

Arctic Science Diplomacy: Opportunities for International Collaboration and Policy-Engaged Scholarship

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Presentation represents author views and not necessarily those of the National Academies of Sciences, Engineering, and Medicine

Science Diplomacy

The use of scientific knowledge and collaborations to address shared challenges and to build constructive international partnerships, inform foreign policy objectives, and improve international relations.

- **Diplomacy for Science**

Diplomacy facilitating international scientific cooperation

- **Science for Diplomacy**

Scientific cooperation helping to build & improve international relations

- **Science in Diplomacy**

Science advice to inform and support foreign policy objectives

*Sources: Royal Society & AAAS (2010); U.S. & International Perspectives on Global Science
Policy & Science Diplomacy (NRC, 2012)*

The Global Arctic

The community and interrelationship of the interests of our entire world is felt in the northern part of the globe, in the Arctic, perhaps more than anywhere else... scientific exploration of the Arctic is of immense importance for the whole of mankind.

-Mikhail Gorbachev, 1987

The Arctic is increasingly connected to the rest of the world. Whatever happens in the Arctic does not stay in the Arctic.

*-Henry Huntington, 2015; Co-Author, NRC Report
“The Arctic in the Anthropocene: Emerging Research Questions”*

*Quotes from: Stability and Peace in the Arctic Ocean through Science Diplomacy; Berkman, 2014; Science & Diplomacy
New Research Questions Emerge from Arctic Melting; Branscombe, 2014; AGU Blog “The Bridge”*

Global Priorities in the Arctic

How should the international community balance environmental protection, economic development and social equity in this fragile region of the world?

[Read More »](#)

DEBATERS



Cooperation, Not a Drilling Ban, Would Insure Safety

JON RAHBEK-CLEMMENSEN, UNIVERSITY OF SOUTHERN DENMARK



Stop the Oil Nonsense in the Arctic

FAIZA OULAHSEN, GREENPEACE



Let's Hope Good Decisions Are Made

ROB HUEBERT, UNIVERSITY OF CALGARY



The Arctic Council Must Play a Vital Role

FRAN ULMER, U.S. ARCTIC RESEARCH COMMISSION



Empower Local Arctic Communities

ALEXANDER SHESTAKOV, WWF GLOBAL ARCTIC PROGRAMME



Let Science Guide the Way

PAUL ARTHUR BERKMAN, PROFESSOR OF SCIENCE DIPLOMACY



Ratify the Law of the Sea Treaty

DAVID CARON, LAW SCHOOL DEAN, KING'S COLLEGE



This Is a Global Challenge

KAI SUN, OCEAN UNIVERSITY OF CHINA

Let Science Guide the Way in the Arctic



[Paul Berkman](#) is a research professor of science diplomacy at the University of California Santa Barbara.

UPDATED MAY 21, 2015, 5:40 PM

The challenge in the Arctic is to balance the interests of diverse stakeholders. Take for example, the village of Gambell on St. Lawrence Bering Strait, where indigenous peoples have survived the time of woolly mammoths through today. On one side is Alaska, and on the other is Chukotka, Russia. Ship traffic is funneled through this corridor, which is 82 kilometers at its narrowest point.

And now, given the recent conditional U.S. approval for Shell to begin drilling in the Chukchi Sea, which is just north of the Bering Strait, how do we ensure that Gambell, along with other villages in the region, have a central voice and that their economic, environmental and social concerns are addressed fairly? After all, the native communities have been depending on this region and its resources long before the rest of us.

As a bastion of objectivity, science facilitates international, interdisciplinary and inclusive dialogues that contribute to informed decision-making about sustainable infrastructure development in the Arctic. Indeed, science and scientists working together with government, industry and nongovernmental organizations can provide monitoring, assessments and early warnings that guide regulation and policy. Moreover, science contributes technological solutions for revealing and utilizing resources as well as responding to impacts, natural and anthropogenic.

**P. Berkman, 2015,
New York Times Op-Ed**

Science should serve as a tool of diplomacy among allies and adversaries alike to balance national interests for the benefit for all in the Arctic

Arctic Science Diplomacy in Paris / COP21

What Happens in the Arctic Doesn't Stay in the Arctic

December 10, 3:45pm

- Moderator:
 - ❖ Christy Goldfuss, Managing Director at the White House's Council on Environmental Quality (CEQ)
- Speakers:
 - ❖ Dr. John Holdren, Assistant to the President for Science and Technology, Office of Science & Technology Policy (OSTP)
 - ❖ Dr. Patrick Taylor, Research Scientist, National Aeronautics and Space Administration (NASA)



Arctic Executive Steering Committee (AESC)

White House Office of Science & Technology Policy


- **President Obama established AESC with January 2015 Executive Order;** group is charged with providing guidance and coordinating priorities for Arctic strategies across the Executive Branch
- AESC Chair: **Dr. John Holdren, Science Advisor to the President**
- AESC Vice Chair: **Amy Pope, Deputy Advisor for Homeland Security**
- AESC Executive Director is **former US Ambassador Mark Brzezinski**
- AESC includes directors of OSTP, CEQ, DPC, & NSC; deputy secretaries of the Departments of State, Defense, Justice, the Interior, Agriculture, Commerce, Labor, Health & Human Services, Transportation, Energy, and Homeland Security; equivalent officers from the Office of the Director of National Intelligence, EPA, NASA, NSF, and the Arctic Research Commission; and the Assistant to the President for Public Engagement



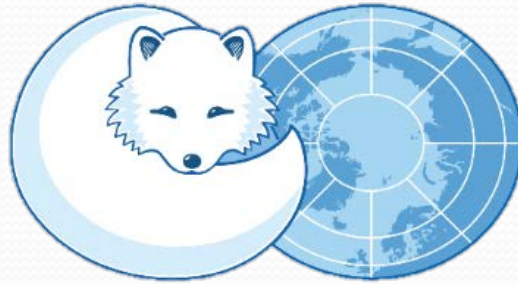
Arctic Science Diplomacy Issues Include

(but are not limited to...)

- Sustainable Development
- Climate Change Impacts on Arctic Environment & Communities
- Arctic Energy Resource Access & Security
- Indigenous Community Knowledge & Leadership
- Infrastructure Development
- Arctic Ocean Safety & Disaster Response
- Icebreaker Investments
- Arctic Community Health Access
- and Delivery
- Arctic Environmental Monitoring & Assessment
- New Northern Shipping Routes & Economics
- Ocean Conservation
- Commercial Fishing
- Mineral Rights & Access
- Sustainable Tourism



Who are (some of) the
current groups advancing
Arctic science & connecting
to policy & diplomacy
activities?



Arctic Council

www.arctic-council.org

- **Established in 1996:** Ottawa Declaration
- **Member Countries:** Eight Arctic Nations (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, United States) & 6 Arctic Indigenous Peoples' Organizations
- **Not Treaty-Based:** Arctic Council is a high-level international forum focused on advancing sustainable development and environmental protection
- **Consensus-Based:** Explicitly seeks to maintain distance from direct engagement on contentious issues of national security, geopolitics, or military (*some think it should play more of a role in this space*)
- **Two-Year Chair Rotation:** U.S. assumed Chair of Arctic Council in 2015 and will set Council agenda priorities through April 2017; Finland is next Arctic Council Chair

Arctic Council & U.S. Leadership



- U.S. Chair of Arctic Council 2015-2017: Secretary of State John Kerry
- U.S. Special Representative for the Arctic: Admiral Robert J. Papp Jr. USCG (Ret.)
- U.S. Priority Focus Areas for Arctic Council Agenda
 - Improving economic & living conditions for Arctic communities
 - Arctic ocean safety, security and stewardship
 - Addressing the impacts of climate change

U.S. Arctic Research Commission (USARC)

www.arctic.gov

- What: Created in 1984 by the Arctic Research and Policy Act, USARC is an independent commission advising President and Congress on domestic and international Arctic research and policy through formal reports and recommendations
- Assists federal agencies in establishing the national Arctic Research Plan; guides the Interagency Arctic Research Policy Committee (IARPC); facilitates cooperation among federal, state and local governments in advancing Arctic research
- Recommends improved Arctic research logistics planning and support; recommends sharing and dissemination of Arctic data/information among public and private institutions
- Holds business meetings and public hearings to get input; makes site visits and field trips to research facilities and projects in the Arctic
- Maintains a thorough, well-organized **Arctic Science Portal** with links to websites of many organizations



Interagency Arctic Research Policy Committee (IARPC)

www.iarpccollaborations.org

Made up of multiple U.S. agencies:

NSF (<i>Chair</i>)	EPA
DoD	NASA
DoE	OMB
HHS	OSTP
Homeland Security	Smithsonian
Department of State	USDA
DOT	Dept of Commerce

- Federal, state, academic, NGO, and industry scientists share their work;
- 12 collaboration teams: start projects, improve predictions, generate observations;
- Re-visioning workshop held December 2015 to develop the strategy, plan, and tools; key recommendations (*report expected in 2016*)



IARPC Collaborations Webinar

NASA's Arctic Boreal Vulnerability Experiment (ABOVE) Campaign

March 10, 2015
3-4 pm EDT

Connect Online
<http://bit.ly/ABOVE>

Eric S. Kasischke
Terrestrial Ecology
Program Scientist
NASA



Abstract

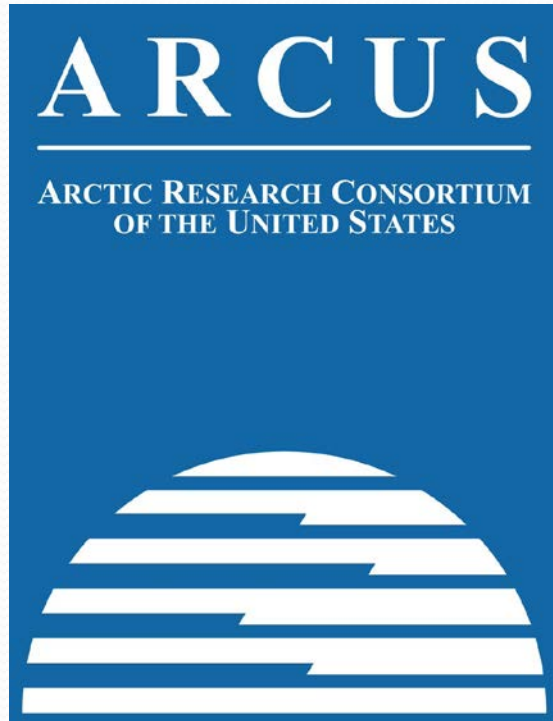
ABOVE is the next major field campaign funded by NASA's Terrestrial Ecology Program. The first solicitation for proposals was released in December 2014. NASA expects to select its initial set of projects by the fall of 2015, with field research activities beginning in 2016. This webinar will include ABOVE's objectives, timeline for research activities (including an airborne remote sensing campaign in addition to coordinated field activities), and plans for developing partnerships with organizations from Alaska and Canada, including federal agencies who conduct research or manage land in Alaska.

Speaker Bio

Eric leads the implementation of NASA's next Terrestrial Ecology field campaign, ABOVE, and develops partnerships with other organizations in Alaska and Canada interested in collaborating on the responses of terrestrial and freshwater ecosystems and societal responses to environmental change in the ABOVE Study Domain. Prior to NASA, Dr. Kasischke was a Professor of Geographical Sciences at the University of Maryland, College Park, where his research focused on the impacts of fire on boreal forests and peatlands.

Arctic Research Consortium of the U.S. (ARCUS)

www.arcus.org



Arctic Science
Summit Week 2016

- What: Consortium of leading U.S. and international research organizations founded in 1988
- Goal: To connect Arctic research across sectoral, disciplinary, and career-stage boundaries through
 - **Communication** – electronic and formal meetings
 - **Coordination**: Arctic Observing Network, IARPC Team Leader meetings, ARCUS/IARPC webinars, NSF Risk/Safety Summit workshops, seminar series
 - **Collaboration**: PolarTREC- brings together researchers & K-12 educators. Applications for researchers for 2017-18 program open Summer 2016
- Vision: create links among and between international researchers, educators, communities, and others to understand the Arctic and inform sound decisions
- Partnerships with NSF, IARPC, USARC, NAS-PRB

International Arctic Science Committee (IASC)

www.iasc.info

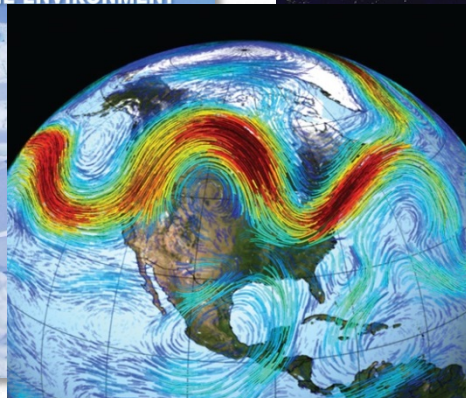
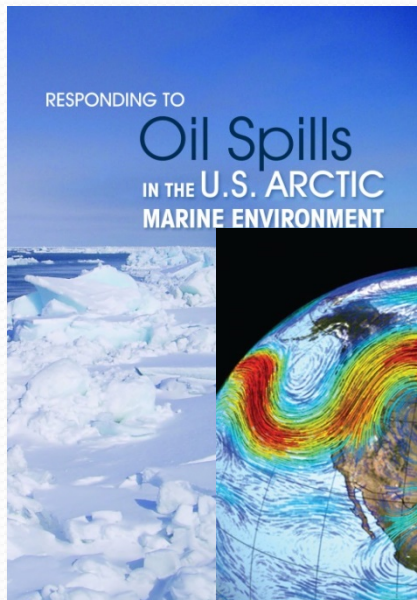
- Founded in 1990; based in Potsdam, Germany
- 14 country members, U.S. representation through National Academies' Polar Research Board (NAS-PRB)
- Non-profit, dues-based organization to encourage, facilitate and promote cooperation in all aspects of Arctic research in all countries doing Arctic research Working groups: cross-cutting (systems), terrestrial, marine, atmospheric, cryospheric, social and human
- Provides seed money & in-kind support for thematic networks
- IASC-supported networks are usually international, favor circumpolar activities, involve early career scientists
- IASC Fellowship program for PhD students and postdocs hosted with Association of Polar Early Career Scientists (APECS)



The National Academies Polar Research Board (PRB)

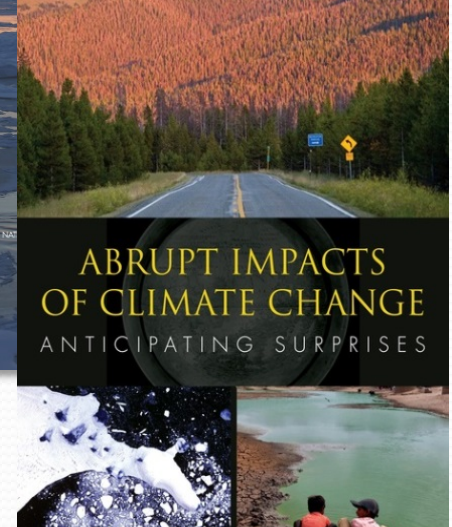
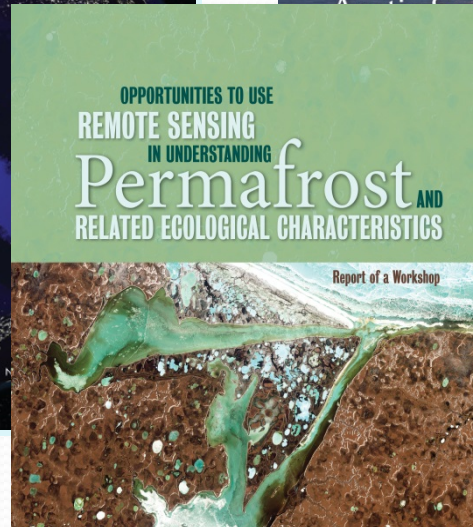
<http://dels.nas.edu/prb>

- Dedicated to enhancing understanding of the Arctic and Antarctic, and providing guidance to the U.S. Congress, federal agencies, and the nation on polar region issues
- PRB serves as the US National Committee for IASC; develops and disseminates high-level reports on key science, policy, and diplomacy issues



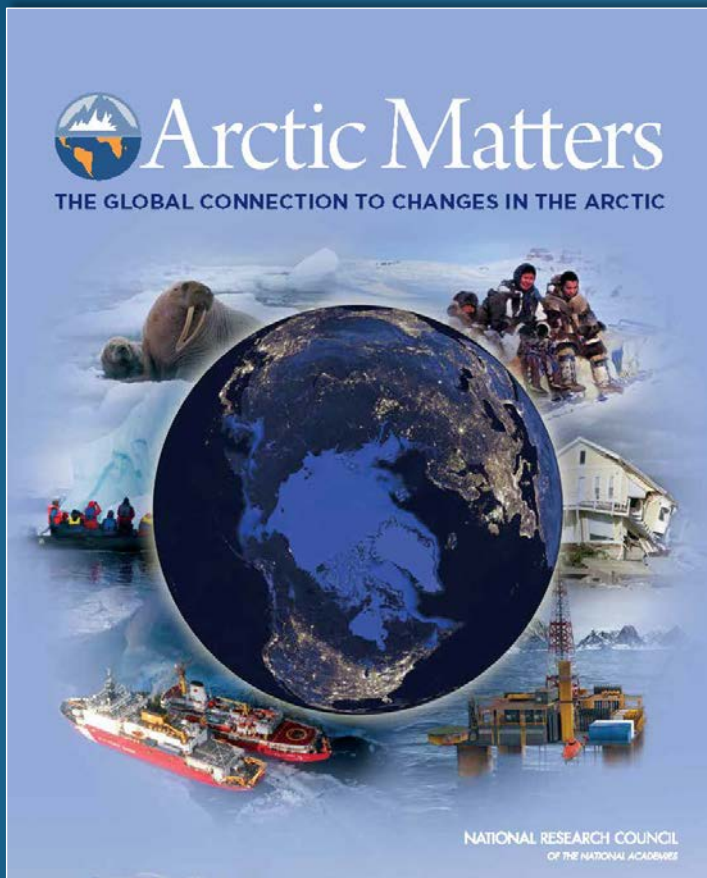
Linkages Between Arctic Warming
and Mid-Latitude Weather Patterns

Summary of a Workshop



The National Academies

<http://nas-sites.org/arctic>



Available free online

Arctic Matters Day

January 14, 2016

*National Academy of Sciences,
Washington, DC*

Planning Committee

James W.C. White [Chair] Univ. Colorado

Brenda Ekwurzel, Union of Concerned
Scientists

Karen Frey, Clark University

Malte Humpert, The Arctic Institute

Geraldine Knatz, Univ. of Southern CA

Walter Meier, NASA/GSFC

Stephanie Pfirman, Barnard College

Henry Pollack, University of Michigan

Geoff Haines-Stiles, Passport to Knowledge

Mead Treadwell, Former Lt. Governor of AK

The National Academies

Board on International Scientific Organizations (BISO)

<http://sites.nationalacademies.org/pga/biso/>

- “*Santa’s Revenge: The Impacts of Arctic Warming on the Mid-Latitudes*” presented at 2014 AAAS Annual Meeting by four U.S. National Committees to the International Unions of Geodesy and Geophysics (IUGG), Geological Sciences (IUGS), Soil Sciences (IUSS), and Quaternary Research (INQUA)
- Science Diplomacy a priority focus of the USNC-IUGS

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Fax: +1 202-334-2231

[BISO Home](#) > [USNC/IUGG Homepage](#) > 2014 AAAS Symposium

2014 AAAS Symposium - “Santa’s Revenge: The Impacts of Arctic Warming on the Mid-Latitudes”

This event was spearheaded by the U.S. National Committee for Geodesy and Geophysics, and co-sponsored by the U.S. National Committees for INQUA, Soil Sciences, and Geological Sciences. The symposium examined high-latitude changes linked to mid-latitude weather and the effect of these complex phenomena on freshwater resources, food availability, and national security. Speakers included:

- Mark Serreze (National Snow and Ice Data Center, University of Colorado-Boulder): “Impacts on Arctic Pack Ice Predictions of Extreme Weather and Natural Variability”
- James Overland (NOAA/Pacific Marine Environmental Laboratory): “When Will the Summer Arctic be Nearly Sea Ice-Free?”
- Jennifer Francis (Rutgers University): “Evidence Linking Arctic Amplification with Changing Weather Patterns in Mid-Latitudes”
- Jerry Hatfield (Iowa State University/USDA-Agricultural Research Service): “Agriculture Impacts and Impacts on International Food Supplies and Prices”
- David Titley (Pennsylvania State University): “Impact of a Warming Arctic on National Security”

Organizer: Michael MacCracken, Climate Institute

Co-Organizers: Ester Szein, National Academy of Sciences; and Robin Muench, Earth and Space Research

Discussant: Hajo Eicken, University of Alaska



UARctic

www.uarctic.org

- The University of the Arctic (UARctic) is a cooperative network of over 170 universities, colleges, research institutes and other organizations around the world concerned with education and research in and about the North
- U.S. UARctic Institutions:
 - Dartmouth College
 - University of Alaska Fairbanks
 - University of Alaska Anchorage
 - Arctic Research Consortium of the United States (ARCUS)
 - University of Washington
 - Association for Canadian Studies in the United States
 - Center for Circumpolar Studies
 - Ilisagvik College
 - Climate Change Institute - University of Maine
 - Cold Climate Housing Research Center
 - Florida SouthWestern State College
 - Antioch University New England
 - Institute of the North
 - Scandinavian Seminar Group

Institute for Arctic Policy (IAP)

www.iacp.dartmouth.edu

IAP

University of the Arctic
Institute for Arctic Policy

search...



Dartmouth



UArctic

*cooperative
network of over
170 universities,
colleges, and
other
organizations*



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Institute for Arctic Policy

The University of the Arctic Institute for Arctic Policy (IAP) is a collaboration between [Dartmouth College](#), [University of Alaska Fairbanks](#), and [University of the Arctic](#).

IAP promotes discussion and analysis of critical issues facing the circumpolar north and its peoples as a result of climate change. Through a series of meeting on aspects of climate change requiring policy attention, IAP brings together representatives of governments, the academy, non-governmental groups, and indigenous peoples to discuss these issues, identify and prioritize the policy related research requirements, and help develop the agendas for governments to address pressing policy issues.

NOTE: The institute recently changed its name to The Institute for Arctic Policy from the Institute for Applied Circumpolar Policy.

News Room

- [A Euro-Atlantic Action Plan for Cooperation and Enhanced Arctic Security](#)
- [Report Defines New Framework to Improve Health and Well-being of Arctic Communities](#)
- [Climate Change and Human Security](#)
- [Experts Examine Arctic Shipping](#)
- [Joint Report Calls for Environmental Security in the Arctic](#)

Fulbright Arctic Initiative (FAI)

www.cies.org/program/fulbright-arctic-initiative



- **Dartmouth College and University of Alaska Fairbanks** awarded co-leadership of inaugural program by U.S. State Department for 2015-2017;
- **17 Fulbright Fellows from 8 Arctic Nations** include a diversity of academics, researchers and professionals with experience in public, non-profit, & private sectors;
- **Unique science, policy & diplomacy collaboration:** FAI has created three multidisciplinary and multinational teams asked to engage in collaborative, policy-relevant research on three Arctic policy topics for report to Arctic Council:
 1. Energy
 2. Water
 3. Health & Infrastructure
- **Leadership will rotate every two years**, coordinated with rotation of Chair of Arctic Council (*Finland expected to take on program in 2017*)

Becoming an Arctic Science Diplomat

- Connect to the international Arctic science, policy, and diplomacy networks listed in this presentation (and you will find many more)
- Learn more about each organizations' collaboration, outreach, fellowship, and/or funding opportunities
- Make active effort to develop policy-relevant research programs in your Arctic studies, with research questions informed by pressing Arctic policy questions with multidisciplinary teams
- Do not develop the research program in isolation, but consult with a diversity of Arctic stakeholders beyond academe, potentially including indigenous leaders, government leaders, NGOs, industry, and international relations interests.
- *Whenever possible, require a new deliverable of “giving back” scientific knowledge, in publicly-accessible form, to the Arctic communities with whom you worked during and after study has been completed*

In Conclusion

- Complex picture with many stakeholders within each country and with other countries
- Science is absolutely critical to informing international Arctic policy and diplomacy activities
- There are multiple entry points for scientific research community to engage in Arctic science diplomacy through established international and U.S. Arctic consortiums and collaborations
- Dedicated funding for connecting Arctic science, policy, and diplomacy studies is challenging (exception is current international Fulbright Arctic Initiative), but hopefully will increase
- Opportunities to engage in policy-relevant Arctic science – and become an Arctic Science Diplomat - are increasing; this is a fascinating, timely, and globally-critical area in which to work



Thank You!

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*Additional thanks to
Julie Brigham-Grette (U. Mass-Amherst)
and Laurie Geller (NAS)*