Katherine Zaba
PhD Candidate, Physical Oceanography Research Division, Scripps Institution of Oceanography, UCSD

Katherine is a third year PhD student in the field of physical oceanography at Scripps Institution of Oceanography. For her research, she uses data from autonomous underwater gliders, called Spray gliders, to analyze the California Current System. She is interested in understanding how climate variability affects our coastal ocean; for example, what are the regional effects of El Niño and La Niña events?

What inspired you to work in your current field? Broadly speaking, I was looking for a career that would allow me to merge my interest in mathematics with my interest in the environment. As a student, I had a strong affinity for math and physics. As a native Californian and world traveller, I grew to love the outdoors by spending countless days in both coastal and mountainous settings. I developed a curiosity about the dynamics of the
planetary environment and a fascination with describing, and ultimately predicting, its patterns through a mathematical framework. Originally, I wanted to be a meteorologist, but a series of oceanography-related research, internship and job opportunities led me into the field of physical oceanography.

Please describe the path that led you to where you are now:
For my undergraduate education, I attended the University of California at Los Angeles, where I double majored in Applied Mathematics (B.S.) and Atmospheric, Oceanic & Environmental Sciences (B.S.). Immediately after graduating from UCLA, I travelled to Tanzania to participate in Theiss Research’s Zanzibar Project, which focused on observing and modeling the dynamics of the Zanzibar Channel. When I returned to the US, I interned at Applied Operations Research, Inc., a naval contractor. After a few months, the internship transitioned into a full-time position as physical sciences analyst. Interested in expanding my knowledge about physical oceanography, gaining sea-going fieldwork experience and participating in innovative research, I applied to graduate schools. Currently, I am in the third year of my PhD program at Scripps Institution of Oceanography.

What experiences helped prepare you for your career?
Each academic, research and job experience along my path has been beneficial towards my career aspirations. My undergraduate education provided me with a strong technical background in math and relevant physical sciences. My experience with the Zanzibar Project introduced me to sea-going fieldwork and collaborative, international research. My job experience at AOR, Inc. improved my proficiency in data analysis and computer scripting. It also introduced me to the technology and application of underwater gliders, which are now the basis of my PhD thesis. My experience as a graduate student at SIO has been invaluable. At the forefront of physical oceanographic research, SIO provides students with the opportunity to take on interesting research projects and work with leading experts in the field.

Please share any funny/inspiring stories or favorite things about your career:
One of the perks about being an observational physical oceanographer is the opportunity to explore distant parts of the world. Various fieldwork opportunities have taken me to remote islands that I had previously never even heard of, like Zanzibar and Palau!

Do you have advice for middle school and high school students interested in a career in science?
In your studies, try to establish a strong foundation in core subjects like math, physics, biology and/or chemistry. In your free time, get in touch with scientists who work in the field that interests you. If possible, you could do “informational interviews” with professional scientists to get a feel for what it is like to work in
the field. Scientists are excited to talk about their research … and who knows, it might lead to volunteer or internship opportunities!

Are there any resources you would recommend for students looking at a career in ocean and earth science, especially at UCSD and SIO? The Marine Physics Laboratory has a summer internship program (http://www.mpl.ucsd.edu/news/mpl.internships.html), but I think that it is intended for undergraduate students.

Favorite quote?
“Twenty years from now you will be more disappointed by the things that you didn’t do than by the ones you did do. So throw off the bowlines. Sail away from the safe harbor. Catch the trade winds in your sails. Explore. Dream. Discover.”
– Mark Twain