

6-19-2014

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### Recommended Citation

"Promoting Computer Science" (2014). *News Releases*. 2930.  
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# University of Dayton, Ohio (url: <http://www.udayton.edu/index.php>)



## Promoting Computer Science

06.19.2014 | Campus and Community, Science, Faculty

The University of Dayton has won a highly competitive \$300,000 grant to improve diversity among students in its computer science program.

The funding will be used to train faculty in developing curriculum that engages, and ultimately retains, women and other under-represented students in the field of computer science said Don Pair, associate dean of the College of Arts and Sciences. It will also fund the creation of a new introductory course and substantially revise two additional courses.

"A strength of this program is the readiness of the entire computer science faculty to rethink their teaching models and curriculum for under-represented students," Pair said. "These three required courses serve as the foundation for computer science education. As such, we expect them to cultivate the enthusiasm and competence needed to succeed in the program and in a career,"

The Association of American Colleges and Universities selected 20 institutions for its TIDES initiative — **Teaching to Increase Diversity and Equity in STEM**. The initiative will support curriculum and faculty development activities to develop models for broader institutional change for the advancement of evidence-based and culturally competent teaching in STEM fields (science, technology, engineering, and mathematics), particularly in the computer and information science domains.

Computer science is a rapidly growing field of study. Job growth for the next 10 years is expected to be faster than average in many computer science fields like programming, software development and research, according to the Bureau of Labor Statistics. Advanced interactive technology like mobile apps, smartTVs and smartcars are now a part of our everyday lives.

As a result of these trends, interest in the University's computer science program is growing every year, said Mehdi Zargham, chair of the computer science department. Traditional teaching models and industry culture may not engage or connect with the diverse population of students.

Zargham said the new course developed by computer science faculty will be delivered in ways that a student who has no initial background in programming can become engaged and successful.

"We will focus on graphical language and real-life projects," Zargham said. "Students will learn the basics of programming, but we will also involve them in picking projects they enjoy, with our goal being that they will continue in the program."

The project is responsive to the need to meet U.S. workforce demands in the computer/information science disciplines, which by the end of this decade will account for more than 120,000 new jobs that require a bachelor's degree in a STEM field. This is in line with the recent report by President Obama's Council of Advisors on Science and Technology (PCAST) who noted that 'one million more' STEM graduates are needed in the next 10 years for the U.S. to remain a global leader in science and engineering.

The grant is the University's first significant award to support computer science education, and it is expected to have an impact across the entire University, Pair said. The new and revised curriculum will directly impact the introductory courses in computer science that are required of students who major in computer science, computer information systems, computer engineering, and electrical engineering. The newest course will also be available to students of all majors in the university, and many of the faculty who will receive the training also teach courses in other disciplines.

The following criteria were used for selection of the 20 TIDES schools:

- High level of institutional readiness;
- Demonstrated commitment to sustaining project activities;
- Targeted focus on increasing the number of women and underrepresented minorities in the undergraduate computer/information science disciplines; and
- Innovation in linking computer/information sciences with other STEM and non-STEM courses.

"It is critically important for higher education to find ways to increase success in STEM fields for both women and all students from underserved communities," said AAC&U President Carol Geary Schneider. "AAC&U is honored to have this opportunity to build on its historic commitment to equity and excellence through the TIDES initiative."

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