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Jennifer works with the NSF research center CAICE (Center for Aerosol Impacts on Climate and the Environment). Generally, CAICE studies the ocean, looking at water composition/structure and how this enables and affects the formation of sea spray (aerosols). These aerosols have a large impact on weather, like cloud formation, and also on air quality and climate. As a biochemist in the group, Jennifer tries to uncover the biochemical origins of these phenomena. Meaning, she tries to understand what marine bacteria and phytoplankton in seawater make and how they make it. If we understand how microbes make the substances they do we can understand what environmental conditions cause them to be made, and consequently how this affects climate.

What inspired you to work in your current field?
I always had a natural curiosity and need to understand the mechanics of life that led me to study biological science. After I got my undergraduate degree in biochemistry, I didn’t want to work in pharmaceuticals so I pursued alternatives. That landed me at a small start-up company looking to make biofuel from algae. I fell in love with algae the first time I looked at it under the microscope. The rest, as they say, is history.
Please describe the path that led you to where you are now:
I got my undergraduate degree at Boston University in biochemistry and molecular biology. As an undergraduate, I volunteered in a neuroscience lab and did research looking at hormone cycling in rats. While I found my research compelling I wasn’t sure it was for me, so come graduation I decided to work in industry for a bit to figure out what I wanted to do. I started working at an algae biofuels company and found my niche and passion. I went through a few jobs in algae biofuels and then decided I finally wanted to get my graduate degree so that I could both further my career and strengthen my knowledge and understanding of algae metabolism. Now I’m working towards my PhD at UC San Diego.

What experiences helped prepare you for your career?
Certainly, my undergraduate volunteer research was probably the most valuable thing I did to prepare myself for my career, along with the various lab and advanced biochemistry classes I took. The experience I got in my early career in industry was also very helpful to my development.

Please share any funny/inspiring stories or favorite things about your career:
A labmate had too much pressure build up in his algae extraction apparatus one day. To note no one was hurt, but I was looking towards it and saw the most beautiful explosion of bright green liquid occur in his hood. The walls and glass were stained green, as was he, for a week. I started calling him the hulk.

Do you have advice for middle school and high school students interested in a career in science?
First and foremost, follow your passion. Passion will get you through the challenges that are sure to be ahead. Second, if you don’t know what you’re passionate about yet, don’t sweat it. It took me a long time, even after I graduated until I found something I really wanted to dedicate my career to. Get out there, volunteer, get experience, even if you’re scared or unsure. Sometimes the best teacher for what we want is learning what we don’t want.

Are there any resources you would recommend for students looking at a career in ocean and earth science, especially at UCSD and SIO?
Check out the CAICE website, caice.ucsd.edu. We always have various programs at multiple educations levels for students looking to get involved in atmospheric science!

Favorite quote?
“Two roads diverged in a wood and I- I took the one less traveled by, and that has made all the difference.” Robert Frost