

# STUDENT SUSTAINABILITY COMMITTEE



2016-2017 ANNUAL REPORT

# TABLE OF CONTENTS

LETTER FROM THE CHAIR	2
MISSION STATEMENT	3
2016-2017 MEMBERS	3
FUNDING SUMMARY	4
2016-2017 FUNDED PROJECTS	5

# LETTER FROM THE CHAIR

The Student Sustainability Committee (SSC) at the University of Illinois at Urbana-Champaign is a group of students, faculty, and staff who allocate over \$1.1 million of student funding to innovative and sustainable projects. As Chair of SSC, I am proud to be part of the ever-changing culture of sustainability that continues to grow here on campus.

The student members of the SSC are selected by the Illinois Student Senate to serve as leaders on campus and assume the responsibility as stewards of one of the nation's largest green funds. The students of the University of Illinois truly understand the importance of sustainability and the SSC serves to amplify their voice through our commitment to service, compliance, and excellence. This annual report will guide you through our most recent accomplishments.

If you have any questions or want to know more about the SSC, do not hesitate to contact me personally or reach out to our SSC Coordinator, Micah Kenfield. We will be happy to help you with any subject regarding specific procedures or projects of SSC.

Best Regards,

Paul Couston,  
Chair  
Student Sustainability Committee



Sustainable Student Farm  
Photo Credit: Micah Kenfield

# MISSION STATEMENT

The **Student Sustainability Committee (SSC)** is a student-led organization charged with the distribution of two student fees – the Sustainable Campus Environment Fee and the Cleaner Energy Technologies Fee. With the ultimate goal of making the University of Illinois at Urbana-Champaign a leader in campus sustainability, SSC reviews, recommends, and funds projects that increase environmental stewardship, inspire change, and impact students.

## 2016-2017 MEMBERS

### STUDENT MEMBERS

#### EXECUTIVE BOARD

Paul Couston (*Chair*)  
Nick Heyek (*Vice-Chair Internal*)  
Meghan Killinger (*Vice-Chair External*)  
Ashley Yu (*Treasurer*)  
Saachi Kuwayama (*Secretary*)

### STUDENT MEMBERS

#### WORKING GROUP CHAIRS

Alex Dzurick (*Education*)  
Rebecca Laurent (*Education*)  
Rebecca Ambresh (*Energy*)  
Ashley Yu (*Food and Waste*)  
Saachi Kuwayama (*Food and Waste*)  
Morgan Wilkes (*Food and Waste, Fall*)  
MJ Oviatt (*Food and Waste, Spring*)  
Justin Vozzo (*Land & Water*)  
Anjana Krishnan (*Land & Water*)  
Julia Chang (*Transportation*)

### FACULTY ADVISORS

#### (EX OFFICIO)

Michelle Wander  
Warren Lavey  
Andrew Stumpf  
Mark Taylor  
Shenghua Wu  
Marian Huhman

### STAFF ADVISORS

#### (EX OFFICIO)

Morgan White  
Ben McCall (*Fall*)  
Ximing Cai (*Spring*)  
Laurel Reed-Rosch  
Joseph Youakim

### SUPPORT STAFF

#### (EX OFFICIO)

Micah Kenfield (*Coordinator*)

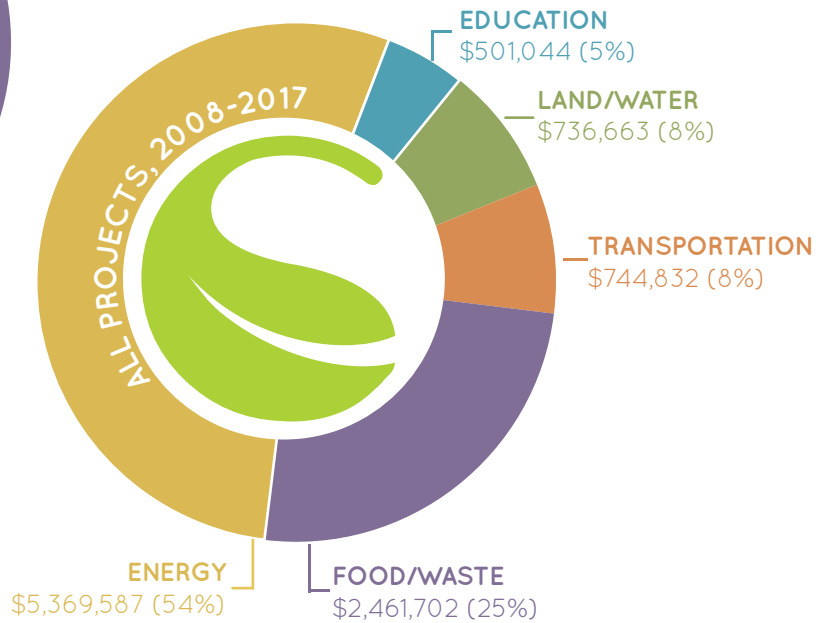
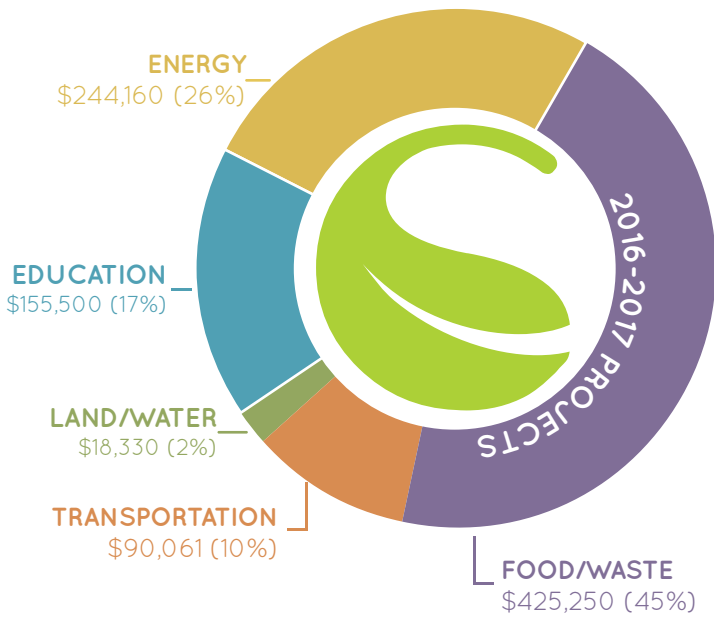
# FUNDING SUMMARY

\$933,301

*allocated to new projects this year*

21

*projects funded*



11 projects funded by SSC this year are student-led...



...accounting for nearly \$175,000 in total funding





# 2016-2017 FUNDED PROJECTS



## BIKE MAINTENANCE INSTRUCTION (\$1,000)

Since 2010, The Bike Project has collaborated with the University of Illinois to provide an educational space on campus. Bicycle education taught through that space encourages the campus community to ride bicycles for transportation because the bicycles sold and worked on at the Campus Bike Center are reliable and safe. While some people are willing to volunteer to teach advanced level bicycle repair classes at the Bike Center, few are willing to teach very basic entry-level classes addressing such issues as adjusting brakes, lubricating chains, and fixing flat tires.

This project funds two semesters of stipend for an instructor to teach classes at the Bike Center covering these topics. Combined class capacity over the two semesters would exceed 200 new cyclists.



## BEVIER CAFE HERB GARDEN (\$30,000)

The Bevier Café is a learning laboratory where FSHN students get hands-on experience running a food service establishment. SSC funding will purchase startup equipment for growing fresh herbs for use in the Bevier Café operation. The goals of this project are two-fold. The first is to produce "hyper-locally" grown fresh herbs to use in food production. Reducing our carbon foot print and aligning with iCAP sustainability goals. The second goal is education for students and the general public. Students will get to experience of a small-scale farm-to-table operation. Students will be heavily involved in developing planting schedules to meet demand, plant care maintenance, and incorporating products into the menu. The public which Bevier Café serves will not only be able to enjoy the fresh herbs incorporated into its recipes, but will have access to tours and educational information about the project.

## BICYCLE REGISTRATION AND RFID TRACKING PROGRAM (\$25,207)

Hundreds, if not thousands, of students already use their bicycles on a daily basis to get to and from class. This project funds an opt-in bike tracking system for all registered campus bikes working toward two goals:

- 1) Collecting useful data on where cyclists are biking on campus for more accurate and timely information than the perennial bike census.
- 2) Providing incentives for people who bike to campus, in the form of points toward or drawings for gift certificates for local dining options near campus.



When students and faculty register their bikes, they will each receive a tag for their bike with a personal ID number. With the data collected about their individual biking habits, students and faculty will be able to track how often they bike and earn rewards through an online interface and incentive system. The interface will show the number of times biked, the rewards an individual can earn, and offer the ability to submit

reports since bikers often see needed improvements before planners and engineers. This system is being developed entirely in-house by a team of women engineers.

## BUSINESS INSTRUCTIONAL FACILITY ROOFTOP SOLAR (\$60,000)

A strategic goal of both the University and the College of Business is to attract and attain the best faculty. In order to do that, it is essential to provide faculty with office space that allows them maximum productivity. The fourth floor of BIF has proven to be excellent space where faculty can work on research. The fourth floor faculty offices are highly sought after by research faculty due to quality of space, location, convenience, and security. As the College expands the fourth floor to include sixteen new offices, there is an opportunity to include a PV solar panel system. The Student Sustainability Committee has agreed to fund \$60,000 toward the total initial cost of \$157,340 to fully fund all \$48,000 of direct construction and equipment cost for a 12.5 kW array as well as \$12,000 in general conditions and contingency. Any other costs will be funded through the College of Business.

## BREWING THE BEST BANKABLE BIODIESEL (\$29,292)

The Illinois Biodiesel Initiative (IBI) converts waste vegetable oil from campus dining halls into biodiesel (intended for campus vehicles) and biosoap (intended for pre-washing in the dining halls), and aims to do so in a financially and environmentally sustainable manner. Currently, Garage and Car Pool, IBI's largest customer, requires that biodiesel meets the ASTM D6751 standard. This requires frequent quality control testing that would be cost prohibitive for a project of this scale to send to an off-site firm. The equipment funded by SSC through this award will allow students, under faculty guidance, to conduct their own quality control testing at a more economical cost. In addition to the hands-on experience students will gain, this also gives IBI all the tools to be fully financially self-supporting.



## ENVIRONMENTAL JUSTICE IS SOCIAL JUSTICE (\$21,000)

INNER VOICES Social Issues Theatre raises awareness and addresses issues of environmental justice through the creation and production of an original play with accompanying educational materials and holding an inaugural National Call for Scripts focused on the theme Environmental Justice Is Social Justice. Through SSC funding, two theatrical pieces will be produced. The first is a newly-penned work from University of Illinois students and staff, and will be performed on campus throughout Fall 2017. The second will be a series of vignettes submitted through a national call for scripts. Both pieces will be performed dozens of times on campus, and each performance will be followed by reflection and discussion.

## EV CAR CHARGING PILOT STUDY (\$5,000)

Campus currently has a scarcity of EV Charging Stations on campus. Presently, only eight public and nine permit-required charging stations exist on campus. These chargers are mainly Level 1, with only two Level 2 chargers on the far east side of campus. Level 1 chargers take significantly longer to charge than Level 2, and there is distinct room for campus to grow in this regard. This project will expand the number of Level 2 chargers on campus to promote the utilization of more electric vehicles. Initially, 1-2 stations will be installed, with metering equipment included in order to track utilization and demand.



## FLY ASH PHOSPHOROUS FILTRATION (\$8,350)

Subsurface (tile) drainage helps sustain the productivity of our farm lands by draining excess water from the field. Excess nutrient losses from our tile-drained agricultural fields have contributed to several water quality issues in the region including the formation of hypoxic zone in the Gulf of Mexico. It has been well-documented that tile drainage is responsible for highly soluble nitrate loss but recent studies have demonstrated that it also contributes to dissolved phosphorus loss from the agricultural fields. This project aims to develop ceramic pellets using fly ash and other additives with minimum or no heavy metal leaching. The specific objectives of this proposed research project are to: a) optimize the proportion of fly ash and other additives for high phosphorous removal and limit heavy metal leaching, b) conduct laboratory experiments to analyze the performance of pellet for dissolved phosphorous reduction.

## FRIDAY FORUM (\$30,000)

The Office of Inclusion and Intercultural Relations' Diversity and Social Justice Education unit (DiversityEd), along with the RSO Students for Environmental Concerns (SECS) and the University YMCA's Friday Forum Committee, are planning a 10-lecture series themed around sustainability. DiversityEd is partnering with the University YMCA to expand the scope and broaden the reach of the Fall 2017 Friday Forum series on environmental issues and solutions, ranging from climate change and policy to biomimicry and design. The broad goal is to elevate environmental issues on campus and educate the campus community on how these issues intersect with social justice. Funding from the Student Sustainability Committee is specifically for one or two high-visibility speakers, especially one keynote speaker, to elevate the 10-week series.



## ILLINI ECOCONCEPT (\$35,104)

This project funds the Illini EcoConcept team for their efforts to design and manufacture a Hydrogen Fuel Cell Urban-Concept Vehicle to compete in the Shell EcoMarathon Competition in 2017. While the competition has always been centered on energy efficiency, it also promotes and rewards innovation that leads to a more sustainable energy system to support communities around the globe. Specifically, in the Urban-Concept Vehicle division, teams compete to have the most efficient vehicle that incorporates many features of real-world cars, such as wet-weather driving ability, headlights and turn indicators. The Illini EcoConcept has chosen to power their vehicle using hydrogen fuel cell, which has been gaining popularity lately, and is seeking to break the competition efficiency record in the coming school year. The team would like to build on the 2nd place finish in the Americas region last year and be able to compete in the world championship. Specifically, the team strives to: 1) promote the use of hydrogen fuel cell as a clean alternative to combustion engines, 2) build a whole new drivetrain system that would eliminate the causes of inefficiencies found in the previous years, 3) design and fabricate a lighter chassis and body, and 4) develop an air-cooling system that would prevent overheating of the system.



## ILLINI FORMULA ELECTRIC (\$24,750)

Illini Formula Electric (IFE) is a student organization from the University of Illinois at Urbana-Champaign that participates in the Formula Electric competition, both hosted and sponsored by the Society of Automotive Engineers. The goal of the competition is to design, fabricate, and race an all-electric race car marketed towards the weekend autocross racer. This project provides financial support to construct a fully electric race car, which will produce zero carbon emissions but run as fast as average gasoline race cars. As a green energy and transportation project, Illini Formula Electric is not only training its team members, but also spreading the sustainability concept to more students from all majors and local community members through project showcase events and social media. Much of automotive innovation is driven from racing, and training current team members will help them innovate and develop new efficient concepts after graduation.

## ILLINI LIGHTS OUT (\$1,000)

With funding for this project, the Energy Conservation and Building Standards Sustainability Working Advisory Team will be able to continue the 'Illini Lights Out' program and expand it to one Friday night each month during the academic year. Interest in doing so is based on the phenomenal success of the pilot 'Illini Lights Out' conducted on April 15th, 2016. In an Illini Lights Out event, pairs or small teams of volunteer students are accompanied by campus security/other personnel (as needed) and are assigned buildings to audit on the main Quad to turn off non-essential lights in classrooms/bathrooms not in use. Volunteers meet at a designated location to sign in, review safety protocols and receive their tally sheets. Students use these sheets to indicate any empty rooms where they turned off lights. After the audit is complete, students return all forms to designated staff and are then eligible for a complimentary meal in exchange for their assistance. This event both results in direct energy conservation impact on campus and also

helps to inspire students to make small behavioral changes to their routine to enhance sustainability more broadly and throughout life. Buildings audited in the pilot project included Altgeld Hall, English Building, Lincoln Hall, Gregory Hall, Daniel Kinley Hall, Foreign Languages Building, Davenport Hall, and Noyes Laboratory. In the first two events of 2017, over 100 combined attendees have volunteered.



## iSEE COLLABORATORY (\$100,000)

At the heart of iSEE's mission is training students to become the next generation of sustainability leaders. To help fulfill this mission, iSEE will develop a "collaboratory" — a new classroom, conference, collaboration, and communications space next to our offices in the National Soybean Research Center (NSRC). This new complex will include space for experiential learning, a collaboration incubator, and a communications laboratory. Two major facets to iSEE's instructional mission include a new undergraduate minor in sustainability and a new undergraduate environmental writing certificate. Together, these activities will involve up to ~500 students annually. To serve these students, as well as to provide space for student sustainability groups and other RSOs, we will develop, for the first time, a central Collaboratory designed to facilitate group activities, with state-of-the-art communications capabilities for research, collaboration, and conferencing. By providing advanced teleconferencing capabilities, the collaboratory will also provide access to virtual conferences and webinars for professional development, thus reducing campus carbon emissions derived from travel to offsite conference.



## KRANNERT CENTER FOR THE PERFORMING ARTS LOBBY LIGHTING (\$150,000)

The Lobby of KCPA is a large 5,000 square foot student-centric multiuse area, arguably one of the most used spaces in one of the most iconic buildings on the campus of U of I Urbana-Champaign. The facility hosts an estimated 200,000 thousand guests, employees, faculty and students every year. The building is nearing its 50th anniversary, and assuring that the functions of the building continue to be upgraded and enhanced to maintain its popularity, frequent usage, and increased sustainable condition in keeping with the campus strategic plan is a priority of the Campus and the College of Fine and Applied Arts. Current fixtures in the KCPA Lobby are older LED technology built into the ceiling with fewer than two years remaining on their life expectancy. The goal of this project is to replace the existing 560 LED fixtures (32 watts each) with new LED fixtures (18 watts each) that have the advantage of long-term fixture life and with the added advantage of simply unscrewing an old LED lamp after 10 years or so and screwing in a new LED lamp. The need to replace fixtures after another 10 years will have been negated, and now the operations personnel of the building will be able to replace the lamps as needed for decades to come.

## METERING OF RAW WATER @ BIF (\$5,000)

The Business Instructional Facility (BIF) was constructed with a separate raw water system that conveys non-potable water for the purpose of flushing toilets. While the system is in place, it was never connected to an outside source of non-potable water largely due to current non-progressive plumbing codes. Metering the raw water system at BIF would provide data about the temporal total and non-potable water demand in a typical class/office building. F&S installed a temporary meter to measure flow to the raw water system and operated this meter for approximately one month between April and May 2016, which yielded promising results. In particular, for the month that the meter was in place, results indicated about 2/3 of the water used in BIF was for the non-potable lines. Because building usage can vary dramatically during the year, it is recommended to install a meter permanently. Once the meter is installed, the data is intended to be used to support changes to plumbing codes, allowing raw water to be used more easily, as well as changes to the campus construction codes, requiring that separate raw water systems be installed in new buildings and during major renovations of existing ones.

## PROJECT PAPLET (\$500)

Project Paplet began in Malaysia as a paper recycling campaign aiming to take once-used paper and turn it into recycled notebooks for children in need. Localizing the project to the University of Illinois, students from the Society of Women Engineers will be collecting used paper from campus departments and producing hundreds of paplets to be donated to the on-campus Child Development Laboratory for use by the pupils. This project aims to educate the public on the social impact that recycling can have on the community. It also aims to increase awareness on the uses of recycled paper beyond its traditional applications.

## RESIDENTIAL NATIVE PLANTS (\$4,980)

The Lincoln Avenue Residence Hall Living and Learning Community (LLC) is aware of the interest in increasing the number of campus locations with native plants. They would like to join the effort to plant Native Plant Species in selected areas around Campus. The goal of this project is to locate plants in places like the unused space between Allen Hall and Lincoln Ave. Residence. There are several other locations around these residences that are suitable for planting near the buildings and in areas where mowing is difficult because of corners and the placing of equipment like large compressors. By selecting a variety of plants that bloom over the growing season, this project provides habitat and food resources for a wide range of butterflies, bees, and other pollinators as well as birds.



Prairie plantings at the intersection of Florida and Orchard



## ROOT TO ROOF (\$94,750)

Root to Roof is a program established to educate students about the sustainability and availability of urban wood for the design and fabrication of furniture, outdoor installations, homes and buildings. It does this through harvesting waste timber from campus and the City of Urbana and milling it to become usable lumber. Milling material locally produces hundreds of pounds of CO<sub>2</sub> annually compared to tens of thousands to buy the same material from all over the USA. This also allows the Root to Roof program to utilize otherwise useful material for beneficial projects instead of that very same material being shredded into mulch. This creates a net gain of carbon sequestration locally. As this program expands it will be setting progressive goals for sustainability and urban wood utilization through selling wood back to the F&S Mill and Carpentry shops for use campus wide and using this material to fabricate indoor and outdoor items for campus use.



## SCIENCE POLICY WORKSHOP (\$2,500)

The Science Policy wants to educate students how to effectively interact with policy makers, as well as advocate for continual science research funding. Funding is an inherently policy-based process as it is determined by legislators, but conversely it is the lifeblood of fundamental research and academic innovation. Sustainability, and therefore its funding, is at the heart of science policy, as it relies on the intersection of science for developing new technologies and the public sphere which determines its implementation. A workshop will allow direct engagement with STEM students on how to prepare themselves to speak with policymakers and lobby on behalf of academia as a whole and science and research

## SUSTAINABLE AGRICULTURE FOOD SYSTEMS - JUICE PROCESSING (\$300,000)

This project is a significant expansion of the current local food partnership existing between the Student Sustainable Farm (SSF), Multifunctional Woody Perennial Polyculture (MWP), FSHN Pilot Processing Plant (PPP), and UIUC Dining. Presently the Sustainable Agriculture Food System grows, processes, and serves on campus a variety of tomato sauces (pizza sauce is served across campus) and hot sauce. Soon, the Sustainable Agriculture Food System will add a whole wheat flour milling line. To expand on an already successful program, this funded project will focus on the addition of a fresh juice processing line that will be able to handle a wide array of fruits and vegetables, packaged into an array of containers from single serving to bulk. As with the other projects, this partnership has no funding for large capital equipment expenditures, and relies on grants to increase our capacity. Dining Services is a strong partner in the project and has agreed to provide a grant to help with the purchase of items needed to produce fresh juice products including a harvester for fruit from the MWP site. All bottles will feature messaging urging students to recycle and spotlighting sustainable goals and outcomes.

## THERMAL RESPONSE TESTING (\$4,868)

The Geothermal Pilot project will use this funding to construct a Thermal Response Test unit on the UIUC Campus. The overall goal of the project is to assess the viability of geothermal heat exchange on this campus as well as the best implementation of this technology. The Thermal response test unit will measure the ability of the local geology to support geothermal heat exchange in the future. The unit will be designed to be used in all future geothermal projects. This project is student-led, and development and construction of the Thermal Response Test Unit will be conducted entirely by University of Illinois students.



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