Teaching Statement
Name

The pivotal role that the practice of statistics plays in scientific discovery presents statistics teachers with many unique challenges. As with most disciplines, teachers of statistics often instruct standard courses designed for students who want to gain a general better understanding of the subject. The widespread use of statistics in all scientific disciplines often causes statistics instructors to be called upon to also educate practicing scientists of all levels in statistical ideas and practices relevant to their fields through both formal lectures and collaborative work. Although challenging, this diverse set of responsibilities can give statistics teachers a poignant insight into the cliché that the key to teaching is communication. It forces one to see that this communication is more than a developed set of gimmicks which enables an instructor to be able to eloquently make a point, but also involves listening to and understanding the desires and learning styles of the students.

I am sure that anyone who has not properly prepared for a lecture only to encounter an uncomfortable sea of blank looks can attest that a key component to good teaching is the clear development of goals and preparation for pathways for their achievement. However, these goals should merely form a structure for the overall outcome of a class and the planned pathways should only serve as possible directions. The intended pathways should be pliable so that they may be modified if they are not effectively leading the class towards its goals. One of my first successful realizations of the power of allowing students to communicate their needs occurred when I was running a series of lectures designed to introduce first year biostatistics doctoral students to the use of SAS in the analysis of survival data. My initial idea was to use small simulated data sets in an introduction of various procedures which would be explored in depth later through case studies of real data. The immediate questions and comments made by the students directed towards practical applications of the various procedures made it clear that my intended plan would not be effective. After a discussion with the class, we decided that the material would best be introduced directly through case studies. I was elated two weeks later while grading the class’ homework assignments to find that every student had successfully gained an elegant understanding of uses of SAS in survival analysis.

Building an environment where it is possible for the class to express its needs is an important part of being a good teacher. I believe that part of this task includes framing all aspects of the material without losing perspective of the overall big picture. Although it is important to learn the form of a t-test and what the Gauss-Markov Theorem states, it is also important to understand their place in the material as a whole and not to get lost in numbers and formulas. A clear discussion of the formulations, uses, and limitations of concepts not only makes it easier to apply them, but it also enables students to express their understanding and provide new insight for the rest of the class rather than blindly memorizing presented material.

Over the past seven years I have served as a tutor, recitation leader, lecturer, and lab instructor in courses for statisticians and non-statisticians, both at the undergraduate and graduate levels. For my work I was awarded the University of Pennsylvania’s Award for Outstanding Teaching by a Graduate Student. I am interested in and able to teach statistics at a wide spectrum of levels to either statisticians or non-statisticians. In terms advanced graduate courses, I am well prepared to teach theory/methods courses in mathematical statistics, longitudinal, multivariate, functional, and time series data analysis and applied courses in the analysis of gene expression and image data.

Aside from my interests in the formal classroom setting, I am also interested in mentoring statistics students and serving as a statistical advisor to students in other disciplines. I have served as a statistical advisor under the supervision of senior biostatics faculty members for several practicing physicians working towards a master’s degree in clinical epidemiology. In addition I have experience with and knowledge of current methods in longitudinal, functional, multivariate, and time series data analysis which can be used to help develop thesis and dissertation work for statistics students at various levels. My experience as a teacher both in and outside of the standard classroom has been rewarding and enjoyable and I look forward to continuing my work.