Teaching Statement

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Student-teacher interaction is central to the mission of every university, and has been, for me, an enjoyable and personally fulfilling experience. It is hard not to get excited about even the most familiar material when one has one or more really motivated students, for whom it is new.

I have taught quite a few courses in mathematics at the freshman and sophomore levels. These include first-year calculus courses at two different placement levels, a two-quarter course on Mathematical Models for social sciences (mainly linear algebra and multi-dimensional calculus with emphasis on economics applications), and a two-quarter course called Studies in Mathematics, an alternative to first-year calculus, which investigated a variety of topics such as properties of Euclidean solids, primality, Diophantine equations, and non-Euclidean geometry. In several of these courses, I was assigned one to three undergraduate assistants, who led recitation sections, helped with grading, and sometimes gave in-class presentations.

In computer science, I have been a teaching assistant for advanced undergraduate and/or graduate courses on the following subjects: abstract algebra, discrete mathematics, algorithms, combinatorics, and formal languages. I have also taught a freshman “Introduction to C++” class and a “professional masters” class on designing and implementing graphical user interfaces in Java. In the latter case, no such course had been taught before, so I designed the course description, curriculum, and recommended textbooks, which were then approved by the department.

One aspect of teaching that is really important to me is being able to motivate and inspire students. I try to show my students that what they are learning is not just “theory,” but rather practical knowledge that will be of frequent use to them. Whenever I can, I like to point out uses of concepts under discussion in the news and other mass media.

Although I began by mentioning the student-teacher relation, I should also emphasize the importance of teacher-teacher and student-student interactions. I try to keep a sharp lookout for good ideas that other instructors are using in the classroom, especially for term projects. It’s also important to have a good feel for what the students have already learned in other courses (and what they haven’t), so it’s good to be in contact with the other instructors.

I believe strongly in the importance of helping students to interact with each other. One way which I’ve found to be effective is a class mailing list, where participation counts toward the students’ grades; this lets the students get help quickly, even late at night, and often helps by identifying unexpected conceptual errors held by students who think they understand the material. Regularly scheduled recitation sessions are also very helpful, even when not a standard requirement for a course. These can be used for planned activities and class discussion rather than just problem sessions: I want to get the class talking to each other, formulating questions of their own, and generating ideas. Recitations are also a great way for graduate students to get teaching experience, and they should be encouraged to help design the activities.

Finally, I am really looking forward to being a graduate student advisor. I feel I have a lot of good problems for students to work on, and I’m eager to share my knowledge and experience with the next generation of scholars.