

## Melanie J. Martin

## Teaching Statement

I find teaching both energizing and inspiring. I enjoy not only challenging students, but also being challenged by them. I have taught courses in Mathematics and Computer Science and worked as a Teaching Assistant in graduate and undergraduate Computer Science courses. I also designed, implemented and coordinated a program aimed at recruitment and retention of minority students in Computer Science. Some of my teaching strengths, highlighted in my teaching evaluations, are:

- Well-prepared lectures, activities, assignments, and exams.
- Clear communication with students.
- Timely feedback on all assignments.
- Steady, reasonable yet challenging, workload throughout the course.

My sincere desire for students to learn the subject matter, gain the self confidence to use that knowledge and to explore on their own, has lead me to an approach to teaching which incorporates:

- Providing students with context for what they are learning.
- Use of real examples and materials where possible.
- Variety of teaching methods and activities, taking into account a diversity of learning styles.
- Emphasis on critical thinking and ethics.

I believe that my varied life experience and somewhat non-traditional academic career enable me to relate well to students from diverse backgrounds and to provide them with appropriate teaching and mentoring.

I would welcome the opportunity to teach across the CS curriculum at all levels and to teach a variety of interdisciplinary courses.

### TEACHING EXPERIENCE

#### California State University, Stanislaus (Fall 2005 to Present)

I am currently a Visiting Lecturer teaching: Statistics, Finite Mathematics, Introduction to Programming II, and File Structures.

#### New Mexico State University (Fall 1995 to Spring 2005)

For the **Mathematics** Department, I **taught** *Calculus I*, *Calculus II*, and *Calculus for Engineering Technology*.

The calculus courses I taught at NMSU were developed and taught within a nationally recognized calculus reform project funded by the NSF and were strongly focused on the incorporation on written projects.

While teaching calculus for engineering technology, I worked with the faculty in the Engineering Technology Department to ensure that the course was at the appropriate level for their students and met the needs of their curriculum. As an individual project I had the students interview someone working in the area of engineering they were studying to find out how they would use calculus.

For the **Computer Science** Department, I **taught** *C Programming* and served as a **Teaching Assistant** for *Computer Literacy, Introduction to Data Structures, Automata, Languages, Computability* (graduate course).

My duties as TA have included running labs, office hours, lecturing when the professor is out of town, and grading homework and exams. My experience as a TA inspired me to co-write a handbook for TAs in our department and to run a TA training seminar. I also co-wrote a proposal, which was accepted and implemented, to provide team-teaching opportunities for PhD students with faculty to teach lower division courses.

More recently, when our department received a MII grant from the NSF, I was selected to implement the undergraduate education component as the **CS Undergraduate Pathways Coordinator**. The focus of the grant is on recruitment and retention of under-represented minorities in computer science at all levels, with a specific focus on Native American and Hispanic students. I spent a year implementing and coordinating this program and the results are reported at the Science, Engineering, and Technology Education Conference 2004 and the Sun Conference on Teaching and Learning 2004 (see <http://www.cs.nmsu.edu/~mmartin/pubs/> for both).

Within this framework, an immediate challenge was to increase student success rates in two of our gateway courses and improve retention of undergraduate majors. I define gateway courses as those in which success or failure is a determining factor in whether or not a student becomes a CS major. We chose to focus on our introductory course, CS 171 Algorithmic Computation, and our new course, Math/CS 278 Discrete Math for CS.

I chose a holistic approach, where we view the student as a person who functions in many interconnected areas including: academic, peers, family, work, cultural, financial. If the student is out of balance in any one area, it will most likely affect the other areas. Through mentoring and academic assistance we address issues in all of these areas. I implemented a team-based approach where each team included: peer mentors, focus groups leader, web programmer, teaching assistant and professor. Our team framework ensured that the interconnections were recognized. I hired, trained, and supervised peer mentors, who were trained in cultural sensitivity and met with directors of various resources available to students on campus, so that they are able to address non-academic issues with students.

Since students have a diversity of preferred learning styles. We endeavored to meet as many of these preferences as possible: in addition to traditional classroom and lab, we provide learning in small groups (focus groups), one-on-one (mentors and TA office hours), and by themselves with web-based support. We got as much input as possible from the students to assess our success and provide direction when we need to make adjustments in our strategy.

### **University of Oregon (Fall 1991 through Spring 1994)**

I **taught** *College Algebra, Math Symmetry, University Math 1, and University Math 2*.

**Course Coordinator**, University Math 2, Spring 1994

Served on the **committee to design and implement University Math courses**, which were taught for the first time in Fall 1992. These courses constitute a year-long sequence in

Mathematics, primarily for students in the Humanities and Social Sciences. The committee met during the Spring and Summer, 1992.

### **Recent Teaching Seminars Attended**

December 14, 2004 at NMSU Teaching Academy

**Team-Based Learning: How Small Groups Can Transform a Class**

Presenter: Larry K. Michaelson, Central Missouri State University

Presenter: L. Dee Fink, University of Oklahoma

January 10, 2005 at NMSU Teaching Academy

**Fostering Critical Thinking in Scientific Disciplines and Across the Curriculum**

Presenter: Craig E. Nelson, University of Indiana, Bloomington

January 10, 2005 at NMSU Teaching Academy

**Responding to Diversity: Three Pedagogical Changes That Improve Retention and Achievement**

Presenter: Craig E. Nelson, University of Indiana, Bloomington