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SCIENTISTS WANTED



PHOTOS BY CHRISTINA.KELSO@STAUGUSTINE.COM

Amber Rock, a junior biology major at Bowdoin College in Maine, researches the development of hox genes in sea anemones Friday at Whitney Laboratory for Marine Bioscience at Marineland. Hox genes control the body plans of developing embryos in humans and animals. Rock, who intends to pursue graduate study in developmental biology, is undertaking her second summer research internship experience at the lab.

» Whitney Lab seeks long-term visits, more collaboration with research village

By Jake Martin
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The University of Florida's Whitney Laboratory for Marine Bioscience has plans to build an interdisciplinary research village to house visiting scientists, from graduate students to researchers of international renown.

Director Mark Martindale is looking for more mixing of the minds and what he calls the "chance collisions" that can lead to some of the most exciting ideas and discoveries science has to offer. He and other administrators say the greater the ability to offer long-term stays on site, the more potential to reel in larger grants, meaning larger programs and projects.

Ultimately, the goal is to create pathways to new frontiers in marine biology, preferably through unforced collaboration.

It's not exactly a hard sell. Martindale says Whitney Lab is unique in its proximity to a diverse collection of coastal habitats, accessible year-round, at a time where more scientists are leaving the confinement of the lab and heading back into nature. He said the field station allows researchers to study marine life in the context of its natural surroundings, with all the bells and whistles of modern technology nearly at arm's length.

"This is, like, the most important place you can be," Martindale said.

He also said there are things that sharing the same working space and the passing of time can do that forcing scientists in a room and telling them to bounce ideas off one another can't.

"Fun things start to happen," he said.

Jessica Long, director of devel-



Kaley Dean, a marine biology major at San Francisco State, tests oxygen levels while studying the ability of clams to filter water in low-oxygen conditions. An undergraduate research intern, Dean intends to pursue a career in wetland conservation and restoration.

opment and external relations, said an original plan for 11 eco-friendly, coastal-style cottages was scaled down to six such cabins, at least for now. She said this

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FROM THE FRONT

SCIENTISTS

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was due mostly to delays in the project as a result of Hurricane Matthew and some subsequent high bids, not to mention a lack of open space with which to work.

Long said Whitney Lab has been trying to expand housing for at least 10 years but that the idea for the research village really took shape in 2012, at the direction of Martindale and the lab's volunteer trustee board. By 2013, the Florida Legislature pitched in more than \$700,000, although \$2 million was needed (before the bids came in around \$3 million). Fundraising efforts, which are ongoing, ensued.

Each cottage, to be built with materials sensitive to the site's proximity to coastal waters and conditions, will include four bedrooms and two bathrooms. There will also be collaboration spaces, an outdoor classroom and dune restoration landscape.

Long said they're hoping to break ground in late summer or fall, at least on the initial six cabins. She said there's still one cottage to be named, via a donation, as well as some

fundraising to do for another cottage.

While Whitney Lab does have a 20-bed dormitory and two temporary trailers it has been able to use for additional housing, Long said those units aren't exactly conducive to attracting the intensive, long-term projects they're trying to attract. She said affordable, non-vacation rentals are hard to come by in the Marineland area and it makes a big difference to not have to commute to the type of work being done on site.

"Living around here is very difficult," she said, adding they've had to turn students, even entire courses, away at times.

Martindale said he wants to expand on the footprint they have and to squeeze the most meaningful use he can out of the facilities and resources at their disposal.

He said the next generation of scientists will be more free to explore and discover new areas than ever before — and with the expensive and convenient help of the latest instruments for observation. For instance, high-powered microscopes with the ability to generate blown-up, 3-D models of microorganisms for further study, are available to researchers on site

nearly 24%.

Much of the data and findings from research already being conducted at Whitney Lab has made its way into science journals and publications all over the world. There are discoveries to be found in any given seine net, tank or microscope slide.

Just last week, an article published in the magazine *Popular Science* noted the potential for research done at the local lab on starlet sea anemones to explain why humans cannot regenerate limbs. A study published last month in a national academic journal said biologists working at the Whitney found a "gene lockdown loop," essentially, a small set of genes that, once activated, prevent cells from reinventing themselves as other types of cells.

For another example, Long said researchers are looking at how lobsters' brains receive certain messages from their antennae. The experiment will help scientists learn more about this particular marine life, but will also have implications for neuroscience.

On Friday, Kaley Dean, a marine biology major at San Francisco State University, was testing oxygen levels in tanks in order to measure the abil-

ity of clams to filter water in low-oxygen conditions, such as in the case of nutrient overload and algal blooms. A participant in this year's Research Experiences for Undergraduates program, funded by the National Science Foundation, Dean intends to pursue a career in wetland conservation and restoration.

By staying on site, in one of the dorm rooms, she says she's never more than 10 feet away from the action. In addition to her own studies, she's assisting other interns in the program with their research, and vice versa.

"We all do our own thing, but we're also helping each other and getting experiences in other areas of the lab, too," Dean said.

Martindale said interactions between different disciplines is an important component in the lab because everyone can learn from anyone else.

But time is a big factor in that equation.

"You can't just come here, take a picture, and then head home," Martindale said. "We call it research because you have to do it over again and over again."

For more about the research village, call 315-2758 or email jessicalong@whitney.ufl.edu.