

# Warren J. Baker Endowment for Excellence in Project-Based Learning Robert D. Koob Endowment for Student Success

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## **PROPOSAL NARRATIVE**

(Maximum of 5 double-spaced pages including figures/tables, 1" margins, 12-point font)

### **I. Abstract**

This proposal would allow four undergraduate students to present their research paper on transformative learning at an American Society of Engineering Education (ASEE) conference in Seattle in June 2015. These four students participated in SUSTAIN SLO, a community-based learning initiative, their freshman year at Cal Poly. SUSTAIN SLO is sponsored by the National Science Foundation to study aspects of change in higher education. As part of SUSTAIN's research, 23 students who participated in the first generation of the initiative in 2012 were interviewed one year after their experience. During summer 2014, the four undergraduate students involved in this proposal partnered with Liz Schlemer, IME professor and co-PI of SUSTAIN, to quantitatively analyze these narratives to explore these two questions: 1) How is SUSTAIN different than the traditional course experience? and 2) How did SUSTAIN affect you? This team of 4 undergraduate students and 1 professor is currently in the process of writing their findings and will submit their paper to the ASEE in January 2015. The funds requested in this proposal would cover the cost of plane tickets, hotel rooms, and conference registration fees.

## **II. Introduction**

SUSTAIN SLO's NSF sponsored research focuses on the faculty change process within the larger inquiry into what is required for innovation and transformation in higher education, particularly within the STEM disciplines. This undergraduate research project expands this focus to include the student change process and represent their personal learning outcomes that are not necessarily measured in institutional outcomes such as retention and grades.

In addition to naming these learning outcomes, this proposal engages undergraduates in research experience, which is a high impact practice in education.

As the student researchers discovered from analyzing 22 student interviews, SUSTAIN SLO was different than traditional experiences as it included 1) open assignments and structure, 2) a new look at education and learning, 3) different relationships with faculty and peers, 4) a recognition of the importance of space to be yourself, and 5) significant collaboration and team building. As for the impact of these differences, students reported 1) increased capacity for personal reflection, 2) new sense of ownership in education, 3) a discovery of internal motivation and joy of learning, and 4) deepened friendships including collaboration and risk taking, which resulted in increased support and resilience. There were also a significant number of negative comments about the experience and an analysis of these comments will also included in the students' research paper. The paper will conclude with a reflection by undergraduate researchers on their experience in performing the research.

To complete this research experience, this proposal requests funds to allow the four students and faculty advisor to travel to a conference in Seattle in June to present their findings.

### **III. Objective(s)**

In partnership with their faculty advisor, the four undergraduate students included in this proposal will:

- (1) Quantitatively analyze 22 student narratives to explore outcomes of SUSTAIN SLO, a multi-disciplinary freshmen experience, specifically exploring these two research questions:
  - a. How is SUSTAIN different than the traditional course experience? and
  - b. How did SUSTAIN affect you?
- (2) Write a paper describing the content and components of SUSTAIN SLO, discussing the research done and the results found, and reflecting on the undergraduate researchers' experience in performing the research.
- (3) Present their research paper at the American Society of Engineering Education (ASEE) conference in Seattle in June 2015.

### **IV. Methodology**

**Spring 2013** – 22 student interviews were performed one year after the group of students participated in SUSTAIN SLO

**Summer 2014** – the four undergraduate students included in this proposal paired up to read and quantitatively analyze these 22 student interviews

**October 2014** – paper abstract submitted to ASEE conference

**October & November 2014** – students meet biweekly with faculty advisor to discuss findings and write results and conclusion section of paper

**December 2014** – edit and finalize paper

## **V. Timeline**

**January 7, 2015** – submit paper to ASEE conference

**June 14-17, 2015** – present at ASEE conference in Seattle

## **VI. Final Products and Dissemination**

The four undergraduate students will present the findings of their paper at the ASEE conference in Seattle in June 2015. Their paper will be published in the ASEE proceedings and distributed among SUSTAIN's existing network of faculty and students.

## **VII. Budget Justification**

We are requesting funds to send 4 students and 1 professor to attend an American Society of Engineering Education conference in Seattle from June 14-17, 2014, which would cover the cost of:

- 5 roundtrip plane tickets from LAX to Seattle, estimated at \$250/ticket (\$1250 total);
- 3 hotel rooms for 6 nights in Seattle, estimated at \$150/room/night (\$2700 total); and
- 4 student non-member conference registration fees, \$60/person (\$240 total).

## PROPOSAL BUDGET

<b>Student Applicant(s):</b>	Elise Candelaria Jada Golland Philip Hatcher Rachel Pittman	
<b>Faculty Advisor:</b>	Liz Schlemer	
<b>Project Title:</b>	SUSTAIN SLO Undergraduate Narrative Research: Reenergizing Learning	<b>Requested Baker Endowment Funding</b>
<b>Travel</b>	<i>subtotal</i>	<b>\$3950</b>
Travel: In-state		\$
Travel: Out-of-state	\$1250 flights \$2700 hotel rooms	<b>\$3950</b>
Travel: International		\$
<b>Operating Expenses</b>	<i>subtotal</i>	<b>\$ 240</b>
Non-computer Supplies & Materials		\$
Computer Supplies & Materials		\$
Software/Software Licenses		\$
Printing/Duplication		\$
Postage/Shipping		\$
Registration	\$60/student ASEE conference registration	<b>\$240</b>
Membership Dues & Subscriptions		\$
Multimedia Services		\$
Advertising		\$
Journal Publication Costs		\$
<b>Contractual Services</b>	<i>subtotal</i>	<b>\$0</b>
Contracted Services		\$
Equipment Rental/Lease Agreements		\$
Service/Maintenance Agreements		\$
<b>TOTAL</b>		<b>\$4190</b>

Christopher A. Dicus, PhD  
Warren J. Baker Endowment Coordinator  
Office of the Provost & Executive Vice President for Academic Affairs  
1 Grand Ave, Building 1, Room 305  
California Polytechnic State University, San Luis Obispo, CA 93407

**Re: Letter of Support for SUSTAIN SLO's Proposal for the Baker-Koob Endowment**

Dear Mr. Dicus:

I fully support the *SUSTAIN SLO Undergraduate Narrative Research* project as a candidate to receive funding from the Warren J. Baker Endowment for Excellence in Project-Based Learning and/or the Robert D. Koob Endowment for Student Success. This proposal supports undergraduate research, a high impact learning practice, by requesting to send four highly qualified undergraduate researchers to present at an American Society of Engineering Education (ASEE) conference in Seattle in June 2015.

This summer the four undergraduate students involved in this proposal quantitatively analyzed 22 student narratives to explore outcomes of SUSTAIN SLO, a multi-disciplinary freshmen experience, specifically exploring 1) how is SUSTAIN different than the traditional course experience? and 2) how did SUSTAIN affect you? Because these four students participated in SUSTAIN SLO their freshman year, they are personally connected to the study. As I worked with them this summer to outline our research questions and co-design our analysis process together, their enthusiasm and depth of perception motivated and inspired me. I have no doubt that they will finish writing their research paper and present at the conference with this same passion and brilliance.

I am currently supporting this project by helping the students with project management, research methods, outlining the research paper, and coordinating with the ASEE. Additionally, the students are paid for the time they spend on this project out of SUSTAIN SLO's NSF grants. However, these grants do not cover travel expenses for undergraduate research, which is why the students are applying for funding from this Baker-Koob endowment. I will continue to work with the students through January to ensure they have enough support and guidance to finish and submit the research paper to ASEE by the January 7<sup>th</sup> deadline.

Please let me know if you have any further questions.

Sincerely,



Liz Schlemer  
SUSTAIN SLO Co-Director  
Professor, Industrial and Manufacturing Engineering