

Scholarships eligible for:

- 1) John E. Bowman Travel Grant
- 2) CIEE-ISP Scholarship
- 3) Jennifer Ritzmann Scholarship

Rachel Carson once wrote in her book titled, *The Edge of the Sea*, that “understanding comes only when we can sense the long rhythms of earth and sea that sculptured the land forms and produced the rock and sand of which it is composed; when we can sense with the eye and ear of the mind, the surge of life beating always (1955).” The rhythms of life’s heartbeat have produced incredible biodiversity on this planet, which is especially evident in Costa Rica. I believe that biodiversity is one of the most important concepts encountered in biology, and I therefore envision my eventual career to be one that is dedicated to the educating of others, the conservation, and the celebration of biodiversity. I admire Rachel Carson because she was a steward of the sea. She was able to understand the power and beauty of the ocean and had a gift for using science and writing to convey the importance of conservation to others, hence building a stewardship ethic.

My intentions while abroad are many. In order to educate others about biodiversity in our natural world, I need to continue to experience its power first-hand through scientific observation and research. The hands-on field experience I accumulate in Costa Rica will allow me to meet these goals. I will be able to conduct my own research project, record the diversity of organisms we encounter on field trips, and then expand this knowledge across environments and cultures. Meanwhile, I will make connections with faculty, students, and local Costa Rican communities. For example, I hope to see how faculty members do research and how that fits into the practical

‘A Walk Through the Tidepools’

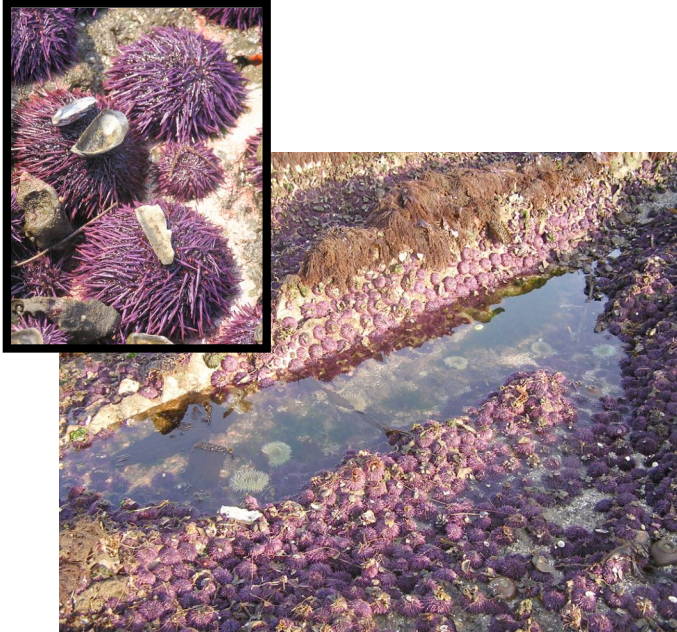


This is South Cove, Cape Arago in Charleston, Oregon. Low tide exposes lots of beautiful intertidal habitat and fascinating sea creatures. For six months this year I was involved in an Environmental Education initiative to develop lesson plans to use at this site. I was lucky enough to also help implement those lesson plans for school groups and visitors. I'd like to take you on a typical tidepool tour of this area, so contain your excitement (if you can) 'cause this is going to be great!

Why do you think these animals are clustered so closely together? There are many invertebrates and plants that compete for space in the intertidal. Some animals like these aggregating anemones form large colonies by cloning themselves. If they detect individuals with a genetic makeup different than their own, they will use stinging cells in their skin as war clubs to attack the space invaders. You can often see a discrete space on a rock separating two clones.



It looks like you have found a gumboot chiton. Like a snail, it is a type of mollusk. Why do you think it is sprawled out upside down like that? Most likely it is heat-stressed and it is trying to aerate its gills. While I'm thinking of it, take a closer look at those gills. Sometimes commensal scaleworms inhabit these oxygen-rich areas.

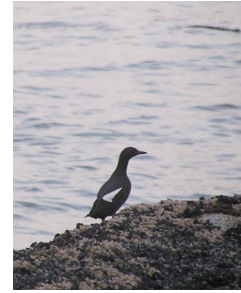


Whoa! Do you know what all those are? Yep, purple sea urchins. Do you notice anything interesting about their surroundings? There is no seaweed around them! The mouths on the undersides of these herbivores have an intricate jaw called Aristotle's lantern, which has over 80 working parts. Sea urchins are such efficient grazers that the algae only survive higher than the urchins can live.

That is beautiful! You have spotted a sunflower sea star, a major predator of the urchins you just saw. How do you think they eat those spiny urchins? After using its "blazing" speed to catch an urchin, a sea star first paralyzes its prey with a chemical, and then it devours and consumes the urchin whole. About 24 hours later, it will spit out the test (the urchin's shell) and spines after digesting all of the organic material.



Well, it looks like the tide is coming in, so we'll need to step higher onto the barnacle and mussel beds. What is that bird out there? Oh, it is a pigeon guillemot, a resident bird of the Oregon coast. It is wearing its finest breeding plumage, so a chick is on the way, if it hasn't already hatched! I hope you have enjoyed yourself on this tidepool tour.



For as long as I can remember the natural world has been an inspiration to me both through its tremendous power to meditate and connect me to my spirituality and through its thrilling diversity of habitats. Growing up in Oregon has given me many opportunities to feel this inspiration whether in a small tidepool or on top of a mountain peak. From on top of south sister I can see sagebrush deserts, Douglas fir forests with blue glacial lakes, and turning my neck I can gaze at a range of snow-capped mountains leading to a valley of wetlands and farms. Each view represents a habitat that has been shaped by different forces and hides a story that I want to learn and share.

I want to offer people of all ages experiences in nature that allow them to feel connected to it. Many environmental issues result from a lack of awareness, which I believe can be remedied by using environmental education. I guided over 500 children and adults through the tidepools and I was able to see a large disconnect between them and the ocean. Still, I witnessed an innate appreciation of nature's wonder in those I guided. It was these observations that lead me to seeing the power of environmental education that I have discussed. However, I believe that in order to become a better environmental educator it is essential that I am able to have other experiences across different cultures and habitats.

With such a large emphasis in studying marine environments in my time at the University of Oregon, I have not had a chance to explore terrestrial habitats as much as I would like. It is hard to imagine what I might encounter in the rainforests of Monteverde, but as amazed as I am at the diversity of tidepool life, seeing tropical biodiversity firsthand will be a mountaintop experience. Likewise, a homestay with a Costa Rican family will enhance my awareness of cultural diversity, which is sometimes hard to accomplish in a homogenous state such as Oregon. I look forward to honing my Spanish communication skills and improving my abilities to connect with people whose backgrounds are different from my own. I hope that the program at Monteverde, with its interdisciplinary approach to conservation, continues to increase my appreciation of the natural world while learning new ways to bring awareness to others.

application of conservation biology in tropical communities. I also hope to play music, have conversations with new people, and go to a local salsa club. I am exceptionally excited about having a local homestay, where I will be able to expand my Spanish skills and learn about a new culture while broadening my world perspective.

A scholarship will allow me to meet goals related to education, increased global awareness, and cultural immersion. During the whole of my college career, including my time abroad, I pay for my college education in three ways: year-round work, loans, and scholarships. I cannot go abroad without greatly increasing my college debt, but this scholarship would provide some financial relief. This is important because when I return from Costa Rica, I hope to focus on applying myself to education and conservation rather than simply making money to get myself out of debt. I plan on incorporating the skills I gain in Costa Rica into international conservation projects, environmental education, scientific research, and artwork with the purpose of inspiring stewardship in others, just as I found inspiration in Rachel Carson.