

CSU CHANNEL ISLANDS

STRATEGIC INITIATIVES | NON-FUNDED WORK

STEM Center

Strategic Initiatives and Action

Student Success

2.1 Increase academic support for students in the first year (e.g., proactive advising, embedded tutors, peer mentors, block scheduling).

Project Summary

The STEM Center is supported by Project PROMESAS, a U.S. Department of Education Hispanic Serving Institutions STEM grant. The STEM Center provides free drop-in tutoring for all CSUCI STEM gateway courses (e.g., BIO 203, CHEM 105, COMP 105, Math 150, PHYS 101) as well as some upper division courses. The STEM Center offers a flexible schedule with STEM Tutors that are able to tutor multiple disciplines. The STEM Center is open for six days a week (about 56 hours a week), including nights and Saturdays (i.e., Monday-Thursday from 10:00 a.m. – 9:00 p.m., and Friday and Saturday from 10:00 a.m. – 4:00 p.m.). In addition to tutoring, the STEM Center makes available resources such as STEM textbooks, anatomical models, and laptops equipped with software utilized in STEM courses. The STEM Center is the only center on campus (outside of lab classes) that has anatomical models for student use.

Aligned with action 2.1 Increase academic support for students in the first-year, the STEM Center is a student-centered academic support service designed to increase the academic achievement and retention of STEM students at CSUCI. Specifically, the STEM Center aims to: increase the number of students utilizing academic support services; improve the pass rates of Hispanic and low-income students enrolled in gateway STEM courses; and increase the 6-year graduation rate of Hispanic and low-income, first-time STEM students. To achieve its desired outcomes, the STEM Center provides free drop-in tutoring for all STEM gateway courses at CSUCI, which include courses for the majors applied physics, biology, chemistry, computer science and information technology, environmental science and resource management, mathematics, and mechatronics. The STEM Center is open to all undergraduate students for six days a week (about 56 hours a week), including nights and Saturdays (i.e., Monday-Thursday from 10:00 a.m. – 9:00 p.m., and Friday and Saturday from 10:00 a.m. – 4:00 p.m.) and supports all students both STEM and non-STEM majors (e.g., Pre-Nursing, Nursing, Health Sciences, Undeclared, etc.). In addition to tutoring, the STEM Center provides students with resources such as STEM textbooks, anatomical models, and laptops equipped with software utilized in STEM courses. The STEM Center is the only center on campus (outside of lab classes) that has anatomical models for student use. To ensure that all CSUCI students are informed about the STEM Center, at the beginning of each semester Tutors visit almost each section of STEM courses to introduce themselves and provide an overview of services.

Since the AY 2016-2017, the STEM Center has hired about 20 undergraduate STEM students as instructional student assistants to serve as Tutors. This feature is important because as research has documented, on-campus employment engages students in the university and their major (Malcom, 2010). To be equipped for their role as tutors, STEM Center Tutors participate in PEEP (Peer Education and Equity Programs) training the summer before the academic term and attend trainings throughout the academic semester.

For the 2019-2020 academic year, the STEM Center will pilot an embedded tutor program. STEM Center Tutors will be embedded in five sections of Math 150 (Calculus I). All STEM disciplines have Math 150 as a required course and first-time students pursuing a STEM degree typically take this course during their first year. The purpose of the embedded aspect is twofold. First, it will help introduce students to Tutors, provide opportunities for Tutors to build rapport with students, and potentially destigmatizing the idea of needing and seeking out academic support. Second,

it will reinforce the Tutors' calculus knowledge so that they are fully equipped to serve all students seeking calculus support.

Baseline Data

For the past three academic years (i.e., 2016-2017; 2017-2018, and 2018-2019), the STEM Center has expanded its reach by increasing the number of total visits, distinct students served, and the number of hours the space was utilized by students. As noted in Table 1, from AY 2016-2017 to AY 2018-2019, the number of visits and number of distinct students served increased by 21.3% and 18.3%, respectively. Perhaps even more noteworthy is the total number of hours (the total number of hours includes students utilizing the space to study, utilize resources such as the anatomical models, and/or to receive tutoring) that the STEM Center has been used by CSUCI students. From AY 2016-2017 to 2017-2018 and AY 2017-2018 to 2018-2019 usage hours increased by 53% from one academic year to another and by 134% from AY 2016-2017 to 2018-2019. In particular, for AY 2018-2019, the STEM Center served about 11% of the total undergraduate population (as of fall 2018, CSUCI's undergraduate population was 6,883).

Table 1. STEM Center Usage

Academic Year	Total Visits	Distinct Students	Total Hours
2016-2017	3,140	616	3,154
2017-2018	3,601	656	4,839
2018-2019	3,809	729	7,390
% increase	21.3%	18.3%	134%

Goals

The measurable objectives associated with the STEM Center are:

1. By 2021, the number of Hispanic and low-income students who have participated in STEM Center supported services or programs will increase by 5% over fall 2015 baseline (250 to 263).
2. By 2021, the number of Hispanic and low-income, first-time students participating in STEM Center supported services or programs who successfully complete gateway STEM classes will increase by 5% over the fall 2015 baseline (70% to 75%).

Project Status

Implementing phase

Key Leaders and Divisions

Lead Division	Division of Academic Affairs
Collaborating Division	Division of Academic Affairs
Action Champions	Dr. Amanda Quintero Dr. Michelle Hasendonckx
Action Project Leads	Dr. Araceli Espinoza-Wade
Action Collaborators	Brook Masters and Alyssa Smith