Growing up an animal-obsessed kid, my heroes were Steve Irwin and the Kratt brothers. From Jeff Corwin to David Attenborough, I couldn’t get enough of nature TV. But for all these amazing science presenters, one thing I never saw was someone like me. Throughout my education, biology was a boys’ club where I stood out from my straight, male classmates, lab members, and advisors. Now, I want to be part of a new generation of educators, a generation as diverse as our interests. As a queer and neurodivergent scientist, I strive to bring my unique perspectives to my teaching to make the scientific community a more welcoming environment for all. My personal teaching philosophy hinges on two core concepts: honesty and creativity.

I find it of the utmost importance to be honest with my students. One way I express this honesty is by thoroughly explaining classroom decisions. A common complaint among teachers is that students are unmotivated or uninterested in the material. However, students have little motivation to interact with material in a meaningful way if they are not given insight into the seemingly arbitrary decisions that are often made for them about what they should be learning. In teaching introductory biology labs, I have often interacted with students who are “just there for a grade.” I have found success reaching these students by honestly explaining the scaffolded structure of the class so that they understand that assignments that seem like busy-work now are in fact steppingstones to larger projects later in the course. For example, I take time to explain what will be happening in lab over the next few weeks so that students can see how that day’s activities fit into the course. I have found similar success in using rubrics and thorough comments to explain my grading decisions. By clearly outlining reasons for point deductions, as well as tangible strategies for future improvement, I can be honest with students about where they stand in the course and better help them achieve their goals for the class.

I also express honesty by communicating honestly about failures. Whether it is an experiment with inconclusive results, a publication rejection, or a grant falling through, scientists often face failures in their careers. However, in my experience senior scientists rarely communicate these failures with their students. This exacerbates the unbalanced power structure of the classroom by making the teacher seem invincible while students, especially those not traditionally welcomed into science, feel the sting of failure even more harshly. When I teach, I am honest about my failures and encourage students to see failures as opportunities to learn. For example, in weekly meetings with undergraduate researchers that I mentored, I shared what went well and what went poorly that week and encouraged my mentees to do the same. While this was awkward at the start, once everyone was comfortable with the concept my mentees were much more willing to share honestly with the group about where they were struggling and to ask for help. I have similarly applied this concept in classroom settings, where I am humble and honest about my shortcomings as an instructor. For example, when students ask questions that I am unable to answer, I am honest about my lack of knowledge. Instead of attempting to come up with an answer to save face, I help students access resources that are better suited to answering their questions. My ultimate goal is to build a classroom environment in which students are not afraid of failure but rather see failures as opportunities to learn and grow. When I am honest about my own failures, I can set a precedent that discussing failure is not only allowed but encouraged in my classroom.

As a creative person, I hold creativity central to my teaching philosophy. Instead of dull lectures, I want to provide creative approaches to learning that are supported by learner-centered pedagogy. For example, when presenting, I like to include interactive components such as think-pair-share activities. These small breaks in the lecture make it easier for students to digest information and give them an opportunity to actively participate. I also employ the universal design for learning “plus one” approach when developing activities. This approach increases the ways in which students can engage with material by offering multiple options for participation. For example, students may choose to participate in different group roles during an experiment, or explain concepts using words or pictures on an assignment. I used these techniques when developing new activities for the herpetology course, which allowed the lab to transition from a very traditional lecture/specimen observation format to a more interactive one.

Creativity is also key to how I assess student knowledge. I see my role in the classroom as someone who provides students with a toolset to investigate complex problems. Instead of requiring memorization, I want to students to be able to apply scientific approaches to new challenges. For example, in assessments I designed for the herpetology lab, students were asked to explain how they would go about identifying a specimen instead of being expected to memorize the name of every species they had seen in class. Similarly, in an online phylogenetics course I designed, students would spend the first half of the course learning phylogenetic techniques and the second half of the course applying these techniques to their own areas of interest. I want to encourage students to think creatively about how to approach problems, and grade them based on the scientific merit of their problem-solving instead of whether they actually reached the “correct” answer. This is especially important when working with diverse students, as people from different backgrounds often draw on their own funds of knowledge to find creative solutions that are outside what is considered “normal” for the field. Incorporating creative approaches into my teaching and encouraging creativity in my students creates a more accessible and welcoming environment while also recognizing the many diverse ways to approach scientific problems.

Overall, my aim as a teacher is to provide an honest and creative classroom environment that supports all students. I seek to encourage students from underrepresented backgrounds and help them find success in a field that is historically unwelcoming to minorities by explaining my teaching decisions, being open and honest about failures, using creative pedagogical approaches, and nurturing creative problem solving.