

## UNIVERSITY CAMPUS PROGRAM FUND SPENDING AGREEMENT

UNIVERS	ITY CAMPUS PROGRAMS USE ONLY
Fund:	Division:
Approved By:	Function:
Date:	Dept ID:
	Select Code:
Please fill out this form if you would like  Purpose of Fund:	to request a new University Campus Program fund.
Also include any specific restrictions p	scribe in detail the purpose and/or background of this new fund. laced on the use of the funds. Please ensure that the purpose (as a boxes checked in the Types of Expenses section.
opportunities for individual students and gro Fundable projects include, but are not limited	ents is to support hands-on, project-based learning oups at California Polytechnic State University, San Luis Obispo. It to, student support, student and faculty travel, student and faculty expenses arch, group projects, conferences, competitions, and equipment and materials
I would like the fund to be titled:	Solar-powered cook stove
DeptID to be associated with new fund:	115500
Fund director will be:	Peter Schwartz Phone Number: pschwart@calpoly_
Print name/Title	
Source of Funds:	
documentation that may provide gu donation)	documentation provided by the donor, and any other idance as to the types of allowable spend and purpose of
$\square$ Written documentation from the	donor? (Attach)
$\square$ Written solicitation for these fun	ds from you on behalf of the University? (Attach)
$\square$ Letter or gift agreement that acc	ompanied the funds? (Attach)
☑ Baker/Koob endowments	Fund number:
☐ Cal Poly Foundation funding source	Fund number:
☐ Cal Poly Corporation funding source	Org Key/ Object Code

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Does the donor require any book, naming rights, etc.?	thing in return for Yes O No	their donation	n/sponsorship, i.e. report, finished produc
	nal Report		
Types of Expenses (check all	that apply):		
		Calasiaa	
	☐ Faculty/Staff S		Other Financial Aid*** (explain below)
	Student Salari		Awards**
Scholarships***		pment	○ Other (explain below)
* can be spent on any expenditure  ** must be paid through State pay  *** must be coordinated and paid	roll office		ss purpose
<b>Additional Explanation:</b>			
Proposals can include funding for Baker and Koob Endowments Pro utilized for student or faculty sala	posal template at http:	//provost.calpoly	tual services (see specific budget line items in .edu/endowments). Requested funds may not be
Additional Details:			
Will this fund be used to pay  If yes: Held on campus  Who will attend:			hosting a conference? Yes • No  Fee charged for event
A request to close the fund of fiscal activity over a period of related departmental fund w	of six months. Clos	sure may cons	r of record when the fund has not had any ist of transferring excess funds to another ubject account.
With the fund director's cond fund, funds will be transferre		uired to establi	sh the fund), in the event of a deficit in this
Fund Number: 77900	Fund Name:	Physics Discretio	nary Account
Required: I acknowledge no i	nterest will be alloc	ated to funds o	on deposit in this fund Initial here
All reports are to be retrieved	d by Fund Director o	r designee by ι	utilizing PeopleSoft/Dashboards.
1. Does director have access?	○ Yes ● No	THE COURSE MANY REPORTS NO.	access by filling out the form located at poly.edu/budget/cmsfinance.asp
2. Does anyone else need acc	ess to fund?	Yes O No	If yes; who?: Shirley Huston
Note - the account direct budgets, reporting, etc.	or should designate	e an individual	to have Dashboard access to assist with
* Please note that conferences hel	d on campus must be co	oordinated via Co	nference and Events Planning (756-7600)

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#### Review and Approval:

**REVIEWED AND APPROVED BY:** (Dean or Vice Presidents are also Authorized Signers on funds established in their college, program or division)

By signing this agreement, I hereby authorize and assign the ownership of the University Campus Program Fund and/or activity described herein to the University, and agree to adhere to all terms and conditions of the agreement.

Pofes V Schwart + Alle / Helium 3-18-20/4

Fund Director - Printed Name and Title Fund Director Signature Date

Robert Fulolo
College Dean / Dept. Chair Printed Name
College Dean / Dept. Chair Signature
Date

Please complete all sections of this request and submit it to State Accounts Payable (Admin Bldg, room 129). You must also include a properly completed Signature Authorization Form with your submission. Once approvals have been obtained, the University Campus Program Fund will be established and you will receive a fund number. If you have any questions regarding your fund, please contact University Campus Programs at <a href="mailto:ucp@calpoly.edu">ucp@calpoly.edu</a>.

#### For Office Use Only:

APPROVAL / AUTHORIZATION ROUTING	
Fiscal Services Management	Date
Foundation Management	Date
University Controller / Director of Fiscal Services	Date
Vice-President of Administration & Finance	Date

# University Campus Programs Signature Authorization Form



FUND	DIRE	CTOR: Leter Va	Johnson				
		CTOR TITLE: Quote	al Profiles	1			
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FUND	TITL	E. Solar Pou	rered Cod	2 5	love		
AUTI	HORIZ	ZED SIGNATURES:					
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Sig	natur			PTINLN	ame & Title		
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		Direct Buy Form DR PO Requisitions other Than Property & Equipment Limit (if any):\$	Time Cards Employment Forms Limit (if any):\$		Property and Equipment Funds Limit (if any):\$		Petty Cash (\$100 max.)
2							
Sig	natur	9		Print N	ame & Title		
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3							
Sig	natur	e		Print N	ame & Title		
		Direct Buy Form □ PO Requisitions other Than Property & Equipment Limit (if any):\$			Property and E Equipment Funds Limit (if any):\$		Petty Cash (\$100 max.)
4							
Sig	natur	9		Print N	ame & Title		
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ALL A	ACCOL	INTS: Any expenditure involvi	ng reimbursement directi	y to the	Fund Director requires Superv	visc	or's approval.
		NARY ACCOUNTS ONLY: Di approval.	scretionary Fund Expend	litures (i	ncluding transfer) in excess of	f \$3	i,000.00 (Fund 7XXXX series) requires
PLE	ASE I	NOTE: If you <u>do not</u> wisl	n to delegate signatu	ure aut	hority, <b>you still need to</b>	o s	ign and date this form.

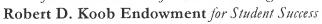
FUND DIRECTOR SIGNATURE

DATE

Route completed forms to University Campus Programs ucp@calpoly.edu

# Warren J. Baker Endowment

for Excellence in Project-Based Learning





		Proposal Cover Page
Title of Project: Solar-Powered	Cook Stove	
Proposal Author: M	adison Fleming and	Mia Sheperd Cal Poly Email: maflemin@calpoly.edu
Student ID: 010014	` ` _	
Signature p	rovides permission to check	k financial aid eligibility.
Previous	Baker/Koob Endow:	rment funding? (circle one): Yes No
Team Member(s)	Signature	Cal Poly Email Department
Madison Fleming	MF	maflemin@calpoly.edu Industrial Technology
Mia Sheperd	MS	msheperd@calpoly.edu General Engineering
Faculty Advisor: Pete	r Schwartz	Department: Physics
Faculty Advisor email	: pschwart@calpoly	<u>y.edu</u> Telephone: <u>+1 805 756 1220</u>
Anticipated Start Date	e: <u>06/2016</u>	<del></del> :
Anticipated End Date	:: <u>07/2016</u>	
Total Funds Requeste	ed (\$): <u>5,000.00</u>	1/1/ A 11 12 2016
Signature of Faculty A	Advisor:	Schledy Date: 4-13-2016, Originally -2f1

# Warren J. Baker Endowment

for Excellence in Project-Based Learning

Robert D. Koob Endowment for Student Success



#### PROPOSAL NARRATIVE

(Max. of 3 pages including figures/tables but excluding budget page, 1" margins, 12-point font. See Sec.XII of RFP for more details.)

Proposals not complying with format guidelines will not be considered.

## I. Project Title

Solar-Powered Cook Stove

#### II. Abstract

As a part of the Appropriate Technology program at Cal Poly, we have worked closely with the technological and business model development of a Solar-Powered Cook Stove. Our research thus far has been productive, yet limited due to our inability to easily work with and develop the technology based off of the needs of the end users. The advancement of this technology will benefit from the opportunity for Cal Poly students to work directly with target communities in Sub Saharan Africa. We are requesting the financial funding from the Warren J. Baker Endowment for the learning opportunity to gather primary market data in order to further develop our technology based off the directly observed needs of end-users in the developing world.

#### III. Introduction

According to the World Health Organization, "Over 4 million people die prematurely from illness attributable to the household air pollution from cooking with solid fuels" which is more than three times the global fatality rate of AIDS. This highlights an incredible problem that many families in developing countries around the world are experiencing first hand. There are too many people using inefficient cooking mechanisms which lead to a myriad of health problems from smoke inhalation due to cooking with open fires in their homes. Furthermore, there is a large harmful environmental impact that comes from the biomass combustion stoves in millions of homes around the world. Deforestation and GHG emissions are primary areas of concern when assessing the current environmental impact of wood fueled cook stoves.

Technical solutions such as our solar-powered cook stove serve as an innovative and appropriate way to eliminate indoor cooking related deaths while eliminating the associated environmental harm that arises from traditional biomass cook stoves.

# IV. Objective(s)

Our **overall objective** is to improve the quality of life for many people by providing solar-based electrical cooking services while reducing environmental impact by displacing environmentally damaging technologies largely related to the burning of biomass such as wood.

Our **specific objective** within the scope of this proposal and possible funding opportunity is to travel to Africa with the non-profit organization AidAfrica in order to gather primary market data, work directly with communities to develop our technology based on their needs, and test implementation of some solar cooking units to evaluate our technology's strengths, weaknesses, opportunities, and threats of implementation in the developing world. We are choosing to partner with AidAfrica specifically because they have pre-existing relationships with communities in Sub Saharan Africa and are interested in the possible use of our solar cooking technology.

### V. Methodology

We are asking for funds to go to Sub Saharan Africa with AidAfrica in order to gain insight into the lives and cooking methods of local community members. AidAfrica is a non-profit organization that has successfully implemented 60,000 brick cook stoves among other development projects in the Sub-Saharan region of Africa. The brick cook stove is an increased efficiency stove, still using biofuels as the energy input. This differs from our solar cook stove, however AidAfrica has expressed interest in collaborating with us to develop and distribute our solar cook stove.

More specifically, our solar cook stove technology is comprised of a 100 Watt solar panel that is connected to a heating element in the form of a stove top which will emit heat at 100 Watts. Insulation is key to this technology since 100 W is not enough power to bring water to a boil due to heat losses. Subsequently, the majority of our focus during the upcoming months will be developing a second prototype consisting of easily accessible and sustainable insulators such as Cob and hay. It will have a built in temperature controller to ensure that the temperature does not exceed 130 degrees Celsius to prevent a fire. The solar cook stove will be located in the Student Experimental Farm: a space on Cal Poly campus for students to implement and develop innovative and sustainable technologies.

#### VI. Timeline

There is already considerable interest and activity surrounding the development of the solar cook stove technology, involving about 20 people. This includes the three principle investigators, six Mechanical Engineering senior project students, one business senior project student, and two Electrical Engineering senior project students. In Dr. Schwartz's appropriate technology class, and eight students including us, are dedicated to photovoltaic cooking.

The continuation of engagement from these 20 individuals will continue from now until June 2016. We plan to further develop the technology, business model, and community relations within that time so that by June 2016 two students will have the necessary existing infrastructure to ultimately travel to Sub Saharan Africa with a strong prototype and understanding of an implementation plan. Subsequently, the information gathered on this trip will serve as a pivotal stage in the development of this technology and dissemination model. The trip itself will last two weeks in June or July (subject to Aid Africa's itinerary). The two weeks will be spent traveling through Sub Saharan Africa to observe the current living and cooking conditions, collect primary market research data (in-depth interviews, focus groups, surveys, etc.) and test the prototype in its intended environment.

#### VII. Final Products and Dissemination

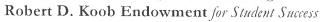
The final product of our proposed field study will be to experience first hand the reality of our targeted end user. We also hope to investigate what the dissemination of solar energy in the developing world on a community scale. More importantly exploring this cooking alternative could be the beginning of many new appropriate technologies that could tackle the number one cause of children's death in developing countries. We look forward to an exchange of knowledge of cultural norms, technical systems, and the fusion of the two.

## VIII. Budget Justification

Our intention is to support Cal Poly students in their 'learn by doing' endeavors to develop this solar cooking technology with the hope of widespread dissemination of these technologies in the developing world. Inside of this, we wish to support the involvement of students to provide hands-on experience in science, engineering, product development, business, and marketing. Hence the funding is only for student travel cost and associated travel costs.

# Warren J. Baker Endowment

for Excellence in Project-Based Learning





# PROPOSAL BUDGET

Student Applicant(s):	
Faculty Advisor:	
Project Title:	Requested Endowment Funding
Travel subtotal	\$ 120
Travel: In-state	\$
Travel: Out-of-state	\$
Travel: International	\$ 2500 (per student)
Operating Expenses subtotal	\$
Non-computer Supplies & Materials	\$
Computer Supplies & Materials	\$
Software/Software Licenses	\$
Printing/Duplication	\$
Postage/Shipping	\$
Registration	\$
Membership Dues & Subscriptions	\$
Multimedia Services	\$
Advertising	\$
Journal Publication Costs	\$
Contractual Services <u>subtotal</u>	\$
Contracted Services	\$
Equipment Rental/Lease Agreements	\$
Service/Maintenance Agreements	\$
TOTAL	\$5000