

My philosophy and approach to teaching is adaptive and dictated by the particular course and the needs and goals of the students. In general, I strive to create a classroom environment that promotes (1) curiosity and a desire for active, life-long learning, (2) critical thinking, developed through learning about science by doing science, and (3) understanding and application to real-world situations.

To promote active, life-long learning, it is necessary for students to connect to the subject matter taught. To do this, I strive to create a personal connection with each student in my classes by incorporating examples from my research program and life experiences in lecture. At the beginning of every course I teach, I also allow for ample time for teacher and student introductions where details about our background, experiences, and future goals are presented. This experience makes the classroom ‘community’ feel more comfortable around each other, thus facilitating learning and enhanced student participation. Through developing these connections, I also learn about individual students so that I can adapt course materials based on the specific needs of the students in the course. I regularly include outside materials such as props (e.g., live organisms, short-term classroom experiments, YouTube videos) and research and/or news articles. This benefits students with diverse learning styles while also promoting the application of subject matter to real-world situations by allowing regular discussions of environmental issues in popular media. As a result of discussing material other than that presented in lecture or the textbook, students learn to critically analyze information that they are exposed to on a daily basis. By the conclusion of the course, when students see familiar topics presented in the news, they will be able to understand and apply the basic principles discussed in class and ultimately challenge any misinformation.

By developing personal connections among students and the instructor in the classroom, this also creates an environment that promotes the active participation of students in the educational process. It is well known that the way students learn science best is by doing science. In my teaching, I emphasize an inquiry-based approach in laboratories where students (1) ask questions/formulate hypotheses, (2) conduct research/test their hypotheses, and (3) interpret and communicate their results through oral and written presentations. As part of all laboratories, I place a large emphasis on students learning about science by conducting individual and group research projects and experiments. Each student meets regularly with me to discuss hypotheses, findings, pitfalls, etc., and in turn, I promote a supportive, encouraging environment by asking questions and communicating ideas.

One of my favorite parts about teaching is the opportunity to mentor students, and through my close interactions with students in my courses, I am always looking for ways to provide students with research opportunities. The opportunity to conduct research as an undergraduate strongly influenced my understanding of the environmental sciences and also shaped my career path. There is no better way to learn science than by being part of a vibrant laboratory and community where students and faculty engage in lively discussions, critique experimental designs, offer suggestions, and form collaborations. These experiences have taught me more about teaching and science than any course possibly could, and I strive to provide opportunities for undergraduate students that would be a good fit in my laboratory.

The development of my teaching philosophy is a life-long process, and I am constantly learning more effective ways to develop the understanding, curiosity, and critical thinking of my students. My ultimate goal in the classroom is to create an environment that fosters a strong

sense of community among everyone. By the conclusion of every lecture (and also at the end of the course), I hope that each student understands and appreciates the application of the course material to her/his everyday life while desiring to learn more (and knowing how to find the answers).