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Diversity Awards to Honor Jacobs School Professors



CSE's Alvarado hands diploma to incoming freshman graduate of the department's Summer Program for Incoming Students (SPIS).

On Wednesday, March 1, UC San Diego will hand out its 2016 Equal Opportunity/Affirmative Action Diversity Awards at a ceremony in the Price Center West Ballroom. Three of the awards will honor individual faculty members from the Jacobs School of Engineering: Electrical and Computer Engineering (ECE) professor Pamela C. Cosman, NanoEngineering associate professor Darren J. Lipomi, and Computer Science and Engineering (CSE) associate teaching professor Christine Alvarado.

ECE's Cosman, who is also associate dean of the Jacobs School, has been very vocal as the school's faculty equity advisor in leading efforts to boost the number of women and minorities. At one point, she was the only woman professor in ECE, at a time where there were no other underrepresented minorities on the faculty. Thanks in large part to her efforts and those of the whole department, in early 2017 ECE has six female faculty members. Furthermore, in part because of Cosman's efforts school-wide, over the last two years 32 percent of faculty hires in the Jacobs School were women, and 11 percent were from underrepresented minorities.



NanoEngineering's Darren Lipomi has been that department's Diversity Officer since joining the faculty in 2012. He is also the departmental representative to the Executive Advisory Committee (EAC) for the IDEA Center, which promotes the recruitment and retention of underrepresented minority students for the entire Jacobs School.

ECE professor Pamela Cosman (left) and NanoEngineering professor Darren Lipomi.

According to the letter nominating her for the honor, CSE's Christine Alvarado "works tirelessly to broaden the participation of underrepresented groups in computer science... through her teaching, research and mentoring." Alvarado helped develop the AP Computer Science Principles curriculum and test, a new AP Computer Science course aimed at bringing more students into computing by showcasing its broad range of ideas, applications and impacts. Alvarado has also held key positions in the Grace Hopper Celebration of Women in Computing, and the National Center for Women and Information Technology Academic Alliance. She has made "pivotal contributions" in the development of online courses in Java programming (jointly with fellow CSE teaching professors Leo Porter and Mia Minnes), and the courses have already been viewed by tens of thousands of learners all over the world on the Coursera online platform.

Alvarado is an important mentor and source of inspiration for students in the CSE department. She is a faculty advisor to the student organizations Women in Computing (WIC) as well as Graduate Women in Computing (GradWIC). As part of her research mandate, Alvarado is also documenting and analyzing the discrepancy between the number of women accepted into CSE, and the eventual enrollment statistics. "Women make up 25 to 30 percent of accepted CSE students," notes Alvarado, "yet they account for only 18 percent of the department's first-year enrollments and only 12 percent of transfer students." At this year's premier conference on CS education research, Alvarado will present a parallel study on undergraduate gender differences related to confidence and attitudes toward computer science.



Computer science associate teaching professor Christine Alvarado.

Above all, Alvarado is widely acknowledged as a leader in innovative approaches to CS education, especially at the undergraduate level. Underrepresented students have been important beneficiaries of the Early Research Scholars Program for sophomores, thanks to funding from the National Science Foundation (NSF), and many of these students continue to engage in research in the department after their participation in the program. Also with NSF funding, in 2016 she and colleagues Mia Minnes and Leo Porter also implemented a new course structure for large-format courses. By dividing a large section of 200 students into seven smaller "micro-classes", students felt a stronger sense of community within the course, an effect that has been shown to help retain students from underrepresented groups.

Prior to joining the CSE faculty in 2012, Alvarado was a professor of computer science at Harvey Mudd College. In 2013 she received the A. Richard Newton Educator ABIE Award from the Anita Borg Institute for her contributions to diversity in computer science education. Alvarado received her Master's and Ph.D. degrees in computer science from MIT in 2000 and 2004, respectively, after earning her undergraduate degree from Dartmouth College in 1998.

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