



CENTER FOR MINORITIES IN SCIENCE AND ENGINEERING

The Center for Minorities in Science and Engineering is committed to the recruitment, retention, development, and graduation of underrepresented (African American/Black, Hispanic American, Native Hawaiian and American Indian) minority pre-college, undergraduate and graduate students in engineering. Currently, UM is ranked 12th in the nation for awarding bachelor degrees to African American/Black students, according to *Diverse Issues in Higher Education*. At present, 12% of all undergraduate engineering students are underrepresented minorities. The 2014 engineering freshman class has 15% underrepresented minorities.

Retention Programs and Activities

Advising: Through special retention programs, CMSE staff assist students with course selection, provide personal counseling and advice; and regularly track the academic progress of minority students in engineering.

Scholarships, Internships and Undergraduate Research Experiences: CMSE serves as a major source of information on scholarships, internships and undergraduate research opportunities.

Annual Student Recognition and Alumni Banquet: This event encourages academic excellence and promotes retention of minority engineering students by recognizing graduating seniors and those students who have earned 3.0 or higher grade point averages.

Winter Student Leadership Retreat: The annual Winter Leadership Retreat engages undergraduates in two full days of professional development and leadership activities. Students learn about communication, teambuilding, and leadership skills from professionals in the workforce. Students are also given the opportunity to interact with private and public sector employers.

Support of Student Organizations: CMSE provides support and guidance to the campus chapters of the National Society of Black Engineers (NSBE) and the Society of Hispanic Professional Engineers (SHPE).

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LSAMP PROGRAMS

The Louis Stokes Alliances for Minority Participation:

The (LSAMP) Program is designed to assist students in developing the skills and learning the strategies that will guarantee their success in the fields of Science, Technology, Engineering, and Mathematics (STEM).

- **Undergraduate Programs**

Bridge Program for Scientists and Engineers: Each year a group of 20 students in engineering are invited to begin their freshman year with a five-week summer program that offers them an opportunity to begin their college experience early and earn four credits. During the academic year, students receive mandatory advising and participate in special activities designed to enhance their retention, promote academic excellence and expose them to internship and undergraduate research opportunities.

LSAMP Undergraduate Research Program: Through LSAMP, the National Science Foundation awards students stipends to perform cutting-edge research with UM faculty in STEM fields. Participants in the LSAMP Undergraduate Research Program attend seminars on presenting research at technical conferences and preparing for graduate school.

S.C.O.R.E.: The Student Community for Outreach, Retention, and Excellence (S.C.O.R.E.), which is affiliated with LSAMP provides support and assistance to minority students majoring in science, technology, engineering, and math. It also aims to increase the number of students interested in, academically qualified for and matriculating into programs of graduate study.

- **Graduate Programs**

Bridge to the Doctorate Fellowship Program: Sponsored by the National Science Foundation, this fellowship program encourages LSAMP students to pursue PhD degrees in STEM disciplines. The BD Program provides graduate students with stipends and cost-of-education allowances that total \$80,000 for the first two years of their studies. Twelve students at UM will participate in this fellowship program which provides enriched academic support, mentoring from advanced graduate students and faculty, opportunities to participate at national and professional conferences, and the support of a community of scholars.





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Outreach Activities and Summer Programs

Outreach: CMSE staff participate in off-campus career and science fairs as well as host elementary and secondary school children on campus for lab tours and hands-on science activities.

ESTEEM/SER-Quest – Engineering Science and Technology to Energize and Expand Young Minds & Summer Engineering Research: The ESTEEM/SER-Quest Summer Program is a 4-week summer program which offers opportunities in research to high school students (rising high school seniors) who have a strong interest in engineering and are considering a major in engineering. Students selected to participate in the program will conduct a research project in the summer in an engineering faculty member's lab. They also learn about the admissions and financial aid process, take an SAT Strategies course, attend lectures provided by faculty and staff and meet undergraduate and graduate students through various programs and activities. Students also take field trips to local companies in the Baltimore-Washington Metro area.

LEGO: The Summer LEGO Robotics camp will introduce 5th and 6th grade elementary school students to building and programming robots using LEGO Mindstorms. Students will learn mechanical design, construction, programming, and teamwork skills. Students use a computer to teach their robot to move, react, and make sounds in order to solve challenges.

SAT Strategies: This pre-college program is open to all rising 10th, 11th, and 12th grade students. The focus of this workshop will be on successful test-taking skills and reasoning strategies to help students maximize their scores on the SAT. The program provides over 40 hours of instruction, a pre-test and a post-test as well as periodic evaluations to gauge student progress throughout the workshop.

SeaPerch Robotics: The Summer Robotics Camp will introduce rising 7th and 8th grade children to mechanical design, construction, programming, and teamwork skills using SeaPerch, a submersible, remotely operated vehicle (ROV) during a two week span. Students will build the SeaPerch and the robot will be controlled by the LEGO Mindstorm Intelligent Brick.

S.P.I.C.E. Program: This is a week long commuter program for young women who will be entering the 9th and 10th grade next fall and would like to learn more about engineering. Students are introduced to the world of engineering through projects, tours, and guest speakers. The camp is co-sponsored by the Center for Minorities in Science and Engineering and Women and Engineering.

Summer Engineering Research (SER)-Quest: SER-Quest is a program for students who currently participate in the Puerto Rico Institute of Robotics (PRIOR) program located at the Polytechnic University of Puerto Rico. Students will participate in a summer robotics course where they will design and build robots. Students will also participate in workshops to acquaint them with the admissions and financial aid process at UMCP, as well as field trips to local science and technical organizations and companies.

