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News Release

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NSF GRANT TO CAL POLY POMONA EXPLORES BARRIERS TO SUCCESS IN MATH

POMONA, Calif. — Why are there fewer women and ethnic minorities represented in the math disciplines? Cal Poly Pomona has received a National Science Foundation grant that will explore that important question as the nation struggles to address the shortage of students entering the fields of science, technology, engineering and math (STEM).

Through a three-year grant of \$449,993, Cal Poly Pomona psychology, sociology and math faculty will examine the way stereotypes may undermine girls' and ethnic minorities' interest and performance in math. Commonly held beliefs like "boys are better at math than girls" may impact a child's performance in math as well as affect their beliefs about themselves.

"Expectations have a huge impact on youths," said Bettina Casad, an assistant professor of psychology and principal investigator of the grant. "Through this research we want to go to the root of the issue."

Casad and co-principal investigators Faye Wachs and Patricia Hale have teamed with Pomona and Azusa Unified School Districts to work with 600 middle school students. Cal Poly Pomona students will also be involved as research assistants.

Researchers will focus on middle school children because girl's science scores fall behind boys' scores between fourth and eighth grade.

"Something is happening in middle school that affects girls' interests in STEM disciplines. This 'something' continues to affect them in high school and college. By looking at sixth, seventh, and eighth graders, we are hoping to pinpoint when this effect is most pronounced," Casad said.

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Over the course of three years, researchers will examine the children's attitudes as well as those of their parents, teachers, peer, counselors and community. At the end of the project, they hope to identify factors that help student success in math and factors that are barriers.

"If we know what the barriers are, we can work on prevention," said Casad. "If we know predictors to success, we can develop training for teachers to boost performance."

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ABOUT CAL POLY POMONA — Striking the perfect balance between urban excitement and rural charm, Cal Poly Pomona is nestled in 1,428 rolling acres in the heart of sunny Southern California. With 2,600 faculty and staff to serve 21,000 students, Cal Poly Pomona's mission is to advance knowledge by linking theory and practice while preparing students for leadership and careers in a multicultural world. The university champions an approach that places learning at the center of every program, course, and activity on campus. Students are afforded opportunities to apply their knowledge through hands-on projects, collaborate with faculty members on research, and participate in valuable internships and service-learning programs. Seven colleges and one school offer 66 undergraduate and 21 graduate degrees, as well as eight credential programs.