

TEACHING PHILOSOPHY

Having been born and raised in China, where standardized tests scores mean literally everything, for much of my time as a student I felt like the quality of teaching seemed inconsequential. All I needed were textbooks and endless practice on as many problem sets as I could muster and I could get very good scores for every subject. These good scores then allowed me to go to the schools that I wanted to attend and to seize opportunities that would be considered rare for many other students, such as being selected to study outside of China. Spending my senior year of college in Japan and studying for Master's Degrees in Sweden, France and Germany were life-changing events for me in many ways, a major factor being that I started to think about what exactly "teaching" and "learning" meant, after experiencing education systems that were so drastically different from the one I grew up with. Subsequently, I moved to the US to pursue a PhD, set my mind on the career path of being a scientist, and through all the unexpected challenges and pleasant surprises that came from being both a student and a teacher, my views on what it means to be an educator have been repeatedly challenged and refined. Now, as I am preparing to teach and develop my own courses and lead my own research group, **I view the overarching goal of teaching as expanding capacity** – capacity for compassion, curiosity, creativity, and critical thinking – so that my students can find their way in the world and become critical and conscious members of the society. I expect this philosophy will continue to grow and evolve as my career proceeds. My teaching philosophy is supported by four core principles:

We are not teaching a subject, we are teaching people, and people are different. All students come to our classrooms with unique backgrounds and learning styles, and being rigid and unadaptable will exclude many of them. Being sympathetic, open-minded, and flexible while still upholding academic rigor will remain my highest teaching priority. I first realized the importance of this perspective from my own experience of being an international student and the fact that many teachers did not understand my need of guidance with navigating very different educational systems in a second language. Moreover, the abrupt transition from in person to online teaching in 2020 also had a profound impact on me. It forced me to understand that many students were facing challenges that I could not anticipate or contemplate, and to be as mindful as I could so that all students could be included and engaged. I have seen many students who were initially struggling academically achieve outstanding performances after they realized that they were understood and would be given time and space to catch up.

Curiosity is the best teacher, and my role as the educator is to ignite and feed student curiosity. This process is facilitated by my own curiosity about my students. Since each student can have their own learning styles, some may find their spark through reading while some others may find it through hands-on activities. Throughout the course, I make conscious observations on what excites different students the most, and use that to cultivate their interests so that they can find more things to be curious about. In addition, I believe my own curiosity and enthusiasm on the subjects that I teach can be infectious, as affirmed by past student evaluations. For instance, "enthusiastic" and "engaging" were two of the most frequently used words for my students to describe me. I intentionally foster a classroom environment that is collaborative and supportive, because learning happens naturally when students can feel more comfortable with sharing opinions, ask questions openly, and identify and pursue their curiosities.

Creative freedom should be given during learning. This principle was first shaped by my experiences of being a teaching fellow in Biology of Plants, which revolutionized my view on how students' grasp of knowledge can be evaluated. At the end of the class, students are asked to do a final project, in any format they felt comfortable with, to explain the evolution of land plant life cycles ("The Rise of Sporophyte"). We received submissions in every possible form: poems, music compositions, raps and songs, dances, board games, video games, movies, recipes, flipbooks, etc. Every single time, I was blown away by the unbounded creativity, but also how such creativity demonstrated their understanding of the key concepts. Many agree that letting students explain a concept or a problem to

others is one of the best ways to reinforce learning, and I believe that giving them the creative freedom to decide *how* to explain the concept will enhance learning even more. In particular, transforming scientific information in the context of an alternative medium, such as art or creative writing, pushes students to really understand the topic they are learning.

Science should be presented as a process that students can take part in, rather than a body of immutable knowledge. The preconception that science equals facts is not uncommon, and it is critical to show students that scientific discoveries are in fact a collection of trials and failures and can always be challenged by new findings. In every class, I think it is essential to design some projects that will require the students to observe, question, hypothesize, experiment, and summarize independently. It can be an empowering experience for students to know that they can participate in science and take ownership of their findings, and this participation will help them to become critical consumers of information and effective communicators of their own ideas, which are vital skills regardless of their career paths.

TEACHING EXPERIENCES & INTEREST

During graduate school, I was a teaching fellow for Genetics and Genomics and Biology of Plants. Both were general, lecture-based undergraduate classes with 40-60 students, and the former class had weekly 1-hour sessions for solving problem sets in a chalkboard-only style, while the latter included weekly 3-hour lab sessions and field trips. I was also a teaching fellow and a co-lecturer for Plant Development and Differentiation, an upper-level lecture and discussion-based class. I received maximum scores on student evaluations for all the courses and was awarded the Derek Bok Certificate of Distinction in Teaching from Harvard University every time. In 2022, together with another postdoctoral researcher, I co-designed and co-instructed a week-long, hands-on, intensive summer course on functional tools in genetics and genomics in *Mimulus*. I was also invited to guest lecture for the Integrative Biology of Plants course at the College of William and Mary and for the Plant Evolution and Development course at SUNY Cortland.

The abovementioned experiences and my research background allow me to be able to readily teach courses related to plant biology, molecular biology, development, evo-devo, and genetics and genomics. I would like to develop a course that has sequential lab components with fast growing model systems such as *Arabidopsis thaliana* or Wisconsin Fast Plants, so that throughout the semester the students learn concepts and experiment with plant development and molecular biology to generate their own transgenic plants at the end. I am also keen on developing upper-level courses in science communication and data visualization, as well as courses exploring relationships between biological disciplines and humans/society/culture (e.g. Plants and People).