While I was looking for an internship this summer, I was mainly hoping to find a program that was similar enough to my interest in marine biology and hopefully one that allowed some flexibility in my schedule. When I found CMIL's summer internship, I was so excited since it seemed tailored to my interests and needs, and I was even more elated when I was accepted. Not only did this program teach me so much about research, working with a team, and general marine biology, it also gave me insight into what trajectory I wanted to take once I got my degree. Through the several workshops CMIL led us interns through, such as understanding science, career building, and path to graduate school, in conjunction with aiding my mentor on their lab and field research, I was able to narrow my passion down to marine rehabilitation. Additionally, I was provided with several opportunities to make important connections in these workshops to help myself in my future career.

For the summer, I regularly came in one to two times per week, either one eight hour day or two four hour days. Usually the day each week was consistent however it differed depending on my mentor's agenda for the week. I am very appreciative that the hours could be so flexible, if I was scheduled to come in but an emergency came up I knew that I would likely be able to make it up another day. I also appreciated that while we only get paid to work eight hours per week, we could come in to help our mentors as volunteers if we wanted more experience. And we were encouraged to volunteer for any other students' projects that interested us as well as develop our own little side experiment alongside our mentor's if time allowed it.

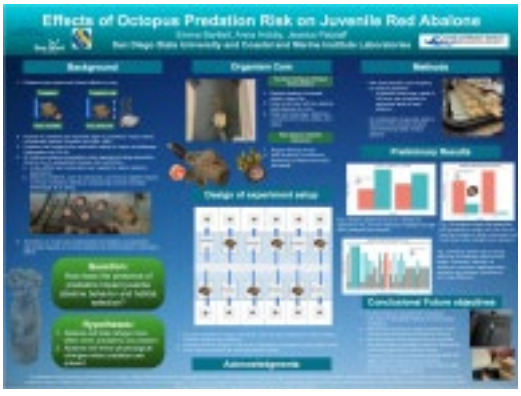
This summer, I worked with Jessie Patzlaff on her project looking at how abalone behavior changed when in the presence of predators in order to understand predator impacts on abalone recruitment. Her overall question was: How does the presence of predators impact juvenile abalone behavior and habitat selection? I loved working on Jessie's project because it involved a lot of animal husbandry. To conduct the experiment, we had an abundance of red abalone, eight octopuses, several anemones, and sea urchins. A big part of my role on this project was collecting sea urchins and taking care of the animals. We would collect mussels and kelp as food, cleaned all enclosures daily, and interacted with the octopuses to keep them happy and healthy. Over the course of the summer, four out of nine of the collected octopuses laid eggs (three of which were impregnated in the lab), and sadly one octopus was eaten by another. It was a lot of
fun for us to watch how the mothers' behavior changed, and to hypothesize what may happen differently for the eggs and the mothers being in a lab setting versus the ocean. While it would have been a great opportunity for the other mentee and I to experiment with the octopus eggs, neither of us had the time available to pursue it.

The first few weeks of the internship we mainly spent the day constructing the setup for the

experiment. This entailed a lot more carpentry work than I had realized, as we needed to use
lots of equipment and materials throughout the trial and error of getting each aspect of the setup correct. I was very surprised to learn how much detail, thought, and creativity goes into creating an original question and experiment. We often had to scrap something we had spent time on because of a nuance she realized it would have caused. There's a lot of trial and error so it was helpful to bounce ideas off of each other to narrow down the most concise setup. After a few weeks we were able to do our first trial. We had constructed 12 refuges for the abalone to have an anemone and an urchin as shelter options, then put each of those in a tub being fed water by a top tank, in which six had an octopus and the other six didn't. Throughout 48 hours we used periodic scan sampling to record the behavior and location of the abalone, using an underwater scope to determine their precise state. While we didn't get obvious results of differences between the abalone with predator cues and those without, we did notice that abalone tend to seek shade or shelter, and generally finding and staying in a shelter is more common in the abalone with a predator cue.

After this trial was conducted, we got together to discuss future directions, and settled on a succession of several smaller trials in which we measure: simpler abalone habitat preference, predator preference of abalone size, and predator feeding capacity. Jessie sent us some scientific papers to read on these topics, gave us pointers on how to digest them, and also taught us how to make a protocol for these experiments.

To end the summer, we worked on a poster to present at CMIL for other students and interns. I hadn't made a scientific poster before, so Jessie helped us and gave a lot of insight into how to make the poster informational and visually appealing. Unfortunately I ended up getting covid so I had to quarantine for the last week of the internship, but we were supposed to give a short 30 second elevator pitch about our poster and our experience this summer.



In all I'm very grateful to have been provided this opportunity. I gained so much knowledge, skills, and confidence in marine biology that has immensely helped me in deciding my path after I graduate. Thank you CMIL and thank you Jessie for a great summer!