

### **Teaching philosophy**

My philosophy for teaching is to inspire students to become excited about learning and give them the tools to be lifelong learners. When I think back to what inspired me to become a scientist, I realize that part of my love of science comes from a love of learning. Science is always changing; there are new and exciting discoveries to be made and intriguing questions to be answered. I believe that life should be a continual learning process, whether we are learning a new subject in school or a new task at work. True learning challenges us to look at a problem from multiple perspectives, thus promoting the development of involved, caring, and tolerant members of society. As a teacher, my goal is to retrain my students to learn conceptually rather than through rote memorization. Feedback from several students leads me to believe my efforts are paying off. For example, one student wrote this about his experience in Microbiology, *“I actually learned the material and did not just memorize the information. As a result, I began to love and appreciate the field of science even more. Having you as a professor really challenged me as an individual and it gave me hope that I can succeed in the field of science.”*

The most effective teachers are those who make their subject interesting and relevant for their students. As I prepare my courses each semester, I create a signature theme for the course to tie the content to a topic that is relevant and current. For example, recent research into the human microbiome (the collection of microorganisms that live on and inside of us) has implicated disruptions to the microbiome in many different human conditions such as obesity, diabetes, autoimmune disorders, allergies, and possibly even behavioral conditions like autism. Throughout the microbiology course I introduce the students to current research in the area of the microbiome as it relates to different health conditions. These assignments help the students see the relevance of the concepts we learn in the course as demonstrated by their feedback: *“I really liked the Microbiome assignments and Case studies, they gave a good basis of why we should care and what is currently going on in the field.”* I also discuss pathogens like swine or bird flu or HIV including recent news stories into my lectures to make these topics more relevant to their daily life.

I believe that trust is a critical facet of the relationship between a teacher and a student. The classroom environment plays a part in the development of trust between the student and teacher. By creating a friendly and welcoming classroom experience for the student, I am better able to fulfill my role as their educational guide and mentor. I strive to make a personal connection with my students, although the increased class sizes make this a challenge. I care about them and do my best to help them be successful, not only in my course, but in life. Previous students have commented favorably on my approach: *“She is an excellent teacher who truly cares about students. She will do whatever it takes for the students to understand the material.”* *“You bring such a warm atmosphere to the classroom and you always kept me interested.”* By respecting my students and creating a welcoming classroom I earn their trust, which allows me to guide them on their path to successful learning.

As Aristotle said *“One must learn by doing the thing, for though you think you know it, you have no certainty until you try.”* As an instructor, my role is to provide the tools necessary for learning and create challenges that will require my students to apply those tools. Students come to the class with varied backgrounds and learning styles, so no one teaching method will serve all students equally. I typically incorporate several different approaches into my instruction including targeted reading assignments, standard lectures, online tutorials or animations, and group discussions. It is also vital to give students ample opportunity to practice and test their learning. My assignments are designed to provide the students with a weekly roadmap to success. I intersperse group problem solving activities throughout my lectures and I create custom online homework assignments through the book publisher so the students can quiz themselves at the end of each week in preparation for our quiz each Monday. For sections that are conceptually more difficult for students I will often create extra tools (problem solving sets, concept mapping exercises, video tutorials) to provide more opportunities for practice. To truly convert them to conceptual learners I must also provide challenges that cannot be solved by rote memorization. By providing challenging quizzes and exams I push my students to revise their study methods so that they can be successful in my courses, but more importantly in their future careers. Based on objective and subjective assessment measures, many students leave my class better equipped for conceptual learning. As one student put it, *“I have always learned to memorize and regurgitate material back to my teachers, but this class really has taught me the opposite.”*

My teaching philosophy provides me with a sense of direction and purpose to guide my curriculum development. But teaching, like science, must constantly evolve because the world our students learn in is constantly changing. The methods that work with today's students may not work for tomorrow's students. For that reason, I keep abreast of new approaches to pedagogy (e.g. blended learning, active learning) and implement them in my classes when appropriate. I also use assessment data and evaluations to reevaluate my curriculum on a regular basis, so I can continually strive to make improvements. I chose an academic career because I want to inspire students to learn the way that others have inspired me. My hope is that my students will leave my class with a greater knowledge of science, but also with a desire to learn more about the world around them and the tools to do so.