



Julie Robidart

Senior Scientist, Biosensors and Molecular Ecology

“I develop and apply sensors and samplers to capture and analyse microbes active in marine biogeochemical cycling. I primarily develop and translate design requirements for novel technological developments to full-time engineers, but I have also developed microfluidics and mechanical components for instrumentation. Finally, a lot of my work involves interrogating DNA / RNA sequence databases to develop novel analytical assays to quantify genes, transcripts and proteins from marine organisms. This is important because it expands the capabilities of molecular biosensors (i.e. number of organisms/cycles we can analyse).”



Qualifications : I have a Bachelors of Science (BS) in Aquatic Biology from University of California, Santa Barbara, and a minor in Spanish. My PhD is in Marine Biology.

Career Pathway : PhD from Scripps Institution of Oceanography, Postdoc at Harvard University and a joint position between the Monterey Bay Aquarium Research Institute and the University of California Santa Cruz.

Number of days at sea : Last time I counted, about a year.

Favourite thing about your work : Developing and working with new technologies allows me to address questions that were impossible to address previously, enabling discovery. I also love the creativity involved in design and the feeling of satisfaction when I (a lowly biologist) can fix broken instruments myself. On the science side, I enjoy planning collaborative research before cruises, and then writing the papers together afterwards. The camaraderie that comes from going to sea is really great and expands scientific networks.

Best technology you've used : I'm lucky enough to have worked with the Deep Submergence Vehicle 'Alvin', a unique vehicle for ocean exploration. The ability to see hydrothermal chimneys, giant clams and human-sized tubeworms firsthand, as well as the abundance and diversity of tiny planktonic animals swimming by your porthole would inspire anybody.

Support for equality and diversity : Compounding the negative impacts of implicit bias, inequalities in education and resources contribute to a science and engineering workforce that does not reflect the broader population. In order to promote diversity in STEM, I have led tours for robotics clubs and led science activities for socioeconomically disadvantaged high schools. A Science of Diversity journal club enabled scientists and engineers to allot time in their research schedules to learn about the problems and address potential solutions to move towards balance in STEM.