TEACHING STATEMENT

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I have always recognized that teaching is an important part of being a mathematician. I have thus made a conscientious effort to teach well, and I have found it enjoyable. I began being involved in formal teaching activities as an undergraduate, and I have been a Teaching Assistant (TA) at Stanford for the past several years. I won the Centennial TA Award in June, and I am currently serving as a TA mentor to first-time TA’s.

Much of my recent teaching experience has been as a TA for sections of Math 51 at Stanford, a course in linear algebra and multivariable calculus taken by many first-year undergraduates, most of whom are not math majors. This course introduces some level of abstraction and proofs, and I have enjoyed the challenge of teaching these ideas.

My approach to teaching is based on several basic principles. First and most importantly, I am a dedicated and responsible TA, and I take my duties seriously. Before each section, I diligently prepare my lesson plan to ensure that my students’ time is used as effectively as possible. I take care to include the concepts that are most important and cover an appropriate range of examples. I paid the same attention to detail when helping write exercises for a new textbook for Math 51 this summer.

I value teaching in an environment where students feel comfortable asking and answering questions. This allows me to gauge which concepts they find most difficult and to ensure that they are really learning the material. In order to foster such an environment, I bring a personable, good-humored, and energetic attitude to section. Every time I have been a TA at Stanford, I have learned the names of the students in my sections relatively early in the quarter. I make efforts to keep students engaged, such as asking them to fill in small steps in a solution. I also routinely pause for questions to make sure the students follow what I have explained. More recently, I have also had students think about a problem for a short while in section before I write out the solution.

I am fully aware that math can be challenging, so I am patient with students during sections and office hours, and I try to make all questions feel welcome. I strongly encourage students to come to office hours. At the same time, when answering questions about how to solve a problem in office hours, I try to guide students only so much so that they can still work towards the solution independently. I break each problem down into smaller steps, each of which they can solve on their own.

I am responsive to student feedback and open to suggestions for improvement. For example, in my first quarter as a TA, I received some criticism for not being sufficiently concise when answering questions. As a result, I made an effort to be more focused in my answers and to rein in my zeal for being as thorough as possible. As a TA mentor, I have encouraged my mentees to have midquarter student evaluations and take the responses into consideration for possible improvements. I still look for new ways to improve my teaching even now in my fourth year as a TA. These include eliciting more active student involvement and making

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sections worthwhile for as many students as possible by striking the right balance between reviewing fundamental concepts and introducing challenging problems.

Overall, I have enjoyed teaching, and I take pride in my students’ achievements and progress. For example, I was very impressed by one student who, after scoring poorly on the first midterm exam, made a concerted effort to improve by seeking help in office hours and eventually scored almost 90% on the final exam. Such instances are particularly satisfying; in general, my most rewarding moments of teaching are when students show that they have really understood the material.

Finally, I am also interested in undergraduate education outside of the courses I teach. For example, I am planning to give a talk on the combinatorial approach to finite-type invariants in the undergraduate math seminar later this academic year. I have occasionally been asked by students in my sections about my research, and I am glad to have an opportunity to present a topic which is not too far from my research, but which should still be accessible to undergraduates with a strong interest in math.

I look forward to the teaching endeavors that lie ahead in my future career, such as teaching my own lectures rather than sections. I will continue to do my best to teach well and to strive for further improvement.