

ABSTRACT

The purpose of the UC Santa Cruz SEMILLA Project (Science Education & Mentorship In Latino Lives in Academia) is to cultivate equity-minded reforms designed to challenge and overcome institutional barriers so that STEM-intended Latino and low-income students increase their rates of STEM transfer, persistence and degree attainment. STEM fields are among the most popular majors for all UCSC students, including Latino and low-income students, who arrive at UCSC as STEM-intended. As these students begin their STEM foundational course work in mathematics, chemistry, biology and computer programming, we begin to see disparities in achievement for Latino and low-income students, which results in STEM attrition and fewer students declaring STEM majors. The SEMILLA project is designed to interrupt STEM attrition patterns and social reproduction rooted in both the under-preparation of students and the under-preparation of UCSC to serve Latino and low-income STEM students. The SEMILLA project will serve as focal point and catalyst for a comprehensive set of interventions guided through analysis of student outcomes and inquiry teams to address barriers both in and outside the classroom.

SEMILLA Logic Model End Outcomes/Goals:

1. Reduce attrition of STEM-intended Latino and low-income students at the major declaration milestone by 20% over baseline;
2. Increase the number of Latino and low-income STEM students who graduate in 6-years to 587 students (a 10% increase from current rates);
3. Increase the number of Latino and low income STEM transfer students from partner community colleges by 20%;
4. Increase the 3-year graduation rate for Latino and low-income students from community college partners in STEM majors by 20%.

SEMILLA Grant Components: a) STEM Equity Analysis, Reporting and Engagement, b) STEM Learning Center, c) Faculty Professional Development, d) Holistic STEM Counselors/Early Alert, e) STEM Sense of Belonging, f) STEM Transfer Academy, g) Articulation of STEM majors/course maps serving local partner community colleges: Cabrillo College, Monterey Peninsula College, Hartnell College and San Jose City College.

Competitive Preference Priorities: The SEMILLA grant activities are based upon relevant research directly aligned to STEM persistence and degree completion for disadvantaged students at research universities. Two key research studies guided the design and are referenced below:

Toven-Lindsey, B.; Levis-Fitzgerald, M.; Barber, P.H.; Hasson, T. (2015) "Increasing Persistence in Undergraduate Science Majors: A Model for Institutional Support of Underrepresented Students," *Life Sciences Education*, Vol. 14, 1-12.

Maton, KI; Hrabowski, FA and Schmitt, CL (2000) "African American College Students Excelling in the Sciences: College and Post-college Outcomes in the Meyerhoff Scholars Program," *Journal of Research in Science Teaching*, 37 no. 7, 629-654.

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