Ryan Gatski
UTA Reflections Essay

I submitted my application for the UTA program after several semesters of upper-level mathematics coursework at the University of Arizona. I did so with the desire to gain teaching experience in preparation for graduate study. I hoped to be able to apply my knowledge and mathematical maturity to help students who were in the same position I had been just a few years earlier. In retrospect, my initial expectations were narrow and I vastly underestimated the personal and professional growth I would realize as a participant.

The program assigned me as a teaching assistant based on their needs, my interests, and my coursework history. I chose probability theory because I admired its broad potential for application and I could envision myself studying it at the graduate level. I was familiar with the course instructor, since I had previously enrolled in another of his classes. He became a mentor in the sense that he was open, honest, and willing to answer any question I had, ranging from course material to career advice. My schedule materialized as a compromise of his expectations along with my interests, comfort, and the goals I set for myself as a teaching assistant. It was instructive to observe how my mentor carried himself professionally, and how he prioritized his thinking when solving problems. His performance prompted me to critique my own work habits, and led me to identify areas where I could improve. I have considered teaching mathematics as a career, and the mentorship allowed me to effectively shadow someone in this role.

My primary responsibilities included holding weekly office hours for the students in my probability course as well as weekly sessions in the tutoring room of the math teaching lab. These assignments had varied requirements for their preparation. For instance, in my probability course I would regularly attend the lectures, review my notes, and complete the homework along with the students. This engagement naturally led to substantive and productive discussions with those who attended my office hours. In contrast, my sessions in the math teaching lab were less predictable, since this venue caters to students enrolled in any undergraduate math course. However, this environment was exciting because of the colorful personalities of the tutors and faculty, along with the breadth of their technical discussions. For sessions in the math teaching lab, I found it helpful to review the topics that were being covered in the second and third semester calculus courses, since these students were most likely to attend. There were times when engineering and physics questions arose and some improvisational approaches were necessary to solve the problems. If I was unable to answer a question, I could thankfully appeal to other teachers in the room. This demanded good communication so that I knew the names and expertise of the others tutoring alongside me. It is unreasonable to think that you will be able to answer every question posed to you, but you can defend against this possibility by arming yourself with the broadest possible spectrum of mathematical knowledge.

As a student, I had a tendency of reticence around my instructors and peers. Success as a tutor demanded me to shed this quality. I observed a similar shyness in many of my students, but it was often just at the surface and rooted in uncertainty or confusion with their work. Most would drop their reservations if, for instance, I initiated a conversation. Taking that first step to offer help and show kindness was critical to establish trust and open a dialogue conducive to learning. Once the questions, answers, and ideas could flow freely, everyone involved could enhance their understanding. This collaborative learning experience is enjoyable and in many ways superior to studying alone. It demonstrates that there are aspects of being a good mathematician that textbooks don't always address. Likewise, the interactions I have had with my mentor have inspired me to try to form closer working relationships with my future instructors as well as other faculty at the university. Doing so will ease the struggle of learning in upper-level courses and help me sharpen the communication skills that are critical for a successful career.

The focus of the program extends beyond teaching. The weekly UTA seminar included me in an intimate group of talented peers with similar interests and goals. The development and delivery of a technical presentation to this group became a fruitful exercise in independent study that I will be able to draw upon in my future work. In the process of tutoring and reviewing material, I was, at times, able to obtain new clarity with concepts that I had learned in my past courses. I therefore recognized the benefit of refreshing my understanding of past topics as a way to maintain my mathematical knowledge base. My experience as a UTA has taught me to learn not just for the purpose of completing homework or meeting project deadlines, but in order to exercise my analytical thinking skills and to train myself to solve the problems which have yet to reveal themselves.

I would not hesitate to recommend the UTA program to undergraduate mathematics majors, particularly if they are entertaining the idea of a career in teaching. Moreover, it would benefit students who view themselves as excessively shy, since it can help address this communication deficit. It is also a great option for those looking to shake off the routine of coursework and apply their mathematical skills selflessly. The program can accelerate your development toward your post-college career under the guidance of a supportive group of faculty and peers. My experience demonstrates this potential for positive growth.