

Teaching Philosophy

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My education in biostatistics was motivated by my desire to use the skills I have to benefit others. As a biostatistician, I can use my fluency in analytic methods to help clinical collaborators solve important problems in public health. Similarly, as an instructor of biostatistics, my goal is to prepare students to apply their quantitative skills to their own passions. It is important that I prepare students to approach problems holistically and in context. As such, I emphasize 1) hands-on experiences with real-world data and 2) exposure to a variety of statistical applications, in order to create an inclusive and relevant learning environment.

As an instructor, I must ensure that my students are not taught biostatistics in a vacuum. Instead, their work should be guided by real-world problems. I bring application-based learning into the classroom by motivating skills and concepts covered in lectures with real-world examples, like statistical graphics found in the media. The topics I cover in class are complemented by hands-on computing lab sessions and homework assignments that use complex data sets and mirror professional statistical reports. Through these assignments, students gain a deeper learning experience by applying classroom skills to a novel situation.

Students' experiences working with data is complemented by statistical communication practice in the form of comprehensive written reports. I acknowledge that students enter my classroom with varied experiences in coding, analysis, and communication. Thus, I build my written report assignments so that all students, regardless of their background, gain a working knowledge of both statistics and effective communication that will enable them to carry out a full research project by the end of the semester. For example, assignments begin with an introduction to reproducible coding in R. In class, students learn statistical methods and how to interpret results in context. Students complete weekly data analysis reports in which the skills need for the required analysis advances with the course lectures. As students' coding, analysis, and communication toolkits grow, reports include less starter code and require more creativity. By the end of the course, students have practiced the skills they need to undertake a full research project. They use a real-world data set of their choosing, develop a research question, select appropriate analysis methods, and present their results. A student's final report is a tangible product that they can use to showcase their skills in job and internship applications.

In providing these projects and hands-on opportunities for student learning, I also acknowledge that students come to biostatistics with different goals. Because of this, I want to allow students choice in the applications they focus on. For example, students are allowed to select data sets and research topics they are interested in. The goal of this approach is that students will be more invested in projects if they are personally relevant and leave the classroom with projects that prepare them for their unique career path. I offer a wide variety of assignments and assessments in my courses, like written statistical reports (with both code and written explanations), coding fluency exams, presentation slides, a research poster, and a web application. Thus, students can showcase their skills in a variety of ways and leave the course with experience in many forms of written and oral communication. This approach allows students to shape their education around their interests.

The overall aim of my teaching is to enable students to achieve their own research and professional goals through statistics. I believe the best training provides students with opportunities to engage in real-world problem solving that ties classroom material to a variety of applications. Through these practices, students gain the confidence and education they need to achieve their own unique goals.