



Navigating the New Arctic (NNA) April 2020 Virtual Meeting Report



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Notes & Reflections on the Meeting from NSF's Navigating the New Arctic Working Group

This report describes the inaugural Navigating the New Arctic (NNA) Investigators meeting held in April 2020. This was the beginning of an unusual time, and a difficult time, as a global pandemic changed almost everything surrounding “normal” processes of research. The format of the meeting itself—a change from in-person to virtual— was a good example of how the NNA community has demonstrated flexibility and resilience under these circumstances.

Planning, organizing, and delivering the meeting in a virtual format required significant effort. We would like to extend our gratitude to the ARCUS staff for the enormous amount of work it took to prepare for, and engage in, a stunningly successful meeting. We also thank NNA project personnel for their hard work and input. For this meeting, they answered surveys, changed to a virtual venue, produced one-pagers and lightning talks, and prepared for participation by watching pre-recorded material. This was accomplished while accommodating major changes to workplaces, homes, and broader society. We deeply appreciate the level of engagement. We are also grateful for the participation of many community members, including Arctic Indigenous peoples, sharing their perspectives and helping to facilitate discussions about Indigenous community engagement.

The meeting was the first opportunity to learn about entire portfolio of awards from the past three years. The meeting achieved its goal of beginning to bring the NNA community together, and identifying future steps. The recommendations described in this report are particularly important as they pertain to the four areas of Knowledge Co-Production, Convergence Research, COVID-19, and Data Sharing Requirements. We look forward to increasing coordination involving the new FY20 awarded projects, the new NNA Affinity Groups, and a new Community Office beginning operation. On the NSF side, we recently released NSF 20-112, a Dear Colleague Letter describing Potential Support for Community Hubs for Collaborations Between NSF-funded Arctic Researchers and Arctic Residents. We also anticipate a new solicitation for the NNA program that will further support and grow the important work of responding to the profound challenges of rapid changes in the Arctic.

The NNA Working Group at NSF has worked hard to develop and guide this program, but ultimately it is the ideas, proposals and projects of the community that make up the NNA program. We look forward to enabling further innovation regarding how to understand the changing Arctic, how to connect diverse research communities for truly convergent research, how to diversify the next generation of Arctic researchers, and how to ensure that the influx of new science is beneficial for Arctic communities.

With the resilience already demonstrated, we envision overcoming the challenges and seizing available opportunities made possible by the NNA program.

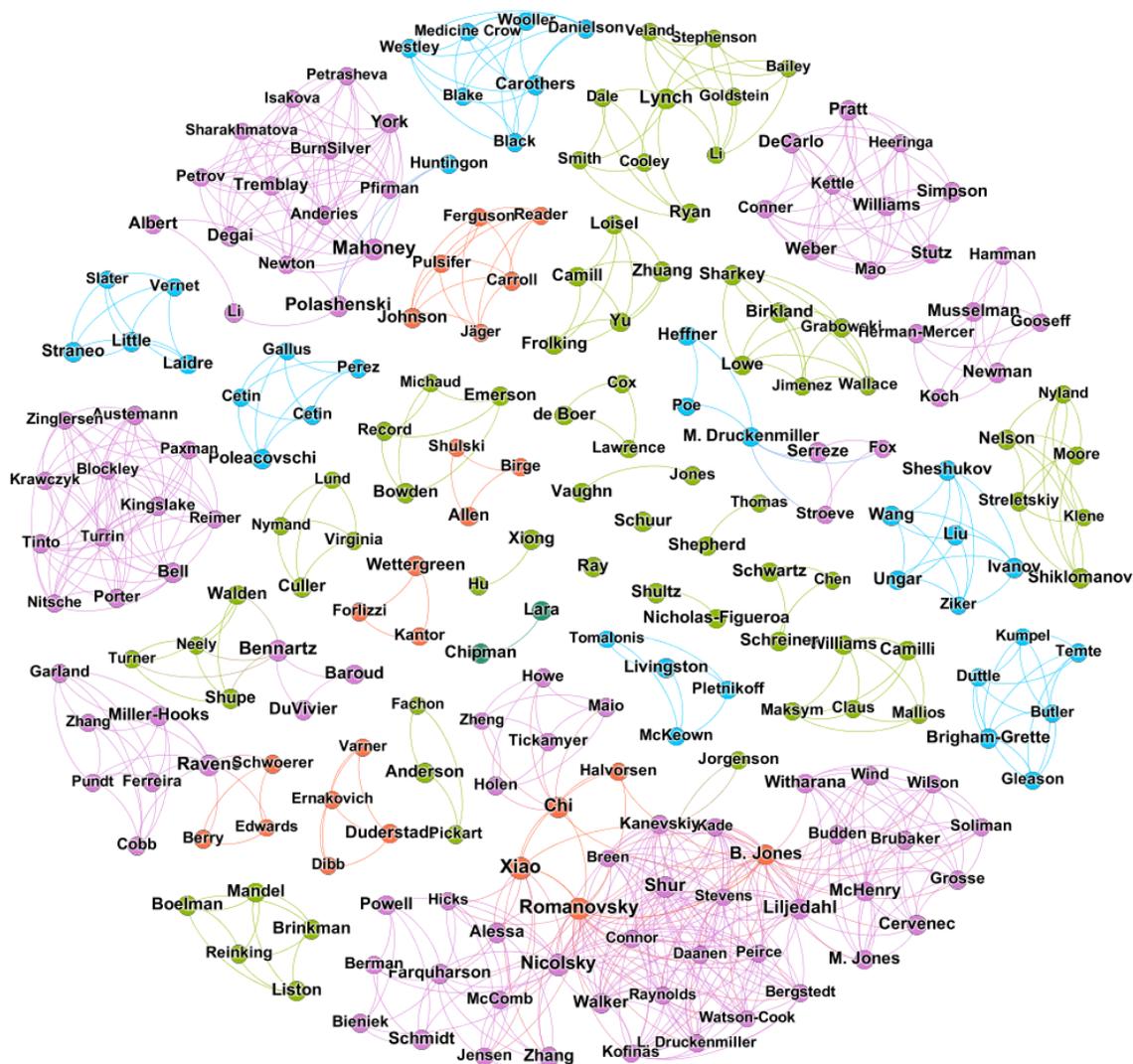
—The NNA Working Group

Navigating the New Arctic (NNA) Working Group Members

Jesus Maurosa	Engineer, NSF Division of Civil, Mechanical & Manufacturing Innovation	Karl Rockne	Program Director, NSF Division of Chemical, Bioengineering, Environmental and Transport Systems
Gregory Anderson	Program Director, NSF Office of Polar Programs	Kate Ruck	Contractor, NSF Office of Polar Programs
Bradley Barker	Program Director, NSF Research on Learning in Formal and Informal Settings	John Schade	Program Director, NSF Division of Environmental Biology
Roberto Delgado	Program Director, NSF Office of Polar Programs	Colleen Strawhacker	Program Director, NSF Office of Polar Programs
Irina Dolinskaya	Program Director, NSF Division of Civil, Mechanical & Manufacturing Innovation	Jielun Sun	Program Director, Division of Atmospheric & Geospace Sciences
Claire Hemingway	Program Manager, NSF Office of International Science and Engineering	Kevin Thompson	Program Director, NSF Office of Advanced Cyberinfrastructure
Mark Hurwitz	Program Director, NSF Division of Social & Economic Sciences	Jacqueline Vadjunec	Program Director, Division of Behavioral & Cognitive Sciences
Katia Kontar	AAAS Science & Technology Policy Fellow, Office of Polar Programs	Jonathan Wynn	Program Director, Division of Earth Sciences
Kendra McLauchlan	Program Director, NSF Division of Environmental Biology	Margarida Yuan	Staff Associate, NSF Directorate for Geosciences
Madelaine Midyette	Program Assistant, NSF Directorate for Geosciences		

The NNA Network: Award Years & Funding Tracks

The NNA Investigator Community includes PIs, Co-PIs, and other affiliates of NSF-funded projects across multiple award years. 6 projects received their award in 2017, 20 in 2018, and 22 in 2019. In 2019 awards were also categorized by two distinct NNA funding tracks. Track 1 Research Grants (n= 13) and Track 2 Planning Grants (n = 8). For the first meeting of the NNA Community, a small number of projects funding through non-NNA solicitations were also invited to participate based on project alignment with NNA goals.

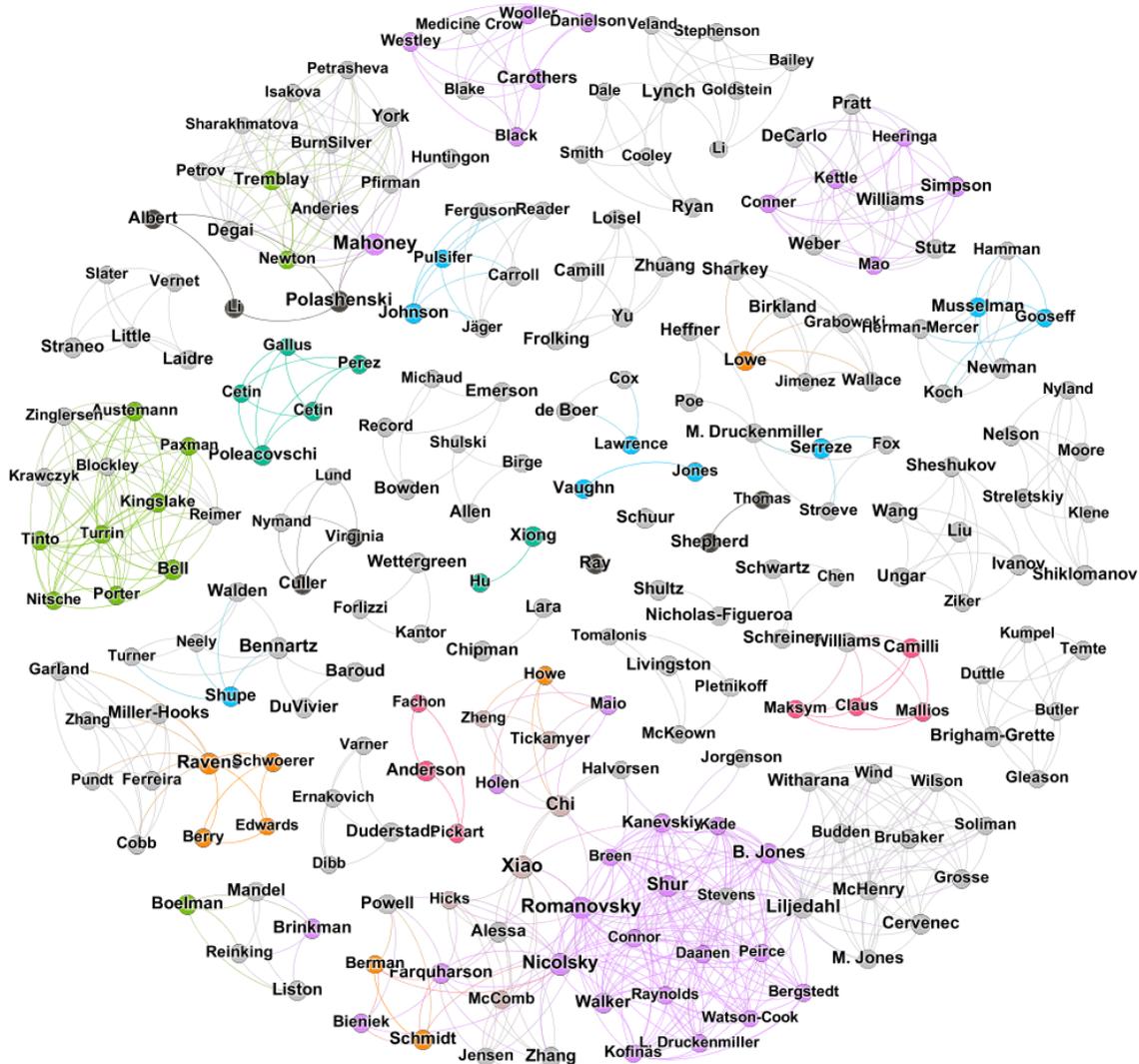


In this network map, individual NNA participants are linked if they are part of the same research projects. Connections are color coded by the solicitation year and funding track of their awards. As a dynamic community poised to grow and change in subsequent funding years, this map gives scope to size and complexity of the NNA investigator community and identifies individuals and teams that may be further along in the life-cycle of their research initiative or award. For further reference, a list of the NNA project awards is available online at <https://arcus.org/NNA/meetings/2020>.

2019 NNA Solicitation: Track 1	(42.36%)
2018 Dear Colleague Letter	(30.13%)
2019 NNA Solicitation: Track 2	(16.16%)
2017 Dear Colleague Letter	(10.48%)
2019 Other NSF Solicitation	(0.87%)

The NNA Network: Affiliated Institutions

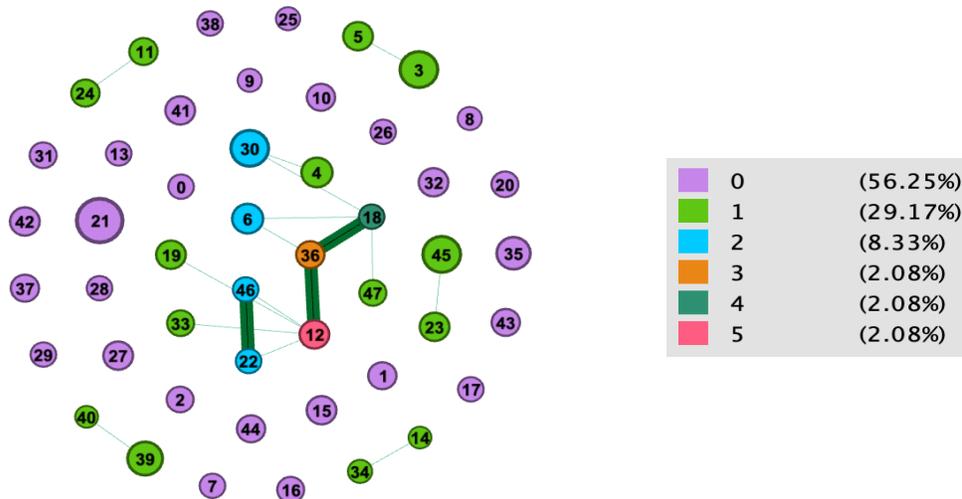
NNA project participants come from 87 different home institutions. The network map below highlights institutions with the most number of NNA Investigators involved in current NNA project teams.



Institutions with a larger presence in the NNA PI/Co-PI/and other reported project affiliate network are highlighted via the color key outlined below. Individuals from the 79 additional institutions that are also present in the network are colored grey.

University of Alaska Fairbanks	(13.97%)
Columbia University	(4.8%)
University of Colorado Boulder	(3.93%)
Dartmouth College	(3.49%)
University of Alaska Anchorage	(3.49%)
Woods Hole Oceanographic Institution	(3.06%)
Iowa State University	(3.06%)
Pennsylvania State University	(2.62%)

The NNA Network: Project Connections



In this network map, each NNA project is represented by a single node. Larger nodes indicate larger team sizes. Ties between nodes indicate shared team members. Bold ties indicate projects that share two team members. Node color represents the total number of ties to other projects.

Node	Project Title
3	ANCHOR - Arctic Network for Coastal Community Hazards, Observations, and Integrated Research
4	ARC-NAV: Arctic Robust Communities-Navigating Adaptation to Variability
5	Arctic impacts and reverberations of expanding global maritime trade routes
6	Arctic Urban Risks and Adaptations (AURA): a co-production framework for addressing multiple changing environmental hazards
11	Co-production of shorefast ice knowledge in Uummannaq Bay, Greenland
12	Coordinate a Transdisciplinary Research Network to Identify Challenges of and Solutions to Permafrost Coastal Erosion and Its Socioecological Impacts in the Arctic
14	Developing coordinated monitoring networks across Alaska and Northwest Canada to evaluate and address rapidly changing environments
18	Landscape evolution and adapting to change in ice-rich permafrost systems
19	Integrating Language Documentation and Computational Tools for Yupik, an Alaska Native Language
22	Landscape evolution and adapting to change in ice-rich permafrost systems
23	Maritime transportation in a changing Arctic: Navigating climate and sea ice uncertainties
24	Modeling Risk from Black Carbon in a Coupled Natural-Human System at the Arctic Ice Edge
30	Planning for Climate Resiliency Amid Changing Culture, Technology, Economics, and Governance
33	Pursuing Opportunities for Long-term Arctic Resilience for Infrastructure and Society (POLARIS)
34	Rain on Snow and Extreme Precipitation Events across the Arctic and their Impacts on Social-Ecological Systems
36	Resilience and adaptation to the effects of permafrost degradation induced coastal erosion
39	Students Using Local, Traditional, and Science Knowledge Bases to Investigate Arctic Snow Processes
40	Sustainably Navigating Arctic Pollution Through Engaging Communities (SNAP-TEC)
45	The Integrated Characterization of Clouds, Energy, Atmospheric state, and Precipitation at Summit, Aerosol-Cloud Experiment (ICECAPS-ACE)
46	The Permafrost Discovery Gateway: Navigating the new Arctic tundra through Big Data, artificial intelligence, and cyberinfrastructure
47	The Transition Zone of Upper Permafrost: The Frontline for Permafrost Changes across Climate and Landscape Gradients

In the tables below, the NNA Grant ID Numbers of projects are listed next to general descriptions of the project's field research and/or community engagement locations. Project locations were drawn from project profile descriptions found in the Arctic Research Logistics Support Service (ARLSS) database. Additional information about each of these projects can be accessed via NSF's online Award Search (www.nsf.gov/awardsearch) by referencing the award numbers.

Research Location	NNA Grant IDs	Research Location	NNA Grant IDs
Alaska: Aleutian Pribilof Islands	1928254	Alaska: North Pole	1927936
Alaska: Anchorage	1745369 1927563 1928144 1928254	Alaska: Northern Alaska	1928230
Alaska: ANWR	1839198	Alaska: Nuiqsut	1927718
Alaska: Beaver Creek	1928189	Alaska: Oliktok Point	1836423
Alaska: Bristol Bay	1927827	Alaska: Oscarville	1928105
Alaska: Chickaloon	1745499	Alaska: Parks Highway	1820883
Alaska: Dalton Highway	1820883	Alaska: Pilot Station	1928189
Alaska: Dillingham	1927827	Alaska: Point Hope	1928202
Alaska: Eagle	1928189	Alaska: Point Lay	1927718 1928105 1928237
Alaska: Fairbanks	1744417 1745369 1927563 1927936 1928144 1928189	Alaska: Prudhoe Bay	1837646 1839198 1928237
Alaska: Fort Yukon	1928189	Alaska: Richardson Highway	1820883
Alaska: Galena	1928189	Alaska: Saint Mary's	1928189
Alaska: Gambell	1928202	Alaska: St. Lawrence Island	1761680
Alaska: Healy	1754839	Alaska: Tanana	1928189
Alaska: Hess Creek	1928189	Alaska: Teshekpuk Lake	1820883
Alaska: Hooper Bay	1745508	Alaska: Tok	1928189
Alaska: Itkillik (Stinking Hills)	1820883	Alaska: Toolik	1754358 1802838 1927772
Alaska: Ketik fire scars	1820883	Alaska: Upper Colville River	1820883
Alaska: Kotzebue	1825486 1927644 1929275	Alaska: Utqiagvik	1821884 1825486 1836377 1837646 1927718 1927785 1928202 1928243 1929275
Alaska: Koyukuk	1928189	Alaska: Venetie	1928189
Alaska: Meade River fire scars	1820883	Alaska: Wainright	1927718 1927827
Alaska: Noatak River Watershed	1927772	Alaska: YK Delta	1927644
Alaska: Nome	1823002 1825486 1836377 1927785 1928202		

Knowledge Co-Production

NNA Investigators met with guest experts in indigenous/ local community engagement to discuss the definition of knowledge co-production and opportunities to fully engage Indigenous Peoples and organizations as equal partners at all stages of NNA research projects.



Pribilof Aleut Elder Mary Bourdekovsky discusses the diversity of Pribilof Island marine invertebrates with Michelle Ridgeway during a Bering Sea Days event in 2011.

The key recommendations included:

Before You Begin:

- Take time to learn about people/communities, build trust, and develop lasting relationships.
- Commit to:
 - being open to different worldviews
 - being sensitive to inequities
 - being vulnerable
 - including community members as equal partners from the beginning

Proposal Development:

- Allow community priorities/needs to inform research questions
- Don't pre-design your research
- Use the concept of reciprocity to guide your project; compensate people for their time and assistance
- Include partners as project co-leads
- Be adaptive to different communication preferences/capabilities
- Give forethought to data sovereignty

Conducting Research:

- Define processes, terms, desired outcomes, & conceptual frameworks together
- Host gatherings in places that promote cultural identity
- Use communication tools familiar to the community & keep partners updated
- Mitigate research practices that are exploitative &/or condescending
- Include partners in data interpretation, outcome validation, & appreciate that its ok if knowledge systems disagree

Before You Leave:

- Acknowledge partner contributions in accordance with their wishes (e.g. include them as manuscript co-authors &/or through named data attributions)
- Share results with & be accountable to community partners
- Develop products that are accessible and useful to the communities
- Help find ways to sustain projects beyond funding cycles & to implement proposed solutions

Convergence Research

NSF's Navigating the New Arctic initiative requires project teams to take a "convergence" approach to research.

Convergence research is characterized by a deep integration of multiple research disciplines. The goal of this multi-disciplinary integration is to develop innovative new ways of understanding and responding to pressing societal needs.

Recommendations below reflect common ideas about conducting convergence research shared by NNA Investigators during meeting breakout discussions.



WHAT HELPS?

- Orienting team efforts around a shared focus such as an emerging risk or boundary object.
- Developing reference materials to explain disciplinary terms &/or concepts.
- Including information users in the research.
- Creating workplans to illustrate how the team will work together and what products will be produced.
- Employing virtual collaboration platforms.



WHAT GETS IN THE WAY?

- Too little time for team-building and to develop mutual understanding across project partners.
- Different rules governing data activities across disciplines.
- Team members with different goals &/or desired outcomes for the project.
- Lack of institutional support &/or appreciation for what is needed to participate in convergence research.

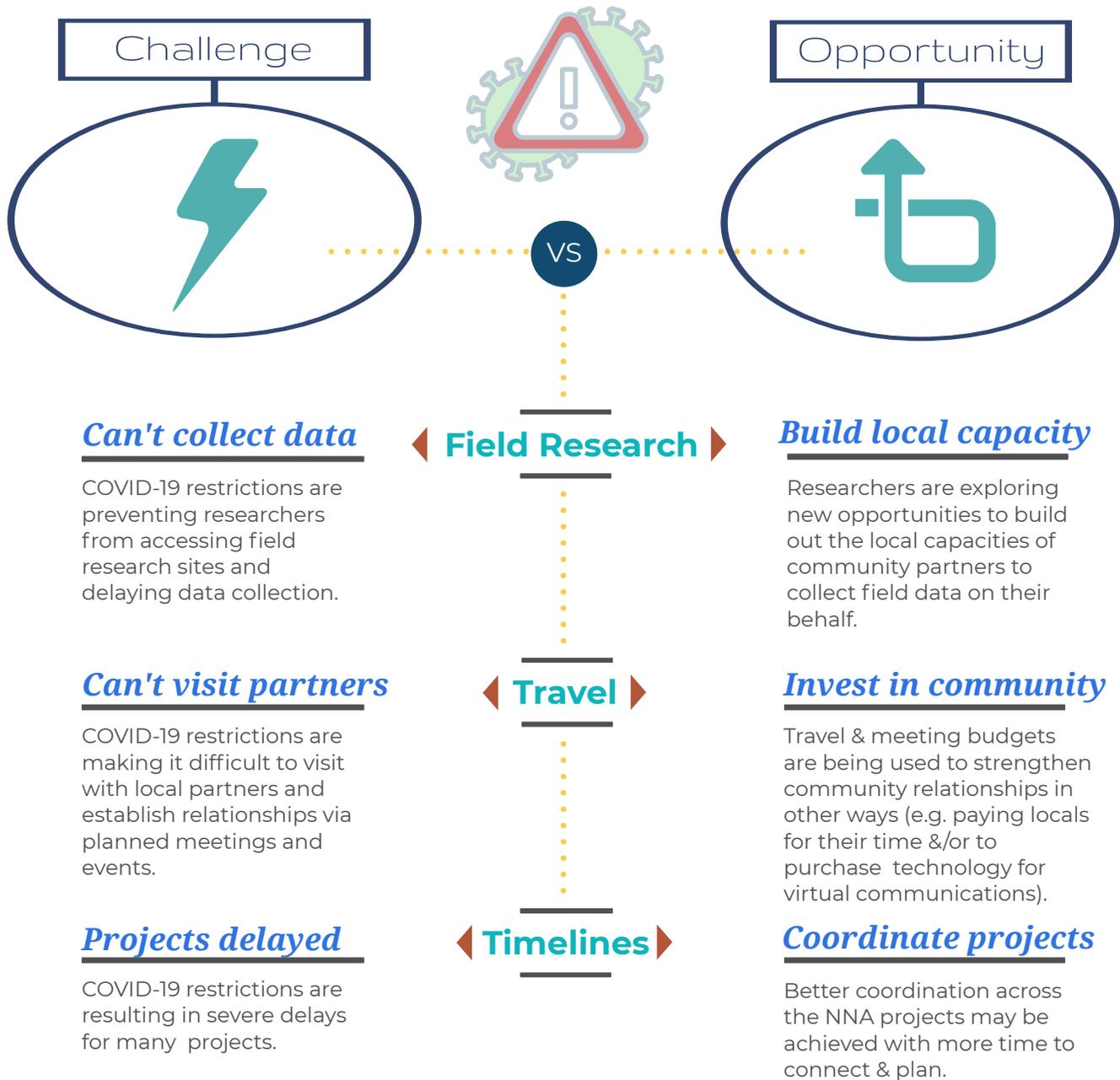


WHAT CAN WE TRY?

- Using other peoples' tools/ languages/ ways of thinking to find solutions to your own problem set.
- Holding cross-disciplinary training workshops.
- Bringing in additional expertise as projects develop.
- Providing opportunities for interdisciplinary mentoring.
- Using what we know about how people learn and communicate to inform team interactions.

NNA Community Challenge: COVID-19

As a result of the global coronavirus pandemic, disruptions to the 2020 Arctic field research season have been severe. The NNA Investigators meeting provided an opportunity for project teams to discuss the many challenges they've faced as a result of COVID-19 and to explore what opportunities these disruptions might present to the NNA community moving forward.



Data Sharing & NNA Community Office Requirements

At the time of the NNA Investigator's meeting, the National Science Foundation was preparing to establish a new NNA Community Office (NNA-CO) to lead the coordination activities of funded NNA projects; integrate newly-funded project teams into the wider NNA community; and to help promote other NNA research, education, and outreach activities. NNA Investigators used the final session of the meeting to explore what forms of support would be needed from the soon-to-be-established NNA-CO to help ensure that the ambitious goals of the Navigating the New Arctic program will be met.

Seen as a critical first step in enabling synthesis and collaboration across the NNA project teams, specific time and attention was also given to the NNA community's data sharing support requirements.



COMMUNITY OFFICE

- + Provide pre-proposal development support and assist in coordinating both new and existing projects.
- + Serve as the clear point of contact for NNA data coordination and consultation.
- + Lead community engagement efforts, particularly with respect to Indigenous & local community participation in NNA research.
- + Work to reduce the logistics, administrative, and project management burdens placed on NNA project leaders.
- + Coordinate &/or aggregate the broader impacts activities of the NNA community.
- + Provide training & professional development opportunities.

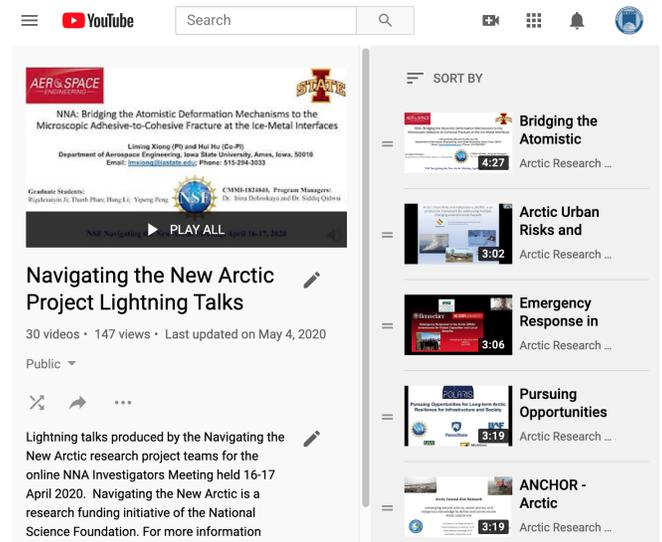


DATA SHARING

- + Identify what types of data are being collected by the NNA project teams & make this information accessible to others.
- + Develop & coordinate standards & protocols for NNA data collection, exchange, & storage.
- + Address the many challenges of data integration across disciplines.
- + Ensure high ethical standards with respect to human subjects information & data sovereignty issues.
- + Coordinate data collection & synthesis efforts across the NNA project teams & with other research efforts beyond NNA.
- + Make data accessible to local/ Indigenous community partners

Lightning Talk Archive

In preparation for the first NNA Investigator's meeting, project teams produced short lightning talk videos as a way to introduce their work to the wider NNA community. Videos made accessible to the public can be viewed through the ARCUS YouTube channel: <https://www.youtube.com/user/ARCUSvideo/playlists>.



Bridging the Atomistic Deformation Mechanisms to the Microscopic Adhesive-to-Cohesive Fracture at the Ice-Metal Interfaces

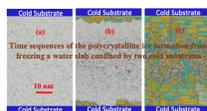
Key Project Contact: Liming Xiong (PI)
 Department of Aerospace Engineering
 Iowa State University, Ames, Iowa, 50010
 Email: lxiong@iastate.edu
 Phone: 515-294-3033



Project Website Urls & Social Media Accounts:
<https://www.aere.iastate.edu/nna/online/>
<https://www.aere.iastate.edu/nna/research.html>

Project Objectives: Ice accretion over the surfaces of materials exposed to the cold environment is a topic of great concern for airplanes, wind turbines, and marine vessels sailing near the arctic area. However, a strategy of de-icing (detaching ice from cold surfaces) with minimal power cost is not well-established yet due to the lack of answers to a fundamental question on how the ice forms and sheds from a material surface. The goal of this project is to answer this question by identifying the atomistic mechanisms responsible for the fracture of the ice-metal interface. Two specific aims are: (i) to correlate the ice adhesion strength with the ice-metal interface structure, and (ii) to support the search of de-icing strategies that consume less power than existing approaches. A series of high-fidelity computer simulations will be performed under a correspondence with the relevant experimental measurements in an ongoing Research Train at the PI's institute. This project will facilitate a rational design of materials that inhibit ice adhesion, with implications for safety-critical infrastructure operating in arctic areas, including telecommunication equipment, power lines, automotive vehicles, marine vessels, offshore oil platforms, and among many others.

Keywords: icing and de-icing, ice-metal adhesion, crack propagation in ice, multiscale simulation



Progress to Date/Future Plans: through atomistic simulations, the PI recently found a microstructure transition from "the columnar grain structure" to "the equiaxed grain structure" nearby the ice-substrate interface. Such a microstructure transition in turn, may dictate the commonly observed "adhesive-to-cohesive" fracture involved in a de-icing process. This is to be confirmed by experiments and higher length scale computer models in the next, which may be then utilized to guide the design of novel de-icing strategies.

Highlights of the Expected Outcomes: one main expected outcome of this research will be an integrated experimental and computational platform that can be used to understand how the ice is formed and how it should be removed from the surfaces of engineering infrastructures exposed to the cold environment in arctic areas.

NNA Community Collaboration and Research Coordination: the PI's do not conduct field experiments in any geographic area nearby the arctic region yet, the gained knowledge that far may not be directly applicable to understand the ice accretion on the infrastructures in arctic areas due to the lack of the information about the humidity, temperature, wind speed, water droplet size and chemistry in the field. If the support from the NNA community on this aspect is provided, an experimentally-validated computer software can be expected and will be delivered for predicting how the ice is formed from water freezing and how it fractures in arctic areas. This may also enable researchers to explore how the glacier fractures under current global warming conditions from the bottom up.

Advice for Overcoming NNA Project Challenges: if the support from the NNA community is not leveraged, it remains impossible for the PI to directly use their platform on the infrastructures in arctic areas, although they have practiced in engineering, especially in computational mechanics of materials and experimental icing physics, for tens of years. The PI believes that all the ongoing and upcoming NNA projects are multidisciplinary in nature, which remains as a challenge to each NNA project team, and should be clearly addressed whenever possible.

Summary Notes & Project Update Reports

Summary meeting notes that further detail key discussion points from the meeting's break-out and plenary discussions, as well as a set of written NNA project update reports can be found online at www.arcus.org/nna/meetings/2020.



Navigating the New Arctic (NNA) Investigators Meeting

Meeting Agenda

Thursday, 16 April 2020
Day 1 Focus: Introductions & Peer Support

Session 1.1: Introductions

12:00pm ET **Welcome & Introduction**

- Welcome
- Introduction to the NNA Program from the Steering Committee Co-Chairs
 - *Kellina M. Craig-Henderson, Deputy Assistant Director, NSF Social, Behavioral, and Economic Sciences Directorate*
 - *Kelly Falkner, Director, NSF Office of Polar Programs*
 - *Robert B. Stone, Division Director, NSF Civil, Mechanical and Manufacturing Innovation Division*
- Introduction to the NNA Working Group members & goals for the NNA Virtual Investigators Meeting
 - *Roberto Delgado, NSF Program Director, Office of Polar Programs*
 - *Kendra McLauchlan, NSF Program Director, Division of Environmental Biology*

12:20pm ET **Plan for the Day**

- Agenda overview and introduction to the Session 1 peer support activity
Marion Smith, NNA Meeting Facilitator

12:30-1:25pm ET **Peer Support Small Group Discussions**

- Meeting participants will split into groups of four participants to meet or connect with other members of the NNA Investigators community and to seek input and advice on any challenges they are facing within their NNA projects or with other relevant Arctic research activities. Each individual will have ~15 minutes to share and seek peer support. A timekeeper may also be present in some groups to assist with the peer support activity.
- **Desired Outcomes:**
 - Participants connect with other investigators and learn about their projects
 - Investigators learn about NNA community challenges and explore how they can support one other in overcoming them.
 - Individuals document common themes among their discussions that they can introduce in other meeting break-out discussions.

1:25pm ET **Session 1.1 Wrap-up**



1:30-2:00pm ET **Break**

Session 1.2: Enhancing Collaboration Capacity

2:00pm ET **Introduction to Session & Special Guests**

- Introduction to the two different thematic areas of the break-out session
 - “Community”: Working with Arctic Indigenous communities
 - “Convergence”: Facilitating convergence research
- Special guest introductions:
 - *Carolina Behe, Inuit Circumpolar Conference (ICC) Alaska*
 - *Nikoosh Carlo, CNC North Consulting*
 - *Raychelle Daniel, PEW Charitable Trusts*
 - *Kaare Erickson, Ukpeaġvik Iñupiat Corporation (UIC) Science*
 - *Nagruk Harcharek, Ukpeaġvik Iñupiat Corporation (UIC) Science*
 - *Brenden Raymond-Yakoubian, Sandhill.Culture.Craft*
 - *Julie Raymond-Yakoubian, Kawerak, Inc*
- Introduction to the break-out session process and desired outcomes

2:20 - 3:25pm ET **Break-out Group Discussions**

- Each participant assigns themselves to one of the two session themes and is moved into a Zoom break-out room to discuss the focus questions below.
- Break-out group facilitators will introduce the focus questions and assign one investigator to serve as the group’s rapporteur during the Session 1.3 plenary.
 - **Community Theme Focus Questions:**
 - What does co-production of knowledge mean to you &/or the other investigators on your NNA project team?
 - How can you apply the concept of reciprocity in the context of research?
 - What kinds of resources and support do you need (and/or does the NNA community/larger Arctic research community need) to engage in collaborative and co-productive research with Arctic communities?
 - **Convergence Theme Focus Questions:**
 - What challenges do the NNA projects face with regard to working effectively across scientific disciplines to achieve the goal of research convergence?
 - What tools, techniques, or resources have been helpful in promoting successful research collaborations and how might they (or others) be applied to enhancing convergence outcomes and synthesis across the NNA projects?
 - How can the NNA community work together to overcome the existing barriers to convergence research and/or broader



collaboration? (e.g. working internationally, working with business or policy sectors, connecting with other Arctic research efforts beyond NNA, etc.)

- What support could be provided to help investigators successfully initiate, engage in, and foster convergence research?
- **Outcomes:**
 - Key discussion points from each break-out are captured by the group facilitator or a designated note-taker in a [shared Google doc](#).
 - Discussion highlights are synthesized by the break-out group rapporteur and shared during 3-minute presentations during the Session 1.3 plenary.

3:25pm ET **Session 1.2 Wrap-up**

3:30-4:00pm ET **Break**

Session 1.3: Report Outs & Plenary Discussion

4:00pm ET **Session Introduction**

- Introduction to the order of reports and how the plenary Q&A will work

4:05-5:25pm ET **Break-Out Group Reports**

- Rapporteurs from the “Community” groups will give 3-minute report outs
- Rapporteurs from the “Convergence” groups will give 3-minute report outs
- Q&A, plenary discussion, and ID of cross-cutting themes

5:25pm ET **Session Wrap-up, Office Hours, & Virtual Happy Hour**

- Three of our meeting guests from today - Julie Raymond-Yakoubian, Kaare Erickson, and Raychelle Daniel - will be holding virtual "Office Hours" for interested investigators. These Office Hours are voluntary but are an opportunity to speak with Arctic community/Arctic research experts about your specific project or questions you may have about community engagement, collaborations, or partnerships. Julie, Kaare, and Raychelle will be available today from 5:45pm - 6:45pm ET on Zoom. They will also be available tomorrow morning on the same Zoom channel from 10:45am-11:45am ET.
- Participants are also invited to spend a few more minutes following-up with each other informally before they leave for the day. We'll keep this Zoom meeting room open until 7pm ET if there is anyone who might want to stay and socialize. The NNA Slack Channel is another great place to continue some of the conversations started today!

5:30pm ET **End of Day 1**



Navigating the New Arctic (NNA) Investigators Meeting

Meeting Agenda

Friday, 17 April 2020
Day 2 Focus: Future Planning

Optional “Office Hours” Meeting Opportunity

10:45-11:45am ET **Expert Consultation on Community Engagement**

- Julie Raymond-Yakoubian, Raychelle Daniel, and Kaare Erickson will be available to speak with NNA Investigators about your projects or other community collaboration questions during this optional “office hours” session.

Session 2.1: Addressing Current Challenges

12:00pm ET **Welcome, Reflections, and Plan for Day 2**

- Welcome and agenda overview for Day 2
Marion Smith, NNA Meeting Facilitator
- Review of insights/outcomes from Day 1
Katia Kontar, AAAS Science & Technology Policy Fellow, hosted by NSF Office of Polar Programs
- Introduction to the Day 2 focus of the meeting and the desired outcomes for the first break-out session.
Roberto Delgado, NSF Program Director, Office of Polar Programs
Kendra McLauchlan, NSF Program Director, Division of Environmental Biology

12:25 - 1:25pm ET **Break-out Group Discussions**

- Break-out group facilitators will introduce the focus questions and assign one investigator to serve as the group’s rapporteur during the Session 2.2 plenary.
 - **Break-Out Group Focus Questions:**
 - How has COVID-19 disrupted your project or field research plans? How are you finding ways to adapt that could be relevant to others in the NNA community?
 - Do COVID-19 disruptions present any opportunities for the NNA community to do things differently or to strengthen collaborations?
 - How can you apply what you know/are learning about co-production and collaboration to this COVID19 situation? (i.e. in terms of relationship building, on the ground collaborations with communities when field work is cancelled or uncertain, using this as an opportunity to create longer-term modifications to how research is done, etc.)



- What could the NNA community achieve together over the next six months to a year given the current challenges and circumstances?
- How can these activities/actions serve as a stepping stone to what the NNA community might achieve together over the next 5+ years?
- **Outcomes:**
 - Key discussion points from each break-out are captured by the group facilitator or a designated note-taker in a [shared Google Doc](#).
 - Discussion highlights are synthesized by the break-out group rapporteur so they can be shared during 3-minute presentations during the Session 2.2 plenary.

1:25pm ET **Session 2.1 Wrap-up**

1:30-2:00pm ET **Break**

Session 2.2: Report Outs & Plenary Discussion

2:00-3:25pm ET **Break-Out Group Reports**

- Rapporteurs give 3-minute report outs followed by a Q&A period/plenary discussion once all reports have been shared.

3:25pm ET **Session 2.2. Wrap-up**

3:30-4:00pm ET **Break**

Session 2.3: Data Sharing & NNA Community Office Requirements

4:00pm ET **Session Introduction & Report Out Plans**

- Introduction to the discussion questions, desired outcomes, and report out plans for the final break-out session

4:05-5:05pm ET **Break-out Group Discussions**

- Break-out group facilitators will introduce the focus questions, ensure key discussion points are documented in a [shared Google Doc](#), and assign one Investigator to report out top take-away message via Zoom chat.
 - **Break-Out Group Focus Questions:**
 - What strategies for data sharing across the project teams are needed?
 - What kinds of data/information do projects currently need to move their work forward?
 - What additional data/information would be useful to help the NNA community produce new knowledge together?



- What other tools, activities, support services, etc. would the NNA Investigator community like to see implemented by the new NNA coordination office?
- How can the community stay connected and continue working together before the NNA coordination office is in place?
- What would you like to see happen at the next NNA community meeting being planned for the fall.
- **Outcomes:**
 - Key discussion points from each break-out are captured by the group facilitator or a designated note-taker in a [shared Google Doc](#).
 - Break-out group rapporteurs share top take-away from their discussion with all meeting participants via Zoom chat.

5:05pm ET

Meeting Wrap-Up & Concluding Remarks

- Participants invited to share final reflections on the meeting
- Updates on the products, reports, and recommendations that will come out of the virtual meeting and how they will be shared.
- Reminder of tools & networking opportunities currently available to help the NNA Investigator community stay connected and continue developing their relationships with one another.

5:30pm ET

Meeting End