



STUDENT INTERNSHIP APPLICATION FORM - SUMMER 2021

All information on this form must be typed.

Internship Information

|                      |                                    |
|----------------------|------------------------------------|
| Internship Host:     | California Ocean Science Trust     |
| Internship Title:    | Science Policy Internship          |
| Internship Location: | Sacramento, California (or remote) |

Applicant Information

|  |                             |                                     |                             |
|--|-----------------------------|-------------------------------------|-----------------------------|
| First Name:  |                             | Last Name:                          |                             |
| Student ID:  |                             | CSU Campus:                         | Northridge                  |
| Primary Email:                                     |                             | Major:                              | Biology                     |
| Phone:   |                             | Overall GPA:                        |                             |
| Status (Soph, Junior, Senior, Grad Student):       | Grad Student                | Anticipated Graduation (mm/yyyy):   | 12/2021                     |
| Date Spring Semester/Quarter Ends:                 | May 26 <sup>th</sup> , 2021 | Date Available to Start Internship: | May 26 <sup>th</sup> , 2021 |
| Will you be enrolled at a CSU for Fall 2021? (Y/N) |                             | Y                                   |                             |

Have you previously been employed by, interned with, or volunteered for the internship host?

Comments (If yes, please describe):

## Relevant Experience

For each section below, provide the information requested that complements the areas of knowledge listed in the Preferred Experience and Capabilities and/or Eligibility/Requirements sections of the internship you have selected. The boxes below will expand as you type; please feel free to use as much space as you need.

### List academic coursework (e.g., marine ecology or biology, fishes of California, statistics, etc.):

General Biology, Environmental Issues, Analytical Geometry & Calculus, Intro to Cultural Resource Management, Environmental Health & Development, Wildlife Ecology, Global Change Ecology, Intro to the Oceans, Environmental Philosophy & Ethics, Animal Behavior, Restoration Ecology, Wildlife Case Histories, Climate Dynamics, Probability Statistics (Life Sciences), Sierra Nevada Ecology, Principles in Conservation Biology, Communicating Ocean Science, Coastal Marine Research, Mechanical Design of Organisms, Marine Environmental Issues, Experimental Invertebrate Biology, Biometry, Seminar in Ecology (2), Seminar in Evolution, Marine Ecology, Computer Modeling (Biology)

### List computer programs in which you are proficient (e.g., Microsoft Word, Excel, Access, R, Matlab, ArcGIS, minitab, Solidworks, etc.):

Microsoft Word, Excel, Adobe Acrobat, R, RStudio, GitHub, ImageJ, PowerPoint, Expensify, Wordpress/Weebly, Slack, Zoom

### Describe your field and/or laboratory experience (include experience gained through coursework as well as independent study):

While enrolled as a student at the University of California, Berkeley, my coursework provided me with numerous hands-on fieldwork opportunities. I graduated with dual degrees in Marine Science and Conservation & Resource Studies and also completed a minor in Forestry and Natural Resources Management. My fieldwork courses introduced me to ecosystem monitoring at the Richmond Field Station, intensive field research and management at the University of California Forestry Field Station, and field trips to UC Natural History Reserves throughout California.

On the Berkeley campus, I volunteered at the Museum of Vertebrate Zoology writing species accounts for new amphibian species and working in the Specimen Preparation Lab mentoring new volunteers to collect samples for the Museum of Vertebrate Zoology's DNA collection. I was taught professional record keeping, time management, and collaboration. I also taught ocean science at the Laurence Hall of Science through a course called "Teaching Ocean Science."

During the final term of my undergraduate education, I enrolled as a student at UC Davis to take part in their Coastal and Marine Science Institute at the Bodega Marine Laboratory (BML). Under the mentorship of Professor Eric Sanford, I was part of an independent project on the dietary preferences of juvenile ochre sea stars, *Pisaster ochraceus*. I presented my results at the BML Final Research Symposium. Through this experience I became proficient at identifying intertidal invertebrates along the California coast. I learned how to carry out a research project from start to finish, including permits, field collection, aquarium care, experimentation, data analysis, and stakeholder communication.

My next role as an environmental educator and deckhand while living on a three-masted schooner in Long Beach. My job was to teach the students how to snorkel, identify organisms,

understand plastic degradation, and how to reduce individual carbon emissions. I also taught conservation, kayaking and wilderness survival to K-12 students in Marin, California through a program called Trackers Earth. Environmental education taught me to work with broader community and listen the knowledge that both scientists and non-scientists can bring to the table.

In 2017, I worked as a research assistant with the Smithsonian Tropical Research Institute in Panama under Dr. Nancy Knowlton's project examining spatial scaling patterns of tropical marine biodiversity. I collected, identified, photographed, and preserved marine invertebrates from over 30 sites in Bocas del Toro. This research scaled across multiple ecosystems, including seagrass beds, mangrove forests, and soft sediments. I processed and preserved bulk community samples in preparation for DNA metabarcoding, conducted habitat assessment surveys, and assisted on a MarineGEO project collecting and processing water samples for eDNA. While in Panama, I also became a PADI certified SCUBA diver which led me to now become an AAUS Scientific Diver. This supported my ongoing passion in working closely with the community and learning from the local culture that my research could potentially inform.

For the next two years, I worked as a seasonal field and lab technician in the Menge-Lubchenco Lab at Oregon State University (OSU). I was responsible for the fabrication, installation, and monitoring of both small and large predator experiments. I conducted mussel growth and predation rate trials, as well as mussel recruitment and mobile predator transect surveys. I also deployed, collected, and analyzed long-term field monitoring of mussel, barnacle, and juvenile invertebrate recruitment experiments. My role included managing all undergraduate student volunteers in data processing and entry of these experiments. The highlight my job at OSU was training and supervising a diverse array of undergraduate student researchers and volunteers. This role combined my love of teaching with hands on experimental research. I am continuing to analyze some of the intertidal research data collected from my time in Oregon. As lead author for a publication with my previous mentor, Dr. Sarah Gravem, I am analyzing population demographics and vertical distributions along the intertidal gradient of four predator species at over 25 sites from Oregon to Central California. This detailed inventory of size-specific zonation and latitudinal distribution enables us to establish a baseline distribution of these predators and may allow us to infer what may happen as the climate warms and sea levels rise.

As a current graduate student at California State University, Northridge (CSUN), I am working at the intersection of research, education, and industry. For my thesis project, I work directly with a local aquaculture facility, *The Cultured Abalone*, to understand the effect of marine heatwaves on various sizes of red abalone. Abalone are high-value local fishery whose sustainability hinges on our ability to supplement the market with aquacultured animals. This experience has allowed me to use my knowledge of invertebrate physiology to support a local sustainable fishery that I care deeply about. With my results, I will be able to inform aquaculture stakeholders about the changes that future ocean warming will have on the growth and respiration of their brood stock so that they can best prepare and increase profit and hopefully contribute toward effective marine conservation policy to increase the numbers of black and white abalone in the wild. Through this I can not only assist other scientists in filling knowledge gaps, but also inform policy makers, and industry owners on how to foster healthy ecosystems and infrastructure. The 6+ years I have spent after obtaining my undergraduate degrees working in science and education have been important for me to hone in on my marine ecology skillset and I believe this internship would be an important next step in defining my marine policy career.

## Interest and Qualifications

Please complete the sections below. The boxes below will expand as you type; please feel free to use as much space as you need.

**Please describe why you are interested in a summer internship in general. What do you hope to gain, learn and experience?**

As a first generation woman scientist, I have tried to dip my toes into as many different scientific experiences as I could. While I near the end of my Master's education (graduating in Fall 2021), the pandemic made it necessary to complete my entire project on campus following COVID guidelines. I am thankful was able to follow my original timeline, but I was hoping to also incorporate a field based research experience into my graduate education. A summer internship would provide an opportunity to expand on my current research background while working with stakeholders and the local community. I hope to establish connections with other researchers in similar field that are passionate about conserving local marine environments and communicating the findings with the public. I also hope that this internship could help give insight to my next steps in to a career in marine policy.

**How do you feel the internship you have selected will complement your educational experience at the CSU?**

Working with California Ocean Science Trust would be an incredible opportunity to work with a small, well-run non-profit organization focused on proper ocean policy advising. My education at California State University, Northridge (CSUN) has provided me with a strong foundation for data collection, management, and analysis that I believe would make me a useful component to the organization. My current thesis project on marine heatwave impact on aquaculture industry has given me the opportunity to work with local stakeholders, and I would like to use these new computational and communication skills to potentially work with a larger stakeholder groups under the Ocean Protection Council Science Advisory Team. I believe this internship in particular would teach me how to best educate and inform policy making decisions when it comes to future ocean warming events.

This year at CSUN, I have taken on roles to grow as a community organizer as well as a researcher. I am a co-founder for CSUN's first Biology Student Association tasked with preemptively tackling challenges that hinder underrepresented undergraduate student success, such as racism and classism. I am also a member of the CSUN "pod" *Unlearning Racism in Geoscience (URGE)*. We work as a group of faculty and students to discuss and promote anti-racist policies on campus. These experiences will help me advocate effectively towards an equitable and just science-based marine policy career that is inclusive of local communities, Tribal entities, and stakeholders. This opportunity would allow me to use what I am learning throughout my graduate experience in a professional career oriented context, and allow me to translate science writing and communications to policy makers.

**What are your educational and career goals?**

After graduating with my Masters in Biology, I am hoping to pursue a marine policy career, and eventually work for a governmental policy organization. This internship would provide a glimpse into what organizing and managing scientific research to recommend to state partners would look like. I will be completing my graduate education in Fall 2021, and am hopeful that I will be accepted to the Knauss Marine Policy Fellowship, located in Washington D.C. I will also be applying to The California Sea Grant State Fellows Program, dedicated to marine policy locally in California. My career goal is to focus directly on marine policy, specifically with the implementation of policy such as the Magnuson-Stevens Act and the California Ocean Resources Stewardship Act. I believe policy is a conduit for actionable science, and I hope to invest my next chapters of my career to understanding how policy can shape deeper community interactions and how education can increase community support for coastal protection.

**Please describe your interest in the internship you have selected.**

- **What interests you most?**
- **Why do you feel you are uniquely qualified for this opportunity? Please be sure to include your specific skills and qualifications and address the Preferred Experience and Capabilities section of the internship description.**

Please be as detailed as possible. This section is extremely critical in evaluating your application. The box below will expand as you type; please feel free to use as much space as you need.

I have devoted my Master's thesis project to better understanding the effects of coastal marine heatwaves on the popular aquaculture species, *Haliotis rufescens* (red abalone). I am hoping to transfer these skills into a practical management setting, ideally with a professional entity such as California Ocean Science Trust. I often wonder what the local community and fishery stakeholders may be seeing that coastal researchers are missing. My goal is to continue to work at the intersection of science and management, and this internship would be a great next step in my career in marine policy. I am especially interested in learning more about the OPC SAT. Working with a team that has direct influence on state policy making would be an incredible opportunity.

I am uniquely qualified for this opportunity because I have a strong ability to work independently as well as in a team environment. COVID-19 has made the past year of my graduate research almost entirely independent research. I have successfully performed a two month marine heatwave trial in our on-campus mesocosm, and am invested in working with local stakeholders to communicate relevant scientific research. I also have extensive experience working as a team during long days in the field as well as managing an office of over 100 people in San Francisco. I have excellent verbal, written, and organizational skills and have the ability to re-locate wherever necessary. I have experience with MS Office, Rstudio, Github, and ImageJ and am proficient in the use of scientific instrumentation including HOBO loggers, Orion pH sensor, YSI kits, titrations, and secchi disks. I have taken undergraduate level statistics, graduate level biometry, and am currently enrolled in a computer modeling course to expand my use of the R coding language. Having worked as a scientific researcher, educator, and directly with stakeholders in California, Panama, and Oregon, I have a unique understanding and ability to involve public outreach alongside policy recommendation, creation, and implementation. This internship would allow me to move forward in gaining the skills necessary to work in a marine policy career.