Engelstad
Karen Grosskreutz
Nathalie Ylenia Triches
Renée Crain Wagner
Somayajulu Dhulipala
Cana Uluak Itchuaqiyaq
Kaare Sikuqaq Erickson
Temenuzhka Spasova
Ayumi Fujisaki-Manome
Michael Mackiewicz
Anne Kari Meisingset
Hannah Holland-Moritz
Seth Campbell
Robert Hollister
Diane Hirshberg
Jean Balestrery
Jennifer Schmidt
Edward Kaufmann
Patricia Johnston
Gabiella Gricius
Marian Leerburger
Juliana Wilczynski
Evelyn Strombom

Hajo Eicken
Murielle Nagy
David Cairns
Craig Fleener
Lissa Hughes
Randy Kee
Michelle Mack
Dave Grant
Larry Hurst
Steven Lamy
Talor Stone
Sarah Johnson
Peppi Croft
Helena Edelson
David Harning
Camila de Souza
Gaurav Madan
Victoria Miles
Craig Dorman
Acacia Johnson
Jessica Miller
Steven Lee
Tanguy Sandré
Olivia Lee
Kate Ruck
Pips Veazey
Hailong Liu
Min Liew
Talor Stone
Suguang Xiao
Jason Zottola
Grant Gunn
Brit Myers

Rolf Rødven
Matt Heavner
Jeffrey Mar
Ming Xiao
Adrian Gall
Eric Wilkman
Ann McElvein
Daniel Otto
Ryan Naylor
Austen Whitney
Camila de Souza
Maher Al-Badri
Jessica Dutton
Rae Cook
Anna Berge
Xiaohang Ji
Gisele Arruda
Igor Appel
Ellen Frye
Thomas Farrugia
Marta Kumle
Yvette Spitz
Min Liew
Asma Shethwala
Lavi Appel
Christopher Ivins
Kimberly Rand
Hailong Liu
Jill Prewitt
Holly Kent
Carol Janzen
Darcy Dugan
Stacy Porter

INTERDISCIPLINARY RESEARCH COMMITTEE

Holly Hapke
Mia Bennett
Martin Jeffries
Brit Myers

Liz Weinberg
Helen Wiggins
Pips Veazey
Kuba Grzeda
Canal Uluak Itchuaqiyaq
Julie Raymond-Yakoubian

Caitlyn Wylie
Peter Webley
Gisele Arruda
Karl Huemmrich

Lenore Grenoble
Emre Hagguder
Asad Sabbah
Hilary McMahan
Jessica Kantarovich
Madeline Snigaroff
Suzanne Green
Forrest Schoessow
Dawn Marie Lemke
James Bradley
Armina Soleymani
Mason Stockstill
Kimberly Ohnemus
Ashok Pandey
Kabiraj Khatiwada
Inci Güneralp
Stephen Vavrus
Emily Maxwell
Katherine Reedy
Mary Gibbons
Kathryn Lavelle
Cody Johnson
Thian Yew Gan
Celso Ferreira
Erica Ferencik

Savannah Peery
Joshua Butterick
Peng Lian
Jessie Meyer
Saskia Hirsch
Manwei Chan
Audrey Taylor
Lori Petruski
Laura Zanotti
Lorene Lynn
Julie Lina
Leonid Yurganov
Joyanne Hamilton
Kyle Lambert
Karl Huemmrich
Eda Ayaydin
Michelle Leclair
Monika Sikand
Frank Zhu
Karl Newyear
Bruce Main
James Anderson
Molly McCammon
Madison Kluge
Lavi Appel

Juliana Wilczynski
Prasad Padalkar
Millie Lambert
Timothy Pasch
Timo Koivurova
Michelle Ritchie
Sheyna Wisdom
Jim Costopulos
Nadya Yanakieva
Suresh Immaneni
Nadya Yanakieva



ARCUS COOPERATIVE AGREEMENT



Building Community in Arctic Research: Communication, Research Support, and Multi-Knowledge System Integration

A three-year NSF-funded Cooperative Agreement (2019–2022; Award # OPP-1928794) supports the work we do to nurture collaborations across disciplines, sectors, and perspectives; and to broaden participation across the Arctic research enterprise.

ARCUS Cooperative Agreement activities focus on:

- Research community support, including fostering community-driven research initiatives through virtual tools, and support of early-career researchers;
- Networking activities, including network analysis and community-building events for the Arctic research community;
- Collaboration with Indigenous communities and knowledge systems, including integration of Indigenous knowledge with weather and ice predictions, and support for Indigenous scholars of all career levels;
- Arctic research communications and outreach; and
- Support of the Interagency Arctic Research Policy Committee (IARPC).

The added value of these research support functions—effective collaboration management, networking, communications, and outreach—is key to successful interdisciplinary research.

WHAT KINDS OF ACTIVITIES DOES THE COOPERATIVE AGREEMENT SUPPORT?



Arctic Community Networking



Arctic Indigenous Scholars Program



Early Career Conference Awards



Arctic Citizen Science Virtual Conference



Research Incubation Activities



Communications Tools



Alaska Native Organization Partnerships



Arctic Research Seminar Series



Sea Ice for Walrus Outlook



Arctic Research Day Events

COMMUNITY & CITIZEN SCIENCE IN THE FAR NORTH

A VIRTUAL
CONFERENCE



The Community & Citizen Science in the Far North virtual conference (#CCSFarNorth) was held 5-7 October to provide an opportunity for researchers, community members, and other practitioners of community and citizen science in the circumpolar Arctic to meet and share knowledge. A conference white paper, archived conference presentations, and a growing community of practice will continue developing a shared knowledge base and advance our community's long-term strategic objective to foster Arctic citizen science and community-based research.



of
attendees

124



of
presentations

42

##CCSFarNorth



More information: <https://www.arcus.org/meetings/2021/arctic-ccs>

EARLY CAREER CONFERENCE FUNDING AWARDS

This ARCUS Early Career Conference Funding Award supports the participation of US-based, early career researchers in meetings and events relevant to Arctic research, with a focus on underrepresented minorities (Black, Indigenous, and People of Color; BIPOC).

Congratulations To:

- Jillian Sanders (Texas A&M)
- Leslie Baker (Portland State)
- Hannah Zimmerman (Standford)
- Mark England (UC Santa Cruz)
- Mia Bennett (U Washington)
- Shouwei Li (UC Riverside)

"Without the award I would not be able to present and network at perhaps the most important conference of my career."

More information: <https://www.arcus.org/early-career-funding>

COMMUNITY CONNECTIONS

COOPERATIVE AGREEMENT ACTIVITIES (Year 2 of Award: September 2020–August 2021)



Mailing Lists

- ArcticInfo: 5,238 subscribers, 294 postings, emails opened 347,831 times
- Polar Education List: 1,646 subscribers



Witness the Arctic Newsletters

- 8,808 subscribers
- 44 articles from 78 contributors
- 31,836 webpage views



ARCUS Community Meetings & Events

- Arctic Research Speed Networking - 95 participants
- Arctic Research Webinars- 7 seminars with 471 participants from 11 countries and 27 US states
- Webinar Archive - seminars recording during the reporting period were viewed 2,274 times
- ARCUS Annual Meeting - 128 attendees & 21 ARCUS Institutional Members represented
- Funders Meet & Greet -103 attendees with 7 featured funding organizations



Website

www.arcus.org

- 270,411 page views and 153,353 unique visitors
- 51% users from US and rest from 201 different countries
- Arctic Calendar with 2,984 events and 31,217 page views
- Publications Directory - 220 publications with 1,216 page views
- Directory of Arctic Researchers with 4,209 Arctic experts

HOW TO JOIN THE ARCUS COMMUNITY ONLINE:

- 1) Subscribe to ArcticInfo for weekly news from the broader Arctic research community. This is a place to submit your event announcements, job openings, & other news: www.arcus.org/arctic-info
- 2) Subscribe to the Witness The Arctic newsletter to receive more in-depth articles highlighting Arctic research & education efforts: www.arcus.org/witness-the-arctic
- 3) Subscribe to the ARCUS Monthly Report to receive a monthly update on ARCUS & ARCUS Member Organization news as well as a digest of job openings, professional development opportunities, and funding opportunities: www.arcus.org/arcus/member-newsletter.
- 4) Submit your Arctic-related meetings, events, & funding deadlines to the Arctic Calendar: www.arcus.org/events/arctic-calendar
- 5) Subscribe to the Polar Education Mailing List for education-related news & announcements.: www.polartrec.com/about/education-list
- 5) Join the Directory of Arctic Researchers: www.arcus.org/researchers
- 4) Join us on [Social Media](#):



@ArcticResearch
@PolarTREC

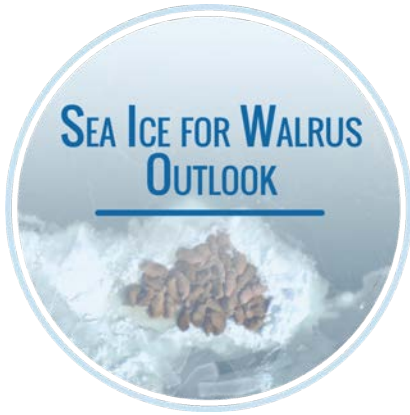


@ArcticResearchConsortium
@Polar.TREC
@SealceForWalrus



Company: ArcticResearch
Group: Sea Ice Prediction Network

Sea Ice for Walrus Outlook



The Sea Ice for Walrus Outlook (SIWO) is a resource for Alaska Native subsistence hunters, coastal communities, and others interested in sea ice and walrus. The SIWO provides weekly reports each spring with information on weather and sea ice conditions relevant to walrus in the northern Bering Sea and southern Chukchi Sea regions of Alaska.



More information:
www.arcus.org/siwo

Follow us on Facebook:
www.facebook.com/seaiceforwalrus

LOCAL OBSERVERS:

Shishmaref:
Curtis E. Nayokpuk

Wales:
Robert Tokeinna, Jr.

Brevig Mission:
Marcus Barr

Nome:
Frank (Boogles) Johnson, II

Gambell:
Clarence Irrigoo, Jr.

Savoonga:
Aqef Waghiyi

Diomede:
Eeleengayouq Ozenna

SIWO is managed by ARCUS and produced in partnership with the National Weather Service, Eskimo Walrus Commission, University of Alaska Fairbanks, and local observers. Support for SIWO is provided by the National Science Foundation's Arctic Sciences Section (PLR-1928794).



of Weekly Reports in 2021 (March-June)

13



of local observations

60



Alaskan communities engaged

43



of Facebook Followers

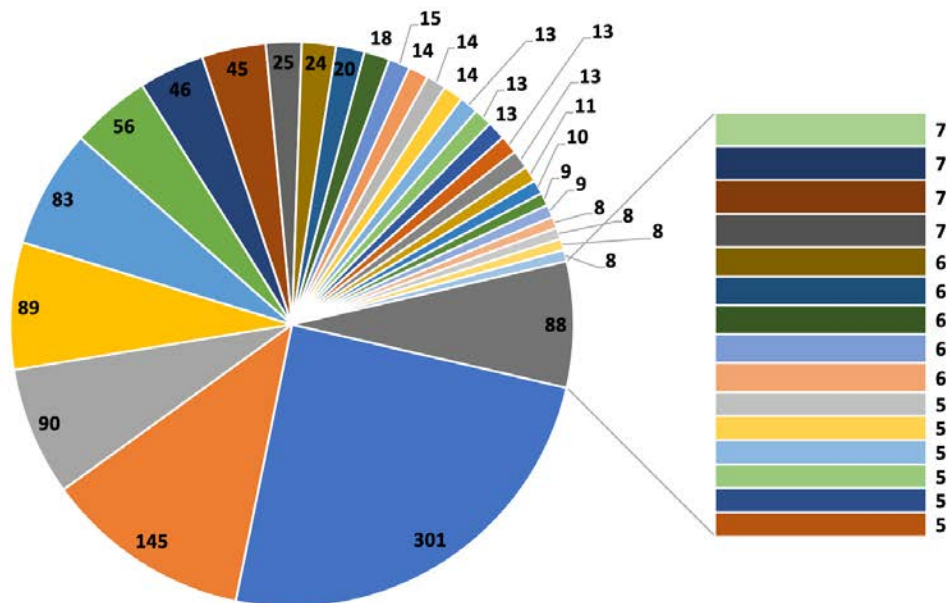
1,652

The 2021 SIWO season ran from 26 March - 18 June. At the start of the season, open water patches & leads shifted with the winds & were not often accessible to hunters. Walrus were present April through June. Some communities still had difficulty accessing walrus during this time, however. Ice lingered in the region longer than in recent years.



Walrus resting on ice near Gambell in mid-May. Photo by Clarence Irrigoo, Jr.

Location of SIWO Facebook Followers



- | | | | | | |
|----------------------|----------------------|------------------|-------------------|-------------------|----------------------|
| ■ Anchorage, AK | ■ Nome, AK | ■ Gambell, AK | ■ Savoonga, AK | ■ Shishmaref, AK | ■ Brevig Mission, AK |
| ■ Barrow, AK | ■ Fairbanks, AK | ■ Kivalina, AK | ■ Point Hope, AK | ■ Teller, AK | ■ Kotzebue, AK |
| ■ Bethel, AK | ■ Elim, AK | ■ Wainwright, AK | ■ Wales, AK | ■ College, AK | ■ Deering, AK |
| ■ Hooper Bay, AK | ■ Stebbins, AK | ■ Unalakleet, AK | ■ Palmer, AK | ■ Wasilla, AK | ■ Diomedes, AK |
| ■ Seattle, WA | ■ Alakanuk, AK | ■ Koyuk, AK | ■ Toksook Bay, AK | ■ Tuntutuliak, AK | ■ Chevak, AK |
| ■ Homer, AK | ■ Scammon Bay, AK | ■ Sitka, AK | ■ Juneau, AK | ■ Nuiqsut, AK | ■ Point Lay, AK |
| ■ Port Clarence, AK | ■ White Mountain, AK | ■ Golovin, AK | ■ Kipnuk, AK | ■ Noatak, AK | ■ Noorvik, AK |
| ■ Ottawa, ON, Canada | ■ Shaktoolik, AK | | | | |

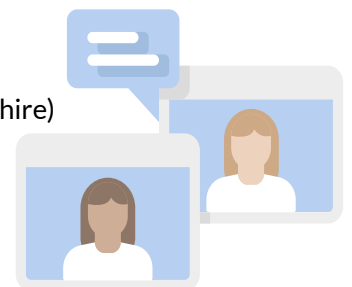
ARCTIC RESEARCH COLLABORATION WORKSHOP

ARCUS, UC Irvine, and IARPC Collaborations co-hosted a series of networking and collaboration activities in 2021, including the Arctic Research Collaboration Workshop held virtually on 16 April.

A panel of experienced interdisciplinary researchers shared examples of successful collaborative research projects and processes that support project conceptualization, disciplinary integration, and effective engagements with local communities. Participants also took part in small group discussions to help project teams identify and define specific research problems that might be used to stimulate ongoing research collaboration.

Panelists & Small Group Facilitators

- Holly Hapke (UC Irvine)
- Elise Miller-Hooks (George Mason University)
- Katherine Duderstadt (University of New Hampshire)
- Jennifer Brewer (University of New Hampshire)
- Courtney Carothers (University of Alaska)
- Pips Veazey (University of Maine)
- Liz Weinberg (IARPC Collaborations)
- Olivia Lee (University of Alaska Fairbanks)



Arctic Research Collaboration Workshop

Friday, April 16, 2021
9am-1pm AK/1pm-5pm ET

NOF support for this workshop. For support, contact: workshop@arcus.org. Grant No. 092521920339. Cooperative Agreement No. 5-5-2102794.



More information: <https://www.arcus.org/meetings/2021/interdisciplinary-workshop>

2021 RESEARCH SUPPORT HIGHLIGHTS

ARCUS regularly serves an important facilitation role for collaborative research endeavors seeking to engage participants across institutions, sectors, disciplines, cultures, geographic locations, and/or career levels.

Sea Ice Prediction Network - Phase 2 (SIPN2)

SIPN2 activities aim to improve Arctic sea ice forecasts using a multi-disciplinary approach that includes modeling, new products, data analysis, and scientific networks.

- ARCUS' role in SIPN2 (funded by NSF) includes strategic planning, project management, networking, and outreach & communications.
- A key activity of SIPN is the Sea Ice Outlook, with reports in June, July, and August containing a variety of perspectives on Arctic sea ice—from observations of current conditions, to advanced numerical models, to qualitative perspectives from citizen scientists. In 2021, 45 groups from around the world contributed to the effort.

More information: <https://www.arcus.org/sipn>

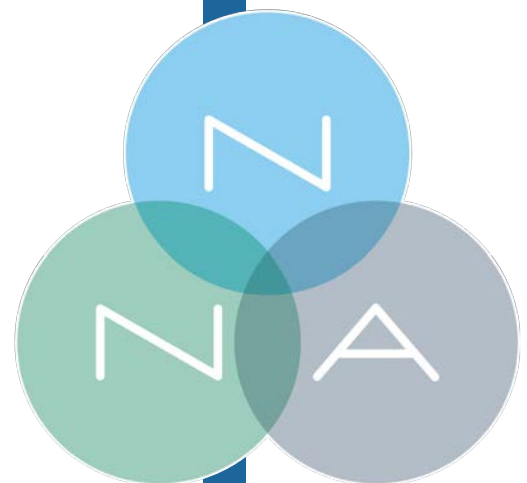


Navigating the New Arctic (NNA)

Navigating the New Arctic is a National Science Foundation initiative designed to support fundamental convergence research across the social, natural, environmental, engineering, computing, and information sciences.

- In year 2 of the ARCUS Cooperative Agreement, ARCUS staff worked with NNA project teams to develop an online hub featuring all 69 of the NNA grants that had been funded to date. The hub shared project descriptions, field location data and mapping, team member profiles, and project timelines and were viewed 7,345 times during the reporting period.

More information: <https://www.arcus.org/nna>



2021 RESEARCH SUPPORT HIGHLIGHTS

Arctic Research Community Meetings

Although COVID-19 health and safety concerns continue to make it difficult for ARCUS to host in-person conferences, meetings, and events, ARCUS staff have been very successful over the past two years in pivoting to virtual forms of engagement and collaboration.

In the second year of our Cooperative Agreement with NSF, we were also able to extend more guidance, expertise, and staffing to the virtual gatherings of our Member and Partner organizations.

A few of the organizations and virtual community events supported by the ARCUS team during the reporting period include:

- Interagency Arctic Research Policy Committee (IARPC) Research Plan Development Workshop (2020)
- Woodwell Climate Research Center's Carbon Flux Workshop (2020)
- Adaptable Microgrids in Arctic Communities Research Advisory Workshop
- Engaging Youth in Arctic STEM
- Kawerak Tribal Representatives Meeting
- Inuit Circumpolar Council Alaska's Ethical and Equitable Engagement (EEE) Meetings
- Permafrost Carbon Network Annual Meetings



National Park Service Beringia Days



In 2021, ARCUS staff began working with the National Park Service on plans to host the next Beringia Days International Conference during the summer or fall of 2023. Stay tuned for this unique heritage event!



EDUCATION HIGHLIGHTS

ARCUS education programming and outreach efforts promote access for students and teachers to Polar research experiences, projects, and professionals. In 2021, ARCUS staff were active in promoting culturally-relevant STEM education for Alaskan Native students through their work with the IARPC Arctic STEM Education Working Group and through additional collaboration with the North Pacific Research Board (NPRB).



Engaging Rural & Alaska Native Undergraduates & Youth in Arctic STEM



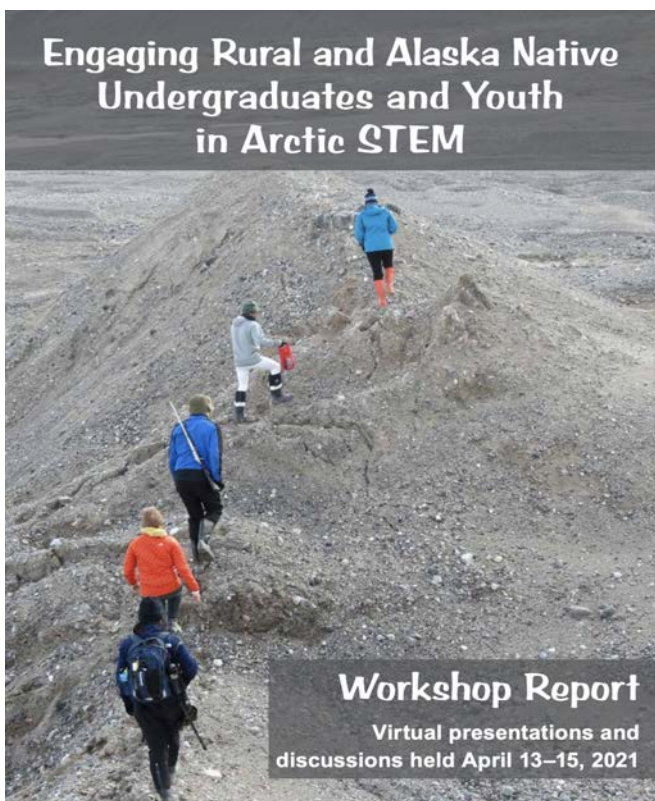
International Arctic Research Center



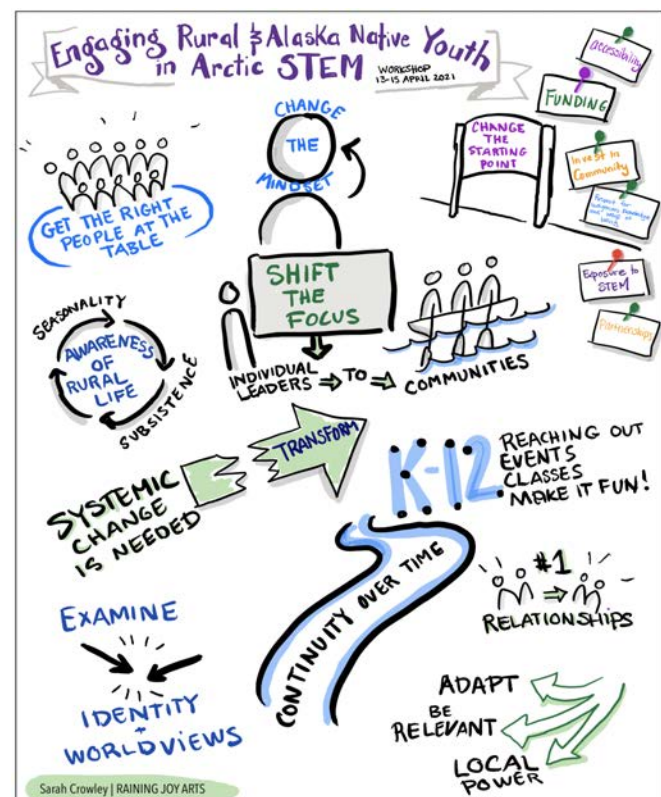
The virtual workshop Engaging Rural and Alaska Native Undergraduates and Youth in Arctic STEM was held from April 13–15, 2021. The goal of the workshop was to bring together rural and Alaska Native youth and undergraduates, federal agency representatives, researchers on Arctic STEM projects, Indigenous faculty and staff, those from the private sector, and rural Alaska community members to discuss the gaps, challenges, opportunities, and successful practices to increase and support the representation of rural and Alaska Native undergraduates and youth in STEM education and career pathways.

The workshop was an initiative of the IARPC Arctic STEM Education Working Group and was hosted by ARCUS in collaboration with the International Arctic Research Center (IARC) with funding from the National Science Foundation (Grant #s: NSF PLR 1304316 and PLR 1928794).

Workshop Report Citation: Arctic Research Consortium of the United States. 2021. Engaging Rural and Alaska Native Undergraduates and Youth in Arctic STEM: Workshop Report. ARCUS, Fairbanks, Alaska.



Report Cover Photo by Peggy McNeal (PolarTREC 2014), courtesy of ARCUS.



Visual notes of workshop outcomes by participant Sarah Crowley

More information: <https://www.arcus.org/meetings/2021/arctic-youth-stem>

PolarTREC 2020-21 **STEM at the Poles!**

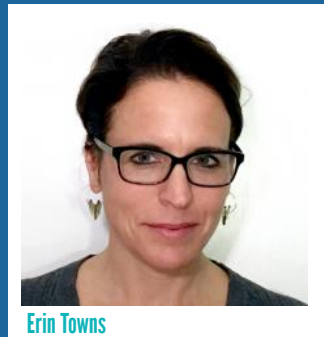


The PolarTREC education program, now in its 14th year, has provided more than 170 US teachers a unique opportunity to work with scientists in the polar regions. Currently supported through the *STEM at the Poles! Research Experiences for Formal and Informal Educators in the Polar Regions* grant from the National Science Foundation (Award# 1918637), this program invigorates polar science education and understanding by bringing educators and polar researchers together through field-based, hands-on, research experiences in both the Arctic and Antarctica.

Due to the global COVID-19 pandemic, ARCUS made the difficult decision to postpone deployment of all 2020 PolarTREC educators to both the Arctic and Antarctica with most of the expeditions postponed until 2022. During the summer of 2021, two teachers were deployed. In late June, teacher Liza Backman traveled to Alaska and worked with Dr. Jeremy May and Dr. Steve Oberbaur, at Toolik Field Station. In September, teacher Jon Pazol participated in a ship-based expedition as part of a biennial cruise in the Eastern Eurasian Basin. In addition, PolarTREC alumnus Mark Goldner returned to Svalbard, Norway to work with Dr. Julie Brigham-Grette. For the latest news on the program or to follow the PolarTREC teachers on their expeditions, please visit the PolarTREC Virtual Base Camp online at www.polartrec.com.

More information: <https://www.polartrec.com>

2020-2021 PolarTREC Cohort



Erin Towns



Jon Pazol



Tammy Orilio



Cassie Kautzer



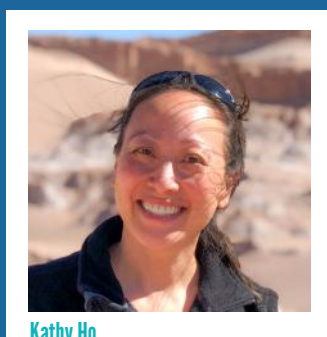
Sarah Johnson



Bill Henske



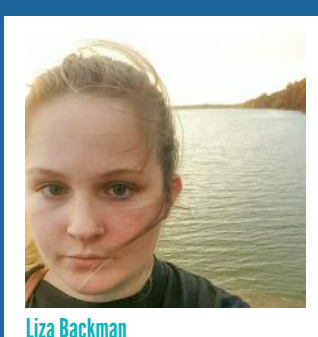
Jenn Heidrich



Kathy Ho



Elaine Krebs



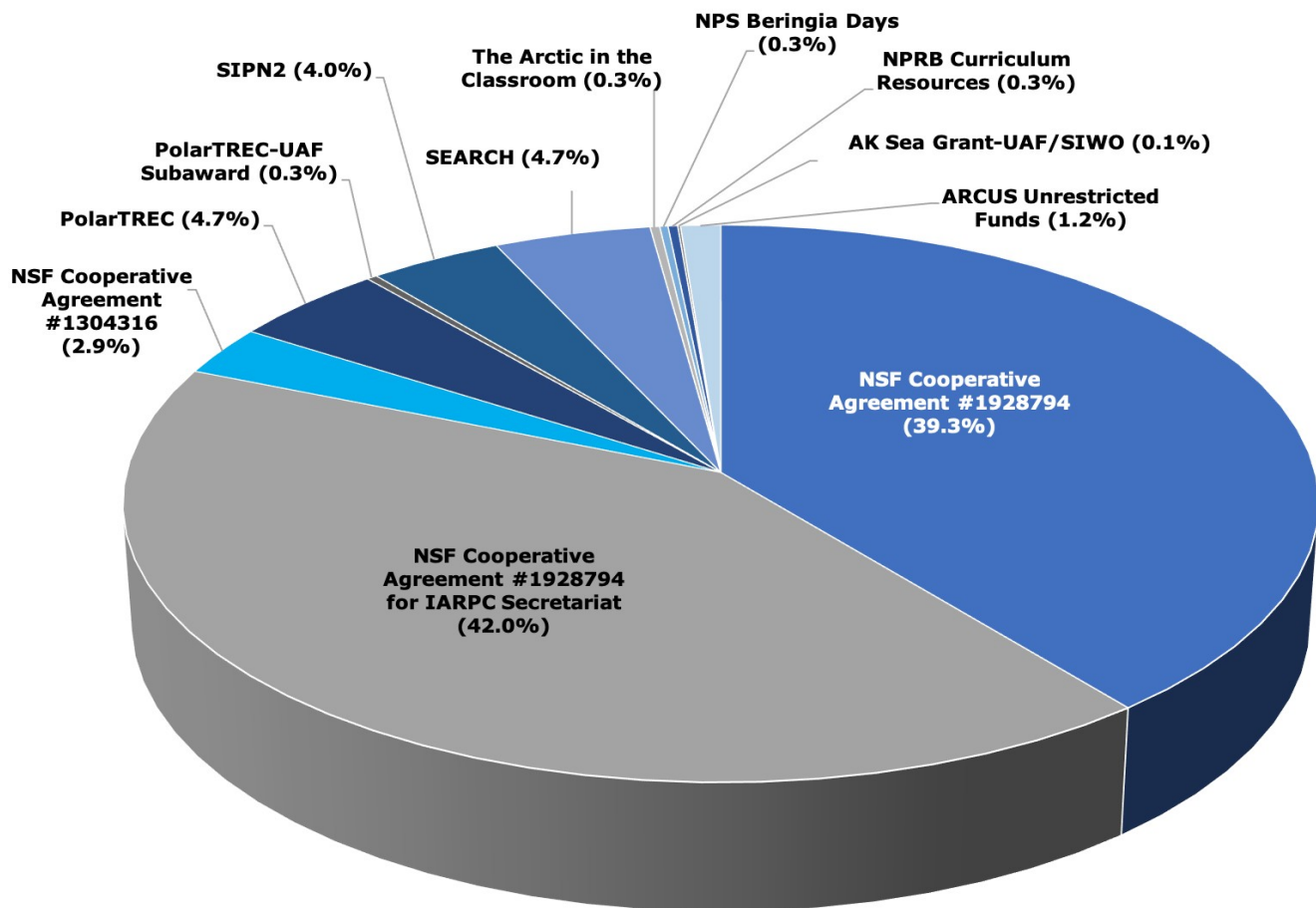
Liza Backman



Eric Filardi

2021 FINANCIAL REPORT

Fiscal Year 2021 Revenue by Source (October 2020 – September 2021)



FY21 Direct Revenue by Source

| | | |
|--|----|-----------|
| NSF Cooperative Agreement #1928794 (39.3%) | \$ | 734,467 |
| NSF Cooperative Agreement #1928794 for IARPC Secretariat (42.0%) | \$ | 786,177 |
| NSF Cooperative Agreement #1304316 (2.9%) | \$ | 53,855 |
| PolarTREC (4.7%) | \$ | 87,654 |
| PolarTREC-UAF Subaward (0.3%) | \$ | 5,938 |
| SIPN2 (4.0%) | \$ | 75,124 |
| SEARCH (4.7%) | \$ | 88,335 |
| The Arctic in the Classroom (0.3%) | \$ | 5,369 |
| NPS Beringia Days (0.3%) | \$ | 4,672 |
| NPRB Curriculum Resources (0.3%) | \$ | 5,421 |
| AK Sea Grant-UAF/SIWO (0.1%) | \$ | 1,546 |
| ARCUS Unrestricted Funds (1.2%) | \$ | 22,568 |
| | \$ | 1,871,126 |



www.arcus.org