

## STATEMENT ON TEACHING

Valerie J. Peterson

Somewhere on my way through high school, I fell in love with mathematics. A bit later, somewhere on my way through a Ph.D. in mathematics, I fell in love with teaching. I am quite privileged to be embarking now upon a career that allows me to engage daily in both of these pleasures, while growing as a mathematician and an educator. I enjoy the practice of mathematics on its own, as a science and as a creative undertaking, but my innate enthusiasm for the subject has found its home and purpose in the classroom. Sharing insights and making discoveries with students is my favorite part of the day.

I have taught an array of courses at the University of Illinois, encountering a diverse population of students. I have employed an assortment of teaching methods. There have been trials along the way, but each challenge has informed my beliefs about how to be an excellent instructor. Indeed, one of the great delights of teaching is that my students and I both learn a great deal every semester.

I have learned how to enter my classroom on the first day of the semester and make students feel welcome while outlining my high expectations for them. I establish early on that our class will be a place that fosters dialogue and respect, and I make clear that this requires the active involvement of all participants. I also try to impress upon my students how very much I want them to succeed. I promise to match any effort they are willing to put forth in achieving their goals.

I have learned how to ascertain the backgrounds of my students and adjust the curriculum when appropriate. By setting tasks and assessing students' responses I learn where they are struggling and where they need to be challenged. Incorporating group work is an excellent way to gain insight into students' thinking. It provides students with a comfortable setting in which to practice communicating mathematics. It also provides me with a birds' eye view of their thought processes and misconceptions. In addition, I am always cognizant of my audience. Are my students math majors who need a firm conceptual foundation before moving forward in their program? Are my students pre-service teachers who will be declared competent to teach after having only my class in mathematics? These two situations require different emphases and different preparation on my part.

I have learned how to be flexible, both in my exposition and in what I recognize as mathematical understanding. It is possible to give informal explanations that help students develop their intuition without sacrificing rigor or compromising curricular goals. I work at balancing my formal understanding of mathematics with a common-sense approach to which students are receptive. When students have a good intuitive understanding of a concept without being able to articulate their understanding clearly, I help them build on their intuition while incorporating vocabulary and exposing them to abstraction.

I have learned how to keep students engaged. I am constantly questioning my students, often responding to their questions with directed questions of my own. If I use questioning to help students build their own understanding of mathematics, I eliminate the need to passively distribute facts and algorithms. In my classroom, the expectation is that understanding will come from active participation and not from me. There are never surprises on the written assessments I give my students, because our regular interactions inform me of their individual progress. I also make my classroom a comfortable environment which respects students' individuality. I encourage students to come to me for help but do not pressure them; students must decide for themselves to become responsible for their learning.

I know that my efforts to be effective in the classroom have improved me as a teacher. I also know my efforts have impacted others because my students and peers have responded in ways that support this. Nearly every semester my student evaluations have earned me a spot on the university's *Incomplete List of Teachers Ranked Excellent by Their Students* and my department recognized my commitment to undergraduate instruction with a teaching award last spring.

Developing my teaching expertise and increasing my knowledge of pedagogy have helped me cultivate a deeper appreciation for mathematics. The most prominent lesson I have learned through my endeavors to improve, though, is that scholarly inquiry and teaching do not exist in isolation. Mathematical understanding is most gratifying when I have others with whom to build and share it. At the end of each semester I hope students leave my class not only having learned some mathematics, but also having a manifest sense of curiosity, enhanced maturity as scholars, and the impression that they have done something worthwhile. I know this is how I feel.