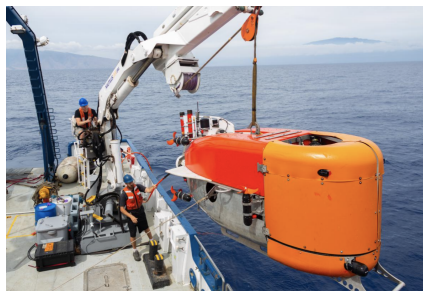


Dive into the **Bridge to Ocean Exploration (B2OE) Program** with the Ocean Exploration Cooperative Institute (OEI) at the **University of Rhode Island's (URI) Graduate School of Oceanography (GSO)**! Dip your toes into the multidisciplinary world that is ocean science with opportunities in video/data engineering, media asset management, technology asset management, applied coral science, and multimedia production.



The OEI (<https://web.uri.edu/oei/>) is a unique consortium of top oceanographic institutions: URI, Woods Hole Oceanographic Institution (WHOI), University of New Hampshire (UNH), the University of Southern Mississippi, and the non-profit, Ocean Exploration Trust. They work together to push the boundaries of ocean exploration with research and innovation in remotely-operated and autonomous vehicle operations, virtual engineering connectivity, and ocean science communication and engagement.

A core mission of the OEI is to inspire future generations of ocean scientists and engineers, and support the Blue Economy. The B2OE Program, based out of URI/GSO's Ocean Science Exploration Center, is an experiential program key to advancing this mission. Currently, the OEI is recruiting **up to eight students** to participate in this **PAID, part-time, experiential learning program** within these potential, project pathways:

- Computer science and machine learning**
- Ocean exploration data science**
- Systems development, ocean technology management**
- Tropical and temperate coral research**
- Media asset management**
- Multimedia production, storytelling, and/or video editing**

Project Pathway Breakdown- Tropical and Temperate Coral Research (lab-based)

- This project will be supporting research in Dr. Carlos Prada's lab, investigating symbiosis in Rhode Island corals via stable isotope analysis; connections to deep sea coral research will be explored.
- The student will work along URI graduate students to investigate energy allocation in the Rhode Island temperate coral, *Astrangia poculata*. The project, using compound-specific isotope analysis (CSIA), is focused on the following questions: 1) How does light availability impact symbiosis and morphological light modulation in temperate corals? 2) How is energy from heterotrophy (cannot produce its own food- a consumer) versus photosynthesis allocated differently within the coral? 3) How do changes in heterotrophy vs. photosynthesis affect coral physiological health?
 - *More project background:*
 - One of the most widely known symbioses is that between coral hosts and dinoflagellate algae of the family Symbiodiniaceae, hereafter 'symbionts'. Symbionts harvest light and provide corals with most of their energetic needs (> 90%) through photosynthesis and offer corals a broad physiological repertoire to cope with fluctuating environments. Because light is so critical to symbiont photosynthesis, scientists have dedicated decades of research to investigating the role of light in coral energy dynamics, morphological modulating of light microenvironments within coral skeleton structure, and physiological adaptations associated with light gradients.
 - Historically, bulk isotope analysis has been used to measure carbon and nitrogen isotope fractionation as proxies for heterotrophy and autotrophy inputs in corals. Through this project pathway a new technology/application is being explored –compound-specific isotope analysis (CSIA)– which permits researchers to break living tissues down into individual amino acids (AA), and allows detailed questions to be asked about how energy is allocated (e.g. identify the photosynthetic vs heterotrophic inputs of carbon and nitrogen in any organic tissue). The evaluation of this new technology and likely application to marine organisms will advance science by offering finer resolution to study energy allocation in the ocean.
- The student will conduct/assist with the following tasks:
 - Symbiont counts on temperate and tropical corals
 - Prepare coral samples for analysis using airbrushing and aliquoting (fractionation)
 - Conduct physiology assays including protein and chlorophyll content
 - Bleach and wax dip coral skeletons to quantify surface area
- The student will acquire/learn:
 - Basic data management & lab cleanliness skills
 - Common coral physiology protocols
 - Coral sample preparation
 - Coral symbiont density quantification
 - Methods in physiology assays (including protein and chlorophyll content)
 - Optional: basic R and github skills

- *Useful coursework/experience requested for this project pathway:*
 - Strong interest in STEM
 - *Preferred majors (but not required) for this pathway: Science, Biotechnology, Chemical Technology, Environmental Sustainability*
 - Completion of at least 2 community college science courses (e.g. biology, chemistry, geology, physics, oceanography)
 - Proven attention to detail and organization skills
 - Ability to work independently and as part of team (communication is key)

Benefits to BOE Program participation:

- PAID, part-time opportunity; up to \$17/hour salary (paid via stipend)
- Potential for onsite and/or tele-work
- Exposure to cutting-edge ocean science, engineering, and media production technologies and best practices.
- Collaboration with OECI personnel; field trips to OECI affiliated institutions and/or industry sites.
- Opportunity to remotely participate in expeditions aboard NOAA *Okeanos* and (EV) *Nautilus*.
- Peer-to-peer interaction with other ocean science and exploration interns.
- Networking opportunities with industry professionals and other students during a (virtual) “Blue Economy Career Awareness Fair”

In addition to the above mentioned part-time experience, *additional program requirements and expectations include:*

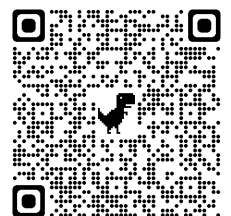
- Time commitment of up to 10h/week (November 2023- May 2024)
- Weekly tag-ups with mentors to gauge project progress and answer questions (mentors are also available via email for questions, etc. at any time)
- Bi-weekly tag-ups with B2OE program coordinator to gauge project progress and address any questions/issues
- Participation in OECI student events, including the Blue Economy Career Awareness Fair
- Final project summary report and presentation
- Participation in pre- and post-experience evaluation

Eligibility:

- U.S. Citizenship (or F-1, J-1 visa status if applicable)
- Currently enrolled CCRI students (undergraduate/associate's degree, and/or workforce certificate candidates)
- Degree, major, or intent to major in a field relevant to the OECI's mission; these can include, but are not limited to: STEM (science, technology, engineering and math), computer science, media production and graphic design, communications, education, and/or business operations/administration.

Application Requirements:

- Interested students must complete the [OECI BOE online application](#) on or before 11:59 pmET, October 9, 2023.
- In addition to this application, interested individuals will also be required to **submit their current resume or CV with 3 professional references listed** (who can speak to the applicant's character and professional and/or academic background- this can be a professor, advisor, teacher, community member, work supervisor, mentor, etc.).



Applications will be reviewed and analyzed based on merit and relevant experience. Potential participants will be notified by **October 16, 2023**, for an in-person or virtual interview. Final selections will be made on or before **October 30, 2023**, and candidates will be notified of their program status. **The anticipated program start date, with an on-site orientation at URI's Graduate School of Oceanography campus in Narragansett, RI, will be November 9, 2023.**

Questions? Please contact Holly Morin (holly_morin@uri.edu).