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OF RESEARCH, POLICY, AND LEADERSHIP

Arctic Initiative

2022–2023 Year in Review

The Robert and Renée Belfer Center for Science and International Affairs

Arctic Initiative

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Opposite Page: Dean Douglas Elmendorf presented an overview of Harvard Kennedy School's ongoing work on climate and the Arctic at the 2022 Arctic Circle Assembly in Reykjavik, Iceland.

FRONT COVER: A polar bear confronts a group of walrus on sea ice. (Photo: Andrey Todorov)

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ELIZABETH HANLON

"Young people are demanding more education on climate change and especially on regions that will change the most, such as the Arctic."

Welcome

As we reflect on the past academic year, we are honored to share the progress we have made addressing some of the biggest challenges facing the Arctic region. Starting six years ago as a small project, the Arctic Initiative at the Harvard Kennedy School has grown into one of the world's top academic programs on the Arctic.

The Arctic has become a crucible of climate-change impacts, economic and social challenges, and geopolitical uncertainties, all of which necessitate thoughtful and collaborative responses. Serving as a pivotal convener of Arctic thought leaders, the Arctic Initiative has focused on comprehending and communicating the local and global impacts of permafrost thaw, developing strategies to enhance community resilience, and navigating the intricacies of the future of Arctic governance.

In this moment of dynamic change and lingering uncertainties in the region, fostering constructive dialogue among diverse experts and practitioners remains paramount to assess and inform the future of the Arctic. We remain steadfast in our dedication to comprehending and responding to the region's pressing challenges. Leveraging our interdisciplinary strengths and extensive global networks, we continue to elevate Arctic policy dialogue and underscore the significance of inclusive governance.

Beyond our commitment to addressing the pressing Arctic challenges, we embrace the profound responsibility of helping to nurture the next generation of Arctic leaders. Our commitment to education and mentorship manifests in initiatives such as the Policy and Social Innovation for the Changing Arctic Course, the transformative Indigenous Youth Leadership in the Climate Crisis Workshop, active participation in the ARCADE program for young Arctic Leaders, and the perennially successful annual Innovation Lab at the Arctic Circle Assembly.

As we emphasize the significance of inclusive Arctic governance, dynamic dialogue, and fruitful cooperation for a sustainable and harmonious future, we are unwavering in our pursuit to actively engage with Indigenous communities, promote sustainable practices, and advocate for robust norms and institutions.

The following pages highlight notable activities from the 2022–2023 academic year, organized by our five focus areas. We are grateful to all of the faculty, fellows, staff, students, advisors, and partners whose insights and dedication have been instrumental in advancing our Initiative's mission.

John Holdren • Henry Lee

ARCTIC COUNCIL/FLICKR

Arctic Council Member and Indigenous Permanent Participant flags on display at the Arctic Environment Ministers' Meeting on October 11, 2018, in Rovaniemi, Finland.

Charting a Course for Working-Level Cooperation in the Arctic

In March 2022, seven of the eight Arctic states announced an unprecedented pause in the operations of the Arctic Council to protest Russia's invasion of Ukraine. The pause came in the middle of Russia's two-year Chairship of the Council—and during a period when the region is experiencing radical environmental and social transformation driven by climate change.

Though work on Council projects not involving Russia resumed in a limited way in June 2022, the disruption caused by the Ukraine crisis has been severe. For nearly three decades, the Arctic Council has served as the leading intergovernmental forum for circumpolar cooperation on sustainable development and environmental protection. The stoppage of Council work has cost the Arctic and the world precious time and momentum in addressing the accelerating climate crisis, pollution, biodiversity loss, food security, human health threats, and other challenges. Without Russia, circumpolar action on many of these issues is difficult.

In September 2022, the Arctic Initiative and the Wilson Center's Polar Institute convened a small group of Arctic governance experts and practitioners to explore possible pathways for cooperation through the Arctic Council and the broader network of institutions that support the management of Arctic issues. Participants also considered how the Arctic Seven might create a path for eventual engagement with Russia—and what other systems could be substituted in some of these roles if Russia cannot be re-engaged and the Arctic Council cannot be re-established as it previously functioned.

In May 2023, after more than a year's hiatus, Norway took over the Arctic Council Chairship from Russia, but the bulk of the Council's work has been slow to resume. While geopolitical tensions between Russia and the Arctic Seven remain high, restoring cooperation and progress on the most pressing issues facing the region will require both urgent attention and creative solutions.

To that end, the Arctic Initiative is hosting a second workshop in September 2023, with the aim of providing concrete, specific advice to the Norwegian Chairship and the U.S. State Department on strategies to proceed with working level cooperation on the high-priority issues of climate science and emergency management, preparedness and response. The workshop findings will be shared during a session at the 2023 Arctic Circle Assembly. The workshop represents the first in a series of dialogues to be co-hosted by the Arctic Initiative with the Fridtjof Nansen Institute, Norwegian Institute of International Affairs, and the Wilson Center's Polar Institute.

"Today, ensuring a productive future for Arctic cooperation has been made much more challenging by Russia's unconscionable invasion of Ukraine," Initiative Co-Director **John Holdren** wrote in a response to Norway's program for its Arctic Council Chairship. "What will matter in this environment is not only Norway's priorities for its Chairship, but gaining the enthusiastic participation in those priorities of all who understand the importance of international and cross-cultural collaboration in shaping the Arctic future."

ELIZABETH HANLON

Participants in "The Future of Arctic Cooperation" workshop on September 24, 2022.

The Geopolitics of Climate Change: Scenarios and Pathways for Arctic 2050

ELIZABETH HANLON

Eyck Freymann presented on Chinese perspectives on Arctic climate change during the workshop.

Climate change is transforming the Arctic's geography. Every community in the region—and every great power with an interest in the region—has begun to adapt to this new reality. Unfortunately, Arctic climate change is becoming increasingly entangled with geopolitics as China and Russia seek strategic and commercial advantages from Arctic warming.

The United States now faces a difficult and delicate question: can Washington protect its interests in the Arctic without raising regional tensions further, antagonizing allies, and endangering the region's fragile natural environment?

To help answer this question, the Arctic Initiative held a two-day, closed-door workshop in May 2023 for climate scientists, regional experts, Indigenous and youth leaders, and national security officials from six Arctic states. The event had two goals: to identify the most plausible scenarios and pathways for how geopolitics linked to Arctic climate change might evolve through 2050 and to identify actionable steps that the U.S. government might consider taking today to manage emerging risks.

The workshop kicked off with expert presentations about the latest climate science and developments in Moscow and Beijing. In the discussion that followed, individual participants proposed a number of immediate actions that the United States could undertake to help avert the worst-case scenarios. These proposals included deepening and broadening horizontal discussion between federal and state agencies with a stake in the Arctic, expanding block grants to Indigenous Arctic communities to support adaptation and resilience, and seeking to bring Russia back into Arctic Council discussions.

While geopolitical and climate risks could interact to create negative outcomes in the Arctic, participants identified several reasons for optimism. All Arctic states have an interest in an Arctic that is governed by robust, comprehensive, and inclusive rules, norms, and institutions, rather than a bifurcated Arctic with ad hoc or dysfunctional governance structures. The Arctic-interested great powers, too, have mutual interests in cooperation and collaboration on adaptation and resilience, standard-setting and infrastructure investment, scientific research and data sharing, and rational development of natural resources.

"My key takeaway from the event is that it is not premature for the United States to start preparing for Arctic climate-geopolitical futures," wrote Postdoctoral Research Fellow **Eyck Freymann** in a post-event analysis piece for the Belfer Center website. "The future of the Arctic will not be dictated by any single country or dominated by any single trend. It will emerge over time as various actors observe the situation, plan ahead, and react to one another through time. We cannot be sure that it is possible to avert the worst case-scenarios. However, by thinking systematically about path-dependencies and the cascading potentialities of our actions, we might just be able to change the balance of probabilities and nudge the arc of history in a more constructive direction."

Read Freymann's full summary of the workshop at **belfercenter.org/arctic/2050**.

AP PHOTO/ANDREW HARNIK

Biden and Trudeau Need to Talk About the Arctic

Excerpted from Senior Fellow Fran Ulmer and Co-Director John Holdren's op-ed published in The Hill *on March 18, 2023. In a joint statement issued on March 24, 2023, President Biden and President Trudeau named protecting shared waters and the Arctic as a priority for U.S.-Canadian cooperation.*

In 2016, then-President Barack Obama and Canadian Prime Minister Justin Trudeau of Canada jointly charted a new course for collaborative leadership in the Arctic. With the motivation provided by our shared borders, close economic ties and the common challenges faced by the Indigenous peoples in both countries, whose culture and way of life has flourished in this remote part of the world for thousands of years, Canada and the United States have played a pivotal role in promoting solutions to shared challenges in the Arctic. Now is the time for the two nations to reaffirm their commitment to work together to meet the growing climate-linked challenges in their far North, from intensifying wildfires and thawing permafrost, to plant and animal impacts imperiling Indigenous subsistence and cultures, to a changing Arctic Ocean and all that this entails for the region and the globe.

"Arctic Council Members, Permanent Participants, and Observers can make headway on [issues such as marine litter, plastic pollution, and emergency prevention and preparedness] even if Russia is not participating. Clearly, the Arctic Seven are not bound to wait for Russia to come back out of the penalty box before progress can be made."

—***Fran Ulmer,*** *Arctic Initiative Senior Fellow*

Excerpted from an interview on what to expect from Norway's Arctic Council Chairship, originally published on May 8, 2023. Read the full interview at ***belfercenter.org/chairship-transition****.*

Polar Cousins: Comparing Antarctic and Arctic Geostrategic Futures

LIZA XIAO/BELFER CENTER

Douglas Causey

Once considered "flyover country at the edge of the world," the rapidly warming Arctic, Antarctic, and their associated marine environments are emerging as regions for exploration, exploitation, and extraction—as well as active arenas for geopolitical competition between polar and near-polar states. How that competition plays out will have serious ramifications for environmental, political, economic, and human security and stability around the globe.

On January 26, 2023, the Arctic Initiative hosted a book talk featuring **Christian Leuprecht**, Class of 1965 Professor in Leadership at the Royal Military College of Canada, and Arctic Initiative Affiliate **Douglas Causey**. Drawing from their new book, *Polar Cousins: Comparing Antarctic and Arctic Geostrategic Futures*, co-editors Leuprecht and Causey discussed the impacts of geopolitics and climate change on national and international security interests in both polar regions.

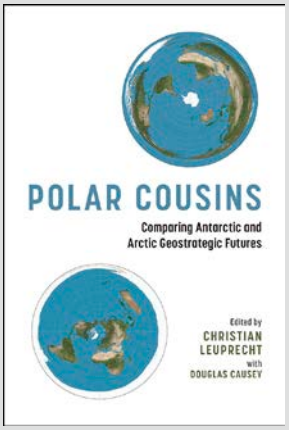
According to Leuprecht and Causey, the Arctic and Antarctic differ in several key ways, but the impacts of climate change are causing the geopolitical situations at the poles to converge. "From an environmental and ecological standpoint, there has always been an easy comparison between the two regions," Causey said in a post-talk interview. "Both the Arctic and the Antarctic are warming faster than the global average, and receding sea ice is opening the poles to potential shipping and resource exploitation, attracting interest from opportunistic polar and near-polar states—in particular, Russia and China."

Historically, the different governance regimes of the two poles "have been very successful at generating a fairly stable geopolitical environment," said Leuprecht. But while the Arctic Seven and Russia remain at an impasse over the Ukraine crisis, the co-editors consider it an opportune moment for the closely allied "Five Eyes"—the United States, Canada, the United Kingdom, Australia, and New Zealand, all of which have polar territorial claims or economic interests—to "lead by example" in Antarctica and the Southern Ocean, working as a bloc to develop new governance mechanisms that can anticipate and manage challenges related to changing climatic and environmental conditions. In turn, those mechanisms might eventually ease the situation in the Arctic.

At minimum, Causey hopes that readers, especially social scientists and policymakers, will come away from the book with a better understanding of "how the environment plays a role in what they are doing." Leuprecht added, "Not paying attention is a very bad plan."

About the Book

Edited by Christian Leuprecht with Douglas Causey



With contributions by: Brenda Dunkle, Roger Bradbury, Joe Burton, Douglas Causey, Lassi Heininen, Randy "Church" Kee, Ilan Kelman, Timo Koivurova, Peter Layton, Christian Leuprecht, Dwayne Ryan Menzes, Heather Nicol, AJ (Tony) Press, Joanna Vince, and Robin Warner

Available open access from University of Calgary Press

LIZA XIAO/BELFER CENTER

Permafrost Pathways Policy Convening Hosted by Partners at Harvard Kennedy School

Kumari Karunaratne from the Canadian Permafrost Association.

On September 26–27, 2022, Permafrost Pathways hosted a policy convening at Harvard Kennedy School. Representatives from federal agencies, Alaska Native communities and organizations, and Arctic science institutions traveled to Cambridge to learn about Permafrost Pathways; offer their thoughts about the challenges and opportunities at the intersection of permafrost science and policy; and identify possibilities for connecting with, leveraging, and collaborating with the project.

The convening began with an introduction of Permafrost Pathways—then just five months old—which is working to bring together leading experts in climate science, policy action, and environmental justice to address the challenges permafrost thaw poses for the Arctic and the world. The project aims to fill critical gaps in scientists' ability to track and forecast permafrost thaw and consequent carbon emissions, and to harness these data to inform climate mitigation policy and support Arctic community adaptation and resilience strategies.

The opening sessions highlighted the different roles of project partners at Woodwell Climate Research Center, the Arctic Initiative, the Alaska Institute for Justice, and the Alaska Native Science Commission. Representatives from the U.S. Government—including the White House Arctic Executive Steering Committee, the Department of State, the Department of Interior, the National Science Foundation, the National Oceanic and Atmospheric Administration, and the Denali Commission—provided additional background on existing federal permafrost projects and climate resilience and adaptation initiatives.

Key topics covered included the importance of improving permafrost science, closing existing data gaps, recognizing climate-forced relocation as a human rights issue, and establishing a relocation governance framework. Representatives from the U.S. Government also highlighted the significant work that is happening under the Biden administration related to assisting communities in addressing the impacts of climate change and how this momentum may be able to assist in driving forward the goals of Permafrost Pathways.

The convening brought together many potential collaborators who are working on issues of Arctic adaptation, resilience, and mitigation and identified more opportunities for engaging with Permafrost Pathways. The connections established during the convening translated into further meetings between Permafrost Pathway partners and U.S. government officials, and laid the foundation for a workshop with the Department of Homeland Security (see p. 13). It also gave members of the Alaska Institute of Justice and the Tribal Liaisons an opportunity to provide on-the-ground feedback to representatives who are involved in existing federal projects to address climate adaptation efforts in Alaska.

The meeting delivered insights and updates from those leading responsive interventions in the federal government, amplified voices of Tribes that are among those most directly affected by permafrost thaw, and provided the Permafrost Pathways team with recommendations to consider when charting the next steps of the project.

Read a summary report of the convening and learn more about the project at **permafrost.woodwellclimate.org**.

Permafrost Pathways: One Year In

It's been a busy year for Permafrost Pathways since Woodwell Climate Research Center, the Arctic Initiative, and the Alaska Institute for Justice launched the project in April 2021. In addition to hosting a policy convening at Harvard Kennedy School (see opposite page), here is a sample of what the partners accomplished in Year 1:

- Established an Arctic Carbon Flux Monitoring Network to advance Arctic modeling and better understand the global impact of permafrost thaw.
- Began to install new, strategically placed eddy covariance towers and support existing towers by providing equipment for year-round measurements of both carbon dioxide and methane.
- Signed tribal agreements to work with six Alaska Native communities—Chinik, Chevak, Kuigilnguq, Nunapicuaq, Akiak, and Kipnuk.
- Started coordinating with Tribal Liaisons to develop relocation toolkits, lead community adaptation planning, and identify policy priorities to address the impacts of permafrost thaw and other climate-caused hazards in their communities.
- Attended the United Nations Climate Conference (COP27) in Sharm el-Sheikh, Egypt, where we co-hosted a side event and pavilion programming to highlight permafrost thaw as part of the policy discourse.

Looking Forward to Fall 2023

- In collaboration with World Reindeer Herders, members of the Permafrost Pathways team will attend Arendalsuka in Norway and present on addressing land degradation and permafrost thaw.
- In September, the Alaska Institute for Justice will host a "Rights, Resilience, and Community-led Adaption Workshop," convening representatives from ten Alaska Native tribes and U.S. government offices to coordinate efforts to address climate risks impacting these communities.
- Permafrost Pathways will have a presence at Arctic Congress Bodø 2024, an event combining the

International Congress of Arctic Social Sciences XI, the UArctic Congress 2024, and the High North Dialogue 2024.

ELIZABETH HANLON/BELFER CENTER

Participants in the September 2022 Permafrost Pathways Policy Convening.

Strengthening U.S.-Canadian Collaboration on Permafrost Thaw

CSPC

From left to right: Jennifer Spence, John Holdren, Elyn Humphreys, Janet King, and Sarah Kalhok Bourque at the Permafrost Pathways panel during CSPC 2022.

In Canada, approximately 40 percent of the land is underlain by permafrost—the most of any country after Russia. While the issue of permafrost thaw remains underappreciated at the international level, its impacts are already disrupting life in Canada's northern communities, with disproportionate effects on Indigenous peoples. Now, the global community is looking to Canadian scientists and researchers for guidance on how to address one of the world's most vulnerable carbon sources.

In November 2022, members of the Arctic Initiative traveled to the Canadian Science Policy Conference (CSPC) in Ottawa to introduce Permafrost Pathways to the Canadian research and policy communities. Through participation and meetings with key stakeholders, the team used the opportunity to seek guidance on how best to engage with Canadian scientists, decisionmakers, and First Nations, Inuit, and Métis (FNIM) communities as the project moves forward.

The Arctic Initiative hosted a Permafrost Pathways panel, moderated by Senior Fellow **Jennifer Spence**, as an opportunity for Canadian researchers, policymakers, and Arctic residents to exchange insights and examine opportunities for collaboration. Panelists included **Raylene Mitchell**, Engineer at Yukon University's Northern Energy Innovation, **Janet King**, Chair of the Board of Directors of the NSERC Permafrost Partnership Network for Canada, **Elyn Humphreys**, Professor in the Department of Geography & Environmental Studies at Carleton University, **Sarah Kalhok Bourque**, Director of the Northern Science and Contaminants Research with Crown-Indigenous Relations and Northern Affairs Canada, and **John Holdren**, Arctic Initiative Co-Director.

The panel emphasized the need for international collaboration to effectively address the nature of the issue. "Achieving the Permafrost Pathways project goals will require extensive interaction between researchers, policymakers and activists, Indigenous, regional and national leaders across the Arctic. To state the obvious, we need more organizational collaborations to address complex issues, and denser and more effective partnerships among all of the participants," said Holdren.

The session at CSPC was recognized as a success in terms of building upon the relationships of scientists and policymakers within the permafrost space and sharing insights into the efforts to address the global issue. "The issues related to climate change are unconstrained by national boundaries," said Spence. "Canadians, Americans, and people from all over the world will have to look at these issues in a multidisciplinary way."

CSPC

CSPC's CEO Mehrdad Hariri interviewed Arctic Initiative Co-Director John Holdren about the local and global hazards of permafrost thaw.

JENNIFER SPENCE

Students and judges celebrate their participation in the Arctic Innovation Lab at the Arctic Circle Assembly on October 13, 2022.

Student Innovation on Display at Arctic Circle Assembly

In October, members of the Belfer Center's Arctic Initiative joined over 2,000 Arctic policymakers, scholars, business leaders, and residents in Reykjavík, Iceland, for the Arctic Circle Assembly—the world's largest annual gathering on Arctic issues.

The fruits of the Arctic Initiative's efforts to train the next generation of interdisciplinary, solutions-oriented Arctic leaders were on full display at the Arctic Innovation Lab, where students from six collaborating universities pitched their solutions to Arctic challenges to an audience of over 150 attendees. HKS students and Arctic Initiative Research Assistants **Isaac Kim** and **Vic Hogg** earned high praise for their proposals, respectively entitled "The Anna Tobulek and Molly Hootch Fellowship Program" and "Capacity Building within Alaska Native Communities for Land Co-Management." Initiative Affiliate **Douglas Causey** and HKS Dean **Douglas Elmendorf** served as judges alongside **Alice Rogoff**, the publisher of *ArcticToday* and a member of Arctic Initiative's Advisory Board; **Anders Oskal**, Secretary General of World Reindeer Herders and Executive Director of the International Centre for Reindeer Husbandry; and **Jón Atli Benediktsson**, Rector of the University of Iceland.

"It was inspiring to see young Arctic leaders with such a broad variety of ideas," said Hogg about participating in the Lab. "I was also moved by Halla Logadóttir's remarks that she met some of her greatest professional allies at youth gatherings just like the one we were attending. I wonder if I might find myself working alongside some of my peers who presented one day."

JENNIFER SPENCE

Arctic Initiative Research Assistant Isaac Kim (MPP 2023) pitches his idea on stage during the Arctic Innovation Lab.

ELIZABETH HANLON

Arctic Initiative Research Assistant Vic Hogg shakes hands with President Guðni Thorlacius Jóhannesson of Iceland.

BENN CRAIG/BELFER CENTER

Arctic Initiative Hosts Indigenous Youth Leadership Workshop

The participants of the International Workshop on Indigenous Youth Leadership for the Changing Arctic pose with Arctic Initiative team members and Harvard Kennedy School peers.

In January, two dozen Indigenous youth leaders from across the circumpolar North visited Harvard Kennedy School. Hailing from Denmark, Norway, Finland, Sweden, Greenland, and Alaska, the youth leaders came to Cambridge as part of the International Workshop on Indigenous Youth Leadership for the Changing Arctic, designed by the Belfer Center's Arctic Initiative in collaboration with the International Centre for Reindeer Husbandry (ICRH), UArctic EALAT Institute, World Reindeer Herders (WRH), and the Fletcher School of Law and Diplomacy at Tufts University.

The Indigenous youth leaders joined HKS students for the second half of the January-term course IGA-67M: "Policy and Social Innovation for the Changing Arctic." The intensive course, taught by Arctic Initiative Co-Founder **Halla Hrund Logadóttir**, is designed to encourage students to engage with facets of the climate crisis in a solutions-oriented capacity, inviting students to develop their own policy and social innovations to address issues in the region. For the youth leaders, this was not an abstract exercise: many shared their direct experiences with the changing Arctic climate and its impacts on their daily lives, providing personal perspectives and first-hand knowledge that grounded and enriched the conversation in the classroom.

Throughout the week, the visiting youth leaders and HKS students learned about the various dynamics which are transforming the Arctic, as well as the process of using social innovation

Our Research Assistants

The Arctic Initiative was fortunate to work with a talented team of Research and Course Assistants from across Harvard University this year.

Seerat Byala
HKS MPAID 2023

C. Stirling Haig
HKS MPP and Georgetown Law Joint Degree 2026

Sara Harriger
HKS MCMPA 2023

Calvin Heng
Faculty of Arts and Sciences, AM in Regional Studies 2023

BENN CRAIG/BELFER CENTER

Douglas Elmendorf, Halla Logadottir, Na'ni'eezh Peter, Sam Schimmel

to address the wide-ranging consequences of this transformation. For the visiting youth leaders, it was an opportunity to strengthen their understanding of how the challenges facing their communities relate to broader regional and global challenges. For the HKS students, the visiting youth leaders provided invaluable insight into how climate change is impacting the people of the North. Classroom discussions and simulations on adaptation and resilience were complemented with practical training in persuasive communication and op-ed writing, as well as one-on-one idea development meetings with mentors.

The course and workshop culminated with an Arctic Innovation Lab, in which each of the 43 participants shared their solution for addressing a specific Arctic challenge. Following opening remarks by **Sara Olsvig**, Member of Greenland's Human Rights Council and President of the Inuit Circumpolar Council, students had just two minutes each to pitch their idea to a panel of Arctic experts, who selected the pitches they felt presented a clear avenue to enact change. The winning pitches included "Changing Systems in Sweden" by **Sara-Elvira Kuhmunen** (Jokkmokk, Sweden), "The Role of Asian Observer States in Restoring the Arctic Council" by **Calvin Heng** (HKS), "The Oppression in Greenland's Education System" by **Linda Kristiansen** (Nuuk, Greenland), "Certification System for a Sustainable Tourism Industry" by **Christine Zhao** (HKS), and "Entrepreneur Incubators in the Arctic" by **Hyder Zahid** (HKS). For her pitch, "Rich Reindeer," **Inga Julie Sara** (Karasjok, Norway) won the popular vote.

After the end of the course, the Indigenous youth leaders then continued to the Tufts Fletcher School for further training in negotiation. The integration of the workshop and the Arctic course not only provided a space for sharing knowledge and experience regarding the impacts of climate change, but it facilitated the growth of new relationships and opportunities for future partnerships.

This workshop was a sequel to one held in Arendal, Norway, in August 2022, both part of an ongoing effort by the organizers to empower Indigenous youth to be leaders in their communities as they address the climate crisis. A second cohort of Indigenous youth will visit the Kennedy School in January 2024.

Vic Hogg
HKS MPP 2023

Gemma Holt
HKS MPP and Graduate School of Design MUP Joint Degree 2023

Isaac Kim
HKS MPP 2023

Sneha Venkata Krishnan
HKS MPAID 2023

Jonny Yau
HKS MPP & MIT Sloan MBA Joint Degree 2025

JONNY YAU

‘Deeply Enriching’: Kennedy School Students Build Leadership Skills, Connections at Arctic Frontiers

The inaugural ARCADE cohort poses for a group photo at the Arctic Frontiers Conference in Tromsø, Norway, January 30, 2023.

In January, Arctic Initiative Research Assistants **Jonny Yau** MPP 2024 and **Stirling Haig** MPP 2024 traveled to Tromsø, Norway, for a week-long intensive workshop hosted by the Arctic Academy for Social and Environmental Leadership (ARCADE). As part of the workshop, Yau and Haig joined Initiative team members at the 2023 Arctic Frontiers Conference, an annual meeting of scientists, policymakers, and business leaders focused on sustainable development in the Arctic.

ARCADE is led by the Center for Arctic Studies in collaboration with the Institute for Sustainability Studies at the University of Iceland, UiT The Arctic University of Norway, Ilisimatusarfik—University of Greenland, the Arctic Circle, and the HKS Arctic Initiative. Launched in October 2022, the 10-month leadership program focuses on training students to develop creative, interdisciplinary solutions to meet the challenges of the fast-changing Arctic.

As part of the inaugural ARCADE cohort, Yau, Haig, and 12 other graduate students from across the Arctic took part in three workshops in Norway, Iceland, and Greenland, providing a unique, on-the-ground opportunity to explore the dramatic effects of climate change in the region. They worked on individual and group projects under the guidance of academic experts, which will be presented at the 2023 Arctic Circle Assembly.

JONNY YAU

Jonny Yau and Stirling Haig stand in front of Husøy lighthouse.

Attending Arctic Frontiers as part of ARCADE was “eye-opening” for Yau, who hails from Hawaii. “Though I had studied the region academically, physically being there gave me a tangible grounding. Not only did I learn from experts at the conference, but even just speaking with my program mates from Iceland, Denmark, and Greenland really expanded my understanding of the challenges facing the Arctic.”

Despite having grown up less than a mile from the conference venue in Tromsø, Haig agreed that the experience helped him see the Arctic in a new light. “The conference covered a wide range of issues, from cutting-edge polar science to diplomacy, and my multidisciplinary ARCADE cohort brought perspectives beyond my own background in Arctic security and governance,” said Haig. “The issues facing the High North are beyond the capacity of any single field, so approaching regional issues alongside students from a variety of disciplines helped provide a wider lens with which to understand the region.”

The Arctic Initiative was also represented at Arctic Frontiers by Associate Director **Brittany Janis** and Senior Fellow **Jennifer Spence**. While in Norway, Janis delivered a lecture on communicating with policymakers to the ARCADE cohort as part of their communications training, beginning preparations for their eventual participation in the Arctic Innovation Lab at the Arctic Circle Assembly in October 2023.

Haig and Yau returned to Harvard Kennedy School “invigorated and eager to continue working on Arctic Issues.” In the months that followed, the ARCADE cohort stayed connected through virtual seminars before reuniting in Iceland in May and Greenland in August for the second and third legs of the program.

Advising Federal Responses to Rapid Climate Change in Alaska

In May 2023, the Arctic Initiative hosted a workshop in partnership with the Science and Technology Directorate of the U.S. Department of Homeland Security (DHS). The focus was on the challenges posed by the impacts of rapid climate change in Alaska; how DHS and its components—including the Federal Emergency Management Agency (FEMA), the Cyber and Infrastructure Security Agency (CISA), and the U.S. Coast Guard (USCG)—are addressing them; and what possibilities may exist for DHS to do more and better.

The workshop represented an opportunity for Arctic Initiative experts, as well as partners from Woodwell Climate Research Center, the Alaska Institute for Justice, and Alaska Native organizations, to provide analysis and recommendations to the federal government to inform policies for combating the climate crisis in the U.S. Arctic. The Arctic Initiative published a summary of the workshop's findings on ocean issues, infrastructure, human health and security, and cross-cutting science and technology solutions. DHS' Science and Technology Directorate will produce another report later this year based on the workshop and their further considerations.

Workshop participants emphasized that the accelerating effects of climate change, such as extreme weather events and permafrost thaw, are inflicting serious damage on the region's already limited infrastructure. The damage is affecting the region's economy, the stability of long-established and important communities, and the physical and cultural health and well-being of residents. The damage is also hampering disaster relief efforts and adding to the cost of mitigating and preventing further damage. There will continue to be widespread destruction of local communities requiring large-scale rebuilding, and in some circumstances, the wholesale relocation of residents.

The retreat of Arctic sea ice is opening previously inaccessible areas of the Arctic Ocean to navigation and resource extraction. This will constitute a growing challenge for environmental protection, the regulation of commerce, and border security. These new challenges have exposed gaps in communications, weather monitoring, and situational awareness in the U.S. Arctic region.

Many of the impacts of climate change within the region fall especially hard on Alaska Native communities. Representatives from Alaska Native organizations and the Alaska Institute for Justice shared how numerous at-risk villages are deciding whether to invest in adaptation in place or relocate some or all of their populations. However, affected communities have historically encountered significant limitations when attempting to utilize government support for responding to climate-induced disasters. For instance, in the wake of Typhoon Merbok, barriers to accessibility prevented many villages from receiving prompt assistance, and despite a low number of applications for funding, there were high denial rates for the Individual Assistance Program.

Central to the discussion was how DHS could include slow-onset disasters within its emergency response capacities. Participants identified a need to review the Stafford Act and other relevant policies to determine where responsibilities for dealing adequately with slow-moving disasters belong and what policy changes are needed to remedy current shortfalls. Currently, FEMA is only authorized to respond to sudden crises; its protocols require a reported start and end date, which

A set of seven issue briefs prepared for the workshop by the Arctic Initiative is available at: **www.belfercenter.org/issue-briefs**.

does not account for many climate issues facing the region. In response, the agency is prioritizing coordination with Indigenous communities to improve disaster response and put equity at the center of emergency management. The White House Community-Driven Relocation Subcommittee, co-led by FEMA, is focusing on addressing the relocation challenges faced by communities in need that have already been identified. CISA is working to develop and apply technology-based approaches for addressing challenges specific to rapid climate change, including adaptive risk-management solutions.

The workshop emphasized the need for interagency collaboration to fill many of the gaps that currently exist in Federal responses to rapid climate change in Alaska. Local and Indigenous knowledge must be integrated with science, technology, and innovation to develop community-based adaptation mechanisms to address the current effects of warming and prepare for future impacts.

Building Urban Resilience to Climate Change: Lessons from the Arctic

Life in Arctic cities is becoming increasingly challenging as climate-driven hazards threaten urban infrastructure and the health and livelihoods of urban residents. Although roughly two-thirds of the region's four million inhabitants live in urban areas, cities have been underrepresented in discussions on Arctic resilience. Increasing Arctic cities' capacity to plan for, respond to, and recover from climate shocks will be critical to maintain essential services for residents and to continue to drive regional economic development.

An April seminar co-organized by the Belfer Center's Arctic Initiative and the Arctic Mayors' Forum, brought together mayors and climate officials from Bodø, Norway; Umeå, Sweden; and Fairbanks North Star Borough, Alaska, to discuss how their cities were responding to the impacts of climate change. The speakers also drew out lessons that other climate-vulnerable cities could learn from the Arctic experience.

While each speaker defined climate resilience differently, several common themes emerged during the discussion.

Arctic Initiative Postdoctoral Research Fellow Nadezhda Filimonova (top left) moderated the seminar with panelist Annika Myrén, Development Strategist for Umeå, Sweden (top right); Ida Maria Pinnerød, Mayor of Bodø, Norway (bottom left); and Bryce Ward, Mayor of Fairbanks North Star Borough, Alaska (bottom right).

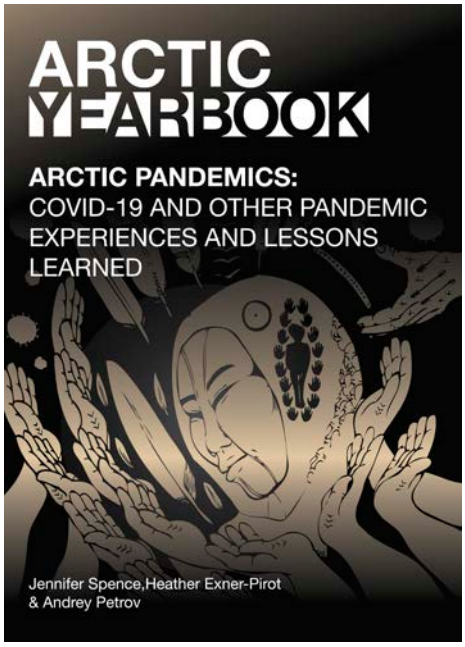
The remoteness of Arctic cities and a lack of public awareness around climate issues were cited as major challenges to climate adaptation. The panelists also identified the need to tailor technological solutions to unique local conditions and to empower local communities to develop creative solutions. They saw promise in increasing circular economy activities, incorporating social sustainability principles into adaptation efforts, and cooperating with local, regional, national, and international stakeholders to develop adaptation and mitigation strategies.

Above all, the panelists emphasized the importance of including cities in regional and international climate adaptation and resilience discussions. Annika Myrén, Development Strategist for Umeå, pointed out that cities worldwide are driving innovation and making progress on climate issues, even in the absence of national regulations. "Strong local commitments can compensate for international negotiations that are not going so well."

This seminar was the first in a planned series of talks focused on Arctic cities; the Arctic Initiative and the Arctic Mayors' Forum will host a sequel in the coming year.

Watch a recording at **www.belfercenter.org/resilient-arctic-cities**.

Drawing Lessons from COVID-19 in the Arctic



Cover art is based on a work by Yu'pik Alaskan artist Amber Webb.

In July 2023, the Arctic Yearbook launched a special issue on "Arctic Pandemics: COVID-19 and other Pandemic Experiences and Lessons Learned." The volume includes fifteen peer-reviewed articles and ten shorter contributions and is available open access on the Arctic Yearbook website.

"The idea for this special issue of the Arctic Yearbook started with the beginning of the COVID-19 pandemic," said Arctic Initiative Senior Fellow **Jennifer Spence**, who co-chaired the editorial board with Andrey Petrov and Heather Exner-Pirot. "We realized that the pandemic was global, but the experiences and impacts in the Arctic would be distinct." The volume is an effort to remember and learn from Arctic experiences with COVID-19 and other pandemics in order to inform responses to future pandemics and other regional and global shocks.

In a region already at risk due to underdeveloped healthcare systems, infrastructure deficits, difficult socioeconomic conditions, rapid climate change, and colonial injustices, COVID-19 severely disrupted daily life in Arctic communities. Yet, on the whole, Arctic communities experienced better pandemic outcomes than their southern counterparts in the same states.

This special journal issue examines the health, social, cultural, and economic consequences of the COVID-19 pandemic and public health responses in the Arctic, placing an emphasis on Indigenous and community-based experiences and perspectives. The findings point not only to unique vulnerabilities of Arctic communities, but also to unique strengths that may inform responses to future pandemics and other regional and global shocks.

The authors and editorial board reflect a diversity of Arctic regions, disciplines, and ancestries, with many Indigenous and Northern contributors. The special issue features work early-career scholars such as Arctic Initiative Research Assistant **Sai Sneha Venkata Krishnan**, who co-authored "The State of Research Focused on COVID-19 in the Arctic: A Meta-Analysis" with Spence.

"As COVID-19 increasingly is seen as a thing of the past, it is critical that we continue to dedicate time, effort and resources to learning from these experiences and ensuring that it informs our future actions," said Spence.

A launch event will be held on September 7, 2023.

Arctic Initiative Senior Fellow Jennifer Spence (left) with co-presenters Marya Rozanova-Smith, Andrey Petrov, and Justin Barnes during their breakout session, "The Arctic During the Global Pandemic: What Have We Learned?" at the 2022 Arctic Circle Assembly.

Arctic Emergency Medicine

In 2022–2023, Massachusetts General Hospital's Division of Space, Ecological, Arctic, and Resource Limited Medicine (formerly the Division of Wilderness Medicine), led by Arctic Initiative Faculty Affiliate Dr. **N. Stuart Harris**, continued to deepen their clinical, research, and educational efforts in Alaska, including providing risk mitigation and direct medical support to climate research teams and building healthcare quality improvements through Alaska Native health partnerships.

Looking forward to 2023–2024, Dr. Harris is working with partners at Maniilaq Association in Kotzebue to develop a program to quantify and qualify climate change impacts on human health using the lens of emergency medical care to provide evidence for health-informed decision-making. This project proposal was selected as a finalist for the 2023 Fredrik Paulsen Arctic Academic Action Award**.**

Reflections on Navigating the Intersection of Climate and Health in Rural Alaska

By Dr. Lorenzo Albala, excerpted from *Society for Academic Emergency Medicine Pulse Magazine*

"We might be able to charter a plane from Big, he might be willing to land and pick her up."

You wouldn't expect to hear this in the back room of an emergency department (ED). After spending some time in Kotzebue, on Alaska's western coast, however, something like this wouldn't seem out of place. The population of a few thousand Inupiat is served by a small hospital with a 6-bed emergency department. When I first arrived, I couldn't help but wonder—can you really practice "wilderness" medicine in a place that people call home?

In short, yes. Working in Kotzebue's ED, I had to rethink my way of practicing emergency medicine: no in-house specialty support, no MRI, no ICU, a 90-minute flight time to the closest tertiary center. There is no shortage of bread-and-butter cases such as necrotizing marine zoonotic infections, hypothermia, or frostbite. Some days, it feels like a cultural immersion: an elder may describe his symptoms with a peppering of Inupiaq words, which soon become wonderfully familiar. You chat about muktuk (whale blubber) and seal oil, and you wonder, "Am I still in America?"

Dr. Luke Apisa (left) participates in a neonatal resuscitation review at a Maniilaq Association clinic. Credit: Luke Apisa

I move to my next patient, a middle-aged woman living at camp, her lifestyle defined by subsistence hunting and fishing. With a grimace, she describes how she now needs to be careful snowmachining into town, because although it's the middle of January, there are still holes in the river ice. The daily impact of a warming environment is much more tangible at these latitudes.

Imagine running medical control for several villages scattered across an area the size of Indiana. The population of these villages varies from a handful to a few hundred people. Their clinics are staffed by a community health aide, a trained community member who functions as your eyes, ears, and hands. Through a patchwork of Zoom, phone calls, and written notes, I became a telemedicine "regular" in between ED patients. When planning a village transfer, since there are no roads connecting these villages, I begin the following mental gymnastics: is this patient stable for the commercial flight tomorrow? If not, do I save the local crew for a potential future critical patient, and send the Anchorage crew instead?

Often, we see communities come together in amazing ways for patients: an entire village rallying on a dark morning to line dozens of ATVs and snowmachines along the length of the runway, lighting the way for the plane to land. Within the walls of Kotzebue's ED, the idea of wilderness medicine blurs with rural medicine, global health, EMS, and climate health.

Meet Margaret Williams, New Senior Fellow

Arctic environmentalist and policy expert Margaret Williams has joined the Arctic Initiative as a full-time resident Senior Fellow for the 2023-2024 academic year. Williams will support and expand the Initiative's portfolio of work on marine governance and sustainable ocean management.

With over 30 years of experience on conservation issues in Russia and Alaska, Williams joins the Arctic Initiative from the World Wildlife Fund (U.S.), where she established and served as the Managing Director of the Arctic Field Program.

While in residence at Harvard Kennedy School, Williams will investigate mechanisms for effective U.S.-Russian collaboration on conservation and marine stewardship, with the aim of identifying opportunities to rekindle dialogue and cooperation between the two countries, particularly in the Bering Strait region. She seeks to improve mutual understanding in both Russia and the United States of the growing impacts of climate change and maritime shipping on the region's ecosystems, wildlife species, economies, and cultures.

We sat down with Williams to talk about her career and her plans for the coming year.

Margaret Williams while accompanying a team of U.S. polar bear researchers on the Beaufort Sea during her tenure at World Wildlife Fund. (Photo courtesy of Margaret Williams)

Much of your career has focused on conservation issues in Russia and Alaska. Where did this initial interest come from?

I've always loved nature and languages, and I used to dream about entering the Foreign Service. While studying Russian in college, I learned about an initiative between President Bush and President Gorbachev to create an "international peace park" in the Bering Sea. I was fascinated by the idea of doing diplomacy through conservation and that was what turned my attention toward environmental issues in Russia. As the Cold War was ending, a lot of information came out about the terrible pollution and environmental disasters in Russia. Much was written about those problems, but there was very little acknowledgment of some of the good things Russia had done for the environment, such as creating a huge network of protected areas.

Russia's invasion of Ukraine has complicated U.S.-Russian cooperation at a time when the Bering Sea is experiencing increasing environmental pressure from rapid climate change and growing shipping activity. What worries you most about this situation?

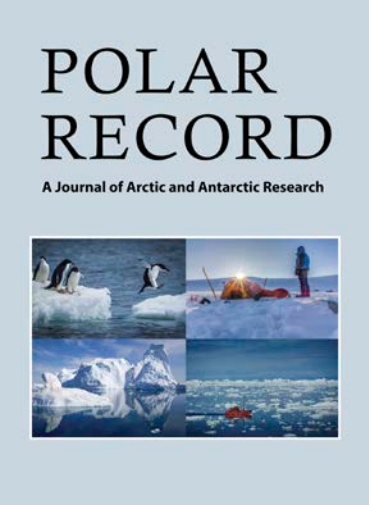
The impacts of climate change are accumulating rapidly and affecting every aspect of the Bering Strait ecosystem. The United States shares so much with Russia in this region—not just incredible fish and wildlife populations, but millennia of cultural connections between people on both sides of the Strait. Communication and collaboration across the Bering Strait have ceased at a time when we really need to be working together to protect this special place.

On the topic of shipping, Russia has invested tremendously in developing its oil, gas, and mineral resources, much of which is now shipped through the Bering Strait to Asia. In the event of an oil spill, our countries must be able to coordinate. The U.S. and Russian Coast Guards are still monitoring the maritime boundary for illegal fishing incursions, and a year ago the U.S. Coast Guard said they would communicate with their Russian counterparts in case of an emergency, so that's something hopeful. But to cut off other channels of communication at this time is potentially very damaging to our efforts to stave off the worst impacts of climate change.

Do you see opportunities for improving this situation?
Despite the interruption of official collaboration, there are still many personal relationships that exist—for example, between biologists on both sides of the Bering Sea who have spent the last three decades tracking walrus, polar bears, and bowhead whales together. Trust and understanding are still there, as is a shared appreciation for the value of collaboration. There are opportunities for information sharing. Those things cannot be underestimated because when U.S.-Russian relations get better, we'll have to pick up the pieces and work together again.

What led you to join the Arctic Initiative?
When I learned that I could possibly continue working on critical Arctic issues with a team of amazing people at the Arctic Initiative, while trying to find ways to re-engage with Russian scientists and policy experts during these unprecedented times, I thought that would be really exciting. Throughout my career, I've enjoyed being part of an international community, so I'm also looking forward to meeting and learning from Belfer Center colleagues from different countries and disciplines.

What will the focus of your research be in the coming year?
I plan to examine U.S.-Russian collaboration and the different mechanisms that have brought together American and Russian conservationists and scientists in the past. I'm particularly interested in identifying mechanisms that could be useful and practical in this time of high tension. If the political situation allows, I hope to convene American and Russian colleagues via webinars—or in-person meetings if at all possible—to share updates on the conditions they are observing in the Bering Strait. While at WWF, I organized a similar series of seminars for biologists studying seabird and marine mammals in the Strait. But relations with Russia have gotten so tense over the last six months. I don't want to put anyone in Russia at risk. No matter how the situation develops, I will focus on shining a spotlight on what's at stake for biodiversity if lines of communication between the United States and Russia are lost.



Lessons from the Central Arctic Ocean Fisheries Moratorium

In June 2021, the historic "Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean" entered into force. The Agreement—the first multilateral treaty to take a legally binding, precautionary approach to protect an area from commercial fishing *before* fishing had begun—could serve as a model for conservation efforts elsewhere. In a November 2022 paper published in *Polar Record*, Senior Fellow **Fran Ulmer** and Harvard Law School's **Cayla Calderwood** identified the factors that helped make the Agreement possible, including:

- scientific breakthroughs coupled with science-based legal frameworks;
- proactive public-private partnerships;
- willingness of international stakeholders to learn from past mistakes; and
- a nation willing to be the first-mover in foregoing future economic profits within their own Exclusive Economic Zone in order to benefit ecosystems beyond their waters.

Read Ulmer and Calderwood's full insights: **https://doi.org/10.1017/S0032247422000389**.

Bering Strait Navigation and Conservation in Times of Conflict

In November 2023, the Arctic Initiative convened experts to identify measures to mitigate risks from growing maritime traffic

As the only passage connecting the Pacific and Arctic Oceans, the Bering Strait is a vital "highway" for wildlife and ships alike. Though the United States and Russia have a relatively successful record of cooperation across their shared maritime boundary in the Strait, the fallout from Russia's invasion of Ukraine has complicated that cooperation at a time when maritime traffic risks in the Strait are increasing.

Sea ice loss, driven by rapid climate change, has made the waters of the Bering Strait more navigable, which in turn has led to increasing vessel traffic, particularly along Russia's Northern Sea Route (NSR). The expansion of shipping activity heightens risks to Arctic ecosystems and communities on both sides of the Strait, including groundings, collisions, spills of oil or other contaminants, noise and air pollution, and vessel strikes on marine mammals and small watercraft. These risks are magnified by increasingly unpredictable and extreme weather conditions and a lack of emergency response infrastructure.

As climate change and economic activity in the region accelerate, the United States and Russia have a common interest in mitigating these shared environmental risks. A November workshop hosted by Harvard Kennedy School's Arctic Initiative, the Wilson Center's Polar Institute, and the World Wildlife Fund (WWF) brought together seventeen experts to explore potential actions that the United States and Russia could pursue, jointly or independently, to protect the Bering Strait's sensitive marine ecosystem and coastal communities.

The workshop featured recent papers by Arctic Initiative Postdoctoral Research Fellow **Andrey Todorov** and **Inga Banshchikova**, Policy Research Associate with the WWF U.S. Arctic Program. Over 80 virtual participants, including representatives from the U.S. Coast Guard and the International Maritime Organization (IMO), attended.

A Valuable but Vulnerable Corridor

Biologically, the Bering Strait is extremely productive and provides a habitat and migration pathway for a wide range of fish, marine mammals, and seabirds. This rich marine life is critically important for the subsistence activities of the Siberian Yup'ik, Central Yup'ik, Chukchi, and Iñupiat people.

Ship traffic in the region is on a steady upward trend: the number of transits through the Strait rose from 242 transits in 2010 to 555 transits in 2021. This activity is driven in large part by Russia's ambitions to develop the Northern Sea Route. The war in Ukraine has caused Russia to target Asian markets,

rather than European markets, for its Arctic resource exports. As a result, shipping traffic (and the corresponding potential for an environmental disaster) in the Bering Strait, the eastern terminus of the NSR, is likely to grow.

As an international strait, all ships are permitted to the right of transit passage. In 2018, the IMO approved a joint U.S.-Russian proposal to establish voluntary two-way shipping lanes and three Areas to Be Avoided (ATBAs) around St. Lawrence Island, King Island, and Nunivak Island. Though voluntary, compliance with these measures has been high. On top of IMO measures, there are various regional and bilateral agreements pertaining to ship traffic management and fisheries.

The Path of Least Resistance Under Harsh Conditions

Given the high geopolitical tensions between the United States and Russia, the panelists were not optimistic that bilateral cooperation on regulating Arctic shipping would soon resume. The war and subsequent suspension of cooperation with the other Arctic nations may have far-reaching consequences for Russia's Arctic policies. Todorov pointed out that, due to sanctions, Russia will need to use outdated and less eco-friendly technologies. He added that the socio-economic crisis in Russian society may significantly weaken the country's commitment to environmental protection.

However, the panelists identified several measures that could be implemented without Russian cooperation. Both Todorov and Banshchikova recommended that the United States establish, through the IMO, an ATBA around Little Diomede Island, which would help route vessels away from sensitive areas in the event they must deviate from the existing shipping lanes. Big Diomede Island, on the Russian side, would not be covered.

> "Out of all possible next steps to protect the sensitive area around the Diomede Islands from growing vessel traffic, the most obvious would be the designation of an Area to Be Avoided (ATBA) that would complement the existing two-way shipping routes."
>
> Andrey Todorov, from "Shipping Governance in the Bering Strait Region: Protecting the Diomede Islands and Adjacent Waters," *Marine Policy* (September 2022)

Other measures taken by the United States could include maintaining lines of communication with the Russian coast guard and improving domestic emergency prevention and response capabilities. The international shipping community could adopt voluntary dynamic shipping measures tailored to vessel size and class, which would reflect weather conditions, seasons, and wildlife migration patterns. In the long term, decarbonizing oceanic shipping would also reduce the risk of oil spills and black carbon emissions.

In the current geopolitical climate, mandatory measures will be difficult to implement, but voluntary measures may go a long way toward preventing future maritime disasters and drastic environmental consequences.

Our Team

View the full profiles of our team members by visiting our website.

Leadership

John P. Holdren
Co-Director, Arctic Initiative; Co-Director, Belfer Center's Science, Technology and Public Policy Program; Teresa and John Heinz Research Professor of Environmental Policy, Harvard Kennedy School; Formerly President Obama's Science Advisor and Director of the White House Office of Science and Technology Policy

Henry Lee
Co-Director, Arctic Initiative; Jassim M. Jaidah Family Director, Belfer Center's Environment and Natural Resources Program; Senior Lecturer in Public Policy, Harvard Kennedy School; Faculty Co-Director, Harvard Kennedy School Executive Education Programs on Infrastructure

Brittany Janis
Associate Director, Arctic Initiative; Co-Founder, Harvard Alumni for Climate and the Environment

Fellows and Affiliates

Douglas Causey
Affiliate, Arctic Initiative; Professor of Biological Sciences, University of Alaska Anchorage; Research Principal Investigator, Arctic Domain Awareness Center of Excellence, U.S. Department of Homeland Security

Joel Clement
Senior Fellow, Arctic Initiative; former Director, Office of Policy Analysis, U.S. Department of Interior

Greg Harris
Affiliate, Arctic Initiative; Adjunct Lecturer, Harvard College, Harvard Kennedy School, and Harvard School of Public Health

N. Stuart Harris, M.D.
Faculty Affiliate, Arctic Initiative; Founder and Chief, Division of Wilderness Medicine, Massachusetts General Hospital; Associate Professor of Medicine, Harvard Medical School

OUR TEAM

Halla Hrund Logadóttir
Senior Fellow and Co-Founder, Arctic Initiative; Director-General, Iceland's National Energy Authority; Adjunct Lecturer, Harvard Kennedy School

Jennifer Spence
Senior Fellow, Arctic Initiative; Adjunct Professor, Carleton University; former Executive Secretary, Sustainable Development Working Group, Arctic Council

Cristine Russell
Senior Fellow, Environment and Natural Resources Program

Fran Ulmer
Senior Fellow, Arctic Initiative; former Chair, U.S. Arctic Research Commission; former Lieutenant Governor of Alaska

Lorenzo Albala, M.D.
Emergency Medicine Physician, Massachusetts General Hospital

Luke Apisa, M.D.
Fellow, Division of Wilderness Medicine, Massachusetts General Hospital

Nadezhda Filimonova
Postdoctoral Research Fellow, Arctic Initiative

Eyck Freymann
Joint Postdoctoral Research Fellow, Arctic Initiative and Columbia–Harvard China and the World Program; Non-Resident Research Fellow, China Maritime Studies Institute, U.S. Naval War College

Andrey Todorov
Postdoctoral Research Fellow, Arctic Initiative

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Karin Vander Schaaf
Administrative Coordinator, Science, Technology, and Public Policy Program

Elizabeth Hanlon
Communications and Outreach Specialist, Environment and Natural Resources Program and the Science, Technology, and Public Policy Program

STAFF SPOTLIGHT:
Tessa Varvares, Permafrost Pathways Project Coordinator

In January, the Arctic Initiative welcomed Tessa Varvares as a Project Coordinator. Varvares will support the Permafrost Pathways project, liaising with external stakeholders and policymakers on issues related to the impacts of permafrost thaw on Arctic communities.

Hailing from Missouri, Varvares earned an M.A. in International Environmental Policy, specializing in Natural Resource Policy and Management, from the Middlebury Institute of International Studies. She also holds a B.A. in Political Science with minors in Women's, Gender, and Sexuality, and Africana Studies from the College of the Holy Cross.

You have served as a Peace Corps volunteer in South Africa and worked on emergency preparedness and community outreach for the National Park Service and the Monterey Fire Council. What sparked your interest in the Arctic?

While living in South Africa, my village was experiencing long periods of drought followed by intense flooding and mudslides, devastating local infrastructure. This opened my eyes to regions that seemed to be disproportionately experiencing the acute effects of the climate crisis, and it inspired me to focus in on adaptation and mitigation efforts. In grad school, I began working with a local non-profit driving the community efforts to adapt with worsening wildfires, as well as with the National Park Service to build an oil spill database to assist in training personnel on existing protocols and steps to take if a spill occurs. The Arctic is facing many similar challenges, and the pressing nature of the crisis compelled me to find a way that I could get involved.

What projects are you looking forward to tackling in the year ahead?

Over the last few years, the issue of accelerated warming in the Arctic has been making its way into mainstream media. More people are realizing we need to address this issue. As Permafrost Pathways enters its second year, we are ramping up momentum to advance equitable climate policy and strategies. This September, our colleagues at the Alaska Institute of Justice will host a workshop with Tribal liaisons from the Alaska Native villages that have partnered with the project. I'm looking forward to traveling to Anchorage and hearing firsthand what they perceive as the biggest challenges affecting their communities. This experience will be crucial to accurately capture the sentiments of affected communities and relay these insights to the broader public.

Team News

Riikka Karppinen Joins Arctic Initiative's International Advisory Board

In February, **Riikka Karppinen**, a prominent youth leader, environmental activist, and politician from Finnish Lapland, was appointed to the Arctic Initiative's International Advisory Board. As a Board member, Karppinen will leverage her substantial expertise in nature conservation, policymaking, activism, and communication to help the Initiative advance its research and education goals and train the next generation of Arctic leaders.

"I'm absolutely delighted that Riikka Karppinen is bringing her wonderful combination of smarts, environmental and policy experience, and youthful energy and enthusiasm to our Advisory Board," said Initiative Co-Director John Holdren.

Karppinen combines impressive political credentials with firsthand experience of the challenges facing Arctic communities and broad knowledge of Arctic and global affairs. She was elected to Sodankylä's municipal council in 2012 and has since served three terms, becoming Chairperson in 2021. From 2019 to 2021, Karppinen served as Vice President of Finland's Green Party. She is also a Member of the Board of the Arctic Society of Finland and the Regional Council of Lapland, the governing body responsible for regional planning and development. In addition to her political career, Karppinen studies Finnish language and literature at the University of Helsinki and works as a political assistant to Finland's Minister for Foreign Affairs Pekka Haavisto and the Minister of the Interior Krista Mikkonen.

Comprising leading Arctic scholars and policymakers, the Arctic Initiative's International Advisory Board informs our research and provides a critical eye as to how we can have the greatest impact.

Other International Advisory Board Members

Tarja Halonen
Former President of the Republic of Finland

Evon Peter
Senior Research Scientist, Center for Alaska Native Health Research, University of Alaska Fairbanks

Gunn-Britt Retter
Head of Arctic and Environmental Unit, Saami Council

Alice Rogoff
Publisher and Owner, *ArcticToday*

Awards & Recognitions

Several members of our team were recognized this year for their contributions to Arctic research.

- **John Holdren** was appointed to the **National Academies' Polar Research Board**.
- **Fran Ulmer** received the **Alaska Governor's Award for Distinguished Service to the Humanities in Leadership**.
- **Stuart Harris** was shortlisted as a finalist for the **2023 Fredrik Paulsen Arctic Academic Action Award**. His proposed project would create a program of health monitoring with colleagues from Maniilaq Association in Alaska's Northwest Arctic Borough to quantify and qualify the impacts of climate change on human health.
- **Nadezhda Filimonova** received an **Excellence in Dissertation Research Award** from the University of Massachusetts Boston for her dissertation titled "*The Practice of Climate Change Adaptation Governance in Arctic Cities: Understanding Local Policymaking Interactions in Russia and Norway*."

Bon Voyage!

Congratulations and best wishes to these departing Arctic Initiative fellows:

- **Joel Clement** joined the Lemelson Foundation as a Senior Program Officer, where he will oversee the Foundation's new $50 million global climate initiative.
- **Eyck Freymann** was appointed as a Hoover Fellow at Stanford University's Hoover Institution.
- **Andrey Todorov** started a new role at Utrecht University's Netherlands Institute for the Law of the Sea, where he will lead research on issues related to ship-borne tourism in the Antarctic, with a focus on underwater noise.

Launched in 2017, the Belfer Center's Arctic Initiative addresses the challenges and opportunities being created by rapid climate change in the far North. By integrating insights from cutting-edge scientific research, Indigenous knowledge, and policy analysis, we seek to:

1. improve understanding of the regional and global impacts of Arctic climate change;
2. work with local, regional, national, and international stakeholders to develop responsive policies and actions; and
3. help train the next generation of interdisciplinary Arctic experts and leaders.

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