Teaching Statement
Kara McCormack

Teaching statistics and data science is a multi-faceted endeavor, involving a mathematical foundation, a thoughtful approach to study design, and applying methods to real-world problems. In teaching these topics, I seek to show my students that even though a problem might seem difficult at first, great satisfaction awaits completing a problem and truly understanding all the steps. It is my belief that practicing this process again and again builds a sense of confidence in a mental map of solving problems, a truly valuable skill in the world of data analysis. Specifically, in the classroom I focus on 1) fostering a sense of community, 2) incorporating active-learning to teach collaborative skills, and 3) engaging in a reflective teaching practice.

My foundational goal in the classroom is to foster a sense of community, where students feel comfortable working with others and asking for help. In spring 2021, I was part of the inaugural _Teaching on Purpose_ fellowship, a program through the Kenan Institute for Ethics at Duke University. In this program, we discussed the importance of creating community in the classroom and its role in creating more meaning in education. A key takeaway from this program is to prioritize getting to know each student, encouraging all students to visit my office hours during the first two weeks of the term. This is particularly crucial when teaching statistics, as I've found that most students experience some level of anxiety towards this subject. If I can get a sense of a students' goals and learning styles, then I can better cater the course to their needs. For example, I can offer extended office hours on a particular topic, or create supplemental material outlining steps to solve a particular type of problem. In a purely remote environment, it can be much more difficult to foster a sense of community. In this setting, I prioritize more time at the beginning of a class for community-building activities. An example is having students change their Zoom name to an emoji that summarizes something fun they did recently, then having pairs of students introduce the other person's emoji.

Active learning is a key aspect of statistics and data science curricula. I taught several interactive labs from OpenIntro for an Introduction to Statistics course at Duke University. These incorporated a broad range of real-world applications, which helped students across disciplines connect statistics to their own area of study. When leading labs, I gave students a few minutes to read the questions to themselves first, and then discuss in pairs any initial thoughts. Whether their first thoughts were correct or not, this informal discussion helped build confidence in students. For classes involving coding, I prioritized incorporating a live-coding activity for every 15 minutes of lecture time. I implemented this strategy here when introducing first-year population health science master's students to the tidyverse. In August 2022, I attended _Preparing to Teach,_ a workshop preparing graduate students for teaching roles in statistics and data science. One of the biggest takeaways from this workshop was a focus on how to use technology in the most seamless way for classroom activities. For instance, using RStudio Cloud for teaching active coding is an excellent way to avoid the nightmare of installation difficulties when setting up students' computers, as a standardized set of packages can be loaded _a priori_.

As a lifelong learner, I commit to a reflective teaching practice. After each class, I write down three things I'd do differently next time. Without pressure to implement all three things right

away, I make a mental note and work towards addressing them whenever it makes sense. Administering a mid-semester survey is a great way to get feedback on class structure and whether students need additional support. To the best of my ability, I implement reasonable changes based on this survey for the remainder of class. At the end of the term, I give a final survey to see if the changes were helpful. During my doctoral training, I received the [Certificate in College Teaching](). As part of this training, I participated in Teaching Triangles, in which peers in the program exchanged teaching observation and feedback. Peer-to-peer feedback gave me an opportunity to self-reflect and better understand my own nonverbal cues while teaching.

Above all, seeing students understand and become excited about course content is what inspires me as a teacher. Through creating community in the classroom and implementing the latest pedagogical tools, I hope to continue improving my teaching to inspire the next generation of learners.