

Undergraduate research

The UofSC has a long-standing tradition to include undergraduate students in cutting edge research. All involved faculty in this proposal has a strong commitment to undergraduate research. Each typically have several undergraduate students performing research at any time, and we are all committed to continuing this commitment during this project.

We have a dedicated Office of Undergraduate Research that we will work with to coordinate efforts for this project. This Office administers the Magellan Scholars program and is UofSC's liaison for the Louis Stokes South Carolina Alliance for Minority Participation (LS-SCAMP). We plan to specifically recruit at LS-SCAMP institutions throughout the state, such as SC State, Claflin University, and Benedict College. These recruiting events provide opportunities for direct conversations regarding graduate programs at the UofSC facilitated by information highlighting the Bridge to the Doctorate Program, UofSC graduate programs and faculty advisors, resulting careers, and successes of underrepresented minority graduate students and faculty.

The Office of Undergraduate Research provides "getting started" workshops and research advising appointments to help students connect with faculty and research opportunities. They offer a Summer Workshop Series and Summer Poster Symposium open to all undergraduates engaged in summer research at UofSC, including visiting students. For students and faculty who are engaged in research, they provide a campus-wide system to help track and record activity. Undergraduate students can be involved in research paid or as volunteers, for credit or no credit. UofSC has also generated a degree with research distinction, which rewards undergraduate students with extensive research experience.

UofSC has a long and successful history of mentoring underrepresented minorities in STEM research at the undergraduate level. We will partner with the UofSC TRiO-McNair program, which provides scholarships, mentoring, and research opportunities for low-income or first-generation undergraduate students from Universities around the state, including students from the UofSC. In the last three years, at least two-thirds of the students have begun graduate programs after obtaining their undergraduate degree. The University has also had nearly continuous NSF support over the past 25 years via the EPSCoR Research Infrastructure Improvement (RII) programs. RII programs always have a workforce development component, typically featuring outreach to the primarily undergraduate institutions and historically black colleges in the state. The emphasis has been on providing research experiences for undergraduates.

A critical component of helping URM graduate students to succeed will be training of faculty research advisors to provide effective mentorship in diversity and inclusion. Recent work has shown that diversity training alone is ineffective at increasing diversity in academic and professional institutions. Faculty advisors must understand topics such as implicit versus explicit biases, cultural identity, and the importance of equity and social justice (Moss-Racusin et al., 2014). The UofSC is a network institution in the NSF INCLUDES ASPIRE Alliance which promotes more inclusive teaching practices. The curriculum for "Entering Mentoring" helps faculty advisors become more effective research mentors for students with diverse backgrounds. UofSC is committed to and offers this training through its Center for Teaching Excellence. UofSC also offers "Entering Research" training for graduate students, of which is complementary to the "Entering Mentoring" and prepares graduate student to enter into the mentoring relationship.

Graduate Student Research

- The Grace Jordan McFadden Professors Program (GJMPP) is a mentoring and support program established at UofSC in 1997 to promote attainment of the Ph.D. in all disciplines. Since inception, 52 students have completed doctoral degrees in the program, of which two-thirds are currently in academic teaching or administrative positions, with the remaining one-third in private industry. The success of this program provides valuable guidance as to best practices in retaining underrepresented minorities in doctoral programs. These best practices include regular meetings of all students, professional development workshops, invited speakers, networking with recent GJMPP graduates, and individualized mentoring by the director and senior staff.
- The UofSC is a member of the National GEM Consortium (Prof. Matthews, College of Engineering & Computing, is the UofSC representative to GEM). The UofSC has successfully used the GEM program database of applicants to help identify and recruit one or two additional minority students per year to campus, and three have won a GEM Fellowship since inception.