Preparing for a Northwest Passage:  
A Workshop on the Role of New England in Navigating the New Arctic

Speakers, Panelists and Panel Descriptions

Sunday, March 25th Evening Lecture

Jennifer Francis is a Research Professor in the Department of Marine and Coastal Sciences at Rutgers University, where she has taught courses in satellite remote sensing and climate-change issues, and is also co-founded and co-directed the Rutgers Climate and Environmental Change Initiative. Her research focuses on Arctic climate change and Arctic-global climate linkages. She and her husband circumnavigated the world in a sailboat from 1980-1985, including Cape Horn and the Arctic, during which her interest in weather and the Arctic began. She earned a B.S. in Meteorology from San Jose State University and a PhD in Atmospheric Sciences from the University of Washington.

Monday, March 26th Plenary Talk

Mamadou Diallo is Director of the Molecular Environmental Technology Materials and Process Simulation Center at CALTECH and Adjunct Professor of Civil Engineering at Howard University. He has great interest in utilizing sustainability science and engineering as a convergence platform to advance a broad range range of research and educational activities. His current research focuses on the preparation and characterization of multifunctional membranes for sustainable chemistry, engineering and materials, including water treatment and desalination, CO2 capture and conversion, and critical metal and resource recovery. He recently served as Director of the Laboratory of Advanced Materials and Systems for Water Sustainability of the Graduate School of EEWS (Energy, Environment, Water and Sustainability) at the Korea Advanced Institute of Science and Technology (KAIST). He holds an Engineer Diploma in Mineral Engineering from Ecole Nationale de L’ Industrie Minerale (Rabbat, Morocco), a Master of Science in Chemical Engineering from Colorado School of Mines, a Master of Science in Chemistry and a Ph.D. in Environmental Engineering from the University of Michigan.
Panel 1: Convergence in Arctic Research  
(Monday March 25th morning)

This panel will examine how to merge discipline-specific research into a convergence approach to advance innovations in observations, data analysis, and modeling. A convergence approach will benefit research into links between Arctic change and New England by bringing together substantially different disciplines from natural science, social science, and engineering, while transcending barriers that might arise from disparate terminology and paradigms. The panel will examine how convergence can tackle the technical, organizational, and logistical challenges to collaboration from the outset in order to enable sustained collaboration across disciplines. Panelists will discuss ways that convergence can extend beyond traditional multidisciplinary, interdisciplinary, and transdisciplinary research. Following this panel, researchers will be asked to identify research themes linking New England and Arctic Change that lend themselves to convergence research.

Larry Hamilton is Professor of sociology and senior fellow at the Carsey School of Public Policy, University of New Hampshire. Over the past 25 years he has studied human-environment interactions around the circumpolar North, from Alaska to Greenland and the northern Atlantic. Much of his research involves collaboration between social and natural scientists, to investigate topics such as fisheries crises in Greenland, Iceland and Newfoundland, or the accuracy of hundreds of predictions about sea ice. One recent article focused on “Climigration? Population and climate change in Arctic Alaska.” Dr. Hamilton also conducts large-scale surveys of U.S. public knowledge and perceptions about polar regions.

Kim Juniper has been a Professor in the School of Earth and Ocean Sciences and the Department of Biology at the University of Victoria, and holder of the BC Leadership Chair in Ocean Ecosystems and Global Change since 2006. He came to U Vic from the Université du Québec à Montréal where he was Professor of Biology and Director of the GEOTOP Research Centre. He received his BSc from the University of Alberta (1976) and a PhD from Canterbury University in Christchurch, New Zealand (1982). The primary focus of his research has been the biogeochemistry and ecology of submarine hydrothermal systems. His interdisciplinary publications on deep-sea vents encompass the fields of microbial ecology, biomineralization and benthic ecology. Other research areas have included the microbial ecology of deep-sea sediments, and the seasonal dynamics of arctic sea-ice microbial communities. Juniper previously served the NEPTUNE Canada project as Co-Chief Scientist in 2004-2006, and was President of the Canadian Scientific Submersible Facility from 2001 to 2011.
Paul Arthur Berkman is building connections between science, diplomacy and information technology to promote cooperation and prevent discord, balancing national interests and common interests for the benefit of all on Earth. He was a visiting professor at the University of California at the age of 23, after wintering the previous year in Antarctica on a SCUBA research expedition, evolving two decades later into a textbook on *Science Into Policy*. He was a Fulbright Distinguished and Head of the Arctic Ocean Geopolitics Programme at the University of Cambridge, chairing the *Antarctic Treaty Summit* at the Smithsonian Institution in 2009 with legacy through the first book on *Science Diplomacy* and then the first formal NATO-Russia dialogue the following year regarding *Environmental Security in the Arctic Ocean* with legacy contributions through a successful Springer publication of the same name. He currently coordinates the *Arctic Options* and *Pan-Arctic Options* projects (involving support from national science agencies in the United States, Russian Federation, Norway, France, China and Canada from 2013-2020) as well as a Carnegie Corporation project on *US-Russia Relations*. In September 2015, he joined the Fletcher School of Law and Diplomacy at Tufts University as Professor of Practice in Science Diplomacy and is now Director of the Science Diplomacy Center as a university-wide initiative.

Elisabet Idermark is Senior Advisor on international relations at Research Support Office, Stockholm University, Sweden, coordinating research projects and partnerships. She is the project manager for the Arctic Science IntegrAtion Quest (ASIAQ), uniting six universities from three continents and four countries (Russia, Japan, USA and Sweden) in an endeavour to jointly advance research and education for a sustainable Arctic.
Panel 2: Infrastructure and Transportation – Opportunities and Hazards
(Monday March 25th afternoon)

An ice-free Northwest Passage will stimulate new trade markets, including the potential to transport fossil fuel from the Alaskan North Slope and Canada to U.S. East Coast refineries. Coastal communities such as Portland, Maine are transforming into Arctic shipping hubs. Increased ship traffic will require shore-based infrastructure and provide job opportunities. Search and rescue capabilities will need to expand, along with plans for responding to oil and container spills. Air, water, and noise pollution may increase in coastal communities, disturbing terrestrial and marine ecosystems and migratory paths, and there is the potential of invasive species being transported via ballast water. This panel will present examples of new ventures to enhance economic development and stimulate productivity, while addressing the importance of environmental and societal sustainability. Participants will consider how the pursuit of innovation, solutions, new products, and increased productivity can also empower communities, improve lifestyles, and strive for social and economic equality.

Nancy Kinner's main areas of research interest are oil spill response and restoration, bioremediation of contaminated subsurface environments and more generally, environmental microbiology. She is a member of the Environmental Research Group (ERG) at UNH and has conducted research on wastewater biofilm microbiology, the role of protists in subsurface and sea ice contaminant degradation, and petroleum and chlorinated solvent bioremediation. A professor of Civil and Environmental Engineering, Kinner has been co-director of the Coastal Response Research Center, a partnership between UNH and the National Oceanic and Atmospheric Administration (NOAA), since 2004. The center brings together the resources of a research-oriented university and the field expertise of NOAA’s Office of Response and Restoration to conduct and oversee basic and applied research, conduct outreach, and encourage strategic partnerships in spill response, assessment and restoration.

David Kennedy is currently NOAA’s Senior Advisor for the Arctic Region. He served as Deputy Undersecretary for Administration at NOAA as well as Assistant Administrator for NOAA Ocean Service and director of NOAA’s Office of Ocean and Coastal Resource Management. He has more than two decades of experience leading hazardous materials management and response efforts, including coordinating federal scientific response to more than 100 oil and chemical spill incidents. Prior to 1976, Kennedy was director of the spilled oil research team at the University of Alaska Geophysical Institute. He is a native of Oskaloosa, Iowa, and received a Bachelor of Arts degree in anthropology from the University of Northern Colorado.
Rebecca Pincus is the Class of ‘65 Endowed Chair in Arctic Studies in the Department of Humanities at the U.S. Coast Guard Academy and leads research at the Academy’s recently established Center for Arctic Study and Policy (CASP). Her research addresses security concerns in the Arctic region, broadly defined as encompassing national security as well as human and environmental security concepts. She earned a B.S. in Foreign Service from Georgetown University, an M.S. in Environmental Law from Vermont Law School, and an M.S. and Ph.D. in Natural Resources from the University of Vermont.

Jeff Levine, AICP, has been involved with land use planning on the local and regional level for 20 years. Before coming to Portland, he was the Director of Planning & Community Development for Brookline, MA, where he managed the completion of the town’s award-winning Comprehensive Plan and a public realm plan for the Route 9 corridor into Boston. Previously, he worked as the Director of Transportation & Long Range Planning for the City of Somerville, MA, and as a regional planner for the Cape Cod Commission. A New England native, he has been involved in a number of land use transformations, including the redevelopment of the Assembly Square district in Somerville; planning for the introduction of a new light rail transit line in Somerville; redevelopment of John Kennedy’s boyhood church into a mixed-income housing development in Brookline; and the redevelopment of the Bayside district in Portland. Jeff has also been involved in Metropolitan Planning Organizations in Boston, on Cape Cod, and in Portland. Jeff is an adjunct faculty member at the Muskie School of Public Service, and was previously an adjunct at Tufts University, at the University of Massachusetts at Amherst, and at the APA Planning Leadership Institute. He has a degree in urban planning from the University of Minnesota and an undergraduate degree from Wesleyan University.
Tuesday March 26th Plenary Talk

Maria Girouard of the Penobscot Indian Nation, Maine is an historian (M.A. History, University of Maine) with a particular expertise in the Maine Indian Land Claims. A longstanding community organizer, educator, and environmental activist Maria has spoken extensively on topics including Penobscot history, tribal-state relations, the Maine Indian Land Claims, food justice, and the current legal battle being waged over the Penobscots’ ancestral river. She is a cofounder of the Sunlight Media Collective and of Alnabek Kkihkan The Peoples’ Garden on Indian Island. She served her tribal community in the past as an elected member of the Penobscot Tribal Council and director of the Penobscot Cultural and Historic Preservation Department. In 2015 Maria was awarded the prestigious Maryann Hartman Award for her advocacy work in preserving the cultural heritage and rights of the Penobscot Nation. She currently works as a health and wellness coordinator for MaineWabanaki REACH.

Panel 3: Living Resources
(Tuesday, March 26th morning)

Unprecedented environmental conditions on land and sea trigger cascades of ecosystem change. Rising temperatures drive shifts in species distributions, population dynamics, and trophic relations. As sunlight reaches previously ice-covered waters, Arctic primary production is increasing, yet habitat loss, increased shipping, resource extraction, and commercial harvest of living resources may reduce some species populations. Meanwhile, temperature increases in the Gulf of Maine drive some species into deeper or more northern waters, stress other species and increase vulnerability to disease, while newly-arrived species populations may have economic value and/or compete against current species. Ocean acidification and other changes in ocean chemistry pose further challenges. In the face of such rapid change, how can policy sustain living resources and the human communities reliant on them? Some researchers and practitioners argue that current approaches have not accommodated existing levels of socio-ecological variability, and will surely fail as change accelerates. Others seek alternative knowledge systems and environmental ethics of indigenous groups. Many call for expanded data collection. To advance these lines of inquiry, this panel will initiate policy-relevant knowledge-sharing across marine science, social science, and resource management.
Jennifer Brewer is an Associate Professor in the Department of Geography and Master in Public Policy Faculty in the Carsey School of Public Policy. As a political ecologist, her research focuses on human-environment relations and environmental governance, particularly in marine fisheries. Her research asks how decision processes can simultaneously sustain natural resources and augment public capacities for civic engagement. Her projects have spanned community- and market-based co-management models, incorporating field data collection with qualitative and quantitative analyses. Jennifer holds a doctorate in Human Geography from Clark Graduate School of Geography, a Master of Science in Marine Policy from the University of Maine School of Marine Sciences, and a Bachelor of Arts from the University of Michigan School of Liberal Arts and Sciences. She has also worked at the National Academy of Sciences, US House of Representatives, Alaska Department of Fish and Game, and in the non-profit sector.

Robin Alden has dedicated her career to linking ecological knowledge of fishermen with marine science and effective fisheries policy. She retired in January 2018 from Maine Center for Coastal Fisheries (MCCF) in Stonington, Maine where she was Founding Executive Director. Founded in 2003, its mission is to secure a sustainable future for fisheries and fishing communities in Eastern Maine and beyond. Alden served as Maine Commissioner of Marine Resources under Governor Angus King, where she initiated the Maine lobster zones, an example of fisheries co-management. She also founded, published, and edited the regional trade fishing newspaper, Commercial Fisheries News for 20 years. She cofounded the Maine Fisherman’s Forum, served two terms on the New England Fishery Management Council, and worked with Maine Sea Grant. In 2017, Alden received the Peter Benchley Hero of the Seas award for her grassroots work integrating fishermen’s knowledge into science and policy and in 2016, was honored as a White House Champion of Change for Sustainable Seafood. She is a 1998 Gulf of Maine Visionary Award recipient. She holds a B.A. in Economics from the University of Maine.
Susan Kaplan, a professor of anthropology and director of the Peary-MacMillan Arctic Museum and Arctic Studies Center at Bowdoin College, is an Arctic anthropologist and archaeologist. Working primarily in Labrador, Canada, she studies prehistoric and historic Inuit responses to environmental change and contact with the West using archaeology, ethnohistory, visual anthropology, and paleoenvironmental data. She studies the history of Arctic exploration using the same investigative tools. Finally, she works with material culture, using museum collections to develop exhibitions for the public and to reach out to the northern communities from which artifacts were collected.

Tom Shyka is the Product and Engagement Manager at the Northeastern Regional Association of Coastal Ocean Observing Systems (NERACOOS). Tom works with NERACOOS end users and stakeholders to help educate and communicate about the information and the value NERACOOS provides. In this role, Tom works with NERACOOS end users to understand their information needs and help develop products and services to meet those needs. Tom’s work with stakeholders has led to the expansion of the observing system including the development of a Cape Cod PORTS (Physical Oceanographic Real-Time System) that supports safe and efficient navigation. Additionally, Tom has led the communications program at NERACOOS, helping it evolve to integrate new media channels and broaden the outreach. In his previous roles, Tom led the Gulf of Maine Research Institute’s Ocean Data Products team, which developed NERACOOS’ first web site and data management system. Tom also served as the COO at GoMOOS (Gulf of Maine Ocean Observing System) where he oversaw many aspects of the non-profit including product development, communications, and grants management. Tom was the recipient of a Sea Grant Knauss Marine Policy Fellowship and has also worked as an environmental consultant, a marine ecologist for NOAA’s National Marine Sanctuary Program and as an environmental chemist. He received a MS in Marine Estuarine and Environmental Science from the University of Maryland.
Panel 4: Coastal Dynamics, Opportunities and Hazards
(Tuesday, March 26th afternoon)

A central goal of the entire workshop is to identify challenges and opportunities created by Arctic change that extend beyond clear and present threats (e.g., rising seas redefining where the coast is), and consider how possible societal responses may have wide reaching geographic and socio-economic consequences, both intended and unintended. This panel is intended to spark deep and wide ranging discussion about how changes in the Arctic will impact communities on and near the coast, including a discussion of both opportunities and risks resulting from changes currently being observed and changes projected over the next 20-50 years. While the focus includes coastal communities in the Arctic and others around the world, this panel will pay particular attention to coastal areas in the northeast US and eastern Canada. This discussion will help us explore convergent topics that will advance our understanding of how eastern north America should prepare for and respond to these impacts over time.

Kevin Knuuti
Independent Consulting Engineer

Kevin Knuuti is an independent consulting engineer whose work focuses on risk assessment and communication; climate change (sea-level change); datums; and physical processes in coastal, estuarine and fluvial environments. Prior to working as a consulting engineer, Kevin had a career in Army Corps of Engineers with positions that included Technical Director, Cold Regions Research and Engineering Laboratory (Hanover, NH); Chief Engineer, southwestern United States (Sacramento, CA); Research Engineer; Coastal and Hydraulics Laboratory (Vicksburg, MS); and Chief of Water Resources and Coastal Engineering, northern California (San Francisco, CA). During his career in the Army Corps of Engineers, Kevin’s work included planning, analysis, design and construction associated with coastal and riverine flood risk reduction; ecosystem restoration; environmental remediation; and infrastructure for Army and Air Force installations. Kevin also led the water level analysis assessment of the post-Hurricane Katrina investigation of Louisiana and Mississippi; was the lead author for the Army Corps of Engineers sea-level rise policy; and has contributed to sea-level rise work for several states and Federal agencies, for the National Climate Assessment, and for the IPCC. Kevin has a bachelor’s degree in civil engineering from the United States Military Academy at West Point, master’s degrees in civil and environmental engineering from the University of California at Berkeley, and will complete his PhD in civil engineering from Colorado State University this year. He is also an Army combat veteran who retired from the Army as a Colonel.
Adam Parris. Having lived near estuaries all his life, Adam Parris is passionate about positive change where people, waters, and diverse species converge at the coast and about making science more relevant and useful. Currently, he leads the Science and Resilience Institute at Jamaica Bay in New York City, a partnership between governmental, research, and community organizations aimed at improving resilience in the region’s coastal waters. Previously, he helped develop the Sea Level Rise Tool for Sandy Recovery, an effort to integrate science on future sea level rise with flood insurance information for rebuilding and recovery efforts. He has been involved in integrating sea level rise information into the coastal planning efforts of a number of Federal agencies, as well as the states of California, Maryland, New York, and New Jersey. From 2010 – 2015, Mr. Parris directed NOAA’s Regional Integrated Sciences and Assessments (RISA) program, a national effort to connect science to climate adaptation and preparedness decisions in different regions across the US. He holds a Bachelor’s degree in English Literature and Environmental Geology from Bucknell University and a Master of Science in Geology from the University of Vermont.

Dr. Catherine Ashcraft is an Assistant Professor of Natural Resources and the Environment and Master in Public Policy Faculty of the Carsey School of Public Policy at the University of New Hampshire. She is interested in the human dimensions of ecological systems and focuses on how environmental policies and institutions are negotiated and designed, how they respond to change, and are renegotiated. Her current research projects include adaptive and integrated approaches to flood risk management in Europe and New England, institutions for managing conflict and uncertainty in the Danube and Nile Rivers, and international water diplomacy.