

Teaching Statement

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A good statistician must be a reasonably good teacher, as we spend so much time discussing methods and results with our scientific collaborators: we must communicate sometimes complex statistical concepts and methods to scientists with little detailed knowledge of statistics.

I am quite good at that aspect of teaching: explaining complex ideas in simple (but not too simple) terms. I do a good job of helping students to identify and understand the essential concepts and issues and make connections between seemingly unrelated methods. However, I wouldn't say that I am a star teacher. My principal weakness, I think, is that I am not sufficiently patient when a student is struggling; I am too quick to provide assistance. In my experience, students learn best when they must figure many things out for themselves, but I find it hard to watch that struggle in action.

At the School of Public Health at Johns Hopkins, I have taught a number of courses for a variety of different types of students. I taught a course in statistical genetics, aimed at graduate students in biostatistics and genetic epidemiology, and covering statistical aspects of gene mapping in humans, by linkage and association. I also taught a course in advanced statistical computing for graduate students in biostatistics. In the last five years, I have been teaching an introductory statistics course for graduate students in the laboratory sciences (particularly biochemistry, immunology, and environmental health). We have only graduate students at the Johns Hopkins School of Public Health, but the statistics background of the students varies widely. My statistics for lab scientists course was not unlike an undergraduate course in statistics, but the graduate students have a much more mature view of science, and are easily motivated as they generally have their own statistical problems that they wish to solve.

I do have some experience in teaching undergraduates. In my senior year of college, I taught a course in remedial algebra. The course was not required and gave no credit; it served to prepare the students to pass a general mathematics exam that was required for graduation. While I was a graduate student at Berkeley, I was a teaching assistant for many statistics courses, and taught an introductory statistics course for social and life scientists one summer. I like teaching undergraduates, and would be very glad to lead a large course. Statistics courses are quite widely disliked, and I would like to help change that. When the subject is presented with good examples, it is not hard to gain students' interest, and once they are engaged, the rest follows easily.

My research interests are focused almost entirely on problems in genetics and genomics, and I am always glad to lead a course on statistical genetics generally, and on gene mapping in particular. (I have regularly participated in short courses on the genetic analysis of complex traits.) But I still view myself as a general applied statistician, and so I would

also like to be involved in courses on introductory statistics, applied statistics, and linear models.

Regarding the mentoring of graduate students, I have advised one ScM student and two PhD students. (Wei-Min Chen is now a postdoctoral fellow with Gonçalo Abecasis at the University of Michigan; his thesis concerned linkage analysis for quantitative traits in humans. Ani Manichaikul should complete her PhD in December, 2007; her thesis concerns gene mapping in model organisms.) I still have much to learn about advising graduate students, but I have gotten much better at allowing them to struggle a bit. I've definitely enjoyed the process; Wei-Min and Ani are both very good, and in our work together we accomplished much more than I would have been able to do on my own.