

**Gavilan College
Equity Proposed Framework**

1. Gavilan College Office of Institutional Research has shown that inequities exist for the following student populations. Please indicate which populations and equity area your proposal will impact below and how many students from that area will be impacted.

Choose a population(s) your proposal will impact	How many students will be impacted?
<input checked="" type="checkbox"/> Low income Student Course Completion	TBA(determined by final grant regs to be released)
<input type="checkbox"/> Foster Youth course completion	Click here to enter text.
<input checked="" type="checkbox"/> Latino (Hispanic) student Transfer rates	TBA(determined by final grant regs to be released)
<input type="checkbox"/> Transfer Rates of students with a verified disability	Click here to enter text.
<input type="checkbox"/> Students that 20-24,25-49,50 or Older	Click here to enter text.
<input checked="" type="checkbox"/> Asian Access	TBA(determined by final grant regs to be released)

2. Please provide a summary of your request and how it will directly serve one or more of the populations indicated above. Include a timeline for the activities that you are proposing.

***Upward Bound Math and Science Grant.
Creating an Intersegmental Pathway for Gavilan College STEM Programing***

The request will help to fund the grant writer for a \$1.5 million Upward Bound Math and Science Grant. Essentially, \$7,500 can be the seed money that turns into \$1.5 million. We will work in partnership with CalSOAP which is already established within the local feeder schools.

Acquiring an Upward Bound Grant would help Gavilan College’s Natural Sciences and the MESA Program to create the only intersegmental STEM model in our community. It is intended to help create a seamless pathway for first generation, low income STEM students from high school into Gavilan College’s MESA and STEM efforts. After Gavilan College, students can be transitioned into our MESA programs or similar programs at our local feeder universities. Gavilan College MESA belongs to a regional alliance with 4-year university programs.

The model is based on the MESA statewide intersegmental model that was developed over 40 years ago. However, we locally do not have precollege programs to provide the onboarding or precollege support similar to other or more affluent communities. Upward Bound would play this role within our community.

Intersegmental STEM Models Success

The book *Breaking the Barriers: Helping Female and Minority Students Succeed in Mathematics and Sciences* highlights this MESA intersegmental model as a successful strategy to implement STEM education. Furthermore, the model has been named one of the most innovative programs in the nation by Innovations in American Government, a project of the Kennedy School of Government at Harvard University. It is also a winner of the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring.

The Gavilan College Story as Evidence for Intersegmental Pathway Models

In the 2014-2015 academic year, 33% of TRIO's Summer Bridge Students were recruited and bridged from the local CalSOAP Program. All the students were first generation, low income Latinos. These students have been showing strong outcomes in their success at Gavilan College. For example, the 2014 Summer Bridge Cohort has the following outcomes:

- 78% persistence rate
- 68% are slated to Graduate and/or transfer within the next academic year (within 4 academic years). All of these students were underprepared Latinos. According to Gavilan College's scorecard, underprepared Latino student have about a 43% college completion rate within 6 years from a different cohort year. An exact comparison cannot be made with the scorecard given that it's a different cohort year, yet we offer the data for the sake of insight.
- After completing Summer Bridge, approximately 56 % tested 1-3 course levels above the level they initially tested into at the start of the program
- Students that first tested into Math 400-Arithmetic or Math 411-Integrated Pre-Algebra showed the most significant improvements, with about 71% of the students increasing 2 to 3 course levels above their initial assessment after completing Summer Bridge.

Student success can be seen from this pathway model. Another example is Mayra Clemente, a student from another TRIO Summer Bridge cohort. She was a CalSOAP student and transitioned into Gavilan College via TRIO's Summer Bridge. She later transferred to CSUMB where she graduated with her Bachelor's degree. She was recently hired as a Part-time Temporary Program Specialist for TRIO and MESA. She is currently applying for graduate school programs to earn an MSW.

Activities

While specific activities still need to be articulated with the grant writer. Activities in the grant will be centered but not limited to the following.

I. Summer Instructional Component

Implement a 6-week Summer STEM Academy which will simulate a college going experience that is at least 6 weeks in length. Include dual/concurrent enrollment in courses that may include the following courses.

- Mathematics through Pre-Calculus
- Laboratory Science
- Foreign Language
- Composition

- Literature

The STEM Academy would include STEM based competitions such as mouse trap race cars, Cardboard boat races, and or other similar team based STEM activities Visits to four year universities and / or visits to industries such as Google, Cisco Systems, Facebook etc.

II. Summer Bridge Program

A Summer Bridge component will be implemented consisting of math and sciences related coursework for those students that have completed high school and our transitioning into Gavilan College during the following fall Term.

A Math Boot Camp Course will be offered along with Life Skills in Higher Education will be offered. Furthermore, additional activities will be implemented that include community building, transition into other educational support programs and personal/leadership development workshops. Collaboration will be made with STEM Grant Efforts.

III. Academic Tutoring

- Academic tutoring will be provided in STEM based disciplines. Supplemental Instruction based on the Treisman model will be provided.
- Undergraduate STEM majors will serve as tutors and peer advisors for participants of the program.

IV. Academic Advisement

- Advice and assistance will be provided in secondary and postsecondary course selection with an emphasis on a college pathway.
- Preparation and completion of college admission applications
- Preparation for College Entrance Examinations

V. Financial Aid and Financial Literacy

- Information will be provided on Federal Pell Grants, Loan Forgiveness, Scholarships
- Assistance will be provided on the FASFA
- Financial Planning for postsecondary education

VI. Gavilan College Courses

At least two years of the project will provide coursework with one or more of the following as part of its core curriculum.

- Mathematics through Pre-Calculus
- Laboratory Science
- Foreign Language
- Composition
- Literature

In additional course work, will also include student development centered courses such as but not limited to

- Guidance Courses such as but not limited to Guidance 6 Life Skills in Higher Education or Guidance 210 Orientation

- Personal and Career Development or other appropriate Non-Credit Coursework

VII. Exposure to STEM

- Hands on activities such as experience in laboratories, computer facilities or Field Sites. For example, the program can take advantage of the new outdoor classrooms and arboretum. Furthermore, visits can be made to location such as Elkhorn Slough sanctuary, visits to local Silicon Valley Companies, and/ or other similar locations.
- Guest Lecturers from mathematicians, scientist and/ or engineers who are engaged at Gavilan College or who engaged in research or applied science at public and private agencies.

VIII. Mentorship

- Provide students with a mentorship program that includes college students that are high achieving STEM majors and /or faculty, counselors.
- College student mentors will provide peer advisement, role modeling, and support.

IX. Exposure to Cultural Events

- Exposure to cultural events will include activities such as plays, museum events, and cultural events at the local college or community.

3. Explain how the activity is culturally and/or socially relativistic to the population you indicated in question #1. Please include appropriate data, research or relevant information to make your case.

Upward Bound is one of three TRIO Grants provided by the Department of Education. TRIO programs are a result of the Economic Opportunity Act of 1964 in response to the administration's War on Poverty. TRIO is one of the first equity oriented programs in the nation and has set a standard of best practices for providing culturally and socially relevant programming. For example, Garvin's 2015 Dissertation provided evidence to the culturally relevant nature of the Upward Bound Program. He stated,

“Findings suggest providing students the opportunity to “do” and learn science utilizing a culturally responsive approach was much more beneficial to their overall science knowledge, as it allowed students to experience, understand, and connect to and through their science learning. Likewise, culturally responsive science instruction helped students to foster a more positive interest in science and STEM careers as it provided students the opportunity to do science in a meaningful and relevant way. Moreover, results revealed students receiving culturally responsive science instruction were able to see themselves represented in the curriculum and recognized their own strengths; as a result, they were more validated and affirmed in and transformed by, their learning.” (Garvin, 2015, Vi)

TRIO Upward Bound, similar to TRIO Student Support Services, MESA, EOPS, and CalWorks, has a long history of being the best socially and culturally relevant practice. Each of these programs originated from Civil Rights and Social Justice Movements and initiatives and can be cited as culturally and socially relevant programming. For example, in a study of an Upward Bound program conducted by Gullatt and Jan (2003), they found the following outcomes as related to underrepresented students:

1. Upward Bound percipients are more likely to graduate
2. Earned more non-remedial credits in math
3. Were more likely to remain in school
4. Male participants were less likely to drop out of school.
5. Were more likely to receive financial aid.

Furthermore, programs such as MESA and Upward Bounds Math and Science Program provide a community of support for STEM Success in a collaborative, community and group oriented context. Treisman (1990) explored how to create institutional programming that helps to promote the success of students of color in STEM-based majors. He found that one way minority students could be successful in math and science was through collaborative and community oriented learning approaches. Treisman's work was vital because he was investigating what minority students needed to excel rather than questioning why they were not (Treisman, 1992). He created study networks that he found were being effective for Asian students and he expanded them to students from other underrepresented backgrounds (Fullielove & Treisman, 1990). Recent research has proven that similar models implemented in a selective research university to be successful in a non-experimental setting. They found that the workshops had significant impact on the students' performance and retention of students who participated (Drane & Smith, 2005.)

Garvin, B. A. (2015). An investigation of a culturally responsive approach to science education in a summer program for marginalized youth (Doctoral dissertation, University of South Carolina). Retrieved from <http://scholarcommons.sc.edu/etd/319>

Robert E. F., Treisman P. (1990) Mathematics Achievement Among African American Undergraduates at the University of California, Berkeley: An Evaluation of the Mathematics Workshop Program *The Journal of Negro Education*, Vol. 59, No. 3 (Summer, 1990), pp. 463-478

Drone, Smith etc, 2005 The Gateway Science Workshops Program: Enhancing Student Performance and Retention in the Sciences Through Peer Facilitated Discussions *Journal of Science Education and Technology* Vol 14 no3 Sept 2005

4. How do you propose to specifically target the populations that you indicated in question #1 for services?

1. Low Income, First Generation Latinos

If the grant is secured, the students that are targeted and recruited for the program are

required to be first generation and low income students with plans to attend college. It is required that the grant serve these equity populations.

2. Asian Access Inequity

We currently have an inequity in Asian access at Gavilan College but do not have any funds allocated to closing this gap. Special attention will be made to develop strategies to recruit students from Asian backgrounds. We will also follow up and expand with current efforts that targeted Asian community groups and faith-based organizations that were implemented to recruit for the TRIO Summer Bridge Program. We can explore developing a joint advisory group in creating a means for outreach.

3. CalSOAP

The CalSOAP program currently serves low-income and first generation students. The CalSOAP program currently has a waiting list of students that it cannot serve. This waiting list can be used to recruit for Upward Bound.

4. Collaboration with Local Latino Organizations

Efforts will be made to collaborate with local Latino organizations that have youth based programs such as LULAC’s Adelante Program and other similar programs.

5. Please address the following in regards to objectives.

A. What is your proposed objective for the activity? Provide a metric(s) that should be used to measure the success of the activity specifically for the populations indicated in question 1.)

To secure the \$1.5 million to create the program and STEM Pathway in partnership with CalSOAP

B. What are the objectives for your project?

N/A. Must wait for grant application to be released.

C. Please include a plan on how you will collect data to evaluate if you met the proposed objectives.

Data will be collected and based on Department of Education’s Outcome Requirements . These outcomes have not currently been set since the grant has not been authored and data analyzed by the grant writer to propose adequate outcomes.

6. Can your proposal be scaled to impact a greater number of students? If so how?

[Click here to enter text.](#)

7. Please provide a budget and detailed breakdown of requested costs

Description	Amount
Grant Writer	\$7,500

Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.
TOTAL	\$7,500