

Project Title: If you build it will they actually come? How seasonal variation in seagrass habitat structure drives changes in epifaunal community diversity

Nicholas Yoong Class of 2024

Using the Grua/O'Connell funding, I was able to attend the 2023 Benthic Ecology Meeting in Miami, Florida. At the conference, I gave an oral presentation on my research investigating the community ecology of Gulf of Maine eelgrass meadow communities in northern and southern Maine throughout the summer growing season. This work was a combination of work I had done last summer, throughout the Bowdoin Marine Science Semester, and during my independent study this semester. Eelgrass is a marine plant that performs numerous ecosystem services such as carbon sequestration, improving water quality, providing a nursery for fishery species, and enhancing biodiversity. A critical function of eelgrass is its ability to create an ecosystem by providing an area for algae to grow. The algae are then eaten by small marine organisms, which feed larger animals. Despite its importance, eelgrass has been declining globally, especially within the Gulf of Maine. Thus, Dr. Katie DuBois and I set out to observe how eelgrass meadows and the communities that live within them are changing between northern and southern Maine. My primary research finding was that eelgrass meadows in the south were less healthy than those in the north, and eelgrass communities changed dramatically between northern and southern sites throughout the summer. We found that northern communities were made up of native organisms, which you would expect to observe in the seagrass meadows, such as the blue mussel and some snail species. In contrast, southern communities had a higher rate of invasive organisms such as bryozoans and tunicates. These findings suggest a possible mechanism for the decline in eelgrass meadows in southern Maine, but further analysis is needed to be sure.

The experience and the connections I gained at this conference were invaluable. My career goal is to become a research professor in marine ecology. Presenting my work at the conference allowed me to communicate my research to other scientists and get feedback. Throughout the conference, I was able to network with various scientists, including potential graduate school advisors, about their research programs and techniques, which I could incorporate into my research. For example, I was able to go to lunch with Dr. Jonathan Lefcheck and his lab from the Smithsonian Environmental Research Center, where I learned and discussed the different eelgrass monitoring programs happening in the Chesapeake Bay. Similarly, I spoke with Allison Hall, a graduate student on photosystem II efficiency, a plant response metric which I am planning to measure during my honors project. Overall, I will leverage the connections I made at the Benthic Ecology Meeting by collaborating with the scientists I meet and gaining their insight on future project design. Attending the 2023 Benthic Ecology Meeting reaffirmed my love for science and has me excited about presenting research in the future.

Faculty Mentor: Katie DuBois

Funded by the Grua/O'Connell Research Award