

The Belfer Center's

# Arctic Initiative 2017–2018



HARVARD Kennedy School

**BELFER CENTER**

for Science and International Affairs

**The Belfer Center for Science  
and International Affairs**

# Arctic Initiative

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# Welcome to the **Arctic Initiative**

## **The Arctic is changing.**

It is warming twice as fast as the rest of the globe, seeing some of the world's first climate displaced communities. As the ice retreats, the Northwest Passage opens up, leading to new geopolitical challenges as Russia, the United States, China, and other actors jostle for influence. At the same time, its geographical position makes it a hotspot for geopolitical collaboration, a place of U.S.-Russia collaboration on science and research. What happens in the Arctic does not stay in the Arctic. As the top of the world melts, the impacts drip down to everyone.

The Arctic Initiative is a joint project of the Belfer Center's Environment and Natural Resources Program (ENRP) and the Science, Technology, and Public Policy Program (STTP). Launched in September 2017, The Arctic Initiative seeks to develop new insights and collaborations that will bring together science, technology, and policy to address the environmental, economic and social challenges facing the Arctic.

This publication provides a brief overview of some of our Fall 2017 and Spring 2018 semester activities, ranging from research workshops, speaker series, student groups, and the Arctic Innovators program.

We are grateful to everyone participating in this journey and look forward to expanding our work in the years to come to help address the critical issues in the Arctic that affects us all.

**John P. Holdren · Halla Hrund Logadóttir · Henry Lee**



# Arctic Innovation

## Academic year 2017–2018

The **Arctic Innovators** program was established in 2017 with the goal of bringing more young people into the expanding international discussion about the Arctic. The Innovators program both educates students about this rapidly changing region and equips them to participate in developing and implementing sustainable solutions to Arctic issues. Through a series of lectures, meetings with policy makers, and a field trip to Iceland, students develop their own innovative idea for how to tackle a challenge in the Arctic. Students then pitch their idea at the *Arctic Innovation Lab* at the Arctic Circle Assembly, the largest annual international gathering on the Arctic, attended by more than 2,000 participants from 60 countries.

In early Fall 2017, 14 Harvard Kennedy School (HKS) students out of a group of more than 100 candidates were selected to join as Arctic Innovators. They came from diverse backgrounds, some from Arctic states, and some from outside the region. No matter their initial connection to the



Arctic, all of the students recognized that what is happening in the Arctic does not stay in the Arctic. The challenges facing this region impact the world, and these Innovators wanted to be part of addressing them. Over the course of the semester the Innovators worked to develop their solutions and in October they traveled to Iceland to present their concepts at the *Arctic Innovation Lab*.

Arctic Innovators started their trip with high-level meetings to set the stage. During breakfast with the President of Iceland, H.E. **Guðni Jóhannesson**, in his Bessastaðir residence, the students learned about Iceland's aspirations to be global leaders on the environment and sustainability. Next, the cohort met with the Mayor of Reykjavík, **Dagur B. Eggertsson**, who

discussed the new initiatives the city has adopted to increase tourism and alleviate homelessness. The group then did a deep dive into the energy sector with meetings at Reykjavík Energy, followed by an interactive tour of the Iceland Ocean Cluster, a shared innovative working space that brings together Icelandic industries.

Following their meetings with officials, students then joined their peers from other institutions to present at *The Arctic Innovation Lab* at the Arctic Circle Assembly. Students delivered 2 1/2-minute presentations to an audience that later voted on their favorite innovation. The event included a round table discussion session where presenters had the chance to receive feedback, and further develop their solutions as well as network with potential collaborators. We can't wait to see what amazing innovations brewed in the test-tube of The Lab, bubble over to make real change in the region. Some of the Arctic Innovators are featured on the following pages.



# Meet the Arctic Innovators

## Charlotte McEwen

Drones are a disruptive technology that can revolutionize the realm of possibilities in the Arctic. Charlotte focused on the ways in which governments and private sector companies could work with indigenous communities to help new opportunities take flight. Her innovation provides a launch pad new jobs thereby strengthening the economic development of the Arctic. She explored using drones as a tool to improve indigenous communities' access to products and information.



## Wen Hoe

Climate change is threatening the homes of Alaskan Native communities, forcing them to retreat and relocate. Currently, communities receive little to no federal money for relocation, leaving each village over one-hundred-million-dollars short of what's needed to rebuild. To address this critical financial gap, Wen proposed an Arctic fund to raise money for communities in the Arctic who are displaced by climate change. Modeled after a good idea from France which raised \$1.5 billion in eight years for UNITAID, Wen proposed a \$1 levy on all flight, train, and bus tickets in and out of the Arctic region to build this fund.



» The work of the Arctic Innovators was published in *Arctic Today* ([www.arctictoday.com](http://www.arctictoday.com)), a key medium on circumpolar issues.

## Martina Müller

The Arctic ocean is an integral part of life in the Arctic. It provides food and livelihood to all Arctic residents from Inuit to Norwegian communities. Yet, it is one of the least protected oceans in the world and is facing increased risks due to climate impacts and economic development. Martina recommended that instead of relying only on national governments in the Arctic to preserve this resource, marine protected areas should be created through states and provinces. These marine protected areas act like state parks in the ocean, creating ground rules for development and ways to care for biodiversity.



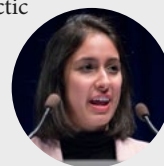
## Gabrielle Scrimshaw

Gabrielle, a member of the Hatchet Lake First Nation in Canada, advocated for the development of an indigenous venture capital fund, the first one in the world. Tourism in the northwest territories was expected to grow by 200 million dollars by 2020—but already passed that milestone in 2018. Unfortunately, indigenous communities were not the winners in that development as most of those investments came from Asia. The 600 indigenous communities in Canada are sitting on millions of dollars from land sharing and resource agreements that could be used to create a fund that would drive indigenous economic independence. Gabrielle's fund would empower indigenous communities to be the winners of the development happening in their backyard.



## Mehek Sethi

Industry and economic activity, both of which are rapidly increasing in the Arctic region, historically come at great cost to the environment. The risk is especially high in the climate-sensitive Arctic Circle. Mehek proposed an Arctic Free Trade Area, including all eight Arctic Council member countries, which could set a new and revolutionary precedent in the global trading system. Adding science-based environmental regulatory standards to a multilateral agreement that reduces trade barriers could harness economic opportunities in the Arctic while mitigating environmental consequences and improving global diplomatic relations in a complex political environment.



## Meredith Davis Tavera

Local Arctic communities, facing rapid development from public and private resource extraction, must negotiate path to prosperity that will protect their physical environments from pollution and preserve the traditions they wish to maintain. Meredith outlined the need for teaching negotiation skills to indigenous populations to equip them with the toolkit to negotiate favorable agreements that concern their historic lands and livelihoods. Through simulations and case-based learning, this would teach future negotiators at the high school level about the key aspects of negotiations.







↑ Students from around the world discuss ideas for innovative solutions for the Arctic.



↑ Arctic Innovators explore the impacts of climate change on glaciers at an interactive exhibit on the changing future of the Arctic.



↑ The Harvard coalition gathers to celebrate a successful Arctic Innovation Lab.



↑ The top three finalists from the 2017 Arctic Innovation Lab celebrate their success.



↑ Students are welcomed by the President of Iceland, Guðni Th. Jóhannesson, to his residence.



↑ Innovators meet with the mayor of Reykjavík, Dagur Bergþórsson Eggertsson, to talk about how the city is evolving and seizing new opportunities for growth.

**The Arctic Innovation Lab**, founded by Halla Hrunn Logadóttir, is a platform that brings together students from the Harvard Kennedy School, the Iceland School of Energy at Reykjavík University, University of Greenland, the Fletcher School at Tufts University, and the University of Iceland. It is a project designed to promote solution-oriented discussions on the changing Arctic region. The Lab brings together scientists, policymakers, and technology experts to discuss new ideas and policy improvements that can contribute to solving Arctic challenges, with an eye to potentially turning some of those challenges into opportunities over time. The Lab's mission is to engage and inspire young people to join the Arctic dialogue. As students create their visions for a future Arctic, they begin to see the role they can play in turning that picture into reality.



↑ Dr. John Holdren, Arctic Initiative Co-Founder, is interviewed at the Arctic Circle Assembly.



↑ Arctic Innovators line up for voting at the Arctic Innovation Lab.



# Educational Engagement

## at Harvard Kennedy School

### Arctic-Related Coursework



Senior Fellow and Adjunct Lecturer **Cristine Russell** taught the spring module, *IGA 451M: Controversies in Climate, Energy, and the Media*, where students discussed the interaction between climate change and the media.

Topics included clean energy, extreme weather, and politics and climate change. The seminar concluded with an Arctic Conference simulation where students were assigned to roles in all relevant sectors (government, oil and gas industries, icebreaking companies, journalists, NGO's) representing various countries delegations.

### Spring Policy Exercise: Developing a National Energy Policy for Iceland

The Spring Policy Exercise is a core component of the Master in Public Policy (MPP) HKS. It is designed for MPP students to apply skills in economics, quantitative analysis, leadership decision making, negotiations, and politics to a real-life policy challenge facing senior decision makers. In 2018, one of the four Exercises offered to students was to develop a national energy policy for Iceland. The course was taught by Professor Jack Donahue, with support from Halla Hrunð Logadóttir and Professor Henry Lee.

Students in the course were tasked with designing a national energy policy that would balance the interests expressed by the Minister of Tourism, Industry, and Innovation **Þórdís Kolbrún Reykfjörð Gylfadóttir** and the Minister for the Environment and Natural Resources, Guðmundur Ingi Guðbrandsson—one of the actual tasks outlined in the Icelandic government's coalition framework agreement formed in late 2017. Examples of the competing issues explored by students include: Iceland is largely powered by geothermal and hydropower resources; the country has substantial untapped sustainable energy resources that could be developed for domestic or international

use; there is a deep cultural emphasis on environmental stewardship; and tourism, largely related to Iceland's nature and landscapes, makes up about 10% of GDP.

Four speakers engaged with students at the beginning of the research process, including the two Ministers, the Managing Director of Research & Development at Reykjavik Energy **Hildigunnur H. H. Thorsteinsson**, and the environmentalist and 2016 presidential candidate Andri Snær Magnason. Minister Gylfadóttir and Minister Guðbrandsson both explained to students their ministries' respective roles in designing a national energy policy, as well as their objectives for such a policy.

The final recommendations made by students was shared with the Ministers.





# Featured Dialogues, Discussions, and Debates at HKS

## **Climate Change Challenges and Opportunities, the Case of Greenland**

The Arctic Initiative launched in September 2017 with a special event on the topic of Greenland, hosted by **Inuuteq Holm Olsen**, the Minister Plenipotentiary for Greenland and Head of Representation at the Greenland Representation at the Danish Embassy in Washington, DC.

Olsen discussed the tension between development and environmental protection in the Arctic, with a focus on Greenland's indigenous people and their future sovereignty plans.

## **Arctic Economic Opportunities and Challenges**

In April, **Tero Vauraste**, the Chair of the Arctic Economic Council and CEO of Arctica group spoke about "Is the Arctic Drowning in Financial Nationalism?" Vauraste discussed the global trade environment influencing geopolitics in the Arctic.

Vauraste explained, while a trade agreement joining the eight arctic states, may be the highest desired form of coordination; today's political climate towards trade makes this kind of cooperation politically unfeasible. Instead he recommended the region should look to strengthening other kinds partnerships. These included private options, ranging from the "Uber" model for Arctic-specific infrastructure

such as icebreakers, and sharing of best practices through industry level cooperation as well as state and local level initiatives to protect and promote indigenous communities.

## **Iceland: Punching above its Weight**

Speaking to a Forum audience of more than 600, President **Guðni Th. Jóhannesson** discussed how Iceland, despite its relatively small geography, has carved out a large and important international role for itself.

From qualifying for the World Cup to playing a leading role in the environmental and climate change action, Arctic cooperation, and holding its own against the United Kingdom during the Cod Wars, Iceland has become an important global player despite its population of only 350,000. As Iceland takes on the mantle of Arctic Council chairmanship, the President discussed the continuing opportunities and challenges of a small country in the foreign arena.

## **Resilience, Risk, and Reinforcements for Arctic Communities on the Edge**

In February, **Joel Clement**, former Director of the U.S. Department of the Interior's Policy Office, joined students and faculty in a seminar on strengthening climate resilience of Alaskan communities. As the Arctic warms twice as fast as the rest of the world, permafrost has begun to degrade, undermining the structural integrity of buildings whose foundations are

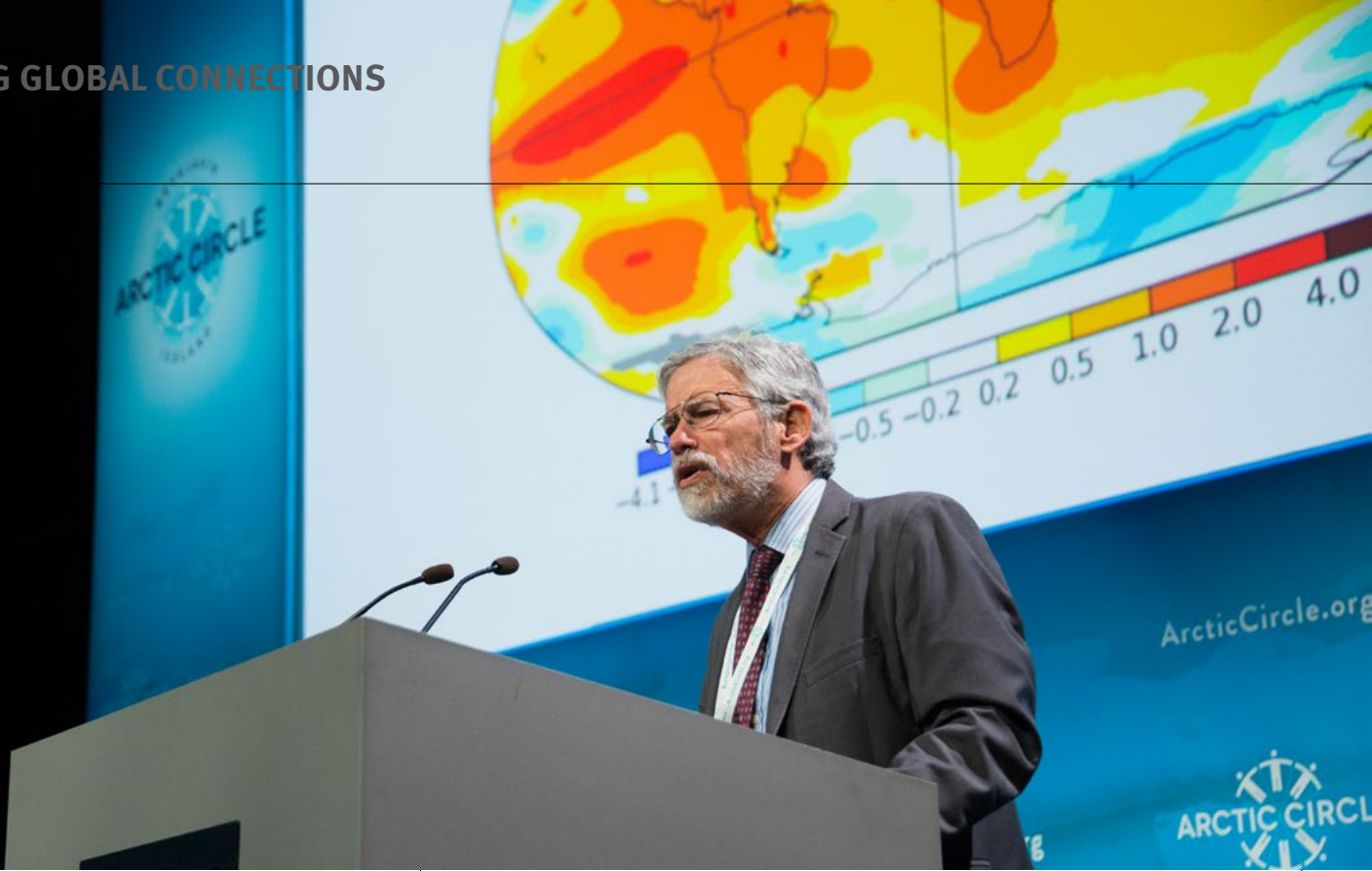
buried deep within permafrost. Sea ice that used to protect coastlines during sea storms is also beginning to melt. As a result, several Alaskan Native communities are in danger of losing their homes and buildings, and need to be relocated. Changing temperatures has also made traditional subsistence hunting more difficult and dangerous.

Clement spoke about the challenges of relocation in light of the recent Administration's position on climate change and reversal of climate action. He discussed other potential solutions in light of the lack of federal support, such as private organizations like Amazon or Google underwriting a village relocation, highlighting technological opportunities in Alaska, and also explored the role of philanthropy in financing village relocation.

## **A Self-Help Manual for a Frightened Nation**

Icelandic writer **Andri Snær Magnason** discussed his award-winning book *Dreamland: A Self-Help Manual for a Frightened Nation*.

His book aims to reframe climate change as a force that threatens the lives of those you will love (such as your children and grandchildren). His work aims to make people feel a deeper and genuine concern for the planet we all inhabit. Andri's message to students and followers was to find examples of tangible evidence for climate change and use it to change minds and hearts



Dr. John P. Holdren is the Teresa and John Heinz Professor of Environmental Policy at the Harvard Kennedy School of Government, Co-Director of the School's Science, Technology, and Public Policy Program, Professor of Environmental Science and Policy in the Department of Earth and Planetary Sciences, and Faculty Affiliate in the Paulson School of Engineering and Applied Science.

Dr. Holdren is Co-Director of the Arctic Initiative.

## Dr. John Holdren: Keynotes in Iceland

Dr. **John P. Holdren** presented "Arctic Climate Science and Policy: Regional and Global Dimensions," to a large audience at the Arctic Circle Assembly in Reykjavik. About 2,000 travel to the annual convening to discuss arctic issues, and plan for the rapidly changing future.

Influential persons from around the world were in attendance, including Alaska's Sen. **Lisa Murkowski**, members of the parliaments of every other Arctic nation, former Iceland President **Olafur Grimsson**, U.S. Arctic Research Commission Chair **Fran Ulmer**, *Alaska Dispatch News* publisher **Alice Rogoff**, and the heads of arctic programs at universities across the northern hemisphere.

His presentation began with an overview of the meaning & magnitude of climate change in the Arctic. Dr. Holdren provided a clear-eyed glimpse into the future policy challenges facing the Arctic, as climate change transforms the region. He ended the presentation on a hopeful note, highlighting the work that those present could do together to begin to mitigate emissions and adapt to a changing climate.

His full presentation from the event can be found at:  
[www.belfercenter.org/Holdren-Iceland](http://www.belfercenter.org/Holdren-Iceland)





## Arctic Innovation and Education of Future Arctic Leaders

On March 10th, 2018, The Fletcher School of International Affairs hosted an Arctic Conference. Halla Logadóttir, one of the keynote speakers, shared her thoughts on innovative science diplomacy, sustainable development goals, and entrepreneurship and the passion needed to achieve them.

Arctic Innovators **Mehek Sethi** and Meredith Travera also participated in the student innovation panel. Sethi shared her thoughts on the complexities of an Arctic Free Trade Agreement that lowers barriers but also creates revolutionary standards for environmental protection. Travera discussed the need for negotiations skills to be taught in secondary schools in the Arctic regions to teach ingenious communities how to negotiate deals in their best interest with the rise of development in their lands. Sethi and Travera were joined by students from Tufts and the University of Moscow.



## Alaska Trek

In May 2018, a group of master students organized HKS's first study tour to Alaska, which aimed to educate students about governance and life in the Arctic, focusing specifically on energy and climate change policy, indigenous policy issues, tribal sovereignty, and what life is like for America's most rural populations. The trek began in Anchorage, students then traveled to Bethel, a primarily Alaska Native town of 6,000 people 400 miles west of Anchorage. The group went up the Kuskokwim River to visit indigenous villages and connect more deeply with the rural population.

As a preparation to the trip, students attended a speaker series organized in collaboration with the Arctic Initiative to explore Arctic issues and prepare for the Trek. Speakers included Halla Hrunn Logadóttir, **Elizabeth Arnold**, and **Mark Begich**.



## Arctic Ocean Expert Meetings

The Arctic Initiative hosted two days of workshops, discussions and meetings with leading Arctic experts about key environmental challenges facing the Arctic region. The two days series began with opening remarks from Halla Hrunn Logadóttir and **Jóhann Sigurjónsson**, Iceland's Special Envoy on Ocean Affairs. Mr. Sigurjónsson leads Iceland's participation in international fishery management, including participation in UN activities as well as within international scientific bodies such as the International Council for the Exploration of the Sea, where he acted as vice president for several years.

Dr. John Holdren led a session on the environmental and health impacts of black carbon. Panelists from PAME, SEA and the Environment Agency of Iceland held a discussion about the problem of plastic pollution in the Ocean.

The event was capped off with a public workshop led by Sigurjónsson on the question "Is sustainable management of marine resources sufficient to meet increasing global demand for fish?" In this talk, Mr. Sigurjónsson, shared lessons from Iceland on resource management. He provided insights into how science-based policymaking became respected in Icelandic politics, despite coinciding with an era in which short-term economic gains and pressure from commercial interests continues to grow. In a world of diminishing fishery resources, Iceland's fish stocks thrive in a relatively sustainable way. The key to this success is science-based policymaking, in which Iceland's independent Marine Research serves as a steady cornerstone.

Together the group discussed plans for how those assembled and the Arctic Council can promote action, research, and awareness on these key environmental issues, and begin to develop policy that can ensure a healthy and productive Arctic ecosystem going forward.

## CO-DIRECTORS



### **John P. Holdren**

**John P. Holdren** is the Teresa and John Heinz Professor of Environmental Policy at the Harvard Kennedy School; Co-director of the Science, Technology, and Public Policy Program at the Belfer Center; Professor of Environmental Science and Policy in Harvard's Department of Earth and Planetary Sciences; and Senior Advisor to the Director at the independent, nonprofit Woods Hole Research Center. Holdren is a member of the U.S. National Academy of Sciences, the U.S. National Academy of Engineering, the American Academy of Arts and Sciences, and the American Philosophical Society. From January 2009 to January 2017, he was President Obama's Science Advisor and the Senate-confirmed Director of the White House Office of Science and Technology Policy (OSTP).



### **Henry Lee**

**Henry Lee** is the Jassim M. Jaidah Family Director of the Environment and Natural Resources Program at the Belfer Center, Faculty Co-Chair of the Sustainability Science Program, and a Senior Lecturer in Public Policy. He also serves on the Advisory Board of the Harvard Kennedy School's Kuwait Program. Before joining the school, Mr. Lee spent nine years in Massachusetts state government as Director of the State's Energy Office and Special Assistant to the Governor for environmental policy. He has served on numerous state, federal, and private boards, and advisory committees on both energy and environmental issues.



### **Halla Hrund Logadóttir**

**Halla Hrund Logadóttir** is the Co-Founder and Co-Director of the Arctic Initiative at the Harvard Kennedy School's Belfer Center. She co-curates the World Economic Forum's Arctic Transformation Map where she focuses on environmental issues. In her native Iceland, Ms. Logadóttir serves on the advisory board to Iceland's Minister of Industry and Commerce on Iceland's Energy Fund and chairs the Arctic Innovation Lab, that she established to encourage business and social innovation across the Arctic region. Ms. Logadóttir is the former Director of the Iceland School of Energy at Reykjavík University where she lectures on Arctic policies.



## FELLOWS AND STAFF



## Cristine Russell

**Cristine Russell** is an Adjunct Lecturer in Public Policy and Senior Fellow at the Environment and Natural Resources Program. She is an award-winning freelance journalist who has covered science, environment, public health and STEM issues for more than three decades. Russell, a former national science reporter for *The Washington Post*, has also written for news media outlets such as *Scientific American*, *Columbia Journalism Review*, and *The Atlantic*. Russell is an Advisory Board member and former Fellow at HKS' Shorenstein Center on Media, Politics & Public Policy.



## Joel Clement

**Joel Clement** is a Senior Fellow at the Arctic Initiative. Clement is a science and policy consultant with a background in resilience and climate adaptation, landscape-scale conservation and management, and Arctic social-ecological systems. As Director of the Department of Interior's Policy Office, he led a team of policy analysts and economists, provided advice and analysis to White House leadership and two Secretaries of Interior, developed innovative policies to address landscape conservation needs, and was the Interior Department's appointed principal to the U.S. Global Change Research Program. He also co-chaired the Arctic Council's groundbreaking 2016 Arctic Resilience Report.



## Amanda Sardonis

**Amanda Sardonis** is the Associate Director of the Environment and Natural Resources Program (ENRP). She oversees the day-to-day activities of the program and keeps ENRP focused on its research mandate: analyzing and developing policies that are sustainable in a world constrained by climate, security, energy, and economic development concerns. Amanda also manages ENRP's student support programs and the Roy Family Award for Environmental Partnership. Her research focuses on the potential of environmental public-private partnerships to meaningfully address complex environmental challenges such as climate change. She has a Master of Liberal Arts (ALM) in Sustainability and Environmental Management from Harvard University and a BA in English from Mount Holyoke College.

## HKS STUDENT LEADERS



### Mehek Sethi

**Mehek Sethi** is research assistant and student organizer at the Arctic Initiative. She is a Master's in Public Policy student concentrating in International Affairs and International Trade. Mehek is a U.S. State Department Fellow; she previously served in the Economic Bureau in Washington D.C. and at the U.S. Embassy in Buenos Aires. She was part of the Arctic Innovators Cohort of 2017 who participated in the Arctic Circle Conference in Reykjavik.



### Martina Müller

**Martina Müller** is a Brazilian-German environmental policymaker. For the past two and a half years, she worked as International and Technical Advisor to the Secretary for Environment of the State of São Paulo, Brazil. Previously, Ms. Müller was a consultant at the United Nations Secretariat in New York, supporting civil society in high-level negotiations on sustainable development. Ms. Müller holds a Law Degree from University of São Paulo; having founded the school's environmental law clinic. Currently, she is a Master in Public Policy student and a Louis Bacon Environmental Leadership Fellow.



### Kelly Clark

**Kelly Clark** was Master in Public Policy candidate (graduated in spring 2018), where she studied political and economic development. Prior to the Kennedy School, Kelly worked for The Carter Center in the Democratic Republic of the Congo (DRC) on an extractive industries governance program, which tracked industrial mining revenues and advocated for regulatory reform in the industrial mining sector. Kelly gained related private sector experience as a member of the Boston Consulting Group's energy practice, through which she worked for a Middle East national oil company.





## **Cole Wheeler**

**Cole Wheeler** was a Master in Public Policy student (graduated in spring 2018) and a Louis Bacon Environmental Leadership Fellow at Harvard's Center for Public Leadership. He has worked as a Policy Fellow in the Office of Pennsylvania Governor Tom Wolf. Previously he was a research associate for energy and the environment at the Council on Foreign Relations, where his work focused on the intersection of energy markets and foreign policy.



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