Teaching students is one of the most fulfilling aspects of working in higher education. As educators, our goal is to disseminate knowledge, teach specific skills, and prepare students for their future careers. Each student is unique and, consequently, each classroom is unique, and teaching effectively requires diverse strategies to meet students where they are at. To do this, my teaching philosophy can be subdivided into four foundational pillars: (1) clarify learning objectives and assessments, (2) engage students using multiple access points, (3) communicate concepts to diverse audiences, and (4) empower students to solve new problems.

(1) **Clarify Learning Objectives and Assessments** – Students often enter learning environments with little knowledge of what they are expected to learn, how they can seek support, and how they will be evaluated. It is up to the instructor to articulate this. Clear articulation of learning goals and objectives helps students understand what is expected of them, motivate classroom activities and participation, and prioritize content for assessment. It has been shown that a clear understanding of what and why they are learning helps increase students' motivation and persistence (Ambrose et al. 2010; Babb et al. 2018; Winkelmes et al. 2019). Early on in any course, I engage students in designing "community practices" within the classroom. The goal is for students to clearly communicate how they want to engage with each other, dispelling the myth that they are competing for the best score and instead reinforcing that they are a collaborative community. I also spend time discussing the "hidden" curriculum of an academic class. For many reasons, students may not be aware of or understand when to use support services (such as attending office hours or leveraging academic accommodations). Increased clarity helps provide equity in the classroom where all students are made aware of what is expected of them and what opportunities are available to them.

(2) Engage Students Using Multiple Access Points – Students learn material and participate in the classroom in different ways. I integrate activities into the classroom that help students think about their own strengths and weaknesses as learners in order to think about which learning strategies may be most effective for them (Bransford et al. 2000; Tanner 2012). By promoting student metacognition, I assist students in understanding what it means to learn and how they can meet specific assessment goals. I provide students with flexible options through the course to provide them with ownership over their own learning. Some students may opt to construct formal written reports while others may prefer developing audiovisual presentations. Taking advantage of opportunities to be flexible in assessment ultimately helps students learn.

Students often begin a course from wildly different starting points. Assignments that can be repeatedly submitted, allowing students to learn from their mistakes and gain credit for continued learning, can help even the distribution of final scores between students who started the course familiar with certain material and those for whom the material was fully novel. Creativity can also help motivate students. For example, having students design 'fake' datasets that they can run statistical analyses on and create visualizations for is not only engaging but also help them think critically about data structures and variables of interest.

(3) **Communicate Concepts to Diverse Audiences** – Students will pursue careers in diverse fields requiring them to communicate ideas and information to varied audiences. I integrate discussions with guest speakers that represent varied identities, academic paths, and careers

to help familiarize students with the variety of options available to them. It has been demonstrated that opportunities for students to profile scientists transform student perceptions of who a scientist is and what they do (Aranda et al. 2021). I also work to build course content around modern debates to spark student interest and to compare differences in how scientific ideas are communicated. While a graduate student at Cornell, I gave a guest lecture on direct-to-consumer tests for an upper-level undergraduate Human Genomics Course where I had students evaluate differences between how Senator Elizabeth Warren communicated the results of her genetic ancestry tests with how businesses and genetic researchers describe these results. In this case, students could see how ineffective communication misrepresents scientific work and how current scientific ideas about ancestry conflict with how indigenous groups classify ancestry.

Empower Students To Solve New Problems – Leading students to independent thinking, where they can tackle problems on their own, is a major goal of mine when teaching. Students must feel comfortable trying new techniques, potentially failing, and reaching out to colleagues for assistance. This requires students to be vulnerable in sharing what they do know and what they do not know. I strategically design group activities throughout the semester to help facilitate connections between students so that they can begin to build trust with each other.

As mentioned earlier, students may begin a course with variable levels of familiarity with the course material. For example, part of my responsibilities as a teaching assistant for Quantitative Genetics while at Cornell University was to teach an hour-long dry-lab where students would learn to run statistical models in R. No coding experience was required for this class, in order to make it more accessible to students, but this often meant that some students in the class had no prior coding experience while others had extensive experience. This created an environment where students who were familiar with R finished lab exercises quickly and left early, while other students had to work past the end of class time to finish. This created conflict within the classroom and left some students discouraged. In the future, I would instead ask students who are more familiar with the material to volunteer as group leaders. These group leaders would help students who need additional assistance and would challenge more advanced students as teaching content helps reinforce mastery.

Potential Classes – In addition to introductory genetics or quantitative genetics, I am most excited to teach courses on population genetics, introductory bioinformatics, biostatistics, or data visualization. My experience as a certified instructor through The Carpentries has helped prepare me to teach coding skills in a variety of different contents. I am also interested in developing, either independently or in collaboration with others in the department, a course for upper-level undergraduate and graduate students on how hegemonic ideologies influence scientific hypotheses (i.e., how does the ableist concept of phenotypically 'normal' limit us, how do misogynistic dogmas influence our understanding of sex, how can scientific studies reinforce racist beliefs, etc.).

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