

Double the Adventure, Double the Fun: How Two OTS Courses Helped Shape my Academic Career

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Wake up at 5:30am, just as the sun starts filtering through broad jungle leaves and howler monkeys start practicing their echoing brays. Roll over in your narrow bunk, trying not to wake your bunkmate sleeping below as you slip down the slender ladder to your door. Maybe be the first to the cafeteria; in any case, grab a hot plate of *gallo pinto* and douse it in *Salsa Lizano*. Turn your head as the fast friends you've made in just a week start filing in, filling up their plates. Listen as an excited buzz builds in the room and voices hum in excited murmurs about the hike later that day to see the famous *Ficus*, hollowed from devouring its long-since forgotten host. Hours later, sit at the base of that tree and hear tales about students who've clambered up its twisting core to arrive at the lush canopy. Try to climb it yourself, start up a few feet, then realize maybe you're best closer to the ground. The next morning, wake up and realize that the egg sandwich you peacefully consumed at the base of the behemoth distracted you from the twenty-three chiggers contentedly munching on your skin. Decide you don't care, because the howler monkeys are testing out their morning operatics, your stomach is growling, there are friends to be made, and nature to be explored.

I discovered OTS in a roundabout way. One of my fellow master's students at Louisiana State University was accepted to the Tropical Plant Systematics class and I overheard him talking about it in the hallway outside my office. As a proud, card-carrying plant nerd, I jealousy festered as I listened to him talk about the immersion experience he was undertaking to learn about tropical plants. After asking him more about where this magical experience was happening and who was running it, I ran to my computer, found that there were still spots available, applied, and a few months later was on a plane bound for San José, Costa Rica, to start an experience that would alter the course of my life.

To say that the first OTS course I took was transformative would be a laughable understatement. Being surrounded by people who were as in love with and fascinated by plants as I was, spending each day in ecosystems spanning rainforests to dry forests to paramos, having instructors that felt the same level of passion about ecology and knew how to use hands-on experiential learning to engrain students with knowledge made me realize that I simply wasn't done learning. By the end of the course, I had decided to pursue my PhD and shift from land management-driven questions to mechanistic inquiries about how invasive species colonize novel regions. More than any course in undergrad or my master's degree, OTS's Tropical Plant Systematics made me realize that there was an enormous world of knowledge that I had completely untapped, and I was inspired to absorb all that I could.

During my PhD, my advisor (Dr. Kyle Harms, who is an OTS Institutional Representative at LSU), offered me the unique opportunity to participate in a second OTS course, Tropical Biology: An Ecological Approach. I jumped at the chance, knowing that if it was even an ounce as amazing as my first course, that I would gain unmeasurable knowledge, make connections with inspiring and passionate teachers, and develop friendships that would last for years. This course was not only equally as knowledge-building, but offered the added benefit of exploring

multiple different ecological research techniques, developing skills in formulating and testing ecological hypotheses, and spending an even longer time in Costa Rica, visiting all of the OTS field stations. In addition, this course extended beyond a focus on plants (which will always be my abiding love) to fish, benthic macroinvertebrates, ant lions, hummingbirds, and more. The skills, knowledge, techniques, and people that I met during both OTS courses made me a better researcher, more adventurous and willing to ask probing ecological questions, and also made me a better teacher, by providing examples of engaging and dynamic pedagogical techniques that are the cornerstone of the OTS experience.

The model of teaching I experienced through OTS served me not only as a graduate student, but also in positions at the University of Louisville, Cornell University, University of Iowa, and Mount Mercy University, as well as in my current position as an Assistant Professor at San José State University in the Department of Environmental Studies. I specialize in teaching field courses focused on topics from natural history to environmental restoration. In my field courses, I draw from the experiential field-based inquiry I was exposed to during my OTS courses. Some people can learn from reading or looking at diagrams in a textbook, however I believe, and I know for myself, that real learning, the kind of learning that sticks like peanut butter to the back of your mind and can be drawn upon over and over again happens when you learn by doing. This is the foundation of OTS. Why sit in a classroom watching a professor talk about pistils and stamens when you could be on your hands and knees in the rain forest using your trusty hand lens to dissect and examine a plant first hand? Why just learn terminology for these parts, when you can think about why the rufous-tailed hummingbird is drawn to the *Heliconia*; how sipping its nectar reward leaves a dust of pollen around its iridescent neck; and how the evolution of this relationship came to be? It is seeing those relationships in person, touching them, pulling them apart, watching and listening and being open to observing the nuances of these interactions that foster eureka moments – propelling scientific understanding of the natural world forward.

As I sit here today, I have unfortunately not just crept out of a bunk bed in Costa Rica. Rather, I'm in northern California, and it's mid-afternoon. There are no howler monkeys exercising their vocal cords, rather birds I can't identify piping their playful call in a perturbed tit for tat. It feels a lot quieter, and a bit less exciting than those early mornings in Costa Rica. I'm sitting next to a fragrant lavender bush. It's not a special bush in any obvious way, except that it smells pleasant, and there's a bee flitting from one flower to the next. Even so, because of my experience in OTS, I pause. I know that this bush is likely quite special because it is harboring an untold host of interactions that are enabling it's survival, and are likely contributing to the survival of many more species around it. Yes, there is the bee, and as it dances from one flower to the next it's gathering pollen on its fuzzy legs. And that pollen will be transported to the pistils of this monoecious plant, fertilizing the next generation. I think a bit more and realize that the scent I'm smelling isn't just to make my day more pleasant. There are several chemical compounds honed over generations to send the signal that this plant is the one that should be visited today. But what about other insects? Maybe there are some too small for me to see munching on the lavender's slender leaves, or perhaps its rigid trichomes – which flash like microscopic knives – are helping this plant win the battle against its herbivorous foes? Digging down, are there nematodes, bacteria, or fungi, connecting with this plant's roots in a mutually facilitated quest for life? I think these questions come to my mind because I am an alumnus of OTS. The courses I took with OTS played an enormous role in teaching me to think like a scientist, to ask

questions, to not worry so much about being right or wrong, but instead to take joy in the pursuit of knowledge. As a professor now myself, I find it my fortune to pass these experiences on to the next generation of explorers, and to do my part to grow a human population that values nature for the secrets we can uncover, as well as the secrets we can never know.

Photos



My OTS group taking a break after hiking through the Costa Rican paramo.



My OTS group forging a stream after leaving the Sirena Biological Station (Estación Biológica Sirena) in the Corcovado National Park (Parque Nacional Corcovado).



Creating a makeshift quadrat out of sticks and cling wrap for measuring ant lion funnel distribution.