

## TEACHING PHILOSOPHY

I recall my first experience as a teaching assistant vividly. I had recently begun my graduate career at a large, research-intensive university and, on the third day of acclimating to this new lifestyle, was scheduled to teach three back-to-back discussion sections in Genetics, each enrolling 20-25 students. While I had a strong background in Genetics and had been interested in teaching since an early age, I had relatively little practical experience in the classroom. I could not fathom memorizing 75 students' names, let alone being effective at engaging students in understanding course content. Paralyzed by this fear, I turned to the primary instructor for the course, someone who had more than 10 years of experience teaching this class and who, like me, shared an interest in teaching and learning in biology. "Jeff," she said, "as much as these students want and need you to help them understand material, they also want to see that you are enthusiastic about Genetics. I know you know the material, but if you aren't invested in it, your students won't be either."

Now, more than 5 years later, this remains the single best piece of teaching advice I have received. My discussion sessions came to be an infusion of case studies, Clicker-based mini-lectures, and small group problem-solving exercises, all in an attempt to illustrate to students the excitement and real-world applicability of Genetics. The feedback I received from students was encouraging and overwhelmingly positive. Many of my students went so far as to comment on how important the experience had been to their overall success in the course and how unique it had been in comparison to other teaching approaches they had encountered during their academic career.

While I now primarily teach introductory biology classes for majors and non-majors, as well as advanced courses in Molecular Biology, Epidemiology, and Biology Education, this same philosophy resonates throughout my teaching. Providing students with multiple opportunities to engage with course material has transitioned into a strong belief that developing a foundational understanding of core principles in biology and biology education requires a commitment to explore knowledge in novel ways, to think critically and synthesize pertinent information, and to connect that knowledge to real-world issues that are of importance to you. It is far too easy, especially in today's world, to simply "Google" or "Wikipedia" a topic, with limited regard for the quality or accuracy of the information obtained from these sources. The case studies, in-class demonstrations and activities, and independent projects I utilize in my courses instead challenge students to be skeptical (in a healthy way) of the information they are exposed to and encourage them to push the limits of their knowledge, whether it be as a result of synthesizing case study data from a hypothetical foodborne outbreak on campus or honing their experimental design skills by turning a set of "mystery items" into a plausible research question.

Beyond simply being enjoyable or beneficial to student success, it is my hope that engaging students in these experiences instills in them a passion for learning and a way of thinking that will help them in their college years and beyond. The most meaningful evaluations I receive are from students who, months after taking my course, e-mail to say that "while your class was a struggle, it sparked my interest in the subject. Thank you for giving me the opportunity to see how important biology really is to me on a personal and professional level."