Abstract
The Central Valley HSI STEM Articulation and Transfer Project at California State University, Stanislaus supports the Central Valley Math and Science Alliance (CVMSA). CVMSA is a coalition of 13 faculty, 6 staff, and about 130 students annually. Programming fosters diverse faculty-guided scientific research and mentoring experiences in Biology, Chemistry, Computer Science, Geology, Mathematics, and Physics. Interventions are designed to strengthen and expand high-impact practices targeting Hispanic/first-generation and low-income STEM student representation, engagement, retention, and graduation.

CVMSA Faculty Mentors receive reassignment time along with travel and research support to increase discipline immersion for student participants. The location is staffed with Peer Mentors and STEM Resource Center, serves as a one-stop resource for all science and technology majors seeking peer and academic support. The location is also available for individual or group study.

CVMSA students are given added opportunities to engage with faculty, participate in scientific research, and attend credit-bearing workshops. The majority of participants are paired with grant faculty as mentees and research associates. Approximately 10 faculty-to-student engagement events are planned each academic year. Students who are new to scientific research are also able to benefit from an annual series of workshops on science and scientific research.

Introduction
“Students who play an active role in the pursuit of scientific knowledge learn more and develop more confidence in their abilities, thereby increasing their persistence in STEM majors” (President’s Council of Advisors on Science and Technology, p. 6). Through intentional programming, CVMSA is breaking down barriers to student success in STEM for Hispanic/first-generation and low-income students. CVMSA understands that “Developing meaningful relationships with peers and instructors, involvement in study groups, and participation in a research laboratory are associated with reduced departures from STEM fields” (p. 8).

Faculty-guided research experiences and opportunities along with academic support are hallmarks of CVMSA programming. Various criteria are used to pair students with Faculty Mentors. Considerations include academic performance, reverse seniority based on time at CSU Stanislaus, and student and mentor requests.

Each year, many of the CVMSA students are paired with Faculty Mentors as mentees or research associates. Throughout the funding period, there has been an increase in the number of paired students. Last year, mentee and research associate opportunities increased 75% and 62%. Along with these increases, their has been a spike in conference attendance.

CVMSA student attendance at scientific conferences more than doubled last year, representing a 138% increase in conference travel. Presenting research at a professional conference is a culminating event that rewards students’ research effort and generates continued interest in the sciences. Students are able to make important connections with professionals and gain understanding of the diverse opportunities in the STEM disciplines.

Measureable Goals
Increase degree completion by target transfer and non-transfer students by an average of 15%.

Results and Discussion
The Commons provides tutoring and peer mentoring to all STEM students Monday-Friday. Peer Mentors from diverse backgrounds and STEM disciplines along with faculty provide help on a walk-in basis. Most of our Peer Mentors are also CVMSA participants, which positions them better to connect with STEM students who may not be aware of available student success resources. Visitors are asked to swipe their Warrior card or a guest card at entry and exit. Based on a cross reference of printer logs and random account draws, it is estimated that 40% of students are swiping a Warrior card. The other 60% of users are neither swiping the guest card or not swiping a card at all. Therefore, the actual use of The Commons is likely higher than the usage based on Warrior card and guest card swipes indicated in the table below.

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<th>Year</th>
<th>Semester</th>
<th>Guest Card Scans</th>
<th>Unduplicated Count (Guest Card)</th>
<th>Unique Warrior Cards*</th>
<th>No. of Visits during Semester**</th>
<th>Avg. Visit Length (Minutes)***</th>
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* Headcounts in this column are unduplicated at each semester, but may be duplicated across semesters.
** Includes only visits in which the student swiped his or her Warrior card at entry and exit.
*** Avg. Visit Length (Minutes) is calculated by dividing the total number of minutes for a given semester by the number of visits.

Conclusion
Creating a student-centered culture of discipline immersion is essential to increasing degree completion of Hispanic/first-generation and low-income students. CVMSA programming engages students in diverse opportunities that provide meaningful connections with faculty and peers, while providing experiences that help define and shape their academic and professional goals.

Participants value the opportunities the grant provides and services are highly utilized. CVMSA continues to receive growing interest from students and appears to be impacting student success. Since the start of the grant, the STEM degrees conferred rate is 73%. During this same time frame, there has been a 20% increase in STEM degrees conferred to all Hispanic and low-income, undergraduate students.

Student Quotes
“CVMSA has been a valuable asset to me and though I did not have a faculty mentor last year, I have been paired with one this year and it has been great! All of the CVMSA faculty members have been very friendly and are always helpful.”

Anonymous

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