Briefing Note

The Fulbright Arctic Initiative: An Innovative Model for Policy Relevant Research & Public Outreach

*Ross A. Virginia, Michael Sfraga, Tom Arnbom, Linda Chamberlain, Susan Chatwood, Asli Tepecik Diş, Gunhild Hoogensen Gjørv, Tamara K. Harms, Anne Hansen, Gwen Holdmann, Noor Johnson, Trevor Lantz, Bjarni Magnússon, Itty S. Neuhaus, Gregory Poelzer, Laura Sokka, Maria Tysiachniouk, Øystein Varpe, and Niels Vestergaard

Introduction

Arctic peoples are experiencing profound environmental, social, and economic change caused by climate change, resource development, and globalization. The Arctic is confronted with critical policy challenges on issues of community health and wellness, energy resources, environmental protection, sustainability of the Arctic Ocean, infrastructure, indigenous rights, and regional governance. The eight nations of the Arctic have an established history of peaceful cooperation, especially around scientific research, but this cooperation is constantly tested as the Arctic becomes more prominent in the global geopolitical landscape.

The Arctic nations are joined together in dialog through the Arctic Council. Founded in 1996 as a high level international forum, the Arctic Council serves to promote cooperation and coordination among the Arctic states. Its working groups provide important assessments on

The Fulbright Arctic Initiative is a new multidisciplinary, multinational team research program designed around specific applied research challenges in the areas of water, energy, health and infrastructure. The Initiative is designed to have an immediate impact on our understanding of these Arctic issues within the timeframe of the U.S. Chairmanship of the Arctic Council (2015-2017). The Fulbright Arctic Initiative brings together leading scholars, policy makers, government officials, indigenous peoples and other stakeholders to identify critical Arctic issues, conduct policy-relevant research, and widely share findings and recommendations.

issues such as environment and climate, biodiversity, Arctic peoples, oceans, and shipping. In a relatively short time, the Arctic Council has achieved a measure of success in setting an agenda focused on the key policy issues facing the region. But the Arctic Council is dependent on access to policy relevant research for setting priorities and allocating resources to assessments and outreach.

The Chairmanship of the Arctic Council rotates among the member states every two years, providing an opportunity for the Chair to focus its agenda on issues of special importance at the national level and for the entire region. In May 2015, the United States assumed the Chairmanship from Canada at the Ministerial Meeting in Iqaluit, Canada. The U.S. Chairmanship program under the Department of State identified three focus areas: improving economic and living conditions for Arctic communities; Arctic Ocean safety, security and stewardship; and addressing the impacts of climate change.

In support of the ongoing need for policy relevant research to aid the Arctic Council's mission, the U.S. Department of State's Bureau of Educational and Cultural Affairs announced the Fulbright Arctic Initiative (FAI) in Fall 2014. Operating outside the Arctic Council, the FAI was designed to support and complement the needs of the Arctic Council for innovative multidisciplinary and interdisciplinary research in thematic areas of interest to the Arctic Council and the U.S. Chairmanship program. This Briefing Note describes the events leading to the FAI, its mission and structure, and reports on activities and accomplishments to date. The FAI seeks to address the policy challenges confronting the Council and Arctic nations, as captured in the following comments:

"The Arctic region is the last global frontier and a region with enormous and growing geostrategic, economic, climate, environment, and national security implications for the United States and the world."

- U.S. Secretary of State John Kerry, February 14, 2014

"Many of the social and economic challenges faced by Inuit today are therefore influenced by global factors. This is why ICC supports the proposed themes and projects for the USA Arctic Council Chairmanship. The themes are crucial to the Inuit, and indeed, they are indivisible from our identity, way of life, and our future."

- Inuit Circumpolar Council Chair, Okalik Eeegesiak, April 24, 2015

The Fulbright Program

The Fulbright Program was established in 1946. It has become the U.S. flagship international educational exchange program administered by the Bureau of Educational and Cultural Affairs (ECA) within the Department of State. The broad goal of Fulbright is "to increase mutual understanding between the people of the United States and the people of other countries." This has been accomplished largely by supporting individual scholar and student exchanges bridging more than 160 countries across the world. The collective action of Fulbright participants leads to an increase in global capacity to address major challenges such as climate change, sustainable energy, health, and food security.

The Fulbright Arctic Initiative (FAI)

The Arctic Initiative emerged during a Fulbright Workshop ("Shaping Arctic Change through Conscious Choices") held in Abisko, Sweden, in October 2013, sponsored by the U.S. Embassy

in Stockholm and the Swedish Ministry of Foreign Affairs, in cooperation with the Stockholm Environmental Institute and the World Wildlife Fund for Nature/Sweden. Conceived by U.S. Ambassador to Sweden Mark Brzezinski and the Chairman of the Fulbright Foreign Scholarship Board, Tom Healy, the Workshop brought together approximately 40 Fulbright scholars and alumni and regional Fulbright program officers, who recommended a new type of Fulbright effort, one that featured coordinated team research on critical policy challenges facing Arctic nations.

An ongoing dialog between Fulbright and Arctic experts identified key research areas where multinational and multidisciplinary teams could work in thematic areas broadly supportive of the U.S. Arctic Council Chairmanship program and other key Arctic stakeholders, i.e., water, energy, health and infrastructure.

The FAI was announced by Ambassador Brzezinski in a U.S. network television interview. A call for applications was made in October 2014 at the Arctic Circle Assembly in Reykjavik, Iceland, by Steve Money (U.S. State Department, Bureau of Educational and Cultural Affairs). Scholar applications were solicited from October 2015 into February 2016 and a peer-review selection committee recommended 17 scholars from the eight Arctic nations to the Fulbright Board to form the inaugural cohort of FAI scholars, directed by Co-Lead Scholars Michael Sfraga and Ross Virginia.

The Scholar Support System

Structure and Expectations

The FAI has key features that distinguish it from most other Fulbright programs. FAI scholars participate for 18 months, including an individual exchange of 1.5-3 months to pursue their proposed independent research projects. Each scholar also conducts collaborative work within a thematic research team. The team produces policy relevant research and engages with the public through outreach activities and broad dissemination of their work. The scholars were organized into thematic research teams by the co-lead scholars with the goal of creating interdisciplinary dialog and diversifying international perspectives on solutions to pan-Arctic problems. The thematic working groups were formed around a set of questions:

- Energy: How will oil, gas, and other natural resources be developed in the Arctic? What can be done to promote clean renewable energy, reduce pollutants, guarantee the inclusion and rights of indigenous people, and protect the environment?
- Water: How can we understand, mitigate, and adapt to the dramatic changes occurring and projected for the Arctic Ocean environment and fresh water regimes, such as changes to fisheries, oil spills, the emergence of invasive species, and shifts in the food supply for local communities?
- Health: What specific issues do coastal communities face, such as erosion and storm surge, subsistence activities and food supply, availability of medical care, transportation, telecommunications, protection and continuity of their identities as indigenous peoples? What opportunities and vulnerabilities can be addressed for the sustainability of affected communities?

• Infrastructure: How can we rethink ports, pipelines, freshwater storage and treatment, and other infrastructure and security issues? What measures and policies should be developed to promote multi-national cooperation on search and rescue, emergency environmental response, and safe shipping?

The Co-lead Scholar Model

The FAI functions with a co-lead scholar model. The co-leads share responsibility for the academic focus of the program and for assisting the scholars in their individual and group research. They serve as mentors and are the scholar interface with the administrative staff and leadership at the State Department's Bureau of Educational and Cultural Affairs and the Institute of International Education (IIE). The co-leads organize monthly plenary seminars using a web-based platform (Basecamp) to sustain group identity and promote project integration. Guest speakers provide examples of innovative research and outreach and serve to connect the research to policy issues. In addition, the co-lead scholars have major responsibility for three multi-day group seminars during which the scholars work on research and present results to the public and the policy communities. The co-lead scholars actively publicize the work of the FAI scholars and present at national and international seminars, conferences, and symposia.

The Fulbright Arctic Plenary Seminars

The face-to-face plenary seminars are an essential investment in the FAI program. The success of the FAI is contingent on the group's identity as scholars working on shared problems. They each bring a research network and experiences shaped by their national identity, discipline, and career path.

In May 2015, the <u>founding plenary seminar</u> hosted by Fulbright Canada was held in Iqaluit, Nunavut, where just a month earlier the U.S. assumed the Arctic Council chairmanship from Canada. Holding the inaugural FAI plenary meeting in the Arctic allowed the group to define its goals within the context of the sustainability challenges facing Iqaluit and Arctic communities in general. A set of guiding principles emerged that helped group projects develop with a common purpose and shared methodology. The group affirmed that community research needs should be prioritized, partnerships with northern peoples and stakeholders were important to all FAI work, and sharing results with the public was expected. The working groups developed public outreach strategies and began the process of building model frameworks for their collaborative research.



Scholars from the eight Arctic countries gathered in Iqaluit, Nunavut, Canada, for their first official meeting as participants of the Fulbright Arctic Initiative.

In Iqaluit, community leaders Peter Taptuna, premier of Nunavut, Ekho Wilman, mayor of Iqaluit, and Okalik Eegeesiak, chair of the Inuit Circumpolar Council challenged the FAI scholars to design research relevant to peoples of the North. David Balton, U.S. Ambassador for Oceans and Fisheries and Chair of the Senior Arctic Officials, Julie Gourley, U.S. Senior Arctic Official, and CanNor President Janet King provided an international perspective by discussing U.S. and Canadian

government priorities for the region. Arctic researchers, including Gwen Healy, director of the Qaujigiartiit Heath Research Center, and Mary Ellen Thomas, senior research officer at the Nunavut Research Institute, spoke to the particular challenges of conducting research in the Arctic and the importance of adopting a community scale lens for viewing Arctic issues.

The midterm plenary meeting, in February 2016, was co-hosted by Fulbright Finland and the University of Oulu. In a public and web-streamed event, the FAI scholars had the first opportunity to present their ongoing research as part of a broader public symposium ("Towards a Sustainable Arctic Future") that gathered together Arctic scientists, students, policymakers, industry, and NGO representatives and other key stakeholders as well as the general public. During working sessions over the 5-day plenary, FAI scholars presented their ongoing work for critique by Arctic experts and formed new research network connections. FAI research was featured in the session "Informing Policy Through Collaborative Research." The symposium included welcoming video comments by U.S. Secretary of State John Kerry, who highlighted the need for interdisciplinary team research to address climate change.

<u>Fulbright Arctic Week</u>, October 24-28, 2016, in Washington D.C., will focus on sharing the policy relevance of individual and group research projects and offer public outreach that highlights the importance of the Arctic to our global environment and international relations. Events will be held at the Smithsonian National Museum of Natural History, the U.S. National Academy of Sciences, the U.S. Department of State, and the Carnegie Endowment for International Peace. The FAI scholars will meet as individuals or in small groups with influential public and private stakeholders to share key policy recommendations stemming from their research.

Thematic Research Progress and Impact

The scholars are organized into three thematic working groups, each creating new collaborative research that is beyond the scope of their individual research projects. The general approach, key findings and anticipated policy relevance of the three working groups is described below.

Energy Working Group

The Energy Working Group draws on diverse disciplinary backgrounds including international law, engineering, sociology, anthropology, political science, and environmental studies to understand the impacts of extractive industries and the transition to renewable energy in the Arctic. In their individual research projects, scholars tackle issues related to the legal framework for energy development, the social, environmental, and economic impacts of both renewable and non-renewable energy, and the business and investment opportunities emerging from renewable energy sector development.

As a core driver of economic and social development, energy is central to discussions of geopolitics and national and human security. The U.S.-Nordic Leaders' Summit in May 2016 noted the "foundational role energy plays in our economies and that energy security is key for overall security." As evidenced by the COP21 (Paris) and the GLACIER (Anchorage, Alaska) conferences in 2015, there has been a significant uptick in political will to support a transition from non-renewable to renewable energy sources. The energy sector alone accounts for more than two-thirds of global greenhouse gas emissions; renewable energy can deliver half of all emission reductions needed to meet global targets. While the Arctic region bears much of the

brunt of the impacts of climate change, the region is also poised to play a global leadership role in the deployment of renewable energy. The Arctic Energy Summit (Fairbanks, Alaska) in 2015 demonstrated this through multiple success stories, from the development of microgrids to the deployment of renewable wind, hydro, solar, and geothermal technologies. However, renewable energy development across the Circumpolar North is highly variable, suggesting the need for further research and investment and the importance of strong and supportive policy.

Group process to develop policy recommendations

The Energy Group is developing policy recommendations in support of the development and deployment of renewable energy in the Arctic region. From June 27–July 1, 2016, the International Centre for Northern Governance and Development at the University of Saskatchewan hosted a group workshop and retreat and identified a set of significant policy challenges and opportunities for the wide-scale development and adoption of renewable energy. Governments, communities, and the private sector will need to address:

- Human capacity challenges to manage renewable energy deployment at the community level;
- Financial capital to invest in renewables at the local level;
- Technical challenges associated with deployment of renewables in islanded, micro-grid communities, as well as variable renewable energy sources (wind, solar, run-of-river hydro);
- Challenges associated with integrating renewable energy with the transportation and heating sectors.

If the full social and economic benefits of a future clean energy sector are to be realized, governments, communities, and industry should seek opportunities to build:

- Alignments between complementary industries, such as forestry and biomass energy, to create expanded and sustainable economic development strategies;
- A global export energy industry for rural and remote regions through the capturing economies of scope through circumpolar cooperation in the renewable energy sector.

The Energy Working Group drew upon its national perspectives, comparative research exchange experiences, as well as diverse disciplinary strengths to identify principles and best practices that could help overcome the challenges of creating a sustainable energy future for the Arctic. Best practices include the importance of early stage consultation and the impact assessment process and the need for strong investment in early stage renewable energy funds to promote public-private partnerships.

In particular, our assessment of the global policy environment suggests that Arctic nations would be well served to develop Arctic Council renewable energy guidelines on policies and practices for use during planning, assessment, development, and production. Energy Group recommendations are intended to inform the development of such guidelines and to encourage the creation of standards appropriate to local, environmental, and cultural contexts in Northern regions.

Health and Infrastructure Working Group

Building on the intersection of biology, ecology, engineering, and epidemiology, the Health and Infrastructure Working Group has focused on issues of sustainability, resiliency, and health policy in the Arctic region. This investigation is developing an integrated model of socioecological interactions, relationships and outcomes that impact health and wellness in circumpolar countries. The overarching goal of the group is to explore how multidisciplinary approaches could enhance the understanding of community wellness in the Arctic.

There is a recognition that community wellness in Arctic regions is influenced by a multitude of factors also known as determinants of health. In Arctic regions these determinants include education, material resources, housing and associated infrastructure, mental wellness, early childhood development, social exclusion, personal security, culture and language, food security, climate change, environmental contaminant exposures, and governance and self-determination. The convergence and interactions of multiple stressors impact the health and wellbeing of Arctic communities and fuel social and economic inequities in the Arctic region.

A comprehensive scoping review revealed that multidisciplinary approaches to research around community wellness were generally lacking. There is a need for governments and the private sector to support research initiatives that bring together multiple disciplines and local and traditional knowledge to consider how Arctic communities define wellness and to develop research partnerships that answer questions that meet the priorities of Arctic peoples.

A workshop at Dartmouth College, in January 2016, brought together additional experts and community perspectives on health care and delivery, infrastructure challenges, youth engagement, and traditional knowledge. The Dartmouth workshop was a consensus seminar featuring facilitated panel discussions by experts, break out sessions, and non-traditional and holistic approaches, including a traditional talking circle to ground the academic discussion in the shared, first-hand experiences of community members and health providers. The key determinants of community wellness that were described include human capacity building and local training, cultural connection, trauma, access to health care services and self-determination. Critical infrastructure challenges could not be separated from issues of wellness, and included safe housing and access to affordable and sustainable energy.

Ongoing research and development of an innovative multidisciplinary model focused on the determinants of Arctic health and wellness will build on the findings of the scoping review and the community workshop.

This model will provide guidance for stakeholder collaborations so that they meet key objectives of Arctic residents, including:

- Exploring more holistic definitions and connotations of wellness in Arctic communities by drawing from the perspectives of multidisciplinary teams and traditional and academic knowledge bases;
- Providing new avenues for collaborative research between academic sectors, indigenous knowledge holders and non-governmental and governmental entities to link infrastructure challenges with wellness;
- Expanding an evidence base for public and health policy within circumpolar nations.

Findings from this collaboration are being shared through publications, conference presentations, and a collection of digital stories from the North that feature lived experiences and emphasize the impacts of the determinants of health in Arctic communities.

Water Working Group

Changing climate and increased freshwater delivery to the Arctic Ocean will have significant ecological, economic, and social impacts on marine life and the sustainability of Arctic communities. The Arctic Ocean is the earth's most land-influenced ocean, and as a result, inputs of freshwater and associated sediment and solute loads from land may have disproportionate influence on ecological processes in the Arctic Ocean, relative to other oceans. The governance structure for the management of Arctic Ocean natural resources will determine how the Arctic region can adapt to environmental change and build a resilient Arctic Ocean management system. The Water Working Group is investigating:

- Consequences of increased precipitation and altered flow in major Arctic rivers and changes in the delivery of nutrients and sediments to the Arctic Ocean ecosystem;
- Influences of a changing Arctic Ocean environment on the abundance of wildlife important for commercial and subsistence harvest and ecosystem sustainability;
- Impacts of sea-level rise on the Arctic Ocean ecosystem and its coastal margins caused by the thawing of permafrost and the melting of glaciers and the Greenland Ice Sheet.

The Water Working Group is addressing an array of issues facing people and ecosystems dependent on marine and freshwater resources. The group includes scholars with individual research projects and interests in hydrology, biology, glaciers, food webs, fisheries, marine mammals, visual arts, and governance and policy.

A changing Arctic Ocean

Changing climate and increased freshwater delivery to the Arctic Ocean are expected to have significant ecological, economic, and social impacts on marine life and the food security of Arctic communities. Climate change is profoundly influencing the distribution, physical state, and quality of water in Arctic lakes and rivers as well as in the Arctic Ocean. For example, the Arctic Ocean is increasingly free of sea ice, and Arctic lakes and rivers are ice-covered for shorter periods. Increased duration and spatial extent of open water present new opportunities for accessing shipping corridors and fishing grounds in the Arctic Ocean, but impede winter travel over ice required by industry and subsistence hunters. Many Arctic lakes are disappearing due to drainage following permafrost thaw, which reduces habitat for freshwater species, but may curtail methane emissions from saturated sediments.

The distribution of resources that support productivity in aquatic ecosystems is also changing. For example, permafrost thaw may cause increased availability of growth-limiting nutrients, including nitrogen and phosphorus, in freshwater and subsequent delivery of these nutrients to the ocean. Melting of ice sheets not only releases freshwater of sufficient volume to potentially contribute to sea-level rise, but also delivers limiting nutrients to the ocean. Climate change is also causing increased precipitation at high latitudes, both due to northward movement of warmer, wetter air and to increased evaporation from the increasingly ice-free surface of the Arctic Ocean. Increased precipitation results in greater runoff of freshwater from land to the ocean, and

enhances delivery of resources essential to biota by rivers, which may in turn alter patterns of marine productivity.

Strengthened terrestrial-marine coupling as mediated by river discharge has myriad potential consequences in marine environments including altered abundance and species composition of biota, altered seasonality of resource availability, and changes in the spatial distribution of productivity hot spots. However, the realization of altered marine productivity and potential human responses to changing resource availability are the result of processes interacting across spatial and temporal scales, each of which is accompanied by significant uncertainty. For example, thawing permafrost may cause increased yields of limiting resources delivered by rivers, but the magnitude and timing of permafrost thaw remains uncertain. The effect of new inputs of carbon and nutrients to the Arctic Ocean depends upon the physical attributes of coastlines and shelves shaping currents and development of land-fast sea ice. Spatial and temporal redistribution of biota is occurring, but the many interacting drivers of species distributions, including migration of temperate species, warming and acidifying waters, and nutrient-driven increases in primary productivity, remain difficult to predict. Human responses to altered productivity of the Arctic Ocean are similarly uncertain, and will be dependent on local economies and fishing pressures driven by the pace of economic development at a global scale.

Predicting and responding to a changing Arctic Ocean therefore requires approaches that can accommodate significant uncertainty. The Water Working Group is implementing a scenario analysis approach to consider multiple potential future states of the Arctic Ocean. These scenarios can be built upon information from many sources including traditional knowledge, and models and data derived from western science. Importantly, scenarios can facilitate thinking about events with low probability but catastrophic outcomes that are difficult to accommodate in quantitative models, but are essential to developing policy options for Arctic decision makers.

Individual Research and the Exchange Experience

Each FAI scholar has completed a Fulbright exchange visit of 1.5 to 3 months (Table 1). The non-U.S. scholars visited institutions within the United States and U.S. scholars conducted their exchange visits at institutions within Canada, Denmark, Finland, Iceland, Norway, Russia, or Sweden. The disciplinary diversity represented by the scholars is high and includes a wide range of career stages and professional affiliations. The group research projects are informed and strengthened by the individual research programs.

The exchange visits expand the Fulbright network across the Arctic region and add to the richness of the Fulbright inspired collaboration.

Table 1: The Fulbright Arctic Initiative Scholars exchange locations, thematic working groups, and individual project descriptions.

Name	Home	Host	Discipline	Group *	Project description
Tom Arnbom	Sweden	Dartmouth & University of Alaska Fairbanks, USA	Biological Science	W	International frameworks for the protection of walrus
Linda Chamberlain	USA	University of Oulu & University of Jyväskylä, Finland	Public Health	Н&І	Trauma-informed framework for health and wellness in the Arctic
Susan Chatwood	Canada	University of California, Los Angeles, USA	Public Health	Н&І	Health systems performance in Arctic regions
Asli Tepecik Diş	Sweden	Massachusetts Institute of Technology, USA	Spatial Plan	Н&І	Arctic as a test site for new spatial planning practices
Gunhild Hoogensen Gjørv	Norway	University of Washington, USA	Political Science	E	Tensions between energy and environmental security in the Arctic
Anne Hansen	Denmark	University of Alaska Fairbanks, USA	Env Science	Н&І	Impact assessment and offshore oil development in the Arctic
Tamara K. Harms	USA	University of Umeå, Sweden	Env Science	W	Flow regimes of Arctic rivers
Gwen Holdmann	USA	National Energy Association of Iceland	Engineering	E	Renewable energy systems for remote Arctic communities
Noor Johnson	USA	University of Alberta, Canada	Anthropology	Е	Knowledge and consultation practices in offshore and gas decision-making in the Canadian Arctic
Trevor Lantz	Canada	University of Hawaii, Manoa, USA	Env Science	H&I	Impacts of sea level rise and storm surge on community infrastructure

Bjarni Magnússon	Iceland	Duke University, USA	Law	Е	Can the United States establish the outer limits of its extended continental shelf under international law?
Itty S. Neuhaus	USA	Memorial University of Newfoundland, Canada	Visual Art	W	Lifecycle of an iceberg, in a series of multimedia installations
Gregory Poelzer	Canada	University of Alaska Anchorage, USA	Political Science	Е	Arctic energy policy and governance from a First Nations perspective
Laura Sokka	Finland	Stanford University, USA	Env Science	Е	Sustainable use of forest bioenergy in the Arctic
Maria Tysiachniouk	Russia	University of Washington, USA	Sociology	Е	Developing global standards in the Arctic: Toward sustainability of indigenous communities in the areas of resource extraction
Øystein Varpe	Norway	Woods Hole Oceanographic Institution, USA	Biological Science	W	Seasonal ecology of Arctic marine ecosystems: Fundamentals, multidisciplinary approaches, and relevance to society
Niels Vestergaard	Denmark	University of California, Santa Barbara, USA	Economics	W	Bioeconomics of Arctic fisheries
Michael Sfraga	USA	University of Alaska Fairbanks, USA	Geography		Co-Lead Scholar
Ross Virginia	USA	Dartmouth College, USA	Env Science		Co-Lead Scholar

^{*} W=Water, H&I=Health & Infrastructure, E=Energy

Lessons to date and looking forward

This Briefing Note presents a history of the nascent Fulbright Arctic Initiative and summarizes its progress to date, roughly 75% into the 18-month program. The Initiative includes a formal evaluation process and much has been learned to date.

The esprit generated by a diverse team of scholars and practitioners spurred a high level of research productivity and public engagement, including wide dissemination of results to the academy, policymakers, and the public at large. FAI scholars organized workshops and conferences to diversify knowledge input to their collaborative work, and presented their research

at, or have helped organize, many of the major international Arctic meetings. Their research is being published in peer-reviewed journals, and also as opinion-editorials in newspapers and blogs.

Scholars are undertaking video storytelling to share the Arctic perspective on pressing issues with the public. They also are involved with Arctic Council working groups and policy organizations in their home countries. As the scholars connect their individual networks, the FAI network is expanding rapidly. The collaborative, multidisciplinary team research model has emerged as a powerful and vibrant component of the program.

How can the FAI be improved and sustained? The co-lead scholars and the greater Fulbright team are aware of the tensions placed on scholars trying to complete their individual research projects while meeting the demands of working at a high level of performance with a new group of people across 12 time zones. Face-to-face meetings are essential for addressing time allocation issues and for helping thematic groups meet their schedules and goals. Early clarity on the multifaceted nature of the FAI and the expectations for scholarship and outreach can help scholars work with their institutions or organizations to gain time and support in order to reap the most from the FAI experience. The FAI scholars also recognize the limits of what can be accomplished within the timeframe of an 18-month program. One of the anticipated outcomes of the Initiative is a self-sustaining network of scholars and experts with a pan-Arctic perspective who will continue to collaborate once the formal program has ended.

The Arctic Initiative can serve as a model for other applied research programs addressing complex, rapidly changing social and environmental issues. As a result of the skills gained from collaborative research and the policy and communication experiences provided by the Fulbright team, a new kind of Fulbright scholar is emerging.

Acknowledgements

A large number of dedicated professionals from the U.S. Department of State, the Fulbright Program, The Institute for International Education, and the community of Arctic scholars came together to create and support this innovative initiative. We are indebted to the many Arctic communities and their leaders who participated in and supported the research of FAI scholars. Primary funding for the Initiative was provided by ECA, with additional funds from the government of Canada.

We wish to especially thank:

Tom Healy (then Chair) and the entire J. William Fulbright Foreign Scholarship Board for their vision, leadership and support of this initiative

The Fulbright Directors and CEOs of the Arctic Nations: Michael Hawes (Canada), Terhi Mölsä (Finland), Petter Næss (Norway), Belinda Theriault (Iceland), Marie Mønsted (Denmark), Joel Ericson (Russia), Eric Jönsson (Sweden) and the Fulbright hosts and staff for the Iqaluit and Oulu Plenary meetings and our honored guest speakers

U.S. Department of State Bureau of Educational and Cultural Affairs: Evan Ryan, Mary Kirk, Steve Money, Lana Muck

Institute of International Education: María de los Ángeles Crummett, Lawrence Mason, Korin Hofmann, and Anais DiCroce

U.S. Department of State Arctic Chairmanship Team: Admiral Robert J Papp, Jr., Ambassador David Balton, Hon. Fran Ulmer, Julia Gourley, and Jen Ey

U.S. Ambassador to Finland, Charles Adams, Jr.; U.S. Ambassador to Iceland, Robert C. Barber; Ambassador Mark Brzezinski, Executive Director, U.S. White House Arctic Executive Steering Committee; and Director John Holdren, White House Office of Science and Technology Policy

Other colleagues who participated in our monthly online plenary sessions or helped in program development and scholar selection: Melody Brown Burkins, Mike Castellini, William Fitzhugh, Gail Fondahl, Bruce Forbes, Lars Kullerud, Mary Pete, and Oran Young

The co-lead scholars thank Lee McDavid (Dartmouth) and Kelly Wilson (University of Alaska Fairbanks) for their invaluable editorial and administrative support.



Monumental Melt, Itty S. Neuhaus, altered photographs; Disko Bay, Greenland and Twillingate, NL; pastel on vellum 3' x 12'. A contribution from the individual project "Lifecycle of an iceberg, in a series of multimedia installations."

* Ross A. Virginia is Myers Family Professor of Environmental Science and Director of the Institute of Arctic Studies, Dartmouth College, USA. Michael Sfraga is Vice Chancellor of University of Alaska Fairbanks, USA. Tom Arnbom is Senior Conservation Officer, World Wildlife Fund, Sweden. Linda Chamberlain is Founding Director and Public Health Specialist, Alaska Family Violence Prevention Project, University of Alaska Anchorage, USA. Susan Chatwood is Executive and Scientific Director, Institute for Circumpolar Health Research, and Assistant Professor, University of Toronto, Canada. Asli Tepecik Diş is Research Fellow, Nordregio (Nordic Center for Spatial Development), Sweden. Gunhild Hoogensen Gjørv is Professor, University of Tromsø, the Arctic University of Norway. Tamara K. Harms is Professor, Department of Biology & Wildlife and Institute of Arctic Biology, University of Alaska Fairbanks, USA. Anne Hansen is Associate Professor, The Danish Center for Environmental Assessment, Aalborg University, Denmark. Gwen Holdmann is Director, Alaska Center for Power and Energy, USA. Noor Johnson is Senior Advisor, Office of International Relations, Smithsonian Institution, USA. Trevor Lantz is Assistant Professor, School of Environmental Studies, University of Victoria, Canada. Bjarni Magnússon is Associate Professor, School of Law, Reykjavik University, Iceland. Itty S. Neuhaus is Associate Professor, School of Fine and Performing Arts, State University of New York at New Paltz, USA. Gregory Poelzer is Associate Professor, Department of Political Studies, University of Saskatchewan, Canada. Laura Sokka is Senior Scientist, VTT Technical Research Centre of Finland, Ltd. Maria Tysiachniouk is Researcher and Chair, Department of Environmental Sociology, Centre for Independent Social Research, Russian Federation. Øystein Varpe is Associate Professor, Department of

Arctic Biology, University Centre in Svalbard, Norway. Niels Vestergaard is Professor, Department of Environmental and Business Economics, University of Southern Denmark.