



University of Michigan Provost's Teaching Innovation Prize

2017 WINNER



MARY LOU DORF
Lecturer IV
Electrical Engineering and Computer Science
College of Engineering
mdorf@umich.edu

- Dr. Dorf would like to acknowledge the following:
- The outstanding staff of EECS 183 for their support, dedication, and belief in the payoff for the students that make the Final Project and Showcase a huge success.
 - National Center for Women & Information Technology (NCWIT) for the grant that made the arduino project possible.
 - JP Morgan Chase for being a platinum sponsor since the inception. Their support for an intro course has gone a long way in making the Showcase a huge success.
 - The many companies that sponsor the Showcase. The interaction of company representatives with the students is invaluable.

Sponsors:

Office of the Provost

Center for Research on Learning and Teaching (CRLT)

University Libraries

Inspiring Confidence Through Achievement: Inclusive Teaching in Computer Science

Innovation Description

EECS 183 “Elementary Programming Concepts” introduces many U-M students to computing and computer science, and its design dispels stereotypes about what programming is, and who can be programmers. Beginning students often struggle with confidence in their ability to succeed. Female students and underrepresented minorities—who are less likely to have prior experience according to U-M data—are disproportionately impacted. Every aspect of the course is created to be explicitly inclusive. Women and other minority groups in computing are represented in the teaching staff, lecture materials, course projects, and all course materials in general.

Undertaking a substantial programming project and showcasing their teams’ successes build students’ confidence through a sense of earned accomplishment at an early stage of the computer science curriculum. The project becomes tangible evidence that the student can actually do the work of a computer scientist, empowering women and other underrepresented groups to continue on in the major and into the field. Building on the success of the authentic learning opportunities provided, the course boosts retention of students who may otherwise become discouraged and leave before hitting a traditional capstone project.

eecs183.org (course URL)

Student Comments

“I absolutely loved EECS 183. I found that I wanted to complete assignments and projects for 183 before work for any of my other classes, and that I enjoyed the process of learning and applying concepts to solve complex problems.”

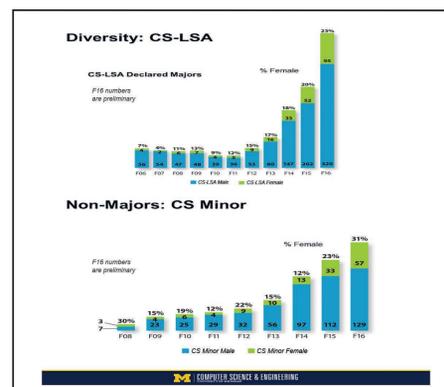
“I never felt more accomplished than when I finished a project or fixed a bug I had been struggling with for hours at a time.”

“I loved getting the chance to be creative and explore computer science concepts on my own, and create something I could show my friends and family, as well as companies, at the Showcase.”

“Completing the project made me more confident in my abilities as a programmer and a student, and getting the chance to present at the Showcase was a great opportunity to demonstrate what I had learned throughout the term and also to witness other students’ creativity.”

“There is no doubt that EECS 183 has changed my life. It is and truly will remain my favorite class ever.”

Examples of Teaching Innovation



Enrollment demonstrably increased for both the CS major and minor, particularly among female students.



Students proudly display their final projects at the Showcase to an audience of their peers, instructors, and invited guests.



A diverse and welcoming teaching staff cheers students on as they work through challenging assignments.