
Seaworthy

Beach combing, whale watching, and fresh-caught tuna. U-High students take a working vacation at the Marine Biological Laboratory.

by Sean Carr, AB'90



Something about this high school science lab seems ... different. The students—smart, resourceful, self-directed—are clearly Labbies. But there are

no test tubes or frogs in sight. Instead the students are gathered around a small squid, and in lieu of the standard biology lab implements, one student has rigged up a connection between the squid and his smartphone. As the Black Keys' "Lonely Boy" thrums from the phone's speakers, the squid's chromatophores—pigmented, light-emitting cells that aid in camouflage—flash red. When the flashing starts to fade, the student dials up the Black Eyed Peas' "Boom Boom Pow"—all low-end bass—and the red returns with a vengeance. Also worth noting: this lab is 1,000 miles east of Blaine Hall, in Woods Hole, Massachusetts.

Welcome to the Marine Biological Laboratory.

Late this past August, 12 U-High students—rising sophomores, juniors, and seniors—and two teachers, **Sharon Housinger** and **Daniel Calleri**, spent a week at the MBL. There they lived, ate, and breathed science—meeting researchers, catching and studying marine organisms, and inaugurating what many hope will become an annual Lab tradition.

When the University of Chicago and the MBL affiliated in July 2013, the benefits for UChicago's faculty and students were obvious: access to the unique organisms the lab collects and maintains, collaborations with MBL scientists, specialized training for graduate students, and even a new "quarter-by-the-sea" for undergraduates.

The advantages for the Laboratory Schools weren't as obvious, except to Mr. Calleri and Ms. Housinger. In the fall of 2014 the pair teamed with Lab Manager for University and Community Partnerships **Alexandra Wallace** to identify areas for collaborative program development between MBL and Laboratory School students of every age. Together they successfully submitted a proposal to the University's Office of the Executive Vice President and secured funding to support one year of pilot projects, including the very first summer field experience. In January 2015 they announced the trip and invited students to apply.

It was, says Ms. Housinger, "pretty rigorous screening on our part"—two essays and teacher recommendations, for a start—"to select kids whom we knew were both academically and personally able to handle a pretty intense experience without us having to push them or hold their hands."

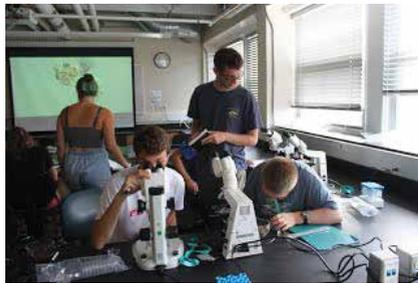
Owen Lasko, now a junior, says, "Biology has always been my thing"; a ninth-grade class with Mr. Calleri took that interest to a new level. "It's kind of fascinating to see how everything is so vital to how the entire organism works, even if it's just a tiny cell in one part of your body." So he leapt at the chance to go to the MBL. Other students selected for the trip were more interested in physics or had a technological bent.

"We even took a student who's got more of an art interest," says Mr. Calleri, "but it's an art interest with a deep respect for biology."

That would be **Maeve Potter**. Her passion is filmmaking, but both of her parents are physicians, and her grandfather spent time at the MBL as a neurobiology

researcher. "If you walk into a room at my family reunion and say 'Dr. Potter,' everyone will turn their head," says Maeve, now a senior. She also notes that "some of the best and most inspiring teachers I've had in my time at Lab" have been in the sciences.

As an added bonus, her grandparents have a home in Woods Hole, where Maeve has spent part of each summer since she was little. So she volunteered her services as an informal tour guide. As it turned out, dinner at Maeve's grandparents' home was the Lab group's first stop in Woods Hole, even before they dropped off their bags in the MBL dorm. "We had a typical meal for us: seafood and Lebanese food," says



Maeve. "My grandma is Lebanese," she adds to clarify. They had caught the tuna earlier that day.

The students were up by 7 a.m. to shower and have breakfast and be at the dock by 8:30 to board the MBL's collecting vessel, the Gemma. For the next four hours, they dredged the bottom of the ocean, catching urchins, sea stars, sponges, crabs, and other creatures. After lunch they took their haul to the lab for study. That was the basic rhythm of their days: trip in the morning (two by boat), lab in the afternoon. Not that the students always obeyed the clock. "We would have to kick them out of the lab to go to dinner," says Ms. Housinger, "and then after dinner, when they had free time, they would frequently go back to the lab."

Other trips included visits to a salt marsh, where they piloted drones to help map the terrain; a whale-watching voyage to the tip of Cape Cod (a first even for Maeve); a walk to the Woods Hole Oceanographic Institution; and—a highlight for students and teachers alike—a visit to Naushon Island, owned by the Forbes family. There's only one house on the island, and visitors must stay below the high-tide line. It's "basically wild, undisturbed beach," says Mr. Calleri, who guided the students through a "really exciting diversity of algae and seaweed." Dragging their nets on Nashuon, they caught baby puffers, mini sea bass, and pike fish—"flat sea horses," explains Owen. "Similar head structure, similar anatomy."

Another highpoint was MBL researcher Kristin Gribble's presentation on rotifers—microscopic marine organisms with similar DNA to humans. Ms. Gribble studies how diet and temperature affect rotifer lifespans, hoping to gain insights on human aging.

"She would say things, and you could see the light bulbs going off," says Mr. Calleri, snapping his fingers again. "That's every teacher's dream. They were leaping out of their seats practically."

"There were lots of points in the trip like that," says Ms. Housinger. "Yes, we're doing an experiment on rotifers, but why do people study these animals, and why do people study marine biology? It's because we care about these animals for themselves and we care about marine ecology, but also you can use them to answer other questions."

While each day at the MBL was highly structured, the work the students did flowed just as much from what interested them at any given moment. "We just got to explore," says Owen, "and Mr. Calleri

and Ms. Housinger would just go around and teach us whatever we were looking at, and they were also completely interested in what we were talking about and looking at."

"Throughout the trip, they really impressed me," Ms. Housinger says of the students. "They were asking the same kinds of questions that undergrad bio majors would be asking in upper-level science classes. They weren't acting like high school students. They were acting like serious biologists."

What happens at the MBL doesn't stay at the MBL. Back at Lab for another school year, many of the students who took the trip are pursuing independent study projects inspired by their time in Woods Hole. Two students have put together a salt-water tank to continue studying marine organisms. Another has gotten into microscopes, says Ms. Housinger, "so we set him loose with some of our old microscopes, and he's taken them apart and rewired them."

Inspired by the MBL's Ms. Gribble, Owen and two friends have set up their own rotifer experiment. Over the course of the school year, they will study the health effects—measured by movement speed, reproduction rate, and overall size—of different diets, with plans to publish their results in the spring.

"There's no way I would ever be doing that without the trip," Owen says. "I would never have taken the initiative or had the idea."

Maeve, too, has enjoyed some lasting benefits from her MBL experience. As part of a filmmaking class in the fall, she had to pilot a camera-mounted drone. "Having just a little bit of practice over the summer helped me a bunch," she says.



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For his part, Owen thinks the trip should become an annual opportunity for students. "I couldn't imagine a better trip honestly," he says. "We all learned so much and we had a great group dynamic, and Ms. Housinger and Mr. Calleri were amazing. It just really worked on every level."

Ms. Housinger agrees. "They have this awesome education at Lab," she says. "They're really primed for an experience like this, and it's nice to be able to offer them something in high school that really is a kind of capstone."