Teaching Statement
Eduard-Wilhelm Kirr

My experience starts with teaching high school classes during the 1993-1994 academic year. This was the practical part of a teaching module I had been taking as an undergraduate in Romania. My responsibilities were to prepare lesson plans and quizzes and sometimes teach the class and grade the students’ work. From 1994 to 1997 I had been a teaching assistant in the Applied Math Department at University of Cluj, Romania. I was in charge of the recitation classes and preparing, administrating and grading the midterms. From 1997 to 2001 I had been a graduate student instructor in the Math Department at the University of Michigan. I taught Pre-Calculus, Calculus I and II being fully responsible for several sections each of approximately 30 students. I also taught recitation/laboratory classes for differential equation courses where I extensively used computer simulations. Since 2002 I have taught at University of Chicago both undergraduate classes, Mathematical Methods for Physical Sciences, and graduate classes, Applied Analysis. I also volunteered for the REU program.

I have been exposed to both traditional and reformed methodologies. I found that tailoring your techniques to the course and the students it is aimed at has a tremendous impact on the teaching efficiency in undergraduate education. Whether you deal with a class for engineer majors or with math majors should make the difference in choosing the textbook and the level of rigor. I also found that preparing good toy examples easy to understand but complex enough to cover the material you are presenting is difficult, time consuming, but extremely rewarding in the long run. Getting students together to work on problems and then to continue outside the class is both a good motivation for them to finish homework and a good opportunity to deepen and express their knowledge which in my opinion is essential in mastering mathematics. Computer simulations proved extremely helpful in teaching differential equations. In my research I am blending theory and simulation to uncover the reality. Therefore I think that educating students in this direction should be part of the curriculum in which I am eager to contribute.

During my graduate and postdoctoral years I have actively participated and lectured in seminars aimed at graduate students (such as VIGRE seminars). My lectures focused on both summarizing recent progress in my research area and on presenting my own contributions. I think that educating people in what I do and understanding what they do is an important step in becoming both a better teacher and a better researcher.