Proposal Details

G Hendrix

Section 1: Summary Information

*** Project Title:**	USF Campus Food Recovery Project
*** Duration (months):**	12
*** Total Budget ($):**	$25,600.00
*** Requested SGEF Funds ($):**	$25,600.00
*** Matching Funds ($):**	$0.00
*** Proposed Starting Date:**	10/1/2018
PI Graduation Date (if applicable):	5/1/2021

Section 2: Applicant Information

	Full Name	Unit/Department	Phone	Email
*** Principal Investigator**	Whitney Fung	College of Public Health	9544152201	whitneyfung@health.usf.edu
Investigator 1				
Investigator 2				
Investigator 3				
Investigator 4				

Section 3: Project Description

*** Project background and purpose (reasons motivating request) (Max 500 words)**

Up to 40% of the food produced in our country winds up in landfills instead of being eaten (Environmental Protection Agency, 2015). It is reported that college campuses as a group waste about 22 million pounds of food each year (Poon, 2015); this number breaks down to an average of 142 pounds per student living on campus and 38 pounds per student living off campus (Recycle Works, 2018). Additionally, the Urban Institute found that about 11.2 to 13.5 percent of America's college students are food insecure, meaning these students lack the resources to be able to obtain adequate food, which negatively impacts academic performance, health, and mental health (Blagg, Gundersen, Schanzenbach, & Ziliak, 2017). The purpose of this project is to pilot test a scalable program that will provide the USF community a place to support food recovery and zero waste initiatives by using anaerobic biodigesters. In partnership with USF Aramark Dining Services, the project will divert edible food to USF Feed-a-Bull or local charities and inedible, post-consumer food to four pilot biodigester sites on campus that will be overseen by USF Facilities and the project team. Goals of this project include reducing food waste at the source to minimize methane gas emission, recovering food waste to support food insecure students and community members, recycling food waste to generate renewable energy sources, and increasing campus awareness and education of food waste reduction/recovery practices.

*** Project activities (Max 250 words)**

We have USF Aramark's support in working with dining sites to provide food waste, which the project team (OPS students) will coordinate pick-up and drop off to the biodigesters. USF Facilities has already completed a space impact form to build the double IBC tank biodigesters (request approved), and we have met with Suchi Daniels and Nainan Desai to discuss the logistics of implementation of the biodigesters. We have discussed the four pilot sites with USF Facilities: OPM100 area (2), USF Botanical Gardens (already built), and USF Athletics area near tennis courts. Design of the biodigesters is provided by USF professor Dr. Thomas Culhane and in partnership with anaerobic digestion experts in the College of Engineering. We will also collect data from one compost site (already existing at OPM100 and managed by USF Facilities) to compare the feasibility of both options. Activities will include food waste pick up from dining sites/drop off to digesters daily by students, monitor biodigester productivity (measure biogas production, monitor pH/temperature, etc.), and develop food waste prevention/recovery campaign. If this project is approved, this project also intends to engage campus students by raising awareness and providing education about this topic through each of these phases to understand food recovery and the aspect of our campus sustainable food system; this might include outreach at campus events or other avenues to discuss campus sustainability initiatives.

*** Project results (Max 500 words)**

There are three phases of this project: implementation, evaluation, and student impact assessment. The goal of the implementation phase is to coordinate the day to day logistics of food waste recovery from the dining sites to the biodigester sites. The deliverables of the implementation phase include: standard operating procedures for picking up/dropping off food waste to the digester in coordination with Aramark and Facilities staff, materials and cost list for campus food recovery implementation, and transition plan to incorporate food waste recovery into USF Campus Recycling Program and Energy Conservation bins. The goal of the evaluation phase is to test the safety, efficacy, and productivity of the biodigesters with guidance from faculty advisors and the committee. Deliverables of this phase include safety and efficacy report for biodigesters, capacity and productivity report for biodigesters, results of campus food waste audit, and standard operating procedures/protocol for conducting a campus food waste assessment and transition plan to capture food waste into the USF Grounds annual waste report. The goal of the Student Impact Assessment phase is to develop and evaluate a social marketing campaign to reduce campus food waste. Deliverables include a USF baseline assessment survey of student awareness, knowledge, and interest in food insecurity, food waste recovery, nutrition, and recycling; a Social Marketing plan for a Zero Waste Campus initiative; and an evaluation of the social marketing plan.

*** Outcomes of the project (Max 250 words)**

The goals of this project include reducing food waste at the source to minimize methane gas emission, recovering food waste to support food insecure students and community members, recycling food waste to generate renewable energy sources, and increasing campus awareness and education of food waste reduction/recovery practices. Thus, the outcomes of this project are food waste reduction among dining sites on campus, increased food waste recovery and renewable energy generated on campus, and an overall increased awareness and interest in these issue across campus students, faculty and staff. These will be measured and shown across all three phases and presented/reported to the advisory meetings every quarter.

*** Annual Energy Savings**	0 kWh
Annual Cost Savings	$0.00
Return of Investment in %	0.00
Annual Green House Gas Reduction	0.00

*** Project Sustainability (Max 200 words)**

This pilot test relies heavily on a project team of students to do the literature review, preparation, data collection, pretesting, and implementation of a potentially campus-wide, scalable project. This pilot test is meant to work out the kinks before it will formally be implemented campus-wide. The project will serve as a foundation for faculty and staff to take over the project and incorporate into existing programs, e.g., campus recycling and energy conservation program, Aramark's Green Thread Environmental Sustainability program, etc. USF Aramark/Dining Services is willing to partner with other USF entities to recover pre-consumer and post-consumer food waste to be donated to charities or the campus biodigesters, and USF Facilities is willing to maintain and operate a larger scale food recovery program. Since USF Facilities already does an annual waste audit (which does not account for food), this pilot test also will provide pilot test measures to include food waste in this audit. USF Departments and College of Engineering, Public Health, Sociology, Anthropology, Religious Studies and Patel College of Global Sustainability are all committed to providing continued support for this project. Other entities willing to support include USF Social Marketing Group, USF Athletics, and USF Office of Sustainability.

Section 4: Workplan and Budget Details

*** Detailed work plan/schedule of activities (Max 250 words)**

Project implementation will be guided by the PI (unpaid, doctoral student); consulted with USF staff from Facilities, Dining Services, and Athletics; and advised by the advisory committee at quarterly meetings. The PI and student team (3 OPS) will meet weekly with USF Facilities and carry out each of the project phases as proposed in the project and advised by each of the USF Departments and Entities. Each week will consist of food waste pick up, biodigester feedings (and cleanings), and other tasks to monitor biodigester productivity and develop the food waste prevention social marketing campaign.

*** Budget breakdown**

Category	Request from SGEF	Applicant contribution	Total
Personnel (include all involved)	$12,100.00	$5,500.00	**$17,600.00**
Equipment	$500.00	$1,000.00	**$1,500.00**
Supplies/Materials	$8,500.00	$0.00	**$8,500.00**
Contractual	$0.00	$0.00	**$0.00**
Construction	$4,000.00	$0.00	**$4,000.00**
Other (specify in budget justification)	$500.00	$0.00	**$500.00**
Total Project Cost	**$25,600.00**	**$6,500.00**	**$32,100.00**

*** Budget justification (Max 250 words)**

There is a $500 budget line item for incentives to engage students in the social marketing campaign development and educational trainings, as well as food for advisory meetings ($30 for each meeting plus serveware, 4 total meetings = $150; $350 for incentives, e.g., $5 gift card for every 10th survey respondent).

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