



REQUESTOR(S): Sarah Parikh	
DATE SUBMITTED: March 2, 2016	FUNDING YEAR: 2015-2016
DIVISION: PSME	DIVISION DEAN: Victor Tam

REQUESTED AMOUNT FROM STUDENT EQUITY: \$12,000

ARE YOU REQUESTING FUNDING FROM OTHER SOURCES? YES NO **IF YES, PLEASE SPECIFY:**

OF STUDENTS SERVED: 1,000 each year **# OF FACULTY AND/OR STAFF SERVED:** 1

Please provide a summary of the request and details on how this activity will directly serve the College’s Student Equity goals. Be sure to include a description of which disproportionately impacted student groups this activity addresses, which specific student success indicators it supports, how this request addresses those groups and indicator(s).

The purpose of this project is to generate content that is currently missing to provide students with expectations for engineering courses and help them understand the engineering pathway. Over the summer, I will create materials that will "tell the story" of our engineering courses to help students to be able to imagine themselves as students in those classes. I will also create example pathways that will help students to have a starting point for determining their own pathway that they should take through engineering at Foothill College. Because there is no ADT for Engineering, the pathway that engineering students should take is not well defined. These materials will be accessible to students through the college's website in addition to through flyers that will be distributed in the Math 1A and Bio 10 courses. An additional outcome of this work will be updated and engaging course descriptions for the course catalog.

The information provided in these materials will help students who are unsure if engineering is an appropriate field for them. Curious students who are first-in-family to attend college will gain the insight and confidence to pursue this great field. Students who may be put-off by the stereotypes associated with engineering will observe an image of engineering that features underrepresented groups. Students who do not have a family members who are engineers will get a glimpse into what life is like as an engineering student. While the information included in these materials will be available to help encourage all students to pursue an engineering pathway, I expect that it will help underrepresented students in a more substantial way.

Please indicate the criteria used to select the students and/or faculty/staff participating in this activity.

I am in a unique position of having the engineering content knowledge to understand both the course activities and appropriate pathways that students should take through engineering at Foothill College. Additionally, I will be implementing portions of the action plan that was developed at the IWITTS Recruitment and Retention of Women in STEM workshop last summer. Furthermore, I have a PhD from Stanford where I participated in research on engineering pathways.

What outcomes are you predicting for this activity (or for those who participate) and what metric(s) will be used to evaluate if the activity is supporting increased outcomes for those students on the indicators (as described above)?

Starting at the IWITTS Workshop last summer, we have been tracking the number and percentage of female students in our engineering courses. We have data from 2013-2014 (only 18% of enrolled students were female) and 2014-2015 (only 21% of enrolled students were female), and this summer we will look at the 2015-2016 data as a follow-up from the workshop. Data from both of those academic years can be used as a baseline to compare the recruitment of students, and women in particular, with data from 2016-2017 to see the effects of this engineering pathway information on enrollment. While the enrollment of female students was tracked, I expect that these efforts will help students from a variety of backgrounds.

Please cite any research or evidence relevant to your proposal.

Nation-wide, women are underrepresented in STEM (47.7% of all STEM graduates) and in engineering in particular (15.7% of all Engineering graduates). The best predictor of a person's career is the careers of his or her parents. The materials generated from this project will help students to feel more comfortable with engineering as a career pathway. Students without a family member who have attended college have less "college knowledge" regarding navigating their pathways through school. Students are more willing to try new things when they have information about what to expect. I expect the materials generated from this project to help all students to have a better understanding of what to expect with engineering, and that help will be extremely valuable to first-

in-family college attendees and students who do not have a family member who is an engineer. Additionally, I learned from the IWITTS Workshop that including pictures of female and minority students in our marketing materials is very effective in helping students to feel as though they fit in. The materials generated through this project will be carefully constructed to primarily include images of female and minority students. Additionally, research has shown that encouragement helps all students, yet helps underrepresented students to a greater extent - effectively both raising the success rate for all students while closing the achievement gap. I expect these materials to similarly help all students and close the gap in engineering-specific college knowledge that many underrepresented students are lacking.

Please describe plans for sustaining the activity (if possible) without Student Equity funding.

Once these materials are generated, I will be able to update them as necessary with minimal effort and no additional funding.

Please provide a breakdown of expenses, a timeline for implementation and a schedule of planned activities.

The materials will be generated between July 1, 2016 and August 31, 2016 at which point I will work with Marketing to get approval for the materials and coordinate getting them online for students to be able to access. Generating the materials is expected to take 120 hours with a pay rate of \$100/hour [I have content-specific knowledge and a PhD from Stanford in Engineering Education] for a total of \$12,000. The breakdown in hours is expected to be: 35 hours to generate the story content, 45 hours to create the example pathways, 20 hours to create flyers appropriate for Math 1A and Bio 10, 20 hours to coordinate with marketing and prepare the content to be posted online. The materials should be accesable to students before the start of the Fall 2016 quarter. I will make two reports to the Equity Committee: first during Fall 2016 to show the materials that have been generated, and second during Fall 2017 to report on the enrollment trends after the materials have been online for a full academic year.

Per the **State Chancellor's Office**, Foothill College's **Student Equity Plan** is comprised of **five focus areas** (*Access, Course Completion, ESL and Basic Skills Completion, Degree and Certificate Completion, and Transfer*). The College then identifies disproportionately impacted students groups and associated activities for each focus area.

Each request must support increased outcomes for the associated students groups via **one (or more)** of the activities detailed in the **Student Equity Plan**. Using the check boxes below, indicate the **student group(s)** and the **associated Equity Plan activities** the request supports. *NOTE: You cannot mix and match groups and activities across factors.*

ACCESS

Target Populations + Current Gap

- Asian Indian (-4%) Veterans (-4%) Vietnamese (-3%)

Associated Activities

- A.1 – Marketing and Outreach to Recruit Students from Underrepresented Student Groups

COURSE COMPLETION

Target Populations + Current Gap

- African American (-15%) Low Income (-10%) Latino (-7%)

Associated Activities

- B.1 – Develop and Implement a Mentoring Program
 B.2 – Professional Development to Assist Faculty and Staff with Identifying and Implementing Strategies to Increase Success of Disproportionately Impacted Students
 B.3 – Support 3SP Early Alert Activities
 B.4 – Plan for the Expansion of First Year Experience
 B.5 – Provide Equity Research
 B.6 – Develop Online Access to Data about Subpopulations of Students
 B.7 – Reduce Financial Barriers to Course Success for Low Income Students

ESL & BASIC SKILLS COMPLETION

ESL: Target Populations + Current Gap

- Native Hawaiian or other Pacific Islander (-23%) Females (-3%) Latino (-7%)

ENGLISH: Target Populations + Current Gap

- African American (-19%) Low Income (-7%) Filipino and Pacific Islander (-13%)

MATH: Target Populations + Current Gap

- African American (-23%) Low Income (-6%) Latino (-6%)

Associated Activities

C.1 - Pilot Multiple Measures of Assessment

DEGREE AND CERTIFICATE COMPLETION

Target Populations + Current Gap

African American (-26%) Latino (-17%) Low Income (-12%)

Associated Activities

D.1 – Use Student Educational Plan Data to Project Student Needs

TRANSFER

Target Populations + Current Gap

African American (-15%) Latino (-16%) Low Income (-10%)

Associated Activities

E.1 – Facilitate the Assessment of ADT Learning Outcomes for Disproportionate Impact

INSTRUCTIONS FOR SUBMISSION

Please submit your completed request via email to the Student Equity Workgroup Tri-Chairs:

Paul Starer (starerpaul@fhda.edu)

Hilda Fernandez (fernandezhilda@fhda.edu)

Roberto Sias (siasroberto@fhda.edu)

FOR ADDITIONAL INFORMATION, PLEASE REFERENCE THE FOLLOWING LINKS

Foothill College Student Equity:

<http://www.foothill.edu/president/equity.php>

Student Equity Expenditure Guidelines:

http://extranet.cccco.edu/Portals/1/SSSP/StudentEquity/Student_Equity_Expenditure_Guidelines_2015-16_Final.pdf