

ARCUS

ARCTIC RESEARCH CONSORTIUM
OF THE UNITED STATES



ANNUAL REPORT



2023

Dear ARCUS Members and Colleagues,


It is with great pleasure that we introduce the 2023 Annual Report of the Arctic Research Consortium of the U.S. (ARCUS). As we contemplate the achievements and challenges of the past year, we are confident that the exceptional dedication and collaborative spirit that characterize our community's endeavors will shine through in the following pages.

To our members, partners, and supporters, we extend our deepest gratitude for your commitment and effort. Your passion and dedication are the driving force in the pursuit of ARCUS' vision of a more connected and collaborative Arctic research community, and we are honored to work alongside each of you.

As we look ahead, 2024 presents new opportunities and challenges that require continued collaboration and innovation. ARCUS provides a unique platform for individuals and institutions to come together, share knowledge, and address the pressing challenges facing the Arctic region. To those who have not yet joined the ranks of ARCUS, we urge you to get involved. ARCUS has cultivated a diverse and inclusive network of members, partners, and collaborators, spanning academic institutions, government agencies, Indigenous organizations, and non-profit entities.

Whether you are an established researcher, a student eager to make a difference, or an organization looking to contribute to Arctic resilience, there are numerous opportunities for you to play a meaningful role in our community. We encourage you to explore the annual report, connect with our members and partners, and join us in our efforts to advance Arctic research, foster collaboration, and make a meaningful difference in the Arctic and beyond.

Sincerely,



David M. Cairns
Board President, ARCUS



Helen V. Wiggins,
Executive Director, ARCUS

Cover photo credit: Photo by Clarence Irrigoo, Jr.

Report Content:

Pg 2: Strategic Goals & Objectives (2020-2025)
Pg 3-4: Staff & Board of Directors
Pg 5-6: Member Institutions
Pg 7: Partner Organizations
Pg 8: Volunteer Contributors & Individual Members
Pg 9: Cooperative Agreement Overview
Pg 10: Award Recipients

Pg 11: Article Authors & Webinar Contributors
Pg 12-13: Communication Highlights
Pg 14-15: Sea Ice for Walrus Outlook Program
Pg 16-17: Research Support Highlights
Pg 18-21: ARCUS Annual Meeting
Pg 22: PolarTREC
Pg 23-25: Program Participants by Sector & Discipline
Pg 26: Financial Report

STRATEGIC GOALS & OBJECTIVES (2020–2025)

Goal 1: Facilitate & 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 and 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 & Formal and Informal Educators about the Arctic, & 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



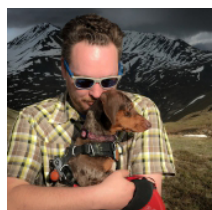
Brandi Austin
Director of Finance & HR
brandi@arcus.org
Fairbanks, AK



Michelle Gutz
Accountant
michelle@arcus.org
Fairbanks, AK



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



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



Joed Polly (Contractor)
Video Production
joed@arcus.org
Somerville, MA

Brit Myers
Strategic Engagement Director
brit@arcus.org
Vashon, WA



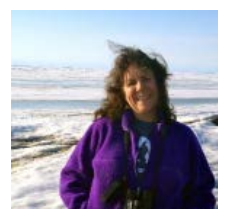
Lisa Sheffield Guy
Project Manager
lisa@arcus.org
Pescadero, CA



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



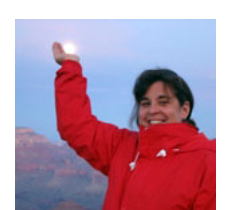
Janet Warburton
Education Project Manager
warburton@arcus.org
Anchorage, AK



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



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



2023 BOARD OF DIRECTORS



Peter Webley (Secretary)
University of Alaska Fairbanks
pwwwebley@alaska.edu
Term End: 2026

David Cairns (President)
Texas A&M University
cairns@tamu.edu
Term End: 2025



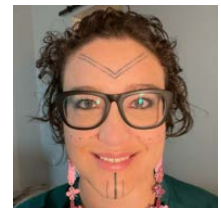
Kaare Sikuaq Erickson (Treasurer)
Ikaagun Engagement, LLC
sikuaq@ikaagun.com
Term End: 2026

**Cheryl Rosa
(Member-at-Large)**
USARC on Detail to UAF
crosa@arctic.gov
Term End: 2025



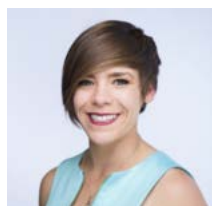
**Julie Raymond-Yakoubian
(Member-at-Large)**
Kawerak, Inc.
juliery@kawerak.org
Term End: 2024

Heather Sauyaq Jean Gordon
Child Trends
gordon.heather.j@gmail.com
Term End: 2025



Alexis Will
WWF US Arctic Program
alexis.will@wwfus.org
Term End: 2025

Cana Uluak Itchuaqiyaaq
Virginia Tech
cana@vt.edu
Term End: August 2024



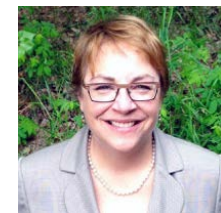
Victoria Herrmann
Georgetown University
victoria.herrmann@thearcticinstitute.org
Term End: 2025

Stacey Fritz
Alaska Adaptable Housing LLC
stacey@akadaptable.com
Term End: 2024



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

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



ARCUS MEMBER INSTITUTIONS



www.tamu.edu

Represented By:
David Cairns,
cairns@tamu.edu



www.unbc.ca

Represented By:
Sinead Earley,
sinead.early@unbc.ca
Tristan Pearce,
tristan.pearce@unbc.ca



www.npolar.no/en

Represented By:
Nalân Koç,
nalan.koc@npolar.no
Ellen Øseth,
ellen.oseth@npolar.no



Represented By:
Diane Hirshberg,
dbhirshberg@alaska.edu
Kirsi Latola,
kirsi.latola@uarctic.org



www.arctic.gov

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



www.virginia.edu

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



www.usapecs.org

Represented By:
Mohammad Afzal Shadab,
mashadab@utexas.edu
Lavanya Ashokkumar,
lavanya3k@gmail.com



www.tedstevensarcticcenter.org

Represented By:
Randy "Church" Kee,
randy.kee.1@us.af.mil
Matthew Schell,
matthew.schell.6@us.af.mil



www.uas.alaska.edu

Represented By:
Maren Haavig,
mmhaavig@alaska.edu
Charmaine Robinson,
cmrobinson7@alaska.edu



www.woodwellclimate.org

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



www.uaa.alaska.edu

Represented By:
Marie Lowe,
mlowe@alaska.edu
Thomas Ravens,
tmravens@alaska.edu



www.gml.noaa.gov

Represented By:
Sara Morris,
sara.morris@noaa.gov
Christine Smith,
christine.smith@noaa.gov



www.kawerak.org

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



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



www.abrinc.com

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



www.gwu.edu

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



Alaska Ocean Observing System

www.aos.org

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



www.uaf.edu

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



www.arcticcentre.org

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



www.uspermafrost.org

Represented By:
Victoria Herrmann,
victoria.herrmann@theartcicstitute.org
Ming Xiao,
mzx102@psu.edu



www.sitkascience.org

Represented By:
Lisa Busch,
lbusch@sitkascience.org
Nagham Sabah,
nsabah@sitkascience.org



DARTMOUTH

www.dartmouth.edu

Represented By:
Melody Brown Burkins,
melody.b.burkins@dartmouth.edu



National Renewable
Energy Laboratory

www.nrel.gov

Represented By:
Aaron Cooke,
aaron.cooke@nrel.org
Georgina Davis,
georgina.davis@nrel.gov



www.worldwildlife.org

Represented By:
Alexis Will,
alexis.will@wwfus.org
Stephanie Lee,
stephanie.lee@wwfus.org



UNIVERSITY OF
SOUTHERN MAINE

www.usm.maine.edu

Represented By:
Tracey Meagher,
tracey.meagher@maine.edu
Ross Hickey,
ross.hickey@maine.edu



UNIVERSITY of
WASHINGTON

www.washington.edu

Represented By:
Craig Lee,
craiglee@uw.edu



Sandia
National
Laboratories

www.sandia.gov

Represented By:
Mark Ivey,
mdivey@sandia.gov
Joshua Stein,
jsstein@sandia.gov



WOODS HOLE
OCEANOGRAPHIC
INSTITUTION

www.whoi.edu

Represented By:
Carin Ashjian,
cashjian@whoi.edu



Institute of Earth, Ocean, and
Atmospheric Sciences

www.rutgers.edu

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



THE UNIVERSITY OF
MAINE

www.umaine.edu

Represented By:
Kristin Schild,
kristin.schild@maine.edu
Pips Veazey,
alice.veazey@maine.edu

ARCUS PARTNER ORGANIZATIONS

Eskimo Walrus Commission

The Eskimo Walrus Commission partners with ARCUS to produce the Sea Ice for Walrus Outlook (SIWO).

National Weather Service - Alaska Region

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

SIKU

SIKU partners with ARCUS on observations tracked through the Sea Ice for Walrus Outlook (SIWO) program.

AGU Cryosphere Section

The AGU Cryosphere Section partners with ARCUS in supporting the Arctic Community Meeting Rooms at the AGU Fall Meeting.

Divergent Science LLC

Divergent Science LLC works with ARCUS on evaluation and community network assessment activities.

Université Catholique de Louvain

Université Catholique de Louvain is a project partner for the Sea Ice Prediction Network.

Western Alaska Partnership

ARCUS is an participant in the Western Alaska Partnership.

Interagency Arctic Research Policy Committee (IARPC)

ARCUS staff work with IARPC on collaborative programming and provide leadership support for the Polar Technology Collaboration Team.

Smithsonian Arctic Studies Center

The Smithsonian Arctic Studies Center provides D.C. host support for the ARCUS Indigenous Scholars Program.

International Arctic Science Committee

ARCUS staff currently serve on ICARP IV advisory committees.

National Snow & Ice Data Center

The National Snow & Ice Data Center is a project partner for the Sea Ice Prediction Network.

Potsdam Institute for Climate Impact Research

Potsdam Institute for Climate Impact Research is a project partner for the Sea Ice Prediction Network.

ELOKA

ARCUS staff serve on the ELOKA Observations Working Group.



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

VOLUNTEER CONTRIBUTORS & INDIVIDUAL MEMBERS



A special thank you to
Katherine Schexneider
for her help with
ARCUS communications!

ARCUS MEMBERSHIP COMMITTEE

Adrian Gall	Keith Reimink	Joshua Stein
Stacey Fritz	Alexis Will	Helen Wiggins
Brit Myers	Asa Rennermalm	Katherine Ginsbach

SIWO WORKSHOP PARTICIPANTS

Marcus Barr	Gay Sheffield	Clarence Irrigoo, Jr.
Amy Hendricks	Kitty Sopow	Curtis Nayokpuk
Jill Prewitt	Rick Thoman	Eeleengayouq Ozenna
Vera Metcalf	Sarah Rosengard	Robert Tokeinna, Jr.
Ryan Metzger	Lisa Sheffield Guy	Mary-Beth Schreck

BRIDGING ARCTIC GATEWAYS PARTICIPANTS

Jodie Anderson	Daisy Huang	Jeremy Kasper
Matthew Balazs	Jeremy Kasper	Brittany Smart
Helena Buurman	Brenda Konar	Pips Veazey
Seth W. Campbell	Adam Low	Gayle Zydlewski
Nima Farzadnia	Brit Myers	Paul Mayewski
Bruno Grunau	Bill Schnabel	Cody Sheltra
Gwen Holdmann	Joshua Stoll	Adam St. Gelais
Anne Herberger Marino	Nettie La Belle-Hamer	Cheryl Rosa
		Martin Truffer

EARLY CAREER AWARD COMMITTEE

Lavanya Ashokkumar	Claire Griffin	Julie Loisel
Josephine-Mary Sam	Onema Adojoh	Stacey Stoudt
Lisa Sheffield Guy		

BOARD NOMINATING COMMITTEE

David M. Cairns	Howard Epstein	Victoria Herrmann
Canu Uluak Itchuaqiyag		

2023 ARCUS INDIVIDUAL MEMBERS

Acacia Johnson	Eric Filardi	Maria Tzortziou
Alicia Sendrowski	Erin Towns	Marissa Record
Alyssa Burns	Ernie Petit	Mary Gibbons
Aman KC	Gong Cheng	Serina Wesen
Amanda Gavin	Haley Cynar	Steven Snell
Ana Santiago	Ethan Conley	Mason Stockstill
Andrew Uccello	Jerry Brown	Mathea Stevens
Angela Szesciorka	Jessica Rich	Matt Heavner
Anna Maria Medina	Joel Wilner	Vicki Jagdeo
Ashok Pandey	Karina Zikan	Kathryn C. Lavelle
Benjamin Mäki	Jessica Mejia	Tyler Goldstein
Bridget Burger	Jingyi Huang	Victoria Herrmann
Canu Itchuaqiyag	Yuji Kodama	Victoria Miles
Cansu Demir	Jocelyn Reahl	Zhaojun Wang
Celia Trunz	Lisa Luken	John Stedman
Claire Jensen	Katherine Todd	Francesca Samsel
Cody Johnson	Keith Alverson	Gabriella Gricius
Corinne Vassallo	Keith Reimink	Gaurav Madan
Craig E. Dorman	Kelli Park	Grzegorz Slowik
Dagny Ysaïs	Kristen Reece	Hang Kei Simon Wong
Daniel Leifson	Kristina Levine	Hannah Chapman-Dutton
Danielle Grant	Kyle Lambert	Heather Jean Gordon
David McNally	Lane Rowland	James Edward Powell
Dean Wallraff	Lauren Kipp	Janet Duffy-Anderson
Diane Hirshberg	Liu Wenxuan	Jaona Ravelonjatovo
Donglai Yang	Loyce Kukunda	Johanne Albrigtsen
Dylan Blaskey	Madison Kluge	Vincy Yesudian Winifred
Eda Ayaydin	Mangaiyarkarasi	Jonathan Raberg
Ekaterina Kim	Ravirajan	Joyanne Hamilton
Elena Harner	Subir Mandal	Kaiyuan Wang
Emily Maxwell	Suhail Khan	Katherine Faulkner
Emrah Ozpolat	Thian Yew Gan	Katherine Ginsbach
Sophie Pouillé	Tianlang Zhao	Stephen Carmel

INDIGENOUS SCHOLAR SELECTION COMMITTEE

Rosemary Ahtuanguaruak	Nicole Kanayuraq
Theresa Arevgaq John	Percy Ballott
Raychelle Daniel	Gay Sheffield
	Inuuteq Stotts
Matthew Clay	Ho Giustino Lee-Biachler Jones
Matthew Wee	Peter Effertz
Max Wolf	Peter Richardson
Micah Witt	Radradutt Thaker
Michael Ashley	Ragen Davey
Michael R. Lilly	Ramey Wood
Michael Weintraub	Rhett Herman
Mikayla Stewart	Robert Graham
Millie Lambert	Robert W Faubel
Mindy Price	Roger Creel
Misa Saros	Rolf Rødven
Mj Riches	Maryam Rahnemoonfar
Monika Sikand	Sandra Derendy
Muhammad Kaleem	Sara Maaria Saastamoinen
Ul Fateh	Sarah Johnson
Nathalie Ylenia Triches	Seira Duncan
Neil Steven Gardner	Selsey Stribling
Oleg Pokrovsky	Shamsudeen Yekeen
Olivia Astillero Lee	Shawnee Traylor
Onema Adojoh	Shiori Nakaya
Otis Crandell	Shreyas Sunil Gaikwad
Patricia Johnston	Shuyu Zhang
Peeranut Visetsuth	Sian Shields
Peng Lian	Stephen J. Vavrus

ARCUS COOPERATIVE AGREEMENT



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

An NSF-funded Cooperative Agreement (2019–2024; 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



Arctic Research Seminar Series



Communication Tools



Collaboration Workshops



Sea Ice for Walrus Outlook



Arctic Meeting Rooms at AGU



Polar Technology Community Support

Arctic Indigenous Scholars

The Arctic Indigenous Scholars program creates a space for Indigenous scholars to educate and inform policy- and decision-makers on Arctic issues. Three Arctic Indigenous Scholars were selected in 2023 by a seven-member volunteer selection committee. These scholars will travel together to meet with agency and government officials in Washington, DC in March of 2024.



Craig Chythlook (Yup'ik/Bristol Bay, AK) - Craig is a non-traditional graduate student at the University of Alaska Fairbanks (UAF), with a background as a commercial salmon fisherman and 19 years of small business ownership. His policy engagement will focus on Indigenous food sovereignty and building equity in resource management.

Taniesha Moses (Athabscan/Fairbanks, AK) - Taniesha is the Indigenous Wellness and Outreach Coordinator for the University of Alaska Fairbanks Rural Student Services program. The focus of her policy-maker engagement is the preservation of Indigenous food sovereignty and the role that traditional foods play in community health and well-being.

Billy Adams (Iñupiat/Utqiagvik, AK) - Billy is an Iñupiat elder, hunter, and lifelong resident of Utqiagvik. The focus of his policy-making engagement is on Arctic research co-production, marine resource management, and food sovereignty.

More information: <https://www.arcus.org/indigenous-scholars/2023>

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).

"I had limited funding available for conference participation. Attending AGU allowed me to network and make connections that led to being able to attend international training courses in my discipline and also helped me find my current position."

Congratulations To:

Cree Griffin
(Nebraska Indian Community College)

Kristen Reece
(University of Alaska Fairbanks)

Priscilla Frankson
(Arizona State University)

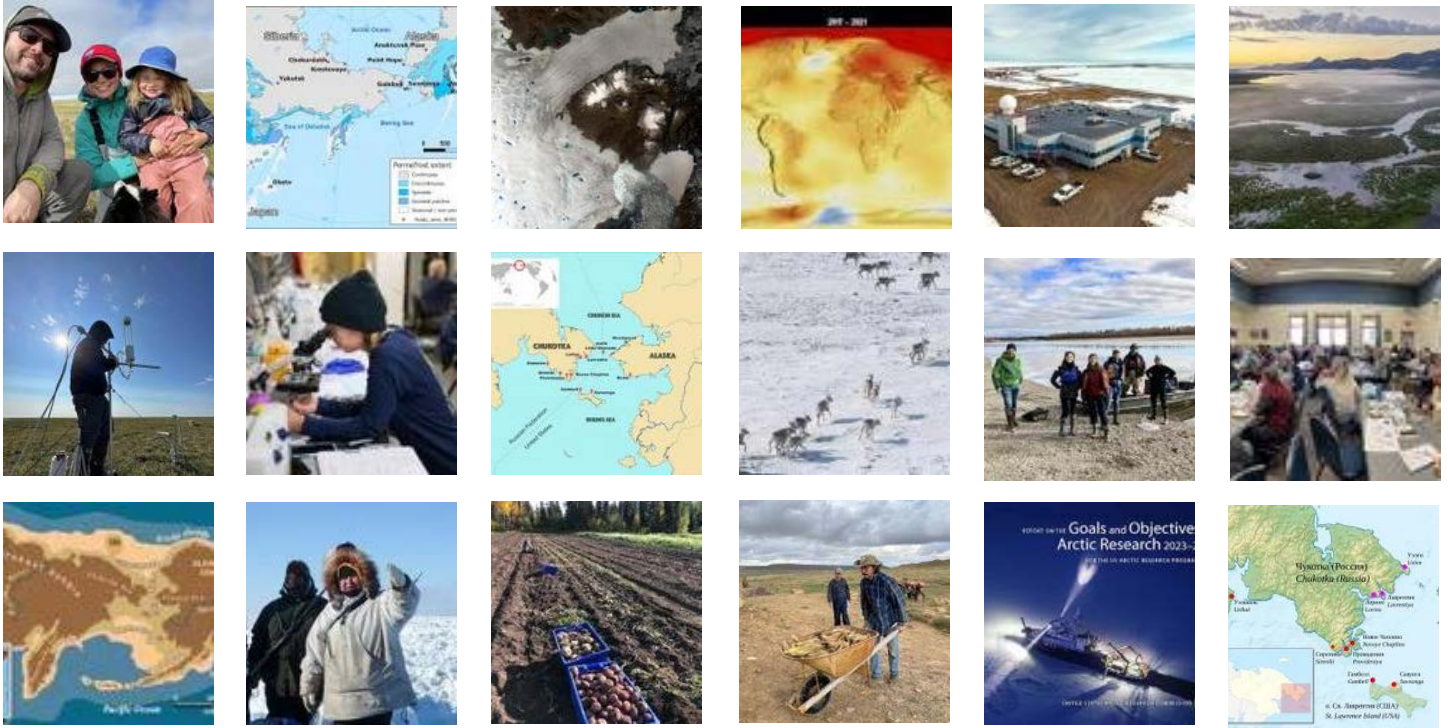
Jacqueline Vogel
(San Diego State University/UC Santa Barbara)

Chase Puentes
(University of Washington)

Tylee Nez
(Tufts University)

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

WITNESS THE ARCTIC CONTRIBUTORS



Melissa Ward Jones, Donatella Zona, Kyle Lunneberg, Walter C. Oechel, Evie Fachon, Jesse Farmer, Tamara Pico, Roberta Tuurraq Glenn, Donna Hauser, Mindy Jewell Price, Noor Johnson, Mary Beth Jager, Stephanie Russo Carroll, Eva Dawn Burk, Orville H. Huntington, Lydia L. Jennings, Kaare Sikuaq Erickson, Max Taylor, Dan Ferguson, Luda Kinok, Liz Weinberg, Ken Tape, Emily Eidam, Christopher D. Arp, Julianne Davis, Allen Bondurant, Sarah Clement, Lillian Marguerite Cooper, Ted Langhorst, Tamlin Muir Pavelsky, Katie Spellman, Michael Koskey, Yoko Kugo, Mathieu Morlighem, Shfaqat Abbas Khan, Hazel Shapiro, Sandra Starkweather, Thorsten Markus, Olivia Lee, Sveta Yamin-Pasternak, Igor Pasternak, Kyle Joly, Benjamin M. Jones, Isaac Edwards, Donald A. Walker, Matthew L. Druckenmiller, Rick Thoman, Twila A. Moon

WEBINAR SPEAKERS



- Alec Bennett (University of Alaska Fairbanks)
- Cana Uluak Itchuaqiyag (Virginia Tech) & Corina Qaagraq (Aqqaluk Trust)
- Henry Huntington (Huntington Consulting)
- Vera Kuklina (George Washington University)
- Elaine Krebs and the IceCube and Askaryan Radio Array team
- Bill Henske and the Dry Valleys Ecosystem Study team

COMMUNICATION TOOLS

PRODUCTION & USAGE STATISTICS

Witness The Arctic



- 23,877 web views
- 8,903 subscribers

ARCUS Website



- 188,000+ page views
- 123,545 unique users

Mailing Lists



ArcticInfo

- 160,716 email opens
- 5,116 subscribers

Polar Education List

- 160,716 email opens
- 5,116 subscribers

Arctic Calendar



- 3,870 events
- 40,047 views

Monthly Newsletter



- 13,627 email opens
- 2,630 subscribers

Social Media Followers



- 4,535 X/Twitter
- 3,085 Facebook
- 1,586 Instagram

Polar Media Archive



- 23,500 images
- 17,934 web views

Directory of Arctic Researchers



- 4,100 entries
- 28,685 web views

CONNECT THE ARCTIC

CONNECTING PEOPLE

BUILDING PARTNERSHIPS

GROWING COMMUNITY



in 2023, ARCUS launched the online platform Connect The Arctic to help us stay engaged with our membership community, ARCUS-supported communities of practice, and other Arctic-focused research and education groups looking for an online workspace. Connect the Arctic strives to create a vibrant workspace where members feel valued, connected, and empowered to contribute to the collective growth and success of the community.

The workspace currently hosts two main groups:

- The Arctic Science Education Network
- The Community & Citizen Science in the Far North Community of Practice



More information: <https://community.arcus.org/>

OTHER WAYS 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.polar-trec.com/about/education-list
- 6) Join the [Directory of Arctic Researchers](#): www.arcus.org/researchers
- 7) Join us on [Social Media](#):



@ArcticResearch
@PolarTREC

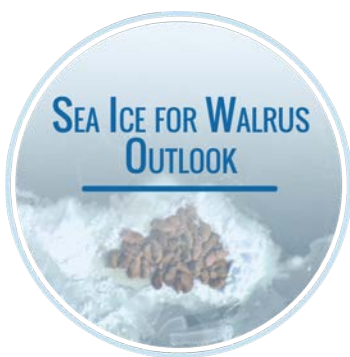


@ArcticResearchConsortium
@Polar.TREC
@SealceForWalrus



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

Gambell:
Clarence Irrigoo, Jr.

Savoonga:
Aqef Waghiyi

Diomede:
Eeleengayouq Ozenna

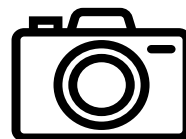
Nome:
Frank (Boogles) Johnson

SIWO is managed by ARCUS and produced in partnership with the National Weather Service, Eskimo Walrus Commission, University of Alaska Fairbanks, and local observers.



of Weekly
Reports in 2023
(31 March-23 June)

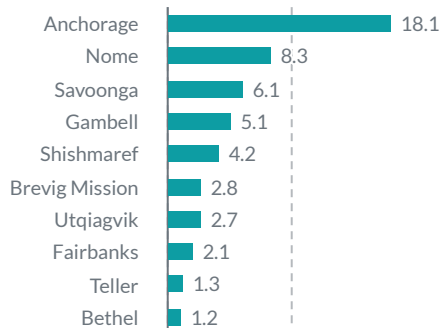
13



of local
observations

59

Top locations engaged on FB



of Facebook
Followers

2,376

In 2023, all SIWO observers were equipped with handheld weather stations generously contributed by the Alaska Ocean Observing System (AOOS) for measurements in their reports.



Walrus resting on ice near Gambell, AK in May 2023. Photo by Clarence Irrigoo, Jr.



SEA ICE FOR WALRUS OUTLOOK



PARTNERS WORKSHOP REPORT 25–26 MARCH 2023 NOME, ALASKA

The first in-person Sea Ice for Walrus Outlook Partners Workshop was held 25–26 March in Nome, Alaska on the University of Alaska Northwest Campus. The workshop was co-hosted by the Eskimo Walrus Commission and included 15 participants, five of whom were SIWO community observers. Blizzard conditions prevented travel for the remaining two observers.

The goals of the meeting were to: (1) create an opportunity for SIWO partners to meet and discuss the future of the program and give local observers from neighboring communities a chance to meet one another and learn about new opportunities; (2) co-develop ways to improve the program and prioritize recommendations from the SIWO evaluation; and (3) discuss and identify teams to work on SIWO collaborations/projects (presentations, papers, etc.).



SIWO meeting participants discuss the future of the program at the first in-person partners meeting in Nome, Alaska.

More Information: <https://www.arcus.org/siwo/2023-partner-workshop>

2023 Sea Ice for Walrus Outlook Evaluation Published in *Polar Geography*

Nathan P. Kettle, Amy Hendricks, Lisa Sheffield Guy, Olivia Lee, Vera Metcalf & Davin Holen (2023). Climate services in a rapidly changing environment: an evaluation of the Sea Ice for Walrus Outlook (SIWO), *Polar Geography*, 46:4, 206–227, DOI:[10.1080/1088937X.2023.2286383](https://doi.org/10.1080/1088937X.2023.2286383)



2023 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 multidisciplinary approach that includes modeling, new products, data analysis, and scientific networks.

- ARCUS' role in SIPN2 includes strategic planning, project management, networking, and outreach.
- 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 advanced numerical models to qualitative perspectives from citizen scientists. In 2023, 121 predictions were contributed to the effort by groups from around the world.
- Funding for the 2023 Sea Ice Outlook was provided by NSF award #1331083.

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



Interagency Arctic Research Policy Committee

In 2023, ARCUS provided support for the Interagency Arctic Research Policy Committee (IARPC) Secretariat in the following ways:

- ARCUS provided administrative support for the secretariat through April 2023.
- ARCUS staff provided meeting planning and technical support for IARPC Biennial Implementation Plan Implementation Workshop held 30 January–1 February in Anchorage, Alaska.
- ARCUS staff member Lisa Sheffield Guy served as a co-lead for the IARPC Polar Technology Collaboration Team.

More information: <https://iarpccollaborations.org>

IARPC
Collaborations

2023 RESEARCH SUPPORT HIGHLIGHTS

Beringia Days 2023

Through a cooperative agreement with the National Park Service, ARCUS supported the planning and implementation of Beringia Days 2023, a public forum celebrating the natural and cultural heritage shared by the Beringia region. Beringia Days was held as a two-day event in Anchorage, AK 24–25 October 2023.

More information: <https://www.arcus.org/meetings/2023/beringia>



American Geophysical Union Fall Meeting Arctic Community Meeting Rooms

Since 2005, ARCUS has hosted Arctic community meeting rooms during the AGU Fall Meeting to enable open participation in side-events organized around the conference. In 2023, these rooms supported more than 15 meetings and 200 people over a 4-day period.

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



Bridging Arctic Gateways Collaboration Workshop

In 2023, ARCUS, the University of Maine, and the University of Alaska Fairbanks co-hosted the first Bridging Arctic Gateways workshop to encourage collaboration between researchers working in the Alaskan Arctic and North Atlantic regions.

More information: <https://www.arcus.org/meetings/2023/bridging-arctic-gateways>



2023 ARCUS ANNUAL MEETING



ARCUS has held an Annual Meeting nearly every year since its inception in 1988. This open community 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 around key Arctic research and education issues and collaboration opportunities.

The 2023 ARCUS Annual Meeting was held virtually on Wednesday, 1 November 2023. The meeting brought together 120 individuals from the Arctic research community, including representatives from 21 ARCUS member institutions, individual members, and community partners.

The meeting agenda focused on breakout sessions and networking opportunities across the following thematic areas:

Breakout 1: Community & Citizen Science in the Far North

Breakout Leads: Keith Reimink (Denali Education Center), Kaare Sikuaq Erickson (Ikaagun Engagement), Stacey Kangipneq Lucason (Kawerak), Janet Warburton (ARCUS), Lisa Sheffield Guy (ARCUS)

This session introduced the new ARCUS community of practice and provided a platform for individuals engaged in Arctic research co-production, community-engaged research, and citizen science projects to exchange experiences and insights. Participants shared information about ongoing projects, discussed common challenges, and explored strategies for project evaluation and community engagement. Discussion questions centered on project initiation, community representation, evaluation methodologies, and longitudinal project sustainability. A summary of the group's key discussion points are shared below.

Ethical Relationships:

- Emphasis was placed on the importance of asking permission and avoiding duplicative work by partnering with existing researchers to reduce fatigue among community members.
- Participants highlighted the need for researchers, even those with experienced perspectives, to continually ask and adjust their approach, recognizing the responsibility inherent in their roles.
- Discussions underscored the distinction between Indigenous knowledges and community science, advocating for respect towards Indigenous perspectives, and reciprocal relationships.



Village elders in Utqiagvik, AK participating in Independence Day festivities. Photo by Cristina Solis (PolarTREC 2012), Courtesy of ARCUS.

2023 ARCUS ANNUAL MEETING

Community & Citizen Science in the Far North Breakout Discussion (continued)

Power Dynamics and Privilege:

- Participants reflected on power dynamics and privilege within research contexts, particularly regarding funding access. They stressed the importance of acknowledging privilege and sharing funding sources with communities to further their interests.
- The responsibility of scientists to reflect on "whose work is it" and what is appropriate for outside researchers to do was emphasized, highlighting the need for awareness and consideration of power dynamics in research collaborations.

Long-term Relationships and Reciprocity:

- Long-term relationships were deemed essential for building trust over time and becoming interwoven with the community fabric. Reciprocal relationships, rather than transactional or temporary ones, were emphasized as foundational to effective community engagement.

Capacity Building and Communication:

- Balancing novel science with community capacity building was highlighted, emphasizing the importance of involving community members as observers and being responsive to community interests.
- Effective communication methods, such as adapting to preferred modes of communication, were discussed as essential for successful community engagement.

Next Steps and Community Involvement:

- Participants expressed interest in joining the ARCUS Community & Citizen Science in the Far North Community of Practice, reflecting a commitment to further engagement and collaboration in this area.
- Strategies for connecting with and recruiting community members were discussed, acknowledging the challenge of initiating relationships but encouraging proactive engagement.

Overall, the session underscored the significance of ethical, reciprocal relationships and long-term community engagement in Arctic research and highlighted actionable steps for fostering meaningful collaborations within the ARCUS community.



The village of Ittoqqortoormiit, Greenland viewed from a helicopter. Photo by Mary Anne Pella-Donnelly (PolarTREC 2007), Courtesy of ARCUS.

2023 ARCUS ANNUAL MEETING

Breakout 2: Building Multidisciplinary Research Connections

Breakout Leads: Stacey Fritz (Alaska Adaptable Housing), Katherine Ginsbach (Georgetown University), Victoria Herrmann (The Arctic Institute), Stacey Stoudt (ARCUS), Betsy Turner-Bogren (ARCUS)

During this breakout session, participants engaged in networking activities and identified collaboration opportunities across multidisciplinary research areas. They collectively selected priority topics for focused discussions, emphasizing the value of collaboration in addressing complex Arctic research challenges. Actionable strategies to advance collaboration opportunities within the ARCUS community were explored.

The four priority collaborative research themes selected for discussion included:

Theme 1: Infrastructure and Industry:

- Participants discussed the impact of permafrost on infrastructure, highlighting mitigation techniques like the use of thermosiphons near bridges to mitigate settling and exploring novel solutions like the Ace embankment.
- The importance of considering climate change impacts on permafrost and infrastructure, along with strategies for managing water/meltwater, was emphasized.
- Multidisciplinary collaboration was highlighted as essential for addressing infrastructure challenges, particularly in remote areas, with implications for both engineering and environmental research.

Theme 2: Hydrology Connections (Arctic Geology, Glaciology, Biology):

- Connections were made between research in Greenland and Southeast Alaska, emphasizing the importance of incorporating Indigenous oral histories and traditional knowledge into scientific research.
- The group discussed individual projects related to sea ice deformation, water table modeling, and stream chemistry, highlighting the need for interdisciplinary approaches to understand complex Arctic systems.

Theme 3: Human Wellbeing:

- Participants explored various aspects of human wellbeing in the Arctic, including the impacts of climate change, environmental justice, and cultural factors.
- Discussions revolved around the need for better coordination, accessibility, and amplification of resources and tools, with a focus on co-creation and community engagement.
- The importance of trauma-informed approaches, storytelling, and sharing best practices for information dissemination was emphasized.

Theme 4: International Research Connections:

- Peace and Indigenous perspectives were highlighted as foundational for international research collaboration, emphasizing the importance of centering Indigenous voices and adopting a co-production approach.
- Consistency in engagement, communication, and in-person meetings was deemed essential for building sustainable relationships and trust.
- The need to collaborate with Russian scientists to fill data gaps and enhance international cooperation was identified as a priority.



Reviewing the geomorphology of the Múlajökul landscape, Photo by Jamie Esler (PolarTREC 2013).

2023 ARCUS ANNUAL MEETING

Breakout 3: ARCUS Institutional Member Engagement

Breakout Leads: Joshua Stein (Sandia National Laboratories), Asa Rennermalm (Rutgers University), Alexis Will (WWF US Arctic Program), Adrian Gall (ABR, Inc), Helen Wiggins (ARCUS)



*ARCUS Annual Meeting.
Photo by Joed Polly (2018).*

The first session of this breakout featured lightning talk presentations from ARCUS institutional member representatives, providing insights into each organization's Arctic research activities, collaboration interests, and key contacts. The second session, a closed meeting for ARCUS Institutional Member Representatives, facilitated deeper discussions around collaboration priorities and strategic initiatives within the ARCUS community.

The closed session emphasized the Consortium's unique capacity to address complex Arctic challenges and underscored its responsibility to the broader Arctic research community. Attendees explored innovative approaches to enhance communication and coordination among members, recognizing the potential for greater synergy and collective action. Key areas of focus included fostering a shift towards collaboration over competition and identifying opportunities for partnerships, such as internships, student exchanges, and thematic webinar series.

The session underscored the consortium's commitment to facilitating meaningful collaborations and outlined a number of actionable steps to further strengthen its position as a leader in Arctic research and innovation, including:

- **Arctic Research Advocacy:** Encourage members to take initiative in advocacy and policy outreach efforts, recognizing that ARCUS, as a nonprofit organization primarily funded by federal sources, cannot directly engage in lobbying activities. Consider helping members interested in advocacy work to connect with each other. These individuals could assist in the development of talking points that can be used to communicate the importance of Arctic research and collaboration to policymakers by individuals independently advocating for funding support and other policy initiatives.
- **Collaborative Initiatives:** Foster collaboration among member institutions through workshops, webinars, and seminars focusing on emerging topics and actionable science. Encourage participation in joint projects, internships, and institutional matching programs to facilitate knowledge exchange and professional development.
- **Communication and Networking:** Establish communication channels such as Google Groups or Slack to facilitate ongoing conversations and collaboration beyond meetings. Consider organizing in-person events and regional networks to promote deeper collaborations among members.
- **Resource Sharing:** Explore the possibility of creating a shared journal or database to disseminate research findings and promote collaboration. Utilize existing resources and partnerships, such as those with UArctic, to expand connections and enhance collaborative efforts.

Overall, the session provided a vital platform for ARCUS Institutional Members to address critical questions, explore collaborative opportunities, and generate actionable recommendations. It highlighted the necessity of member-driven initiatives and underscored the value of ARCUS as a facilitator of collaborative endeavors in Arctic research.

Thank You from PolarTREC

For over two decades, ARCUS' PolarTREC program bridged the gap between educators and researchers in polar science expeditions in the Arctic and Antarctica. This transformative initiative facilitated countless collaborations, forged powerful connections between educators and scientists, and ignited a passion for scientific understanding. As of 31 May 2023, PolarTREC officially ended.

In celebration of the program, a video has been created featuring over 20 years of PolarTREC. The PolarTREC team invites you to view it on YouTube. We hope that you enjoy it as you witness firsthand the immersive experiences and educational opportunities created by the program.

The PolarTREC team would like to thank all who have participated in and supported the program for the last 20+ years. You can continue to stay informed about polar education news through the ARCUS website, social media and email lists. Reach out to us at education@arcus.org.



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



Arctic & Antarctic Learning Resource Collections

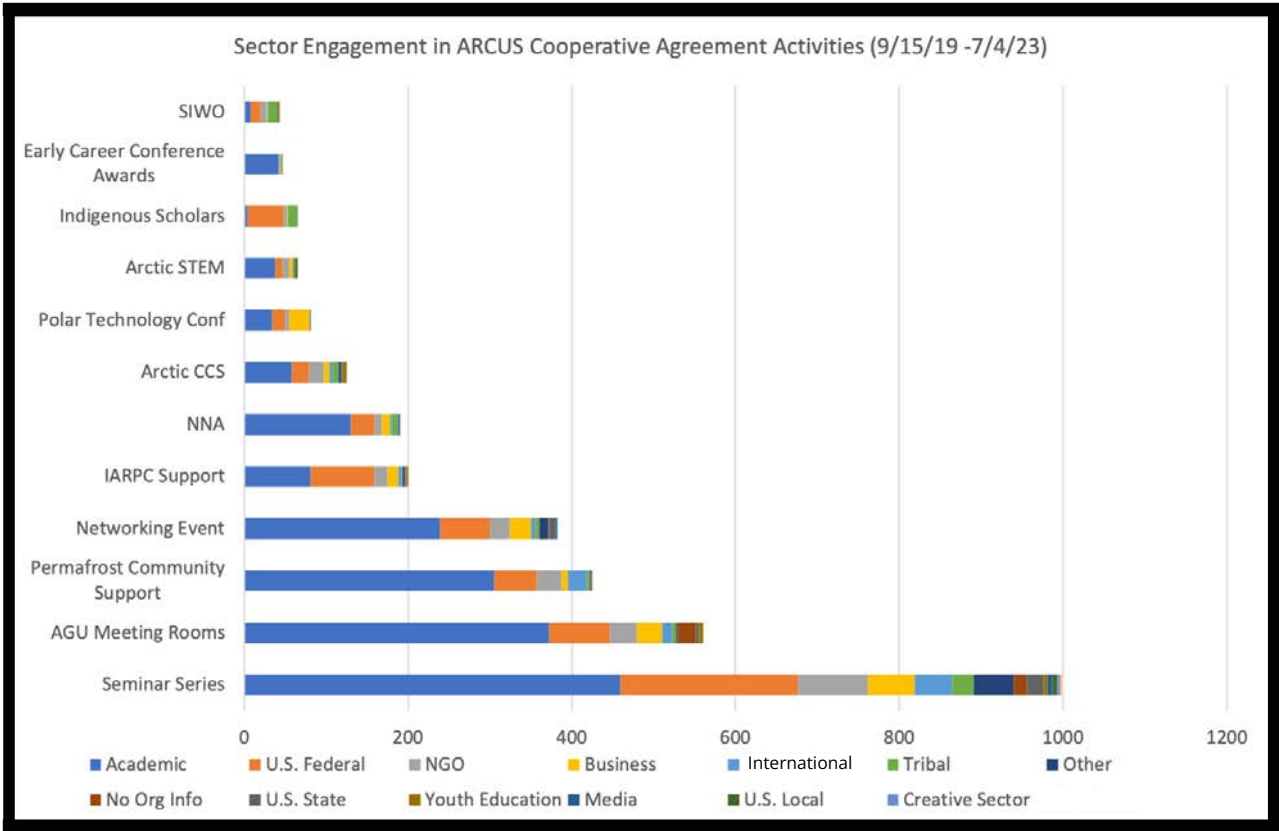
Although the PolarTREC program is no longer facilitating field research experiences for annual cohorts of educators, the PolarTREC website remains a wonderful resource for educators looking for learning resources with an Arctic and/or Antarctic focus.

We encourage you to explore our resource collections online at <https://www.polartrec.com/collections>.

ARCUS COOPERATIVE AGREEMENT

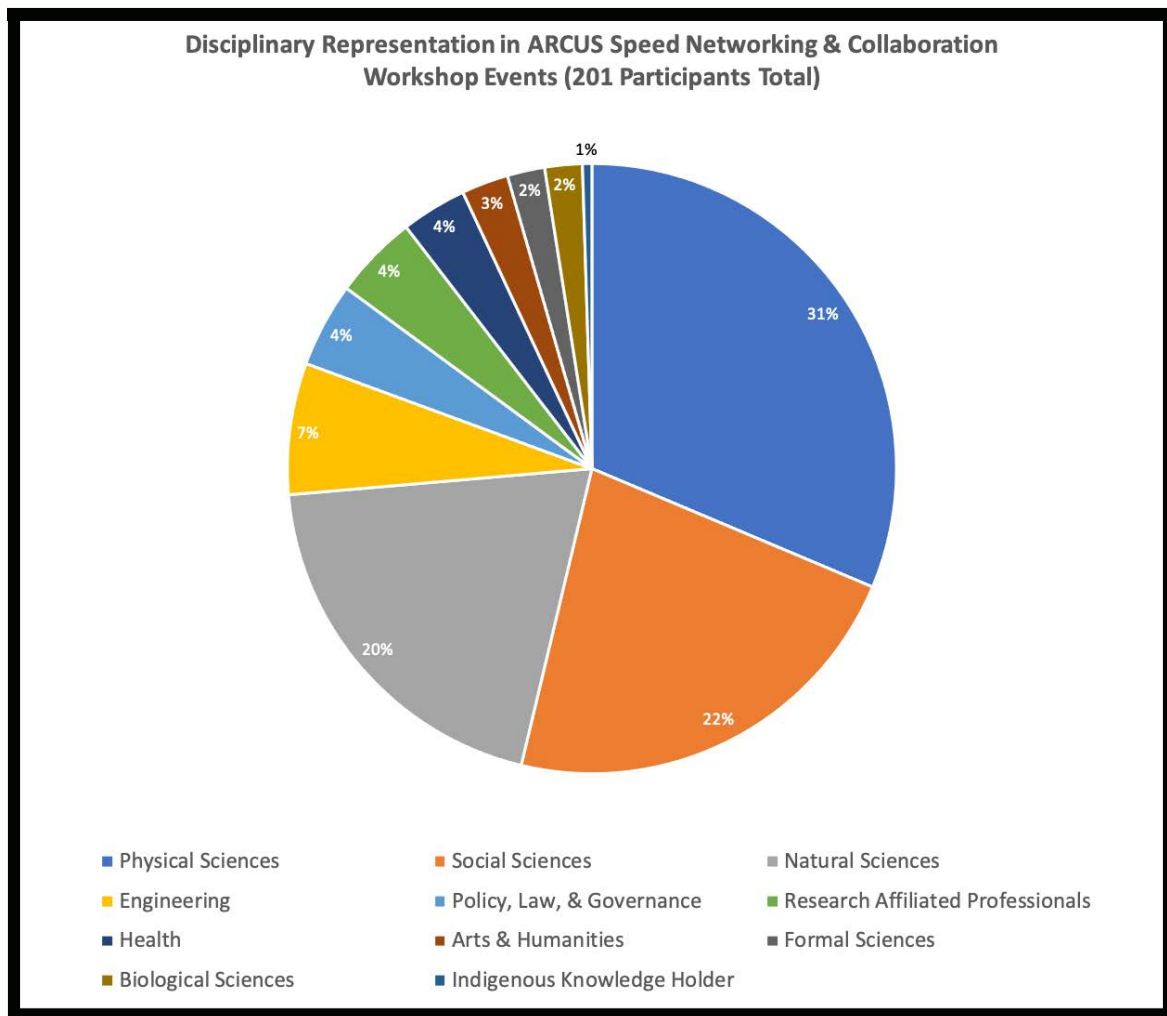
In 2023, ARCUS reviewed event participation data for activities supported by the NSF-funded Cooperative Agreement Award #OPP-1928794 to better understand the sectors and disciplines that are being served by our programming. These graphs help to highlight the diversity of the ARCUS participant community.

Sector Engagement in ARCUS Cooperative Agreement Supported Activities during the 2019–2023 Award Period



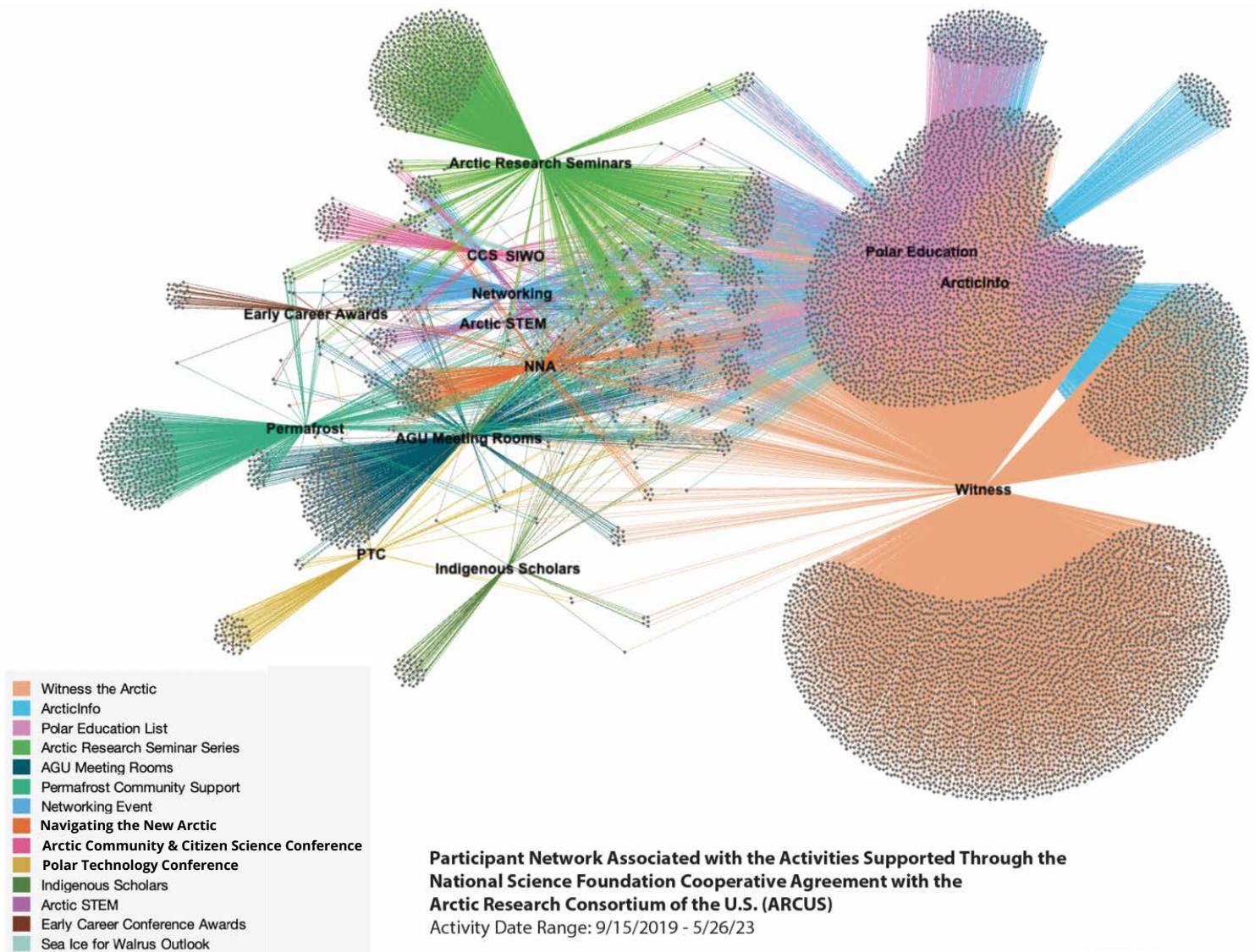
ARCUS COOPERATIVE AGREEMENT

Disciplinary Representation in ARCUS Networking & Collaboration Events During the 2019–2023 Award Period



ARCUS COOPERATIVE AGREEMENT

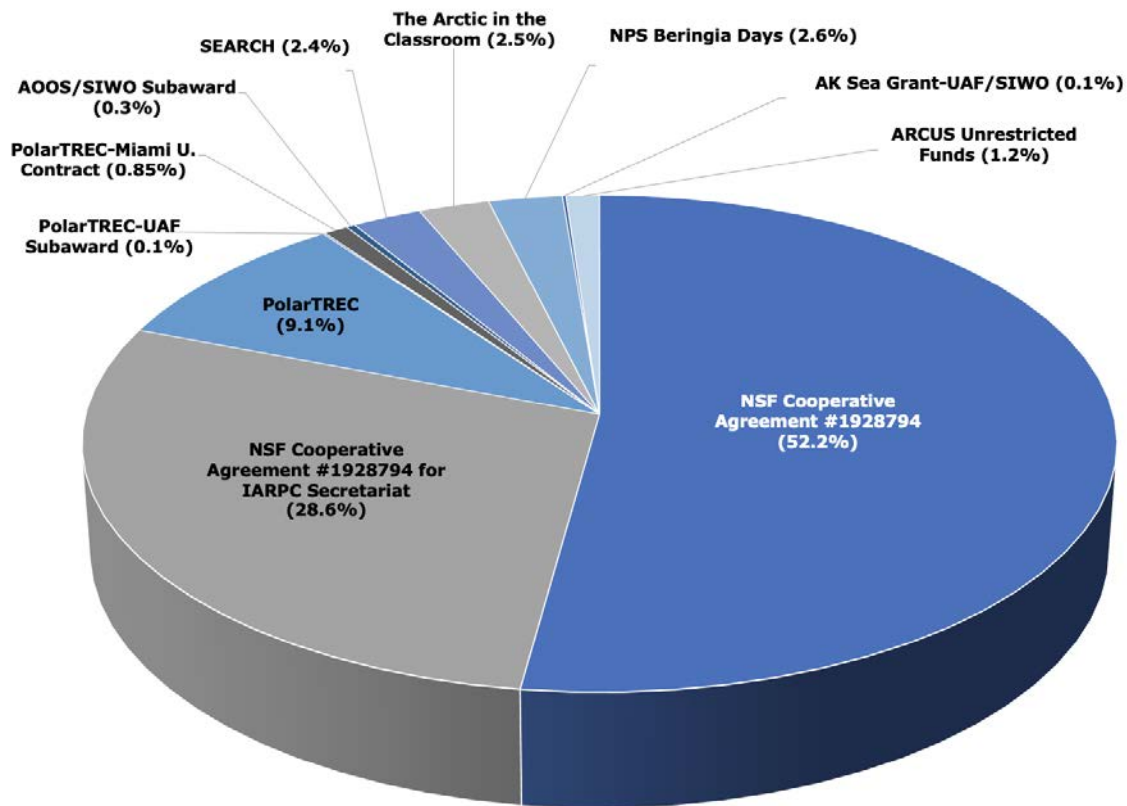
Network Map Showing Participant Engagement Across Multiple ARCUS Cooperative Agreement Activities



In the network graph above, each individual served by an ARCUS Cooperative Agreement activity during the 9/15/2019–5/26/23 date range is indicated by a unique dot. Colored lines connect individuals to different ARCUS programs, activities, and events that they have participated in during this time frame. Witness the Arctic, ArcticInfo, and the Polar Education List are three of ARCUS' email lists. Subscribers to these lists represent the largest segment of individuals who are not yet connected or engaged in other ARCUS activities.

2023 FINANCIAL REPORT

Fiscal Year 2023 Revenue by Source (October 2022–September 2023)



FY23 Direct Revenue by Source

NSF Cooperative Agreement #1928794 (52.2%)	\$	976,847
NSF Cooperative Agreement #1928794 for IARPC Secretariat (28.6%)	\$	536,263
PolarTREC (9.1%)	\$	171,152
PolarTREC-UAF Subaward (0.1%)	\$	1,496
PolarTREC-Miami U. Contract (0.85%)	\$	15,936
AOOS/SIWO Subaward (0.3%)	\$	5,816
SEARCH (2.4%)	\$	45,519
The Arctic in the Classroom (2.5%)	\$	46,467
NPS Beringia Days (2.6%)	\$	48,478
AK Sea Grant-UAF/SIWO (0.1%)	\$	2,183
ARCUS Unrestricted Funds (1.2%)	\$	21,958
	\$	<u>1,872,115</u>



www.arcus.org