

Teaching Statement

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As a student in Makardah, India, I found mathematics very intriguing but nonetheless very challenging. The subject matter grabbed my interest when I had an excellent teacher in the 10th grade, but learning it well also made me very frustrated at times. Still the logic and the elegance of the subject matter drew me to the field to the extent that I decided to become a Math major as an international student at Bryn Mawr College. As a teacher I draw a lot from my own experience of my early days of mathematics at Bryn Mawr, where I had to quickly bridge the language gap in a very traditional classroom setting. I developed a very personalized style of learning partially to overcome the initial language barrier I faced coming from a non-English speaking high school education. I learnt to approach difficult concepts with multiple learning tools such as graphs, tables and diagrams where there is less emphasis on language comprehension and more on logical analysis.

I started my teaching career here at UCSC 25 years ago. My interest in teaching introductory Mathematics courses morphed from my two particular experiences: one as a student of Math Education and the other when I worked as a Mathematics coordinator for the Academic Excellence (ACE) Program which is based on a collaborative learning model. The mission of the ACE program is to increase the diversity of students graduating with degrees in science, technology, engineering and mathematics. I started my professional career as a Mathematics Coordinator in the second quarter of the ACE program. Working with a small group of students from diverse backgrounds gave me a first-hand knowledge of the kind of difficulties our entering freshmen face in their Math classes due to their lack of preparation in high school and sometimes their lack of confidence in their ability to master the subject.

I started to pilot some of the teaching tools while I taught in ACE's small collaborative learning group setting. I use some of those tools today as I teach these big lecture classes. For example, I realized having a sense of community to form a learning environment is very important to effective teaching. I try to achieve that during my office hours and the exam review sessions particularly dedicated to addressing the students' needs in learning the material. I disengage myself from direct instruction during these sessions and facilitate students' learning through collaboration. Mentoring students about how to study and overcome math anxiety also fosters a sense of trust that is invaluable in building community.

In the course of my teaching, I became intrigued and curious about how we could help entering students to bridge the preparation gap and meet the demand of UCSC's fast-paced quarter system. I find it challenging and rewarding to meet a

class mostly made up of freshman in the Fall and help them navigate toward becoming successful Mathematics students to the best of their ability. By the time the Spring quarter rolls around, I find by and large that these students are comfortable with thinking analytically and effectively processing a large number of concepts in a short span of time. High expectations and appropriate academic nurturing seem to be the key factor in achieving this goal. My training in Mathematics and Mathematics Education helps me evaluate the different learning styles of this diverse body of students and allows me to implement different methods of instruction. For example, teaching students how to approach a word problem is always a very difficult task. I have developed a logical rubric of steps where students are carefully guided to think in a systematic manner that leads them through the steps from the hypothesis to a conclusive answer.

I serve approximately 600-700 students a quarter teaching the introductory Math classes such as Math 2, Math 3 and Math 11A. Moving from the small group work at ACE to teaching big classes has enabled me to reach a large number of students help them develop their skills. I have restructured Math 2 to better prepare students for Math 3 and beyond, and have piloted Math 2S, a two quarter sequence of College Algebra for students needing some extra help and time to transition into a university -level Math class, in collaboration with the Learning Support Services (LSS) team. I also use the ALEKS program as an on line tool to bridge the gaps in the students' math backgrounds for the UCSC introductory Math classes.

For me, the key to this kind of teaching is to show students how concepts are interconnected, helping them comprehend the big picture. I bring in selected examples to show them how abstract concepts are utilized illustrating their relevance in the real world. This approach fosters students' self-confidence in approaching mathematical problems with structure and logic and builds their confidence in their own abilities to handle the subject material. Tapping into students' inherent intellectual abilities and showing them that Math can be a fun subject if approached logically has proven to be an effective practice for me. Each student's success matters greatly to me and I genuinely believe that each of them can be successful if we provide them with the mentoring needed especially during the first year. My experience working with underrepresented students has given me a clear vision of how to help and retain a diverse student body in the STEM majors. I feel privileged to be in this role where I can serve the greater campus community on behalf of the Math department in strengthening the introductory Math curriculum as well as helping a diverse body of students become successful in their undergraduate education.