



## 2024 Doyle Fellowship Proposed Projects

See <https://seagrant.unh.edu/fellowships/doyle-fellowship> for more details and to apply.

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## Aquaculture Education

**Overview:** Work with NH Sea Grant and UNH Marine School researchers and extension professionals to develop and implement educational opportunities in aquaculture, in collaboration with the Seacoast Science Center.

**Background:** NH Sea Grant and the UNH Marine School have been working with the Seacoast Science Center and oyster farmers to build educational opportunities focused on messaging sustainable aquaculture to a wide range of audiences from around the Gulf of Maine watershed and beyond. One major project in 2024 will be a research and educational oyster farm site within Odiorne Point State Park, which will stand as a model for interactive aquaculture experiences for families, students, and other members of the community.

**Fellow role:** The student selected for this role will have the opportunity to work with NH Sea Grant and UNH Marine School staff as well as education collaborators at the Seacoast Science Center to develop and implement educational resources focusing on aquaculture and aquaculture research.

**Position requirements:** Interest in aquaculture and education. Experience in informal education preferred. Access to a vehicle is helpful, but can arrange carpooling with others.

**Primary position location:** This position will be based between the UNH main Durham campus and the UNH New Castle Marine Research Complex, with time spent in Odiorne Point State Park in Rye, NH.

**More information:** <https://seagrant.unh.edu/our-work/aquaculture/>

## Climate Adaptation in Coastal New Hampshire

**Overview:** Work with the NH Coastal Adaptation Workgroup (CAW), a network of over 30 organizations, agencies, municipalities, and consultants working on climate adaptation in coastal NH. Major projects this summer will include supporting an update to CAW's database of projects and outcomes and creating timely, engaging content for CAW's communication platforms (website, social media, newsletter).

**Background:** The NH Coastal Adaptation Workgroup (CAW) is a network that's been collaborating since 2009 to support coastal NH municipalities to prepare for the impacts of a changing climate. NH Sea Grant staff have been engaged in CAW since its inception and are active in many CAW activities. CAW has a database of projects and outcomes to keep track of and communicate about the many climate adaptation related efforts CAW members have supported over time. CAW also has a variety of communications outlets (website, Facebook, Instagram, Salesforce newsletter) to share about the network's efforts, community champions, and opportunities to engage. These are the main projects the Fellow will be working on, and there will also be opportunities to participate in other CAW activities depending on the Fellow's interests, including the Climate Summit and other outreach programming/projects.

**Fellow role:** The student selected for this role will have the opportunity to work with NH Sea Grant staff and partners to support an update of the Coastal Adaptation Workgroup (CAW) database of climate adaptation projects and community outcomes, develop content for CAW website/social media (e.g., blog posts, member highlights, brief videos, etc.), and support other CAW activities/projects as interested.

**Position requirements:** Interest in climate adaptation, networks/collaborative groups, and communications. Access to a vehicle is not required – can arrange carpooling if needed.

**Primary position location:** Work can largely be done remotely; there will be some in-person meetings in the Durham/Portsmouth area and opportunities to gather photo/video content throughout the coastal watershed

**More information:** <https://www.nhcaw.org/>

## Estuarine Aquaculture Research and Extension

**Overview:** Work with NH Sea Grant staff and their regional partners to support aquaculture research and extension in the Great Bay estuary.

**Background:** Aquaculture has the potential to sustainably produce seafood while helping coastal communities build resilience to environmental and economic change. NH Sea Grant has been developing, educating, and training individuals in responsible aquaculture methods for decades for both food and restoration. The 2024 summer project includes research on oysters, salicornia, and more!

**Fellow role:** The student selected for this role will have the opportunity to work with NH Sea Grant staff, shellfish farmers, and others to support a range of research, monitoring, and outreach projects.

**Position requirements:** Access to a vehicle is strongly encouraged, but can arrange carpooling with others. Comfort on boats and working in the water (and mud) will be required.

**Primary position location:** This position is based on the UNH campus in Durham, with significant field visits throughout Great Bay

**More information:** <https://seagrant.unh.edu/our-work/aquaculture>

## Great Bay Estuary Bottom Habitat Monitoring Project

**Overview:** Work with Piscataqua Region Estuaries Partnership (PREP) staff and partners to support habitat monitoring for use in watershed management.

**Background:** The Piscataqua Region Estuaries Partnership (PREP) is a National Estuary Program tasked with protecting, monitoring, and improving the water quality and overall health of the Great Bay and Hampton-Seabrook Estuaries in New Hampshire. PREP achieves this by working closely with local partner organizations, agencies, and municipalities to carry out the actions in our Comprehensive Conservation & Management Plan. Annually, PREP is working with the University of New Hampshire's Jackson Estuarine Laboratory to monitor 25 sites throughout the Great Bay Estuary, characterizing seagrass, seaweed, and sediment, along with water quality parameters.

**Fellow role:** Work with Lara Martin of the Jackson Lab to process seagrass, seaweed, and sediment samples. The candidate will have the opportunity to assist in the field (saltmarsh surveys, eelgrass restoration) if they are interested.

**Position requirements:** Must be detail-oriented and enjoy lab work. This position's main function is to accurately measure and characterize eelgrass and seaweed specimens. Careful data compilation, entry, and management are of utmost importance. The candidate needs to be comfortable working independently and indoors on tasks requiring significant focus. Access to a vehicle is highly encouraged but carpooling with other students is a possibility.

**Primary position location:** UNH Jackson Estuarine Laboratory, Adams Point, Durham, NH

**More information:** <https://prepestuaries.org/>, [Project Plan Overview](#)

## Great Bay Estuary Oyster & Eelgrass Restoration Project

**Overview:** Work with Piscataqua Region Estuaries Partnership (PREP) staff and partners to support a multi-habitat restoration project in Great Bay

**Background:** The Piscataqua Region Estuaries Partnership (PREP) is a National Estuary Program tasked with protecting, monitoring, and improving the water quality and overall health of the Great Bay and Hampton-Seabrook Estuaries in NH. PREP achieves this by working closely with local partner organizations, agencies, and municipalities to carry out the actions in our Comprehensive Conservation & Management Plan. In 2023 and 2024, PREP is working with the University of New Hampshire's Jackson Estuarine Laboratory on a habitat restoration project that will include 1 acre of new oyster habitat and ½ acre of new eelgrass habitat in the Great Bay Estuary.

**Fellow role:** Support the implementation and monitoring of a multi-habitat oyster and eelgrass restoration project in the Great Bay Estuary. Activities would include in-water harvesting and transplanting of adult eelgrass shoots and installing adult oysters per a planting plan, as well as collecting and working with monitoring data, supporting project volunteers in the field, and more.

**Position requirements:** Must be comfortable swimming and working in the water. Required gear includes a wetsuit with diving boots and a snorkel (a diving hood is recommended). A boating license to operate small craft is preferred. A car is required for traveling to and from the laboratory.

**Primary position location:** UNH Jackson Estuarine Laboratory, Adams Point, Durham, NH

**More information:** <https://prepestuaries.org/>

## Green Crab Fishery Research and Business Development

**Overview:** Work with NH Sea Grant staff and local partners to support development of a fishery and markets for the invasive green crab.

**Background:** The NH Green Crab Project has been researching several topics related to the development of a fishery for the invasive green crab, including timing of when green crabs molt to explore the feasibility of a soft-shell crab market (like blue crabs), development of culturally relevant seafood products, market analysis, and more.

**Fellow role:** The student selected for this role will have the opportunity to work with NH Sea Grant staff and interested members of the NH Seacoast community to explore development of culturally relevant seafood products, participate in market development, and contribute to research pertaining to maximizing soft-shell crab production.

**Position requirements:** Previous experience with fieldwork is encouraged, access to a car to reach field sites throughout the region is required.

**Primary position location:** This position is a combination of fieldwork in York, ME and work on campus in Durham.

**More information:** <https://seagrant.unh.edu/our-work/invasive-species/nh-green-crab-project>

## Human Dimensions of Fisheries and Aquaculture

**Overview:** Work with NH Sea Grant staff and partners to advance research and analysis related to the human dimensions of fisheries and aquaculture, with a focus on NH resident perceptions of aquaculture.

**Background:** While research often focuses on biological questions, management of fisheries and aquaculture also requires an understanding of the human elements, including but not limited to demographics, community perceptions, trust in science and management, economics, and more. NH Sea Grant is working with several partners to expand the role of social science and human dimensions research to help inform work in the fisheries and aquaculture space.

**Fellow role:** The student selected for this role will have the opportunity to work with NH Sea Grant staff and partners on several projects related to the human dimensions of fisheries and aquaculture. In particular, the fellow will have the opportunity to help analyze survey data to better understand perceptions of aquaculture by NH residents, as well as participate in several other projects.

**Position requirements:** Courses in sociology, anthropology, or other social sciences encouraged but not required. Coursework and/or interest in statistics preferred.

**Primary position location:** This position is based on the UNH campus in Durham.



## Public Health Implications of Microbial Pathogens and Toxic Chemicals in New Hampshire Shellfish

**Overview:** Work with NH Sea Grant staff and partners to support research on both the status and management options of microbial and toxic chemical contamination in shellfish and NH coastal waters.

**Background:** Long-term research at UNH will continue to explore how natural and sewage-borne microbial contaminants, and toxic chemicals, affect public and ecosystem health in NH shellfish. This year's focus will be on climate change factors, as global warming and extreme weather events are exacerbating these issues. In this project, the team will interact with NOAA, UNH and local agency researchers, as well as the NH Shellfish Program, NH Fish and Game, NH Division of Public Health and oyster/mussel farmers who would benefit from the results of the research.

**Fellow role:** The student selected for this role will have the opportunity to work with NH Sea Grant staff and other researchers to support field and laboratory work, data collection and analysis related to public and ecosystem health impacts associated with shellfish and other seafood in NH.

**Position requirements:** Access to a vehicle is highly encouraged but may be able to arrange carpooling with other students.

**Primary position location:** UNH Jackson Estuarine Laboratory, Adams Point, Durham, NH

**More information:** [www.lampreyriver.org/application/files/7817/0541/6044/2023\\_bact\\_tracking\\_1-page\\_final\\_summary.pdf](http://www.lampreyriver.org/application/files/7817/0541/6044/2023_bact_tracking_1-page_final_summary.pdf), [www.des.nh.gov/water/coastal-waters/shellfish/faqs#faq5436](http://www.des.nh.gov/water/coastal-waters/shellfish/faqs#faq5436)

and/or

<https://seagrant.unh.edu/volunteer/coastal-research-volunteers/current-projects/gulfwatch-blue-mussel-collection>