

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) College Math Academy, g) STEM Transfer Academy, h) Articulation of STEM majors/course maps serving local partner community colleges: Cabrillo College, Monterey Peninsula College, Hartnell College and San Jose City College.

The UCSC SEMILLA Project Budget is \$5,940,461 over the five-year award period 10/1/2016 - 9/30/2021.

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UCSC HSI STEM Logic Model

Program Mission: To increase equity in STEM achievement and increase Hispanic and Low-Income STEM graduates at UC Santa Cruz				
Inputs	Activities	Outputs	Intermediate Outcomes	End Outcomes
<ul style="list-style-type: none"> Engaged Faculty Motivated graduate students STEM Counselors, Peer Advisors and co-curricular staff Tutors for MSI, Small group sessions, MEP, and STEM Diversity Student Success Team Community College Partners, Undergraduate research opportunities. Alumni to serve as mentors for STEM students System and personnel to assist with research and on-going equity analysis 	<p><u>Holistic Advising</u></p> <ul style="list-style-type: none"> Coaching Mentoring Early Alert Transfer Outreach Research & Data Analysis <p><u>Collaborative Learning & Teaching</u></p> <ul style="list-style-type: none"> ACE Problem Solving Sessions Small group Training of tutors TA Certification Faculty Development Modified Supplemental Instruction <p><u>Academic Skills and Career Development</u></p> <ul style="list-style-type: none"> Science & Math Academy Engineering Academy College Math Academy Lending Library <p><u>Research Skills</u></p> <ul style="list-style-type: none"> Connections to Undergraduate Research opportunities Workshops and STEM Development courses <p><u>Transfer</u></p> <ul style="list-style-type: none"> Transfer STEM Academy Articulation meetings and agreements 	<ul style="list-style-type: none"> # students using coaching/counseling/adv ising for low income and Latino and low-income STEM students # students identified by STEM Early Alert program # students using tutoring programs and supplemental instruction tracking system for data connection and analysis # students attending problem-solving sessions # attending Faculty Development Programs and # TA Certifications # students in Academies # Academy students who get into research # students attending workshops and developmental courses # of book provided through Textbook Lending Library # students attending Transfer STEM Academy # Articulation agreements needing revision 	<ul style="list-style-type: none"> Increase pass rates for STEM foundational courses Reduction in equity gap for STEM courses Increase enrollment for Latino and low-income students in upper division STEM courses Increase B or better rates for grant participants in STEM courses Increase in STEM transfer applicants from low-income and Latino students from partner community colleges Increase STEM major persistence from first year classes to second year classes Increase STEM students seeking academic advising Increase students sense of belong and identity as a scientist 	<ol style="list-style-type: none"> Reduce attrition of STEM-intended Latino and low-income students at the major declaration milestone by 20% over baseline. Increase the number of Latino and low-income STEM students who graduate in 6-years to 587 students (a 10% increase from current rates) Increase the number of Latino and low income STEM transfer students from partner community colleges by 20% Increase the 3-year graduation rate for Latino and low-income students from community college partners in STEM majors by 20%