Teaching Statement

Kevin Moore

My main teaching interest is to teach computer architecture. Teaching introductory computer architecture is to guide students through the seemingly impenetrable complexity of a computer. By exploring how complex components like registers and arithmetic units can be built by combining simple devices and how those components can be linked by data paths and clock circuits students come to understand that a computer not magical, but merely a combination of many simple parts. In advanced computer architecture, students come to realize that the modern computer with which they are familiar are so very complicated not because of the task they perform, but the speed at which they perform it.

The majority of my teaching experience thus far came as the leader of a discussion section in an introductory programming course and as volunteer and private tutor. My duties as section leader included preparing and delivering a short lecture of forty minutes, preparing in-class exercises, and responding to student questions in a weekly office hour.

As student for nearly my entire life, I have been fortunate to experience good teaching in a variety of forms. In the classroom, I've heard clear and insightful lectures. In several independent study courses, I've been given excellent one-on-one instruction. And, in my post-graduate education I've had the benefit of working closely with a mentor. As I begin a career as a researcher and educator I am certain that I will draw on the examples of my own teachers as I strive to fill each of these roles.

Although inexperienced as a lecturer, I have the ability to speak clearly in public and to connect with students that will help me to become an effective teacher. Beginning with my experience as a teaching assistant, my graduate education has taught me to speak comfortably in front of a crowd. In addition to my teaching role, I have spoken in public many times about both my own research and that of others. Preparing and delivering these talks has helped me learn to structure my ideas coherently and to present them in a clear and concise manner.

Of the teaching roles I mentioned above, my greatest strength and the bulk of my teaching experiences is in one-on-one instruction. In both high school and as an undergraduate, I tutored students from elementary school to college freshmen. In high school I volunteered as a tutor in the Making Waves program, which provides after school tutoring for underprivileged middle school students. In college, I volunteered as a tutor in a program that helps non-English speaking students in the local community (Durham, NC) and worked as a tutor for the peer-tutoring program at Duke. Finally, as a teaching assistant, I spent many hours working one-on-one with my students.

Thus far I have only had a few opportunities to act as a mentor, but those have been some of the most rewarding of all my teaching experiences. As a software engineer, I worked with students who interned at our company. I helped them adjust to working on large

software projects where they were expected to learn and work with code written by others. Recently, I've had a similar experience as a graduate student. I've had the opportunity to work with junior graduate students while developing LogTM. Starting from a design I developed as part of my doctoral research, they have taken the project in new and exciting directions. My experience has helped them to design experiments to test their ideas and their enthusiasm and creativity has reenergized my research.

In the coming years, I hope to embrace each of these roles as a teacher. I look forward to instructing undergraduate and graduate students in the classroom, particularly by teaching computer architecture. I look forward to working with students outside the classroom as both an instructor and as a mentor to graduate students. I hope to form lasting and productive relationships with students and to watch them develop as people and researchers.