Sustainable seafood production in the future

Mentor(s)

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Location

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Abstract

This project focuses on building resilience in our sea food systems. This will be achieved by establishing practices in relation to emerging species known to be resilient to climate change (e.g. scallops and sea urchins). It will also integrate sea urchins and their grazing habits to tackle problematic biofouling in shellfish aquaculture to reduce grower efforts and presence at farms, which in turn we hope will improve social acceptance of aquaculture in RI. The SURF Fellow will participate in transferrable skills development and application through the maintenance of research aquaria, monitoring marine animal health, assisting in physiology assessments, and managing seawater parameters, with data contributed to a shared database to enhance data-sharing skills. Additional responsibilities include conducting experimental design and implementing pilot trials and assisting in sea urchin fieldwork and sample processing to explore climate change impacts on reproduction and potential applications in aquaculture biofouling management and social acceptability of aquaculture. This project offers a comprehensive learning experience in resilience-building for ecosystems and seafood production in Narragansett Bay and New England.

Project Objectives

1. Enhance seafood resilience: Identify practical tools and strategies to mitigate climate change impacts on seafood production systems.
2. Strengthen research aquaria operations: Develop skills in animal health monitoring, husbandry, and physiology assessments.
3. Advance data management capabilities: Build proficiency in monitoring seawater parameters and managing experimental data in shared databases.
4. Support experimental and technological development: Gain hands-on experience in experimental design, pilot trials, and aquaculture innovation.
5. Evaluate sea urchin applications: Examine climate change impacts on sea urchin reproduction and their potential role in mitigating aquaculture biofouling issues.
6. Foster ecosystem and food production resilience: Contribute to broader efforts aimed at building resilience in marine ecosystems and food production systems in New England.

Occasional weekend may be required to conduct quick basic routine checks on the animals and seawater systems, and this will be scheduled in agreement with the research team across the project time. The fellow would also be expected to assist as needed on other projects such microplastics aquarium and/or field sampling. This project would be best suited for candidates with access to a vehicle for regular trips across campus and field work locations.