Teaching offers one of my greatest opportunities for impact. As a university educator and a mentor, I get to infuse the next generation of scientists with my passion for working in this dynamic field. And when I teach courses for undergraduate non-major students, I have an unparalleled opening to leave them with lasting life lessons about the sciences.

My students connect with science

Students must be independent learners in order to move successfully through their education and their careers. I focus therefore on content comprehension and application in addition to acquisition. I strive to develop my students’ science literacy skills so that after they leave my course, they will be confident in their ability to:

1) find and critically evaluate scientific information, and
2) use scientific information and principles to inform their decisions.

My focus on these science literacy skills stems from a recognition that students will not be motivated to retain knowledge or engage in scientific discovery over the long-term if they do not feel that science is relevant to their lives. To connect students with science, I often ask students to use learned concepts to interpret real-world, raw data and then recommend a course of action based on their interpretation. I relate population dynamics, for example, to food source stability. Then I have students complete a project summarizing scientific evidence related to a specific food source and describing a purchasing decision they made based on this science. This attention to relevancy assists with content comprehension, has students practice meeting the two goals I outline above, and motivates students to use science outside the classroom.

My students drive classroom sessions

Instead of having students listen to me give a powerpoint presentation, I challenge students to actively participate in classes. I use powerpoint slides as a guide to have students evaluate information and explain content to one another in class. I also have students draw concept diagrams, make predictions, and generate or interpret graphical information in front of the class. For example, in the population dynamics module that I mentioned above, I have students form small groups to draw expected population growth curves for real species based on life history data. Then group representatives address the class to share their results and discuss which one of the example species most urgently needs taxpayer-funded management attention and how population ecology principles support their decision.

Evaluation is another important component of my courses because it enhances learning and allows students to hone their study practices. In addition to exams, I use assignments to have students reflect on their own performance and instruct and evaluate one another throughout the course. These evaluations help me better assess student performance and allow me to direct future course elements based on student interest and understanding.

My students leave with a practiced skillset

Teaching concepts through applied examples encourages my students to develop their critical thinking skills and gives them knowledge of scientific principles that they can employ in any walk of life. I have incited students in a class of 350 non-majors to yell to each other across the room about whether populations of endangered species have a traditional carrying capacity. I have witnessed several of the science-bound undergraduates that I have mentored secure summer internship and graduate school positions. This is why I want to be a professor: to engage students in the learning process so they will continue to learn long after a course is over.