

How do you study fish in Antarctica? Ask these CPS students, who built a probe



See 2013 footage from the Fish Spy — built by students at Lindblom Math & Science Academy — in the Southern Ocean in Antarctica. (YouTube)

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Blue Sky Innovation

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A group of Lindblom Math & Science Academy high school students sure seem excited to be working on a sinking project.

That's because it'll be used to help research fish in the Antarctic.

The eight robotics enthusiasts worked through the weekend to make a device that will be used for a spring expedition to research Antarctic icefish, the only known vertebrates with no red blood cells.

"We get experience. I get to say I was involved in a research project," said Faith Jones, a senior at the selective enrollment [Chicago Public Schools](#) high school in West Englewood. "And I get to use power tools. I love that."

The time-lapse photography system, called Fish Spy, consists of a GoPro camera, a marine battery and an underwater light. It was shipped Monday morning.

The Fish Spy will help provide new insights to the biology and ecology of the icefish by allowing researchers to study them in their natural habitat, said Kristin O'Brien, associate professor of biology at the University of Alaska Fairbanks.

It's the second time she and her team have worked with students from Lindblom to study the icefish.

"We wanted to involve young people in our research because we're training the next generation of scientists," O'Brien said. "We want to encourage their interest in science and expose them to the many different career opportunities in science with the long-term goal of increasing diversity in science."

Along with Elizabeth Crockett, associate professor in the Department of Biological Sciences at [Ohio University](#), O'Brien is co-principal investigator on the expedition, scheduled to run from April through July.

Little is known about the Antarctic icefish's reproductive biology, important for understanding population dynamics and for establishing commercial fishing policies in Antarctica, she said. The temperature and depths of the icefish's environment make the study of the animals challenging, she said.

"Antarctica is a really unique environment, and it's fascinating — and not something that students are exposed to in their general curriculum," O'Brien said.

The Fish Spy project is led by Lindblom biology teacher Paula Dell, who has worked with the researchers over the past several years, after meeting through the PolarTREC program that allows teachers to participate in field research in polar regions.

It's the latest in a series of projects Dell has had students work on for the team, at researchers' requests. A different Lindblom student group in 2013 developed the first version of the Fish Spy, a more basic device — a frame with a light and a camera tethered to the back of a ship — used to get a couple of shots in more shallow water.

This iteration will be launched with the researchers' fishing equipment and able to stay on its own on the sea floor.

"This is kind of the next step up, where it's independent," Dell said. "They'll leave it down there for 24 hours."

This group has been researching for the Fish Spy II after school since last school year, and began work more fervently in recent weeks as materials have come in.

Dell and two students — senior Christopher Hernandez and junior Alyssa Barker — went to OceansWide over the summer, a marine science camp in Maine, where they were certified for scuba diving and learned about marine life.

The researchers accounted for the Lindblom project in their research grant request from the National Science Foundation, and sent the school \$3,300 to build the Fish Spy.

Most of the eight students are members of the school's robotics team and appreciated working on a project outside of competition.

"This is a real world application of robotics," said Gustavo Tovar, a programmer who's on both teams. "Something that we make, something that we design, is going out there."

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