

Teaching Philosophy: **Students in my classes learn how to become better scientists and better science communicators through a combination of classroom learning, field learning, and applied experience.** I employ active learning techniques in all my classes, so students spend a good amount of what is traditionally lecture time interacting with their classmates in group discussions and other guided activities. For example, in the Forest Ecology lab I taught at the University of Michigan, students spent the first part of each lab and field exercise discussing with their group how to best design their methodology to meet the goals of the assignment. This required them to apply concepts and theory that they learned in lecture and from their reading in a group setting where they must simultaneously integrate the ideas and opinions of their peers.

My favorite way to teach students is by combining what they learn from textbooks and lectures with what they can more intuitively learn by being out in nature. Students in my class learn how to interpret the scientific literature through guided exercises that move through the different parts of a paper and then build up to comparing different papers on the same subject – a skill that is often taken for granted in undergraduate classrooms. My students also combine hands on and statistical approaches in my classes. I take my classes to natural systems like forests and have them think about the patterns we see before taking their ideas back to the classroom and discussing the best ways to evaluate and model them. Conversely, we take theories learned in the classroom and then look for evidence of those patterns in the field.

Having worked extensively with special needs students in K-12 environments, I always look for ways to make learning accessible to all students within my class and to tailor my courses to fit individuals' needs. I pride myself in my ability to work with students in one-on-one settings and finding ways to help them understand the concepts we cover in class, a skill that I developed working as a STEM paraprofessional at a middle school after I finished undergrad where I worked individually and in small groups with students that needed extra help in the classroom. In the university setting, this has involved adjusting assignments so that they better meet the learning goals I want my students to accomplish. For example, I allowed students to pick the format of their cumulative project assignments in my forest ecology class: this allowed students who wanted to write an essay to do so, but it also allowed others to present their work via song or through their art. This had the added benefit of encouraging freedom of expression and I found that I was consistently impressed by what students came up with when given the opportunity.

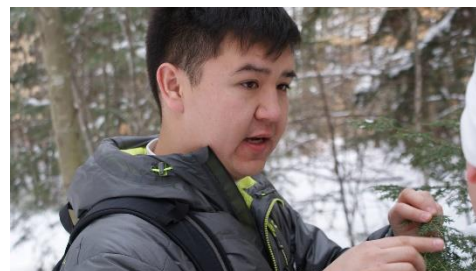
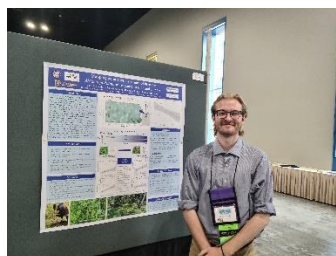


Photo of me teaching students tree identification in the field in Forest Ecology.

Research Mentorship: One of the most effective ways for undergraduates to learn ecology is by actually doing it. **I get students out into the field and into the greenhouse to learn what research is like from firsthand experience.** For example, the past two summers I worked with two students in Pittsburgh on independent research projects as part of their senior theses concerning invasion dynamics and phenological shifts. I worked with them from conception to completion on their projects, starting with brainstorming

ideas that they could accomplish over the span of two years and ending with both papers being prepared for peer-reviewed publication. This type of experience is extremely rewarding for the students because it provides them with a sense of ownership over their ideas, the ability to speak intelligently about their study topic and to synthesize new scientific theories, and the confidence to transition successfully into their chosen careers. It was also very rewarding for me to be able to see the fruits of my mentorship and to help them reach their goals. I was even able to help one of them find funding to present his work at the 2021 Botanical Society of America annual conference in Anchorage, Alaska at the end of the summer. The trip included his first ever air travel, it was the furthest he had ever been away from his home in rural Pennsylvania, and it was extremely rewarding to see the conference through the lens of his excitement.

I will continue working with undergraduate students in my lab to work both on ongoing research projects as well as research projects that we co-develop that help them accomplish their own goals. I have worked with and will continue to work with work study students, students that I recruit from the classes I teach, and students that reach out to me independently because they are interested in the type of work that I do. **I will prioritize recruiting and supporting students from backgrounds that are historically underrepresented in and excluded from the life and environmental sciences.**



Undergraduate mentee Jack Hatajik presenting his independent research project at the 2021 BSA meeting in Anchorage



DDCSP scholar Mikaila Davis measures the radial growth of tree seedlings at the Matthaei Botanical Gardens as part of her summer research project.

Diversity, Equity, and Inclusion: Diverse viewpoints are important to foster within academia and inherent to this is a need to better recruit, support, and retain students that come from backgrounds that are historically excluded from biological and environmental sciences. Importantly, this requires us to actively make space for these students and to actively encourage and support them once they take it. These tenets are core to how I approach science and mentorship and will continue to be important for both my research program and for how I teach moving forward. For example, as a graduate student I volunteered to work with the Doris Duke Conservation Scholars Program, mentoring five different students across four summers. Scholars in the program all came from backgrounds that are historically excluded from environmental sciences – I worked with stu-

dents that were LGBTQ+ and BIPOC as well as first-generation college students that came from low socioeconomic status. I worked with each of them for an entire summer to teach them what research in the environmental sciences looked like and to guide them through independent research projects that they presented at the end of the semester. Two of my mentees have gone on to pursue graduate degrees in environmental sciences while the others have pursued other careers, at least one of them related to the research and internship experience she received as part of this program.