

1. Assessment Plan - Four Column



PIE - Natural Sciences: STEM Unit PIE

Narrative Reporting Year

2018-19

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Program Planning Dialog: The STEM center has four major activities. 1. The STEM center is a study space accessible to students for long hours daily. The center has facilities including white board walls, course textbooks, laptops for students to use, and course specific resources such as microscopes, models, and specimens to study. 2. The STEM center provides counseling support for STEM students through Counseling faculty with an office in the STEM center. Students can get printed copies of their Ed plans here in the STEM center. 3. The STEM center provides student academic support through out coaching programs, using peer mentors to help STEM students organize their time, study habits, and notes in order to become more efficient learners, and successful in their subjects. 4. The STEM center provides STEM engagement experiences to both on-campus students (INreach) and to community members and high school students (OUTreach).

External Conditions, Trends, or Impacts: Our sole funding is based on state categorical funds through the Student Equity grant. These funds have been merged this year with several prior grants including Basic Skills, Student Equity and SSSP. This is changing the fund allocation to programs supported by them, and also changing the funds and reporting on campus.

The state funding formula is changing and requiring more students to be successful over the next several years. This is requiring more student support in centers such as the STEM center to assist students in course completion, program retention, and degree and certificate planning with our Counselors.

STEM fields are highly desirable, but STEM courses are highly impacted, and require high hours on campus including lab times. Students struggle with time management, getting courses, awareness of the time required in lab courses, and are under pressure to succeed.

Multiple Measures has placed more students into the STEM pathways instead of prerequisite STEM classes. This is changing the dynamics of what students need for support when entering college, and when they come to the STEM center.

Campus has not had funds available for construction or remodeling of a new STEM center. Construction projects have been funded off bonds; the STEM center was not one of the projects. With the passage of the recent bond, there may be funds available for the STEM center.

Internal Conditions, Trends, or Impacts : STEM center funding currently is only a portion of the State Equity grant funds; this is changing as we move to the consolidated student support programs funding. There is no institutional budget for the STEM center, only the categorical grant funds.

Data tracking has been a challenge in multiple ways. We have transitioned from a computer sign in without a swipe system to a computer swipe system. We have had our courses recoded from one data collection system to another; and then they have been changed within the swipe system to become a non-credit study lab. Once a non-credit study lab, we have changed the CRNs throughout the semester. This makes it very challenging to extract data, and to know where to find the STEM center data.

The STEM center has 2148 square feet of space, which includes into two small private offices for Counseling and the Coordinator, a storage room, and a unisex restroom, a reception area to sign in and relax with modest lounge furniture salvaged from campus, and two larger study areas with modular tables and white boards on the walls. This supports on the average 425 unduplicated students each week, who use the center for study, coaching, and counseling resources. Not all of the square footage is accessible to students, as we use some space for storage of computers, class textbooks, models and other equipment. The square footage is very small to support the needs of these students. In addition, our physical equipment is limited. The STEM center has 25 modular 1/3 round tables, 5 6 foot tables (some are plastic folding tables), one wood large 8 foot conference table, and 66 chairs. The STEM center is frequently at capacity.

The STEM center does not have a budget line to purchase supplies or instructional equipment. Students come into the STEM center and request dry erase markers to use on the white boards, as well as instructional supplies such as models and microscopes to study for their classes. There are no funds to repair equipment such as the microscopes, and there is no replacement plan for models, slides, and other instructional materials as they age and break. The STEM center also does not have a good way to supply students with current text books; most are donated to the STEM center by faculty members, but this is not consistent for every course that the students request, and are not always the current editions or authors being used in the classes.

Equipment such as lounge furniture, shelving, chairs, storage shelving, and tables have all come from campus salvage or donations. There is no replacement budget for these as these age, or the STEM center grows. In addition, there is no budget to replace equipment such as the microwave which recently was on fire as a result of student inappropriate use, and discarded.

Critical Decisions Made by Unit: Financial decisions have been driving much of this planning cycle.

These decisions were made as a result of constant reconfiguration of staff, Student assistants, both instruction and non-instruction, faculty mentor(s) on reassigned time, and the permanent budget allocation for the full-time Project Program Coordinator. As a result of revolving budget allocation, we have had to reduce services which include coaching courses covered and front desk staffing that includes hours of operation shifting from 9-10pm M T W Th to 9-8pm MW and 9-9pm TTH.

We have a collaboration with Cal State University, Fullerton through Project RAISE, funded by the Department of Education. With some of these grant funds we have been able to hire two Project Experts that assist STEM center activities related to assisting Project RAISE's targeted student population (LatinX and low income) as part of the needed operations within the STEM center.

Additionally, having a pressing need to reconfigure our services we reduced coaching hours during the semester, and worked to minimally impact the sessions. We also reduced staffing in the last two weeks of the semester, and used volunteer faculty hours to stay open. Two Professional Experts as closing staff has been the minimum adequate level of support but has been changed based on our budget limitations, often leaving an unmet need during evening hours of operation that include coordination of evening events and activities as well as support of student usage of the center and its resources.

The STEM center also partnered with the School of Continuing Education to try to collect apportionment dollars as a study lab. There are STEM faculty hired to hold non-credit study lab hours in the STEM center, from varied STEM areas.

Driven by budgetary changes, no new coaches were hired in the 2018-2019 year. Some current coaches were moved into supporting students in the highest need topics (ANAT 10A, CHEM 40, CHEM 50) in order to better support the students in more sections of gatekeeper and high failure rate courses. The diversity of courses coached for has decreased, and the total number of sections coached has decreased.

Notable Achievements for Theme A: To Advance Academic Excellence and Student Achievement: Students using the STEM center are more likely to succeed in courses, and more likely to persist into the next semester in STEM courses. The overall persistence of STEM center students was 40%, up from 29%. This reflects 88 more students in STEM and a 135% increase in STEM retention. The students persisting are found in under-represented populations, indicating that the STEM center is assisting more demographically under-represented students achieve persistence in STEM (see STEM.persistence data attached).

Students using the coaching program in Anatomy and Biology are more successful in all semesters except Summer. Data is still being analyzed for Chemistry. Physics data shows that students in coaching are more likely to be struggling when they enter coaching, and are slightly less successful than uncoached students. (see STEMcoaching data attached).

Notable Achievements for Theme B: To Support Student Access and Success: The STEM center has four STEM counselors that assist with Ed plans, degree and certificate requirements, transfer requirements, career exploration, and connect students to STEM resources. The STEM center has met with ___ students for counseling appointments in 2018-19.

Notable Achievements for Theme C: Secure Human, Technological, & Financial Resources: The STEM center has 20 new PC laptops for students to checkout, to replace 20 older laptops that had been heavily used for five years. The STEM center laptops are heavily used by students, and are able to stay charged much longer, and stably connect to the internet and run programs well.

Notable Achievements for Theme D: To Foster an Atmosphere of Cooperation and Collaboration: The STEM center has partnered in several on and off campus STEM or STEM related events. These include the Mountie Mentor Hidden Figures movie and female scientists of color panel, the Kepler dinner (partnering with ES and A department), the field trip to the Von Karmen JPL lecture (partnering with ES and A and PENG departments), the Veterans Resource Center CHEM boot camp, informal STEM career talks with faculty such as Dr. Romans (partnering with ES and A department), transfer presentations from Project RAISE at CSUF, a women's science panel (Biology and SWE club collaboration), and held workshops to promote successful applications for summer research or internships.

The STEM center has also advertised multiple STEM speaker events and workshops for clubs such as APPLE and Caduceus, and has promoted on campus STEM events.

The STEM center annually holds PIE day on 3/14 and all students, staff and faculty are encouraged to come in and have a free slice of pie.

<i>Unit Goals</i>	<i>Resources Needed</i>	<i>Where We Make an Impact: Closing the Loop on Goals and Plans</i>
<p>Provide quality programs - Offer adequate academic support for STEM gate keeper courses per sections offered.</p> <p>Status: Active</p> <p>Goal Year(s): 2018-19, 2019-20, 2020-21</p>	<p>Request - Full Funding Requested - Coaches in the STEM center for targeted courses: either STEM entry level courses with high failure rates or gatekeeper courses into STEM pathways.</p> <p>Describe Plans & Activities Supported (Justification of Need): Academic support provided through coaching: Coaching, involves peer mentoring with students who have highly successful STEM knowledge and habits. Coaching places an emphasis on academic achievement and overall student success in addition to strategies/ approaches/ tools to study specific STEM content. The STEM coaches support students at specific times in the STEM center; and peer cohorts are built around a coach and a target class student population. To fully support our STEM students, we need to staff coaching sufficiently. It is essential to have an adequate ratio of coached courses to total sections of that course offered in order to support STEM success outcomes.</p> <p>Lead: Beta Meyer</p> <p>What would success look like and how would you measure it?: STEM students in coaching versus STEM students not in coaching per subject and by term.</p> <p>Type of Request: STAFFING: Requests for permanent employee positions or temporary/hourly employees.</p>	

Unit Goals

Resources Needed

Where We Make an Impact: Closing the Loop on Goals and Plans

Planning Unit Priority: High
On-Going Funding Requested (if applicable): 75000
Related Documents:
[STEM.success.2017-18.xlsx](#)

Persistence - To increase persistence of STEM students
Status: Active
Goal Year(s): 2018-19, 2019-20, 2020-21

Request - Full Funding Requested - Full time Program Specialist staffing in STEM center while the center operates.
Describe Plans & Activities Supported (Justification of Need): Program specialists are required to provide necessary staffing and support to STEM center activities and services during operational hours, which are M T W Th 9 AM to 9 PM and Friday 9 AM to 5 PM. These hours are required, as we have STEM classes M T W Th F Sa, and students need a space to study with their peers and coaches and models/ slides/ other class resources. We find that students come into the center from other campus areas after those area close for the day. We need staffing to keep the doors open and provide services to students, such as scheduling counseling appointments, and checking out equipment to students for in-center use. Program specialists also support coordination of STEM center events, from marketing, enrollment, and scheduling. Program specialists also assist in inter-campus communication of STEM events and services.
Lead: Dr. James Reed

<i>Unit Goals</i>	<i>Resources Needed</i>	<i>Where We Make an Impact: Closing the Loop on Goals and Plans</i>
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What would success look like and how would you measure it?: STEM center use would be correlated with increased persistence in STEM pathways or courses. We already see that students who use the STEM center more than three hours are more likely to persist in STEM courses.

Type of Request: STAFFING: Requests for permanent employee positions or temporary/hourly employees.

Planning Unit Priority: High

On-Going Funding Requested (if applicable): 80000

Related Documents:
[Stem.persistence.2017-18.xlsx](#)

<p>STEM Inreach - To increase STEM experiences and mentorship to students campus-wide.</p> <p>Status: Active</p> <p>Goal Year(s): 2018-19, 2019-20, 2020-21</p>	<p>Request - Full Funding Requested - Increased and ADA accessible STEM center space.</p> <p>Describe Plans & Activities Supported (Justification of Need): STEM center space is limited; a larger space will allow us to perform multiple types of activities, such as student study space, student coaching, and student engagement/interaction activities without stopping other activities. The STEM center would like to continuously remain open for student study while performing other functions. The STEM center has been at capacity many times during the semester. Most importantly, the facility is not completely ADA accessible. We are on floor 3 of a building where the only access is via a single elevator or stairs. When the elevator is down,</p>	
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Unit Goals

Resources Needed

Where We Make an Impact: Closing the Loop on Goals and Plans

there is NO ADA access.

Planned activities to run simultaneously with student study are: Workshops, speaker series, STEM field trips, STEM on-campus publicity (tables, student events), Pi (3/14) day celebration.

Activities are designed to provide the following types of academic support, mentoring, and exposures:

1. academic planning- learning to STEM,
2. academic support- resume, cv and internship/ summer research application support,
3. workshops on specific STEM topics
4. workshops or panels with STEM professionals
5. informal meetings with STEM mentors or professionals
6. STEM engagement opportunities on campus (tabling, inreach to centers, Pi Day in STEM center)
7. STEM clubs and organizations - information disbursement to STEM community
8. End of year STEM celebrations- transfer/ graduation
9. STEM center dissemination of campus STEM-related activities and information
10. STEM faculty visibility in STEM center
11. STEM field trips

Lead: Dr. James Reed and Dr. Beta Meyer

What would success look like and how would you measure it?: Ability

Unit Goals

Resources Needed

Where We Make an Impact: Closing the Loop on Goals and Plans

to hold more simultaneous activities.
Ability to increase current offerings.
Ability to service students with wheelchair and mobility restrictions.

Type of Request: FACILITIES: This section includes minor building improvement projects and alterations to specific rooms or operational areas.

Planning Unit Priority: High
One-Time Funding Requested (if applicable): 700000

Related Documents:

[Boot camp 2 W 2019.jpg](#)

[Boot camp W2019.jpg](#)

[CSUF RAISE field trip April 2019.jpg](#)

[Kepler Dinner.PNG](#)

[Mountie Mentor Women in STEM.jpg](#)

[RAISE interview workshop.jpg](#)

[STEM.center.use1.jpg](#)

[STEM.center.use2.jpg](#)

[STEM.center.use3.jpg](#)

[STEM.center.use4.jpg](#)

[STEM.center.use5.jpg](#)

[Women in Science 2.jpg](#)

[Women in Science.jpg](#)

Request - Full Funding Requested -

Funds to provide food for STEM events, and for field trips to STEM locations allowing interaction with STEM professionals (\$20,000)

Describe Plans & Activities

Supported (Justification of Need):

End of year STEM celebrations (transfer, graduation). STEM field trips to industry and other STEM engagement activities (JPL, Science

Unit Goals

Resources Needed

Where We Make an Impact: Closing the Loop on Goals and Plans

center,etc).

Lead: Dr. James Reed and Dr. Beta Meyer

What would success look like and how would you measure it?:

Attendance at event (graduation celebration, field trip), exit survey showing satisfaction with program and STEM experience.

Type of Request: MARKETING: Requests for services in the areas of graphic design, news, and photography, posting information, communication and social media.

Planning Unit Priority: Medium

On-Going Funding Requested (if applicable): 20000

Related Documents:

[CSUF RAISE field trip April 2019.jpg](#)

[Kepler Dinner.PNG](#)

[Mountie Mentor Women in STEM.jpg](#)

[Women in Science 2.jpg](#)

[Women in Science.jpg](#)

Request - Full Funding Requested -

Funds for STEM promotional/ branding materials/ advertising to increase visibility of STEM student activities (robotics, research, clubs) and STEM major pathways. (\$5000)

Describe Plans & Activities

Supported (Justification of Need):

Materials that demonstrate STEM achievements, experiences and opportunities to increase visibility of these to all STEM students and students considering STEM on campus. Materials can also be used to accomplish part of our Outreach

Unit Goals

Resources Needed

Where We Make an Impact: Closing the Loop on Goals and Plans

goals; see Outreach.

Lead: Dr. James Reed and Dr. Beta Meyer

What would success look like and how would you measure it?:

Documentation of campus student participation on STEM related experiences and activities. Capability to peer mentor incoming and newer STEM students, Materials showing student success in STEM can be disseminated across campus to Equity centers and to students at tabling events and to Division chairs as well as to incoming students (see Outreach goal #1; funding here will support part of that goal).

Success: Goal to have documentation annually that can be used to show great STEM experiences our students have in STEM distributed campus wide and for recruiting purposes.

Type of Request: MARKETING: Requests for services in the areas of graphic design, news, and photography, posting information, communication and social media.

Planning Unit Priority: High
On-Going Funding Requested (if applicable): 5000

Request - Full Funding Requested - We need more tables and chairs for student study. We need new lounge furniture for students eating or relaxing. We need new cabinetry and storage space for models, texts, and office equipment.

Describe Plans & Activities Supported (Justification of Need): Our student area was filled with old

Unit Goals

Resources Needed

Where We Make an Impact: Closing the Loop on Goals and Plans

recycled equipment for storage, student seating and table surfaces from the start. We continue to acquire discarded salvage seating, tables, and shelving. Most was discarded for a reason, and the total is insufficient to completely satisfy the needs of the students and staff in the STEM center. We plan to have furniture that can support up to 100 students at a time, and tables and chairs that are safe and do not break. We plan to have shelving and storage adequate to hold all of our resources and academic materials. We plan to have safe and adequate study apces when these changes are made.

Lead: Dr. James Reed

What would success look like and how would you measure it?: Ability to seat up to 100 simultaneously with writing and study space. Ability to store all of our academic resources and STEM center materials.

Type of Request: NON INSTRUCTIONAL EQUIPMENT:
Tangible property with useful life of more than one year, other than land or buildings improvements, equal and over \$500 per individual item. Used for administrative or non-instructional purposes.

Planning Unit Priority: High
One-Time Funding Requested (if applicable): 30000