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Jimena Golcher-Benavides is ready to dive into a new ecosystem

Jimena Golcher-Benavides, a recently hired faculty member in the [Biology](#) program, has worked in some of the most beautiful and ecologically interesting places in the world—and now she can add Banner Elk, North Carolina to that list.

Golcher-Benavides grew up in Costa Rica, one of the most ecologically diverse regions in the world, where she majored in Tropical Biology at the National University of Costa Rica. There, she developed a fascination with evolutionary ecology, particularly with studying why some areas accumulate more species of plants and animals than others.

"Coming from an area like Costa Rica that happens to be the stereotypical 'tropical jungle,' where you have hundreds of species that are unknown even to science, is what made me interested in this field," she said. "I'm trying to understand why some places have more biodiversity."

Her research throughout her master's program at the University of Konstanz in Germany and her doctorate program at the University of Wyoming focused specifically on the evolutionary patterns of cichlids, a family of fish that includes tilapia and angelfish.

For her master's thesis, Golcher-Benavides studied the cichlid populations living in the crater lakes in Nicaragua. These fish species are of special interest to biologists because they evolve rapidly in a contained environment, making them the ideal subjects for testing theories.

Golcher-Benavides was particularly curious to discover why fish in different pools, who were isolated from each other and exposed to different environmental factors, would still evolve in similar ways.

Her work with cichlids continued into her doctorate program, where she joined an interdisciplinary team studying Lake Tanganyika in East Africa.

"Eastern Africa is any evolutionary biologist's dream," she said. "You have the largest freshwater lake in the tropical region. And here, you don't have one species per lake, you have two hundred or even more species, who are all specialized to live in different habitats and eat different food. It's like an aquatic version of the Galapagos Islands."

To get a full picture of the cichlid species and their environment, the scientists had to get as close as possible to their research subjects—which was good news for Golcher-Benavides, who describes scuba diving as her "favorite, favorite thing."

Getting to participate in your favorite hobby while exploring one of the most spectacular natural environments in the world is certainly one benefit of studying evolutionary biology, but researching the mysteries of cichlid evolution and evolutionary ecology in general is essential for improving conservation efforts—something else Golcher-Benavides is passionate about.

"Understanding how biodiversity came to be is key to knowing how to protect it," she said.

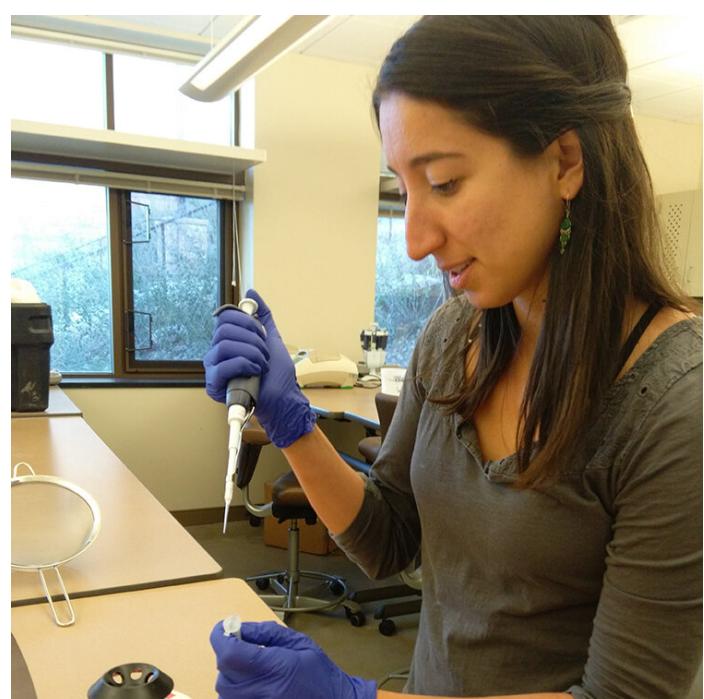
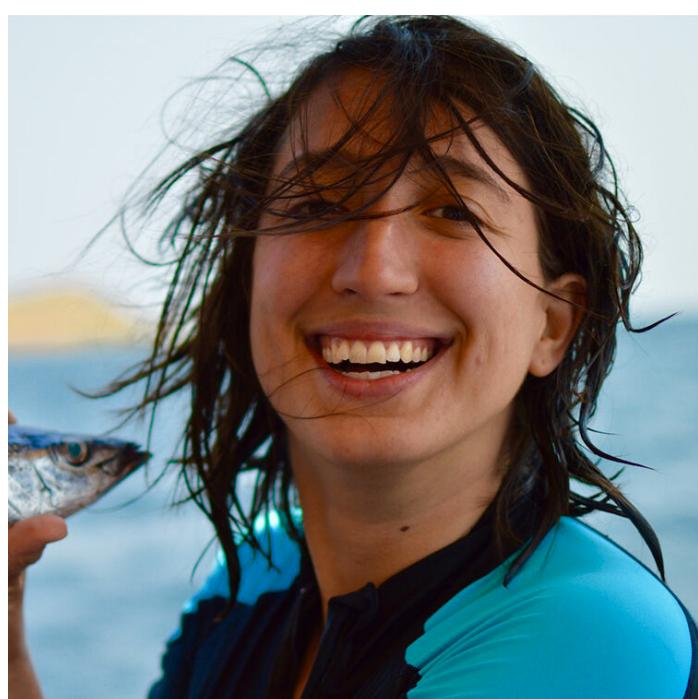
"Some of those species are disappearing without us even knowing that they were here, and that breaks my heart. I want to contribute knowledge so that we can avoid accidental or purposeful extirpations or habitat destructions."

While Golcher-Benavides was finishing her dissertation for her PhD, her husband, Assistant Professor of Wildlife Biology Cody Porter, accepted a job at Lees-McRae. Golcher-Benavides immediately recognized the value of the High Country from an ecological point of view.

"Ever since we moved here, I've been in love with this area," she said. "All the diversity of plants and animals is amazing. Southern Appalachia is very unique in that sense."

Golcher-Benavides is continuing her cichlid research, using data and tissue samples she collected from Lake Tanganyika, but she would love to learn more about the native freshwater fish and eventually include some of her students in that research. This semester, she is teaching Introduction to Biology (BIO 114), which mainly covers microbiology. One lab she has planned for students looks at the microorganisms involved in baking sourdough bread—a hobby that she, like many others, developed during the pandemic. For Golcher-Benavides, however, the allure of baking isn't just the result, but also the scientific processes that make it possible.

As she starts her first year teaching at Lees-McRae, Golcher-Benavides wants students to know she's accessible and approachable to any student who wants to talk about life or careers. She looks forward to getting better acquainted with the High Country and the many varieties of plant and animal species here and finding a new place to go scuba diving.



By Emily Webb

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