

Science, Policy, and Diplomacy for a Sustainable Arctic Future



The Arctic faces critical policy challenges on issues of climate change, community health and wellness, energy, environmental protection, sustainability of the Arctic Ocean, infrastructure, Indigenous rights, and governance. The Fulbright Arctic Initiative (FAI) was announced in October 2014 to support innovative applied research in areas important to the Arctic Council and the U.S. Chairmanship program, the Indigenous peoples of the North, and the many other stakeholders who care deeply about the future of the Arctic.

This Policy Brief is prepared for the Fulbright Arctic Week (October 24-28, 2016), the culmination of the Fulbright Arctic Initiative. During the week the Fulbright scholars are sharing their work with the public and policymakers at events throughout Washington D.C. at venues including the Smithsonian Institution National Museum of Natural History, the U.S. State Department, the Carnegie Endowment for International Peace, and the National Academy of Sciences.

The Fulbright Arctic Initiative brought together 17 scholars and two co-lead scholars from the 8 Arctic nations to work for 18 months on individual research projects and collaboratively on **energy, water, and health and infrastructure** challenges. The scholars worked in thematic research teams to create interdisciplinary policy relevant finding drawing from the diverse international perspectives of the scholars. The FAI stressed community and policy maker engagement and communication of findings to the public.

The Fulbright Program was established in 1946 and is celebrating its 70th anniversary in 2016. 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."

We hope the recommendations presented here are useful to Arctic communities, policy makers, and researchers in setting priorities for future work and for making policy decisions. The Fulbright Arctic Initiative has fostered the creation of new and lasting partnerships to help advance a more sustainable future for Arctic peoples and the global environment.

Ross A. Virginia, Co-Lead Scholar, Environmental Studies Program & Institute of Arctic Studies, Dartmouth College, Hanover NH, USA

Michael Sfraga, Co-Lead Scholar, University of Alaska Fairbanks, USA



Energy Working Group

The research of the Energy Group focused on understanding the impacts of extractive industries and the transition to renewable energy in the Arctic. In their individual research projects, scholars tackled 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.

The tensions between economic, energy, and environmental security continue to be central to the future development of energy resources in the Arctic, and continue to make the transition to renewables difficult. However, promising research from Alaska demonstrates that widespread deployment of community-level renewables is possible and cost-effective and can provide energy security for communities and provide Indigenous peoples with local control over their energy future.

The Energy Group drew upon respective national perspectives, comparative research exchange experiences, the literature, as well as each scholar's diverse disciplinary strengths, to collaboratively identify a set of significant policy challenges and opportunities to support the development and deployment of renewable energy in the Arctic and Sub-Arctic regions. To chart a path forward, the Energy Group developed a set of 14 recommendations that identify principles and best practices to:

- Facilitate the development of renewable energy in northern areas
- Facilitate the business development opportunities in the renewable energy sector for northern regions and communities;
- Encourage international circumpolar cooperation in the development and deployment of renewables; and
- Establish improved energy security and energy conservation for northern communities.

The Energy Group also highlights the following additional recommendations for policy makers:

- Recognize that local communities are part of and are impacted by energy resource policy and their contributions to energy security decisions at higher levels should be better integrated with the policy-making process
- Identify best practices for energy sector engagement (e.g., benefit sharing) with communities across the Arctic states and disseminate these findings widely through the Arctic Council Sustainable Development Working Group or other organizations
- Support for youth engagement in the management of the Arctic coastal resources to expand the scope of the consultation process in assessing energy projects and supporting community participation in research
- Support the alignment of complimentary industries such as forestry and biomass energy to improve sustainable land management practices
- Action by the United States to become a party to the United Nations Convention on the Law of the Sea to be in synchrony with the remaining Arctic states and to improve international governance of continental shelf energy resources

Group members:

Gunhild Hoogensen Gjørnv, University of Tromsø, the Arctic University of Norway

Noor Johnson, National Snow and Ice Data Center (NSIDC), Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado Boulder, USA

Bjarni Mar Magnússon, School of Law, Reykjavik University, Iceland

Gregory Poelzer, School of Environment and Sustainability and Director, International Centre for Northern Governance and Development, University of Saskatchewan, Canada

Laura Sokka, VTT Technical Research Centre of Finland, Ltd.

Maria Tysiachniouk, Department of Environmental Sociology, Centre for Independent Social Research, Russian Federation

Collaborators:

Anne M. Hansen, Arctic Oil and Gas Research Centre, University of Greenland, & the Danish Centre for Environmental Assessment, Aalborg, Denmark

Gwen Holdmann, Alaska Center for Energy and Power, University of Alaska Fairbanks, USA

Water Working Group

The Arctic Ocean is changing at an unprecedented rate. Rising global temperature is resulting in decreasing cover of sea ice. An open ocean provides new habitat for fish and navigable waters with new opportunities for fishing and other industries. Increased precipitation in the Arctic is resulting in greater delivery of freshwater and nutrients to the ocean, which may enhance productivity. These rapidly changing environmental and biological conditions may represent previously unobserved states that are difficult to observe and predict. Management and use of Arctic Ocean resources will occur against a backdrop of shifting baseline conditions and must account for great uncertainty in making predictions of changes in the Arctic Ocean. The policy recommendations of the Water Working Group emphasize: investment, maintenance and sustained funding for monitoring networks; use of multi-disciplinary scenario and modeling approaches to better predict future states of the Arctic Ocean; and, improvements in the cooperative management of natural resources.

The following actions are recommended to reduce uncertainty, increase preparation, and poise communities and nations for resilience in response to a changing Arctic:

- Invest in pan-Arctic monitoring networks that track climate conditions, river discharge, and coastal productivity with a commitment to maintain continuous, long-term records
- Establish a reporting system and database to collect observations from local communities, Indigenous peoples, and scientists to more holistically document ongoing changes in the Arctic
- Employ a multi-disciplinary scenario analysis approach to anticipate unprecedented environmental states and economic responses
- Develop new models of the Arctic system that incorporate more ecological and evolutionary theory and that use modern statistical approaches to make more accurate predictions under unsteady baselines
- Develop models of management systems for potential new Arctic fisheries that include the economic dynamics fishers to secure a balanced fishery outcome
- Apply ecosystem-based and cross-sectoral management of Arctic marine resources to best meet sustainability goals
- Promote international cooperation and prioritize international solutions in the making of species management plans, especially for fish stocks influenced by climate change
- Enhance pan-Arctic exchange of traditional, management, and scientific knowledge for key species by the creation of species-specific working groups within the Conservation of Arctic Flora and Fauna (CAFF) Working Group of the Arctic Council

Group members:

Tom Arnbom World Wildlife Fund, Sweden

Tamara K. Harms, Department of Biology & Wildlife and Institute of Arctic Biology, University of Alaska Fairbanks, USA

Itty S. Neuhaus, School of Fine and Performing Arts, State University of New York at New Paltz, USA

Øystein Varpe, Department of Arctic Biology, University Centre in Svalbard, Norway

Niels Vestergaard, Department of Environmental and Business Economics, University of Southern Denmark

Collaborators:

Bjarni Magnússon School of Law, Reykjavik University, Iceland



Health and Infrastructure Working Group

The research of the Health and Infrastructure Group sought to develop a more holistic model of Arctic health and well-being, one that is more inclusive and responsive to the challenges and opportunities that characterize Arctic regions. Community wellness initiatives often place greater emphasis on treating symptoms of illness rather than identifying root causes and promoting primary prevention through the development of healthy, resilient communities. Informed by individual and group research and two interdisciplinary workshops engaging community members and organizations, health care providers, and Indigenous organizations addressing community wellness needs, the Health and Infrastructure Group found that Arctic perceptions of health are more holistic than traditional western health models. The determinants of health and well-being articulated by a multi-sector group of Arctic stakeholders included: human-environment relations, self-determination, training and capacity building, socio-economic conditions, culture and spirituality, trauma, health systems and infrastructure, and food security. The Health and Infrastructure Group finds that context specific health models are needed to support a high quality of life and strengthen the health and well-being of Arctic communities. These models need to be built from a position of self-determined peoples and governments and must be based on local perceptions of well-being that are culturally relevant and provide ongoing opportunities for collaboration across the sectors of environmental and public health, education, and infrastructure to identify knowledge gaps and reach holistic solutions for communities.

The following recommendations for policy makers are made to increase cooperation and problem solving in the areas of infrastructure, environmental health, public health and education:

- Pay specific attention to determinants that have high impacts in the Arctic including self-determination, climate change, resource management, trauma, capacity building and training, health care and infrastructure, and access to local resources
- Support health and well-being initiatives in Arctic communities that promote collaborations and multi-sector working groups that address the determinants of health and wellbeing identified by the leadership and sectors who are accountable for the actions that influence community well-being
- Support monitoring of the determinants of community wellness in the Arctic to assess the efficacy of policies and to identify knowledge gaps and opportunities for improving the sustainability of communities
- Advance policies and programs that further the self-determination of Indigenous communities and as a result advance their meaningful engagement in community wellness initiatives in the Arctic
- Recognize local Indigenous knowledge and ways of knowing through capacity building initiatives to support the engagement of international Indigenous organizations, Indigenous leadership, and community perspectives in reaching regional and state level health and infrastructure policy
- Apply a systematic approach to analyzing the health and well-being implications of Arctic policy decisions and other proposals under consideration by non-health sectors
- Support national and international forums and initiatives that enhance collaborations between scientists, policymakers, Indigenous organizations and community based sectors to inform new policies and revise existing practices for community wellness

Group Members:

Linda Chamberlain, Alaska Family Violence Prevention Project & University of Alaska Anchorage, USA
Susan Chatwood, Institute for Circumpolar Health Research, & University of Toronto, Canada
Asli T. Dis, Nordregio (Nordic Centre for Spatial Development), Sweden
Anne M. Hansen, Arctic Oil and Gas Research Centre, University of Greenland & the Danish Centre for Environmental Assessment, Aalborg, Denmark
Gwen Holdmann, Alaska Center for Energy and Power, University of Alaska Fairbanks, USA
Trevor Lantz, Environmental Studies, University of Victoria, Canada

Acknowledgments

Primary funding for the Fulbright Arctic Initiative was provided by the U.S. Department of State's Bureau of Educational and Cultural Affairs, with additional funds from the governments of Canada and Finland. The authors wish to acknowledge the support of Fulbright program administrators, institutional partners, and the Arctic communities and their leaders who participated in and supported this research.

For more information on the Fulbright Arctic Initiative see the Briefing Note (The Fulbright Arctic Initiative: An Innovative Model for Policy Relevant Research and Public Outreach) published in the Arctic Yearbook 2016 (<http://www.arcticyearbook.com/>)

The Fulbright Program was established in 1946 and is celebrating its 70th anniversary in 2016. It is 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."