

Environmental Studies Newsletter, Week of January 4, 2021

A Year in the Ice: Insights into the Changing Arctic Ocean from the MOSAiC Expedition, a talk by Madison Smith '14 (ES/EOS major)



THIS THURSDAY, January 7, 2021 at 6:30 on Zoom

This event is free and open to all. Please email pking@rocklandmaine.gov for a link to the Zoom.

The MOSAiC expedition was the result of decades of planning and collaboration by 20 nations to freeze a research ship into the ice of the Arctic Ocean for an entire year – the largest polar expedition in history. The ship served as a platform to observe all components of the Arctic sea ice and climate system with the aim of better understanding the changing Arctic. As a member of a team of sea ice scientists during the summer leg of the expedition, Smith collected data to understand how sea ice is melting in the new Arctic. Throughout the summer, the team watched as the ice evolved from thick and snow-covered to thin and speckled with melt ponds. The data and observations will be used to improve model projections and provide insight into future changes. During this talk, Smith will share stories of what it was like to be a part of the largest polar expedition, and provide a window into our first results on characteristics of Arctic sea ice now.

Dr. Maddie Smith is a postdoctoral scholar at the Polar Science Center at the University of Washington in Seattle, Washington. Motivated by the loss of sea ice in a rapidly changing climate, her research uses observations and modeling approaches to understand how sea ice interacts with the ocean. Her fieldwork has taken her to the oceans at both ends of the earth, and most recently she was a participant in the summer leg of the year-long MOSAiC expedition. Maddie completed her PhD in Civil & Environmental Engineering at the University of Washington exploring the role of surface waves and turbulence in the autumn Arctic Ocean. **She received her B.A. in Earth & Oceanographic Studies and Environmental Science from Bowdoin College in Brunswick, Maine, where she first dreamed of exploring the Arctic while learning about the transpolar drift of Fridtjof Nansen.**

[Not Just Another Pipeline](#), by Louise Endrich

New York Times, December 28, 2020

The expansion of Enbridge's Line 3 pipeline is a breathtaking betrayal of Minnesota's Indigenous communities-- and the environment.

['Blackbird' Sung in Mi'kmaq Seeks to Raise Awareness of Indigenous Language](#) (2019)

The International Year of Indigenous Languages is a United Nations observance in 2019 that aims to raise awareness of the consequences of the endangerment of Indigenous languages across the world, with an aim to establish a link between language, development, peace, and reconciliation. To bring awareness to this important cause students at Allison Bernard Memorial High School in Eskasoni, Cape Breton recorded Paul McCartney's Blackbird in their native Mi'kmaq language.

[Fish Passage: Populations of Sea-Run Fish Gain Access to Maine Waters through Conservation Work](#), Maine Calling

The removal of the Edwards Dam from the Kennebec River — and the Great Works and Veazie Dams from the Penobscot — made national news and ushered in a new era for Maine's sea run fish. But the work is far from over. We'll discuss projects to remove dams, create fish passages and reconstruct culverts all over the state, and what these projects mean for the health of our rivers and streams. This program ties in with the publication of a new book this month about the Penobscot River restoration project.

[Gulf of Maine Research Institute, New Ecosystem Investigation Network](#)

In June, we announced the public launch of our new [Ecosystem Investigation Network](#) — a powerful, climate-focused citizen science platform. Collaborative groups of citizens and scientists are invited to use the platform and resources to design and host their investigations of climate-driven change in the Gulf of Maine and its watershed.

The Ecosystem Investigation Network is designed to bring together stories of climate-driven change from across our region to reveal a new understanding of patterns, change, and connectedness of the Gulf of Maine watershed. We built the Ecosystem Investigation Network with the goal of connecting the many people and organizations investigating climate change impacts in and around the Gulf of Maine watershed.

Pilot Progress

Having launched in a pilot phase earlier this year, the Ecosystem Investigation Network is now hosting nine collaborative research initiatives. Examples include:

- **The Coastal Flooding: Storms and Sea Level rise project**, co-created with residents from the City of Belfast to study the impacts of a rising ocean on their shoreline and infrastructure.
- **The Jellyfish Forecast project**, that collects observational data for a scientist at Bigelow Laboratory who is working on a predictive model of jellyfish distribution and abundance.
- **The Smelt Spawning project**, a cooperative project among The Nature Conservancy, the Downeast Salmon Federation, Maine's Department of Marine Resources, and trained citizens interested in the health and abundance of this iconic diadromous fish.

GMRI is supporting thoughtful project creation with partners and citizens, resulting in projects that deliver strong scientific results and rewarding experiences for participants. Participating partners, such as TNC's Molly Payne Wynne, are seeing the benefits of this approach.

“Working on this project has already proved an incredible opportunity to connect local community members to our work restoring native sea-run fish and the importance of restoring connectivity of Maine's rivers and streams,” said Molly. “Volunteers are collecting valuable data that will directly benefit future management and conservation decisions.”

Summer Internship, Fellowships & Jobs—see the [ES webpage for the recently updated list](#)

[Sample of recently added Opportunities, & those with upcoming application deadlines:](#)

[Research & Communications Intern, Wolfe's Neck Center for Agriculture & the Environment](#)

Application preference if received by February 21, 2021

To support the development of [OpenTEAM](#), we are seeking a Research and Communications Intern for the 2021 season. The intern will ideally be an undergraduate or graduate student who will work at [Wolfe's Neck Center](#) for 12 weeks during the summer, from June through August. Using WNC's organic fruit and vegetable plots, greenhouses, pastures, and orchards as their laboratory, the intern will serve as a critical, place-based researcher of the OpenTEAM initiative. As a public space engaging tens of thousands of visitors per year on both our physical campus and online, WNC is in a unique position to help educate the masses on the critical issue of climate change and what can be done to help reverse it. The intern will be a key conduit for building awareness and community around soil health and agriculture's role as a natural climate solution and contributing to the layering of these topics into the programs and dialogue already happening at Wolfe's Neck Center.

This individual will report to the OpenTEAM Agricultural Research Coordinator, with guidance and mentorship from WNC's Director of Research, Communications Manager and several other members of the WNC staff.

[Research Experience, Gulf of Maine Research Institute](#)

Application Deadline: February 15, 2021

The GMRI REU Site will pair students with researchers based at GMRI, engaged in a broad range of fishery ecosystem and climate adaptation studies. In consultation with their mentor, students will design and conduct a 10-week intensive, independent research project. This may involve field sampling, laboratory experiments, analysis of existing data sets, computational simulations, or some mix of these. At the end of the summer, students will present their findings at an in-house symposium drawing on analysis and communications skills honed throughout the summer. This internship opportunity includes a stipend (\$500/week for 10 weeks), support for housing costs, and meal allowance.

[2021 Kennebec Land Trust Ronald Joseph Summer Internship](#)

Internship Dates: June 21- August 22, 2021

The Kennebec Land Trust (KLT) is seeking summer interns to work on trail maintenance and construction, land conservation projects, invasive plant control, educational programming, and general office work such as writing press releases and sending out mailings.

Interested applicants should be willing to learn basic plant identification skills, be able to perform physically demanding field work, be comfortable multi-tasking in the office, and have an interest in land conservation.

[Mosaics in Science Internship Program](#)

Application deadline: January 24, 2021

The Mosaics in Science Internship Program provides youth that are under-represented in natural resource science career fields with on-the-ground, science-based, work experience with the National Park Service. Established in 2013, this multidisciplinary program provides opportunities to work on inventorying and monitoring, research, GIS and other technologies, and interpretation and education projects.

[Mickey Leland Energy Fellowship \(MLEF\) Program](#)

Application Deadline is January 8, 2020

The Mickey Leland Energy Fellowship (MLEF) Program provides students with educational opportunities to gain **real-world, hands-on research experience** with the Department of Energy's (DOE) Office of Fossil Energy. The MLEF program was created in 1995 with the goal of improving **opportunities for under-represented and minority students** in science, technology, engineering, and mathematics (STEM) fields. All **eligible candidates are encouraged to apply**.

The mission of the MLEF program is to **strengthen a diverse pipeline of future STEM professionals**, and this program has **mentored several hundred of the best and brightest students** from across the nation for future careers in STEM.

MIT Student Summer Research Program (MSRP)

Application Deadline: January 10, 2021

MSRP began in 1986 as an institutional effort to address the issue of underrepresentation of African Americans, Mexican Americans, Native Americans, and Puerto Ricans in engineering and science in the United States. Today, this program's goal is to increase the number of underrepresented minorities and underserved (e.g. low socio-economic background, first generation) students in the research enterprise.

MSRP seeks to identify talented sophomores, juniors, and non-graduating seniors who might benefit from spending a summer on MIT's campus, working in a research laboratory under the guidance of experienced scientists and engineers who are MIT faculty members, postdoctoral fellows, and advanced graduate students.