



STUDENT SUSTAINABILITY COMMITTEE

Funding Application – Small Projects (Under \$10K)

Please submit this completed application and any relevant supporting documentation by the deadline listed on the SSC website to Sustainability-Committee@Illinois.edu. The Working Group Chairs will be in contact with you regarding any questions about the application. If you have any questions about the application process, please contact the Student Sustainability Committee at <http://sustainability-committee@illinois.edu>.

General Information

Project Name: Local Grains and Locally Processed Foods for Dining Services

Total Amount Requested from SSC: \$ 9,657

Project Topic Areas: Land & Water Education Energy
 Transportation Food & Waste

Contact Information

Applicant Name: Ece Gulkirpik

Unit/Department or RSO/Organization: Food Science and Human Nutrition

Email Address: Gulkirpik, Ece <eceg2@illinois.edu>

Phone Number: (217) 904-9224

Project Team

Name	Department/Organization	Email
Juan Andrade	FSHN	jandrade@illinois.edu
Carmen Ugarte	NRES	cugarte@illinois.edu
Brian Jacobson	FSHN	bjacobs3@illinois.edu
Michelle Wander	NRES	mwander@illinois.edu

Financial Contact's Name: Leslie Alexander

Faculty/Unit/Department: FSHN

Email: laa@illinois.edu

Phone: (217) 333-2447

(If Applicable)

Facilities Manager Name: Brian Jacobson

Email: bjacobs3@illinois.edu

Phone:

Project Information

Provide a brief background of the project, its goals, and the desired outcomes.

This project aims at developing methods that promote processing of grains produced locally and for consumption of the student body here at Illinois. The project is connected to a larger campus initiative that seeks to promote the development of grain varieties suitable for organic production in this region. An organic transition project was started in the spring of 2017 at the Vegetable Crop Farm at Illinois where researchers are investigating plant-soil relationships that influence grain quality. In such study, various lines of food-grade corn, wheat, and soybean are being evaluated agronomically. This represents an opportunity for us to conduct research & development of products that could result of those grains and in partnership with the FSHN Pilot Plant. Through the field component of this project, we will have access to over 12,000, 7,000 and 4,000 lbs. of yellow corn, white corn, and high protein soybean. These grains have been pursued for their quality to produce a variety of products that could be currently used to supplement student meals offered by Dining Services. Short-term outcomes of this project will include: 1) development of new food products from locally produced grains, with evaluated nutrition and sensory characteristics, 2) increased use of organic and locally produced foods by Dining Services, and 3) educational opportunities that raise students' awareness of the importance of locally produced foods.

How will this project improve sustainability at UIUC?

This project is tied to the single organic farming study established on campus. Fieldwork for production and evaluation, and lab analysis are currently sponsored by the Agroecology and Sustainable Agriculture Program. The SSC support to this project will accelerate the incorporation of local foods into Dining Services, and boost campus efforts towards sustainability and the achievement of the goal of carbon neutrality.

Where will the project be located? Do you need special permissions to enact the project at this site? If so, please explain and attach a letter of support to your application.

Grain quality, sensory evaluation, and product quality testing (nutrients and polyphenols) will be executed at Dr. Andrade's lab and the FSHN Pilot Plant. Dr. Andrade is member of FSHN and collaborates with Mr. Jacobson and Drs. Wander and Ugarte on several projects.

Other than the project team, who will have a stake in the project? Please list other individuals, groups, or departments indirectly or directly affiliated to this project. This includes any funding entities (immediate, future, ongoing, etc.) and any entities that will be benefiting from this project.

Soil scientists, Michelle Wander and Carmen Ugarte, from the Department of Natural Resources and Environmental Sciences are evaluating soil biological characteristics that influence plant health and grain quality in field conditions. Plant breeders, Martin Bohn and Glen Hartman, from the Department of Crop Sciences and USDA-ARS are involved in the agronomic evaluation of advanced corn and soybean hybrids and varieties. All this work is sponsored by the Agroecology and Sustainable Agriculture Program.

Please indicate how this project will involve or impact students. What role will students play in the project?

Any relevant opportunities for student involvement in your project

Student helpers will be involved throughout the project by assisting in developing protocols and testing the quality and acceptability of newly developed products at Dr. Andrade's lab and the FSHN Pilot Plant. This represents an opportunity for students to link into applied research. Students will be involved in the development of a label for food products used by Dining Services; the label will include information on the carbon dioxide emissions associated with the production and processing of the grain.

*Have you applied for funding with SSC previously? If so, for what project? **NA***

Scope, Schedule, and Budget verification

What is the plan for project implementation? Describe the key steps of the project including the start date, target completion date, target date for submitting a final report, and any significant tasks or milestones in the table below. Please be as detailed as possible.

Fall 2017

Corn and soybean harvest and storage in the FSHN Pilot Plant
Literature review for protocol development

Winter 2018 to Spring 2018

Test protocols to determine grain quality

Summer 2018 Harvest winter wheat and test quality

Develop outreach material to present at field days

Fall 2018 to Fall 2019

Evaluate product quality

Sensory evaluations

Present label and life cycle analysis calculation

Spring 2020

Final report

List all budget items for which funding is being requested. Include cost and total amount for each item requested. Please be as detailed as possible.

<u>Items</u>	<u>Cost</u>
Storage containers (13 units @ \$489/unit)	\$6,357
Sensory evaluation consumables (cups, spoons, plates, paper, cardboard boxes)	\$1,000
Total polyphenol analysis reagents (folin reagent) and supplies (cuvettes, syringe filters, syringes)	\$1,000
Nutrient analyses (supplies for emission spectrometry: high-purity nitric acid, torch, tubes)	\$1,000
Shipping containers	\$ 300
	Total \$9,657

If the project is implemented, will there be any ongoing funding required? What is the strategy for supporting the project in order to cover replacement, operation, or renewal costs? (Note: SSC provides funding on a case by case basis and should not be considered as an ongoing source of funding)

Supplemental funding will be provided by the Agroecology and Sustainable Agriculture Program and we are continuously submitting proposals to off-campus funding agencies that support this kind of work.

Please include any other sources of funding that have been obtained or applied for, and please attach any relevant letters of support.

Dr. Andrade works closely with the Food Pilot Plant in FSHN and with Artisan Grain collaborative, a food hub seeking to connect local cereal growers with markets in Chicago. He also is the principal investigator for the nutrition team at the Soy Innovation Laboratory. This USAID funded program focuses on bringing research for development in the food value chain in Sub-Saharan Africa. It is possible that these sources of

funding continue this and next year. These will potentiate our ability to continue the evaluation of the quality and sensory attributes of cereals produced locally under organic and conventional conditions.

What is the plan for publicizing the project on campus? In addition to SSC, where will information about this project get reported?

As part of this project, Dr. Wander and Ugarte will coordinate the development of a life cycle analysis and a label for food products that will be presented at Dining Services. This will inform students about the carbon emissions produced from farm to table.

We will also develop educational materials to present at field days organized in partnership with the Illinois Organic Growers Association and the Agroecology and Sustainable Agriculture Program. These activities will increase the dissemination of information to the larger community surrounding the University of Illinois campus.

Finally, our findings will be presented at a professional meeting (i.e., Institute of Food Technologies – Food Sustainability session; Chicago IL, July 2018) and an article will be submitted for peer-review publication under the guidance of Dr. Andrade.