

DEPARTMENT OF PSYCHOLOGY

Oakland University professor awarded NSF grants for research

Collaborative projects will look at ways to improve representation,
retention of women and minorities in STEM-related fields



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A collaborative project between Oakland University, the University of Alabama and Tuskegee University was awarded nearly \$1.2 million in grant funds this month by the National Science Foundation in support of a three-year research project that will focus on preparing African American girls from rural school districts to successfully complete an AP Computer Science Principles course.



Associate Professor of Psychology Martha Escobar

“The rationale behind this program is that young women, especially from minority groups, are severely underrepresented in computer science,” said Martha Escobar, Ph.D., an associate professor of psychology at Oakland University.

“For example, in 2013, approximately 30,000 students took the AP Computer Science Principles course, with less than 20 percent of them being women and less than 1 percent being African American women,” she added. “In some states, like Wyoming, not a single minority female took the AP Computer Science Principles exam in 2017.”

According to the NSF, the project will address the need to encourage and support young, African American women as they pursue studies and careers in computer science. As part of the project, researchers will design year-long activities that include workshops and an online peer learning community to immerse 120 female African American high school students from Alabama in computing content and career awareness.

Escobar will serve as the principal investigator for Oakland University on the project, which is entitled “Peer-learning communities to develop rural, African American girls’ computer science knowledge and career awareness.”

OU's share of the total award is approximately \$192,231.

The research grant is the sixth NSF award Escobar has received since arriving at Oakland University in 2015. Earlier this month she was awarded a five-year, \$458,797 grant by the NSF in support of a \$2.6 million collaborative research project that will examine the factors that foster academic career development for historically underrepresented minority (URM) faculty in science, technology, engineering and mathematics (STEM) fields at historically black colleges and universities.

"The rationale behind this program is the observation that, despite the fact that the number of URMs who obtain Ph.D. degrees in STEM has grown over the last 20 years, the number of URM STEM faculty is still at approximately 8 percent, with lower numbers at the higher ranks," Escobar said.

"We believe that efforts should be made not only to recruit URM faculty, but also to retain URMs in Academia, and provide an environment that helps them progress through the academic ranks to reach the status of full professor," she added.

According to the NSF, the project will bring together three historically black universities — Tuskegee University, Tennessee State University and Jackson State University — with the goal of developing, implementing, studying, evaluating and disseminating a model focusing on career development for URM STEM faculty at historically black colleges and universities.

Escobar will serve as the principal investigator on the study, with Oakland University overseeing the research component of the collaborative project, which is entitled "The AGEP Historically Black Universities Alliance: A Model to Advance Early Career Minority Faculty in the STEM Professoriate."

"The program has two components," Escobar said. "The implementation component — Tuskegee, Tennessee State and Jackson State universities — will select early career URM faculty and provide a supporting structure for career advancement, including assistance with writing and submitting external funding proposals, securing visiting faculty positions and receiving mentoring from experienced faculty.

“The research component — Oakland University — will look at how the interaction between the properties of the institution and the faculty perceptions of those factors determine their motivation to advance and stay in Academia,” she added.

The collaborative project was created in response to the NSF’s Alliances for Graduate Education and the Professoriate (AGEP) program, which seeks to advance knowledge about models to improve pathways to the professoriate and success of URM graduate students, postdoctoral fellows and faculty in specific STEM disciplines and/or STEM education research fields.

“Sometimes it is difficult to see how limited the access to science resources can be for some people, even with the U.S.,” Escobar said. “Our goal is to increase participation of individuals who are talented but may lack the opportunities to develop their interest in science.”

Escobar said she was grateful for the support the project has received from the NSF.

“Receiving these grants is extremely rewarding, because it highlights the fact that federal agencies are aware of the problem and are willing to provide support for teams looking to research possible solutions,” she said. “We are encouraged to develop programs that can become institutionalized and are self-sustainable, as well as intervention models that can be translated to other geographical or cultural locations.”