



Lessons from a Little Yellow Submarine

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Sub pilot, Erika Bergman, leads divers below the decks. (Credit: Steve Moore -CSUMB)

On a foggy night, a little yellow submarine is docked in Monterey Bay. The research submersible is about to introduce a group of young people to a whole new world and possibly a new line of work. Youth Radio's Denise Tejada went along for the ride.

Chris Randolph and Bailey Da Costa are juniors at Aptos high school in Aptos, California. They are part of the school's robotics club. Last year they built a small, remote-controlled submarine that actually explored a shipwreck. Now, team-member Michael Sheely is looking forward to stepping up their game, with some help from the pros. Sheely says, "this year the theme for our robotics competition is going to be observation, so we're just getting a feel for how the professionals do that sort of thing."

What better way to learn than to experience underwater observation first-hand? Guillermo Söhnlein, founder and Chief Operating Officer of [Ocean Gate](#)*, the ocean exploration group behind today's dive, introduces the young ocean-explorers to the submarine, Antipodes. The name comes from a Greek term Plato used to describe the Earth's two surfaces: one above and one below. This sub goes between the two.

Before heading out, Söhnlein first briefs the students on Antipodes' many features and fail-safes. This sub can carry five people to a depth of about a thousand feet. It weighs nearly 15,000 lbs, but to maintain neutral buoyancy, pilots can tell when it's just 10 lbs too heavy or light. Like a giant pair of lungs, it pumps pure oxygen in and carbon dioxide out. In a worst-case-scenario, Antipodes is equipped with an extra 72 hours of air and emergency life support.

Today's mission fortunately only lasts two hours. Another research vessel tows the sub to the right depth and releases it into a world few humans will ever get to see. The submarine's pilot, 22-year-old Erika Bergman, says the view is incredible. But beyond the beauty, she says manned-submarines provide one thing that other forms of ocean exploration can't: us. Bergman argues, "there's no replacement for a human being and a human brain being down there and interacting with the environment."

The students stayed above the water, observing from the ship's deck, but Da Costa from the Aptos high school robotics team, couldn't agree more; "I see things and want to know how things work and seeing stuff like this, it brings it all together."

For an alternate take on our ocean adventure, check out this podcast from Youth Radio's [Teresa Chin](#). Check out more from Youth Radio's podcast [here](#) and Youth Radio's science desk [here](#), including [Reinventing musical instruments](#), [Green Chemistry](#), and the [Science of Taste](#).

*Update 12/10/12 Guillermo Söhnlein is with Ocean Gate Inc. [The OceanGate Foundation](#) is the non profit organization that plans and funds educational outreach through ocean exploration.