

A photograph of a Northwestern University campus scene. In the foreground, there is a body of water with several white swans. The middle ground features a large, modern, multi-story building with a glass facade, partially obscured by trees with autumn foliage. To the left, a smaller building with the 'Kellogg' logo is visible. The background shows a clear blue sky and some stadium lights.

NORTHWESTERN SUSTAINABILITY FUND 2014-2015 ANNUAL REPORT

*Jamie Yarmoff, Michael Ziebel, Christina Cilento, Alex Dolgonos,
Sara Crane, Benjamin Goodman, Micaela Stump*

June 25, 2014



Table of Contents

About the Fund	3
The Need for the Fund	4
Committee Members	5
NSF Guiding Principles	6
Project Summaries	7
First Year Successes	26
First Year Challenges	27
Steps for 2014-2015	28





ABOUT THE FUND

The 2011 Northwestern University Strategic Plan calls for Northwestern to “contribute to the solutions for renewable energy and a sustainable environment and to how public policies and economic incentives promote implementation of new technologies and practices.” With this charge, the Northwestern community has committed to environmental sustainability as a core value.

Student-led sustainability projects are among those making the largest impact at Northwestern. In 2011, a group of students in Engineers for a Sustainable World led the initiative to install solar panels on the roof of the Ford Engineering Design Center. SEED organizes Green Cup, an annual month-long competition to reduce energy and water use in residence halls and Greek houses. Eco-Reps have become the student ambassadors for sustainability, educating students around campus about how to live more sustainably. The ASG Sustainability Committee has developed a green events consulting group that helps student groups make their events more sustainable. Additionally, non-sustainability themed student groups are showing an increased interest in developing sustainability programming and making their activities more environmentally friendly.

The past few years have seen a significant uptick in green projects and awareness across Northwestern’s campuses, reflecting a strong trend of increasing support for sustainability. Many of these efforts are student-led and some require financial investment. However, existing grants and financing options on campus are insufficient and highlight the need for access to additional funding. Many of our peer institutions, including ten COFHE schools such as Duke University and Stanford University, have established green funds to finance student sustainability projects.

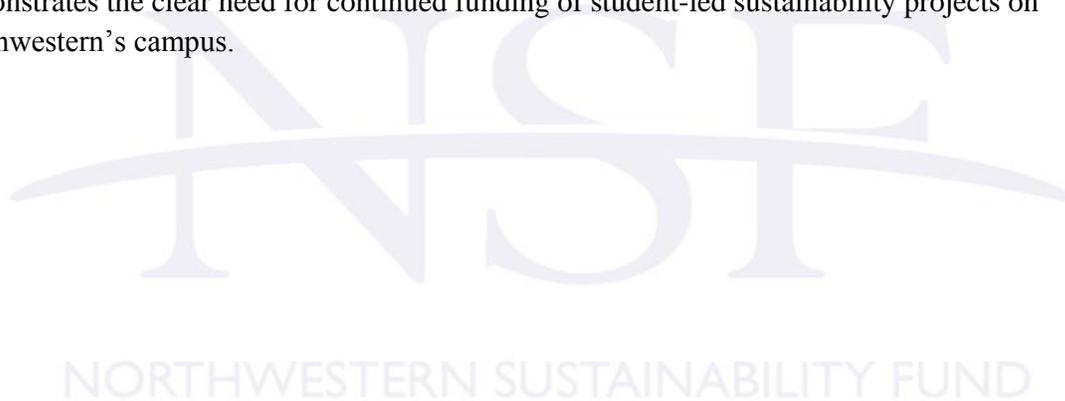
The Northwestern Sustainability Fund (hereafter referred to as NSF), established for the 2013-2014 school year, is a \$50,000 pool of funding available to student-led projects making an impact in energy and sustainability.



THE NEED FOR THE FUND

Prior to the establishment of NSF, existing grants available for student-led projects were insufficient to cover the wide range of sustainability and energy projects taken on at Northwestern. Presently, the two most easily accessible grants for student groups are the ISEN student award and the ASG project pool. NSF was established with the goal of filling in this gap in funding at Northwestern and to create a funding mechanism which would encourage students and student groups from across the university to engage in energy and sustainability in nontraditional ways.

The large response from student groups to NSF's request for proposals demonstrated the clear need for NSF funding during its inaugural year. Over its first year, NSF received 26 applications from 21 different campus groups, including eight student groups not focused exclusively on sustainability projects. NSF received funding requests totalling \$106,500, more than double its allocated budget. From these applications, NSF chose to provide funding to 18 different projects. The response to the establishment of NSF, from both sustainability- and non-sustainability-centered student groups demonstrates the clear need for continued funding of student-led sustainability projects on Northwestern's campus.





COMMITTEE MEMBERS

The NSF committee is comprised of seven students and four faculty members. The committee is led by a student chair, and other members were selected through an application process according to our bylaws. Faculty members remain on the committee year-to-year.

Students

Michael Ziebel, Chair

Jamie Yarmoff, SEED Representative

Christina Cilento, ASG Sustainability Representative

Benjamin Goodman, Engineers for a Sustainable World Representative

Micaela Stump, At-Large Representative

Alex Dolgonos, Northwestern Energy and Sustainability Council Representative

Sara Crane, At-large Representative

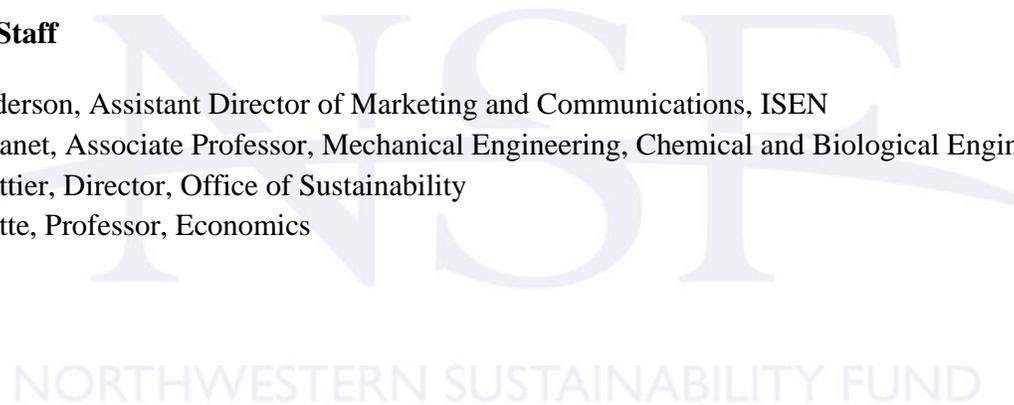
Faculty/Staff

Jeff Henderson, Assistant Director of Marketing and Communications, ISEN

Eric Masanet, Associate Professor, Mechanical Engineering, Chemical and Biological Engineering

Rob Whittier, Director, Office of Sustainability

Mark Witte, Professor, Economics





NSF GUIDING PRINCIPLES

The NSF committee makes funding decisions based on the guidelines set forth by the NSF bylaws. The most important components of the evaluation process are listed below:

1) Projects should increase the sustainability of the Northwestern University campus

Specifically, NSF funds projects that increase the sustainability of Northwestern's campus or students *relative to the current level*. NSF typically will not fund projects that maintain the status quo; projects must demonstrate an improvement over baseline sustainability levels.

2) Projects should have clearly-defined, measurable outcomes within a set timeframe

Projects that demonstrate clear methods for determining the success of their project, and which clearly define their expected timeline, are more likely to be funded by NSF. Projects with ambiguous goals or unclear project end dates are less likely to be funded.

3) Projects should incorporate publicity, education, and outreach within the Northwestern campus and its surrounding communities

NSF funds projects that will raise student, faculty, and public awareness of sustainability initiatives at Northwestern. NSF is more likely to fund a project that is visible to a large number of students and the public than a project that affects only a small group of students.

4) Projects should contain a component of direct student involvement

NSF funds student-led sustainability projects on Northwestern's campus. Projects that involve only the purchase or installation of hardware are less likely to be funded than projects that demonstrate student innovation, planning, and leadership in relation to sustainability on Northwestern's campus.

NORTHWESTERN SUSTAINABILITY FUND



PROJECT SUMMARIES

Listed below are the descriptions of student-led projects that received funding from NSF during the 2013-14 academic year, organized based on funding cycle. These summaries were prepared by the leadership of the respective projects at the end of spring quarter as part of the Selection Committee’s check-in process. Over the course of three funding cycles, the Selection Committee made a conscious effort to fund a variety of projects covering different sustainability facets and student communities across campus.

Early Fall

Eco-Reps Green Living Fair.....	8
Green Cup.....	9
Lonely Switch.....	10
NETG Speaker Event.....	11
Pura Playa.....	12
Smart Tree.....	13

Late Fall

ASG Green Events Consulting.....	14
Brady Scholars Hoop House.....	15
Northwestern Summit on Sustainability.....	16
NUCHR.....	17
NU Solar Car.....	18
NUSPAN.....	19

Winter

Bike Repair Station.....	20
Mayfest Water Bottle Refilling Station.....	21
MeterGenius.....	22
Norris Sustainability Screen.....	23
Sodexo Travel Mugs.....	24

Spring

Spark Clean Energy Tesla Innovation Fellowship.....	25
---	----



Eco-Reps Living Green Fair

The Living Green Fair, presented by the Off-Campus Eco-Reps, was created to educate Northwestern students about how to live sustainably, especially how to live sustainably off-campus. In order to do this, Eco-Reps invited nine speakers to discuss six different sustainability topics. Sarah Moskowitz from the Citizens Utility Board presented about energy, Christie Klimas, an Assistant Professor at DePaul University in the Environmental Science and Studies Department, about consumption, Natalie Watson and Sharon Feigon from Citizens' Greener Evanston about transportation, Ken Kastman from Edible Evanston about food, three workers from Evanston Public Works about waste, and Allisone Fore from the Metropolitan Water Reclamation District of Greater Chicago about water. For the first half of the event, each speaker spoke for 5-7 minutes. After each speaker, a prize was raffled. The prizes were items that would help students live sustainably and that were related to the topic just discussed (for example, a gift card to Whole Foods for the food section.) For the second half of the event, students were invited to walk around the event space and visit the tables of each speaker, where they had more informational material, and ask questions.

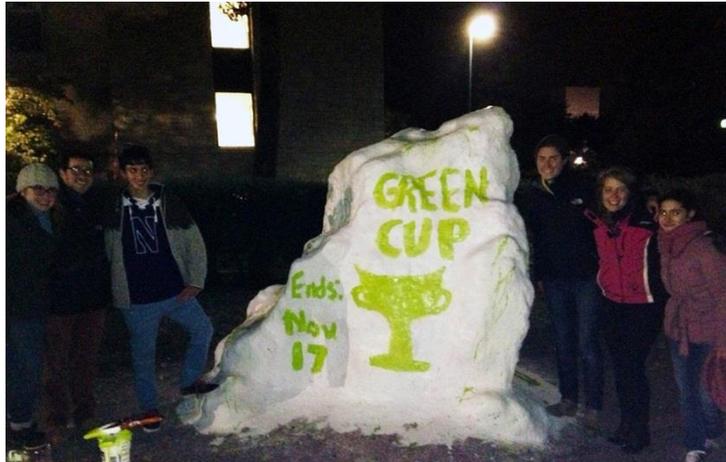


The goals of the event were to educate members of the Northwestern Community about these six areas and to provide resources for living more sustainably. Seventy-five students, including both on- and off-campus students, attended the event. The ideas discussed at the event were reinforced by the Green Living Guide, which is an online resource developed by Off-Campus Eco-Reps and the Office of Sustainability with tips and information about how to live sustainably, featuring information taken from the event. It is difficult to provide an exact quantitative impact of the event, but the high number of students who attended and engaged with the speakers shows that information was successfully communicated. The prizes and informational resources given out at the event also ensure that students were able to fulfill the goals of the event and begin to live more sustainably in their houses and apartments.

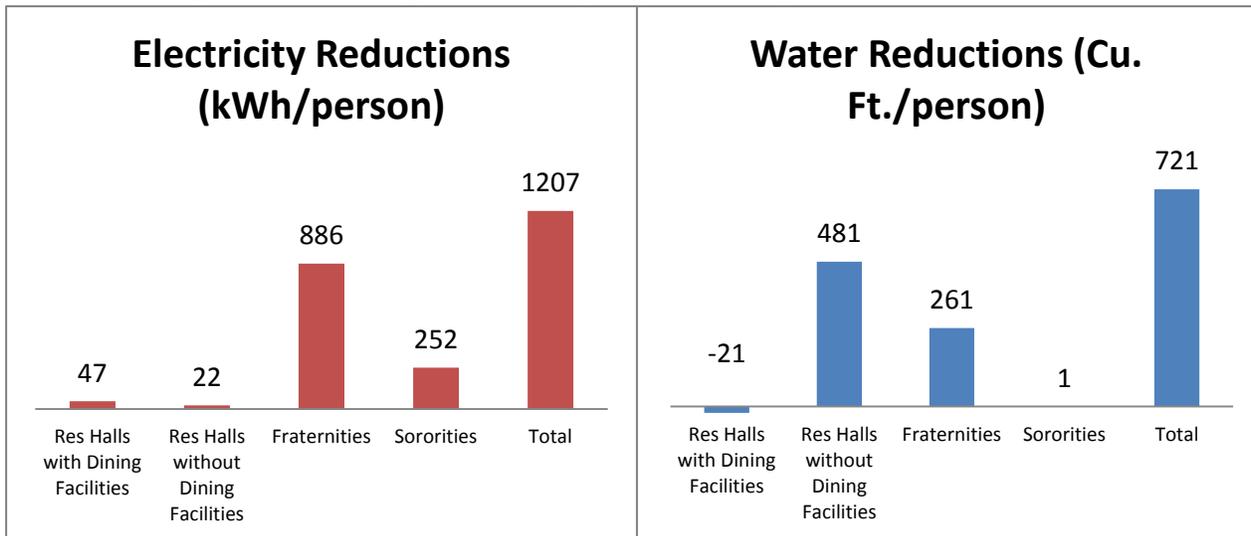


Green Cup

Green Cup is a month long competition among residence halls and Greek houses that promotes sustainable living and environmental issues. Residences gain points by conserving energy and water and attending events. Events ranged from WildRoots workdays to the SEED fall speaker. The competition is intended as a month of environmental themed programming wrapped in a competition in order to motivate students.



This fall the competition was very successful, as Northwestern saw good turnout at all the events and large reductions in energy and water. Green Cup raised awareness on campus about environmental issues, environmentally-themed student groups, and general conservation. Monetary prizes were used as incentives for residences to gain the most points. Each overall winner received \$500 and weekly winners were awarded \$125. The winners in fall 2013 were: Green House/CCS, AEPi, Elder, and Pi Beta Phi. Additionally, PARC, Delta Gamma, and Foster-Walker won individual weekly awards. Green Cup used \$1100 from NSF, the entirety of the grant. This was approximately a quarter of the entire Green Cup budget and all funds from NSF went towards the monetary incentives. The funds from NSF allowed Green Cup to offer the overall and weekly prizes, which helped incentivize students to participate in Green Cup's goals of energy and water reduction.





Lonely Switch

The industrial and research progress made in sustainable energy is stunning. However, end-use remains a key area for improvement. The ability to stop or hinder wasteful habits of consumption via thoughtful design represents the next frontier for environmental consciousness. The Lonely Switch approaches the issue of unnecessary waste in the most ubiquitous, over-sighted form: lights being left on in empty rooms. Northwestern's own Technological Institute is one of the worst offenders, especially at night.

Canadian economist Peter Tertzakian coined the "asymmetry principle" to highlight the importance of consumption controls. Although an individual light bulb may not emit a sizeable amount of energy, the amount of energy lost in the delivery of that electricity package is exponentially larger; this problem of "conversion loss" cannot be addressed by any production-side solutions. While Northwestern has installed traditional automatic light switches (TALS) in some locations, the greater art of light switches remain ignored and "on." In spite of a sound premise, replacing of all these orgotten switches with confusing and unappealing technology is extremely prohibitive (both from a labor and unit cost perspective). Thus, the Lonely Switch was conceived: a concept for a simple, attractive, and smart external automatic light switch that can be used on the vast majority of standard light switch systems, including those found on Northwestern's campus.

The Lonely Switch is an externally-attached, sound-actuated, low-energy, and off-only automatic light switch. Advantages of this design include simple installation, more reliable components, cheaper composition, and battery powered movement. Compared to the "vampiric" electricity draw that TALS consume during every hour of the day, the Lonely Switch has the potential to be a serious contributor to an otherwise successful notion for electricity control. Through iteration and adherence to strict design goals, the Lonely Switch team intends to develop and pilot the concept on the Northwestern campus, thus decreasing energy waste and publicly demonstrating the school's commitment to green initiatives.



NETG Speaker Event

NETG's mission is to provide educational and collaborative opportunities and promote awareness of energy issues for the Northwestern University student body and community. They believe that energy and sustainability issues provide opportunities for Northwestern University students regardless of their careers. A great example of this, and subject of this proposal, is the fact that, as of FY 2013, upwards of two thirds of Fortune 500 companies submit yearly sustainability to their shareholders and the public. Companies are beginning to realize the value of the reputational benefits of being a 'green company' as well as the long term energy and profit benefits from being energy efficient. NETG proposed to host a keynote speaker to explain the emergence of sustainability reporting and the impact it has had on the market. They believe that this talk will serve to highlight energy issues and give insight into a new dimension in the marketplace for northwestern students that are bound for corporate jobs.

NETG is constantly thinking about new events that they could host at Northwestern, and this year they have aimed at recruiting speakers with broad appeal to the Northwestern campus. While they have not yet landed the higher profile speaker they have been aiming for, the search for speakers for NSF has led us to network with and host several diverse and great speakers to campus. Each event has a strong presence from graduate students in Science and Engineering. Lately, they have had an increasingly large presence from Kellogg (through their connections with the Kellogg Energy Club), Medill, and the Evanston community (Citizens for a Greener Evanston). Some examples of recent small talks are Pete Kadens, President of SoCore, and Economics Professor Lynne Kiesling.

NORTHWESTERN SUSTAINABILITY FUND



Pura Playa

Pura Playa is an Engineers for a Sustainable World plastic waste reduction team. In the fall of 2012, they launched the Northwestern Thinks Outside the Bottle campaign, which aims to help Northwestern go bottled water-free. For over a year, Pura Playa's team has focused on educating the Northwestern community about the bottled water industry, plastic pollution, and the global water crisis. They have hosted a number of awareness events including firesides at residence halls during Green Cup, tap water challenges (blind taste test of bottled water versus tap water), film screenings, and discussions.



This year, Pura Playa focused on education and upgrading water fountains on campus in order to provide students with the resources they need to switch to tap water. This summer, they worked with Norris to install six water refilling stations throughout the student center and paired these stations with educational plaques. Now, they're ready to move forward and make concrete steps toward a bottled-water free campus. On April 30th, the Associated Student Government passed a resolution supporting Northwestern going bottled water-free. Moving forward, they plan to meet with relevant stakeholders to address their concerns about this change and to meet with administrators to work on contract negotiations.

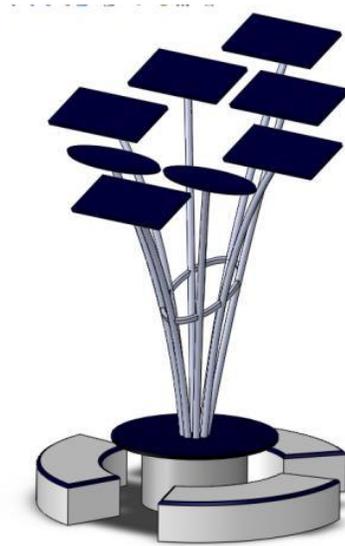
In addition to this activism campaign, Pura Playa is currently focusing on two other main projects: a recycling station and a microplastic filtration system. They are constructing a human-centered design-based recycling station in the hopes of diverting more plastic waste from landfills. The station will be tested in Norris University Center and then hopefully scaled up. The microplastic filtration system will be used to help filter microplastics out of sand to prevent animals from ingesting them. Their efforts will benefit a nonprofit called Sea Turtles Forever, located in Costa Rica.



Smart Tree

What is Smart Tree? Smart Tree is a design project born from a few solar panels and a spark of ingenuity. Its mission? To bring solar energy to Northwestern and get the community involved in sustainability. This project is a structure that will contain a seating area which provides solar-powered AC and USB outlets for everyone to use. So a student (or professor) can bring a laptop or phone outside without worrying whether the battery will run out of power. The goal of this project is to raise awareness for the potential solutions clean energy can bring to everyday life.

The current design is an 18-foot aluminum structure which resembles the shape of a tree. The 'branches' of the 'tree' are connected with eight solar panels outputting 600 watt power to the AC outlet and USB port on the 'trunk' of the 'tree'. A 6-foot circular table and several benches will be built around the 'tree' for students to hang around. In this past quarter, the team has focused on the prototyping of the mounting bracket and the electrical system. The mounting brackets fasten solar panels onto the branches at an adjustable angle. With great effort from the mechanical team, the finite element analysis has been nearly completed and the machining of the prototype has begun.



The design of the electrical system has been completed which consists of power electronics, sensors and protection circuits. The efficiencies of the solar panel and inverters have been tested, and the current and voltage sensors for the battery management system have been configured.

So where is Smart Tree headed in the future? After finishing our bracket design and completing some design testing, we hope to build further prototypes of our design. We have also begun collaborating with SEED on making benches for our projects. With their assistance, we should finish making our recycled plastic bottle benches next year. In fall quarter, we will look to find vendors who can assist us in bending the aluminum branches. Be sure to look forward to seeing the Smart Tree in Norris soon!



ASG Green Events Consulting

The ASG Green Events Consulting team is a resource provided to student groups which helps student groups make their events more sustainable. Many student groups want to be more sustainable, but not all of them know what steps they should take towards those goals. The Green Events Consulting Team focuses on educating student groups and providing one-on-one consulting. Consulting teaches student groups what food options are more sustainable, how they can compost at their events, and how to advertise without paper.

One challenge for student groups is reducing the environmental footprint from paper usage. Although student groups are encouraged to use electronic advertising, many groups continue to print flyers to advertise for events and print a variety of other documents. A central hub for student group printing is the SOURCE printer in the Norris University Center. While it is difficult to convince student groups to pay the additional price for recycled paper on their own, placing recycled paper in the SOURCE printer allows student groups to reduce their impact from paper without forcing them to pay more. ASG Green Events Consulting worked with NSF to pay the marginal cost (over the cost of non-recycled paper) of recycled paper for the SOURCE printer. The NSF funds helped cover the cost of recycled paper for the 2013-2014 school year. The Green Events Consulting team has not been able to determine an exact amount of recycled paper used this year, but SOURCE has agreed to continue to purchase recycled content paper into the future. NSF's funding has provided a long-term means for Northwestern student groups to reduce the environmental impact of their paper use.

NORTHWESTERN SUSTAINABILITY FUND



Brady Scholars Hoop House

Brady Scholars' project was to build a semi-permanent greenhouse, referred to as a hoop house, on Northwestern's campus. This has been a collaborative effort between the Brady Scholars Program in Ethics and Civic Life, Northwestern WildRoots, and the Evanston non-profit, New Leaf Urban Garden, which provides Evanston youth with experiences in urban gardening. The first goal for the project was to incorporate a new, self-sustaining and year-round



urban garden into NU food culture. Second, the project aimed to create a location for peer-learning through urban gardening practices among NU students and Evanston at-risk youth. These two goals have both short-term and long-term quantifiable impacts. The impact of the first goal is to increase the sustainability of the Northwestern campus, which can be measured directly through the amount of food production as well growth in number of consumers over time. The short-term impact of the second goal is to increase healthy food practices and environmental awareness among NU students and Evanston at-risk youth. In the long run, Brady Scholars hope to improve the partnership between NU and ETHS and better coordinate the opportunities provided by the hoop house for students to get involved. In the future, they also hope to increase awareness of the urban garden project by holding informational events that can be open spaces for members of both the NU community and Evanston community to understand the project, hear from participants, get involved, and offer suggestions on how to expand the project model or apply it elsewhere.

Thus far, Brady Scholars has used the funds from the Northwestern Sustainability Fund to purchase all supplies necessary to construct the Hoop House. On Saturday May 17th, members of all three organizations met to begin construction in the backyard of 2046 Sheridan Rd. The hoop house is 20 feet wide and 36 feet long and currently has twelve planter boxes inside the structure. The first three images below show the initial construction of the hoop house, which included constructing the metal frame of the structure. On Wednesday May 21st, members of all three organizations met again to finish construction on the hoop house, including pulling the plastic covering across the structure and installing the doors. The fourth picture below shows the outside of the hoop house with all of the plastic in place, and the fifth picture shows the inside of the hoop house, including all of the condensation from the warm, sunny day! Moving forward, Brady Scholars will tie up a couple loose ends, begin planting, and build three more planter boxes. They will also be having a meeting to determine who will be able to help New Leaf Urban Garden with the summer maintenance, and to set in stone the goals for summer sales.



Northwestern Summit on Sustainability

It's so easy to think about the laundry list of climate change woes and feel a little bleak and a little helpless. This year's fourth annual NU Summit on Sustainability on Friday, April 11 at the Technological Institute sought to inspire the NU community to think about solutions by focusing on the theme "Innovation." The NUSOS team wanted to bring in students who did not usually attend environmental events, bring leaders in the industry to Northwestern



to share ideas and connect with students and professors here, and spark meaningful debate. They also wanted to increase the scale and presence of NUSOS at Northwestern, and they succeeded in attracting more than double the usual audience and had more marketing than ever before. The NSF grant allowed NUSOS to reach out in new ways and bring in higher-powered speakers, a trajectory NSF hopes to see continue into future conferences.

Partnering for the first time with the Engineers for a Sustainable World national conference, more than 170 student leaders from chapters of ESW across the United States joined the dozens of Northwestern students and staff at the summit, making this the biggest NUSOS so far for a full day of talks from practitioners, thought leaders and community organizers about how we can invent and re-create processes that hurt the environment.

Morning keynote Jill Boughton, the so-called "Queen of Waste" took the audience on a journey through her career at Procter and Gamble to her new company W2Worth which dissects and re-thinks the waste disposal system in developing countries to raise public health, economic viability all the while reducing the environmental impact of trash. Six panels followed and attendees learned about energy, economics, higher education, materials science, policy and agriculture from speakers that included the Director of Sustainability of Chicago, a professor who talked about inner-city communities and eco-rap, and a researcher at Argonne National Labs. The closing keynote in Ryan Auditorium had close to 250 people attend to watch Mark Weick, the director of Sustainable Programs at Dow Chemical talk about how the company uses environmental goals to drive its economic and strategic planning.



NUCHR

The Northwestern University Conference on Human Rights (NUCHR) is Northwestern's leading voice for human rights on campus. Through programming events, seminars, service learning trips, and a culminating conference, NUCHR provides an academic arena for all members of the Northwestern community to critically discuss and challenge human rights issues. The undergraduate student-organized conference unites student delegates from across the country with distinguished academics, activists, and diverse members of the Northwestern community. The topic of the conference changes annually, and this year NUCHR examined the relationship between the environment and human rights. While many Northwestern organizations have an environmental focus, NUCHR brought a different perspective to the topic, demonstrating that environmental issues are human rights issues.

This year, NUCHR's 11th annual, three-day conference included two keynote speakers, three panels, and an educational trip into Chicago. In addition, for the largest meal, the closing banquet, NUCHR worked with NUCuisine to provide guests with a "sustainable" meal. While the conference took place in the dead of winter, much of the food served at this banquet was locally sourced, and all of the food served was vegetarian. Thus, this banquet provided an opportunity for conference attendees to witness the kinds of sustainable practices discussed in previous portions of the conference. The Northwestern Sustainability Fund helped to make this banquet possible by covering the marginal cost of a sustainable banquet over the cost of a traditional banquet.

NORTHWESTERN SUSTAINABILITY FUND



NU Solar Car

NU Solar is a student led engineering project at Northwestern that works each year to design, build, test, and race an electric vehicle run entirely on stored solar energy. The purpose of this endeavor is to teach team members engineering and project management skills in a hands-on environment. Many of these students and alumni have gone on to work for companies such as Boeing where they apply lessons learned about sustainable engineering. Every student who works on this project is successfully involved in sustainability and green energy. In addition, NU Solar strives to involve the community and educate them about the benefits of green energy. They travel to various local organizations and make presentations to educate the audience on the science, engineering, and technology of the solar car and alternative energy in general. The most common audiences are elementary and high schools, libraries, and museums. NU Solar has also had its cars displayed at museums such as the Adler Planetarium and the Museum of Science and Industry in Chicago.



The goals of the project can be summarized as:

- 1) Educate members about the design, fabrication, and test of solar vehicles
- 2) Engage the community in a discussion about green engineering
- 3) Compete against similar teams/projects in events such as the American Solar Challenge

This year, NU Solar recruited 10 new members (the most added in any recent year). These students were educated on the inner workings of the car and basic design of solar vehicles. They were taught skills and software such as CAD, stress analysis, and circuit design. Many of them have already contributed a great deal to the team, designing and fabricating various aspects of the car. All of them have learned a great deal about engineering and sustainable energy in general. The design of the next iteration of the car has already begun with several junior members designated as project leads.

Due to difficulties with the previous design, outreach and competition were dialed back this year in favor of improving the car. Still, NU solar managed to engage the community through presentations to prospective students, alumni, employers and elementary through high school students at various points throughout the year. Many of these groups were invited to view the car and learn about green engineering in the process. NU Solar hopes to increase its outreach efforts more next year with a fully functioning vehicle. They are on track to do this as improvements and testing this year have produced a robust car that can travel to outreach/competition in the years to come.

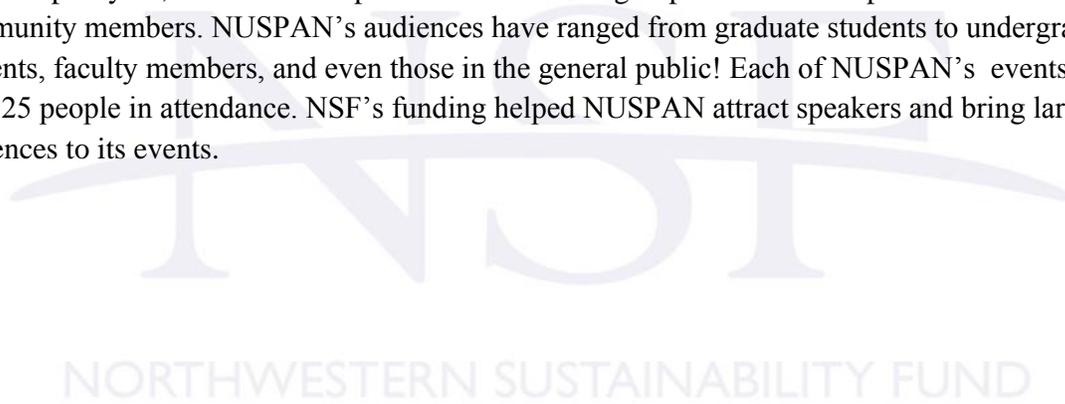
Overall, NU solar has made great strides this year to ensure the future of the team. Both the car and the team members are now ready engage the community at large. Next fall they hope to test the car extensively on the roads around Northwestern. This will give the team and green energy a lot more exposure. Efforts continue to be made to improve outreach especially through the team website at nusolar.org.



NUSPAN

This year was an active one for NUSPAN! NUSPAN has put on five speaker events plus one large workshop. The invited speakers included those with broad expertise in science policy communication. In the fall term, NUSPAN hosted Prof. Donna Leff from Northwestern University and Dr. Aaron Greco from Argonne National Laboratory. In the winter term, NUSPAN hosted Mr. Parag Gupta, Founder and CEO of Waste Ventures, Inc. These speakers were followed up in the Spring 2014 term with Prof. Arthur Lupia from the University of Michigan, who spoke on the same night as that day's workshop. For that workshop, NUSPAN also hosted Ms. LuCinda Hohmann, the Midwest Campaign Manager from the Union of Concerned Scientists (UCS); Ms. Leslie Combs, District Director for Congresswoman Jan Schakowsky; and Ms. Alison Leipsiger, the Legislative Director for State Senator Daniel Biss to help run breakout sessions in brainstorming possible solutions to science policy funding and situational scenarios that might arise when communicating with policy makers.

Over the past year, NUSPAN has prided itself on having impacted a broad spectrum of Northwestern community members. NUSPAN's audiences have ranged from graduate students to undergraduate students, faculty members, and even those in the general public! Each of NUSPAN's events had a least 25 people in attendance. NSF's funding helped NUSPAN attract speakers and bring larger audiences to its events.





Bike Repair Station

A full-service bike station on Northwestern's campus is essential to the Northwestern and Evanston communities, as leadership for both begin to improve local biking infrastructure. Evanston has taken a keen interest in biking culture this past year, evident through an ongoing biking survey and plans to develop bike lanes for the city's main thoroughfares. In turn, Northwestern has started actively planning for future bike infrastructure development across campus. Of particular note is the Sheridan Road bike lane project, for which the City recently procured \$1.5 million in federal funding, and which has been actively supported by Northwestern's Associated Student Government and student body. In light of these developments, a campus bike station would be instrumental in furthering bike culture and sustainability at Northwestern.

The bike station project is now being led by the ASG Sustainability Committee. After funding was procured, the Committee met with Director of Sustainability Rob Whittier and ASG Community Relations VP Kevin Harris to discuss initial actionables for the project. Before the end of the quarter, the Committee conducted peer institution research to identify essential inventory and services, as well as associated costs, for a first-year bike station on campus. With this information in hand, the next tangible step will be to develop a full-fledged project proposal and present to relevant administrators, including Kelly Schaefer at Norris University Center and Julie Payne-Kirchmeier of Northwestern Auxiliary Services. The proposed location for the bike station (currently the NUIT space in Norris) must also be confirmed.

Long term, the committee hopes to procure seasonal staff for the bike station and provide consistent bike repair services for Northwestern bikers. In addition, they hope to grow the station to incorporate an educational component, sell essential biking gear, and offer affordable bike rentals.

NORTHWESTERN SUSTAINABILITY FUND

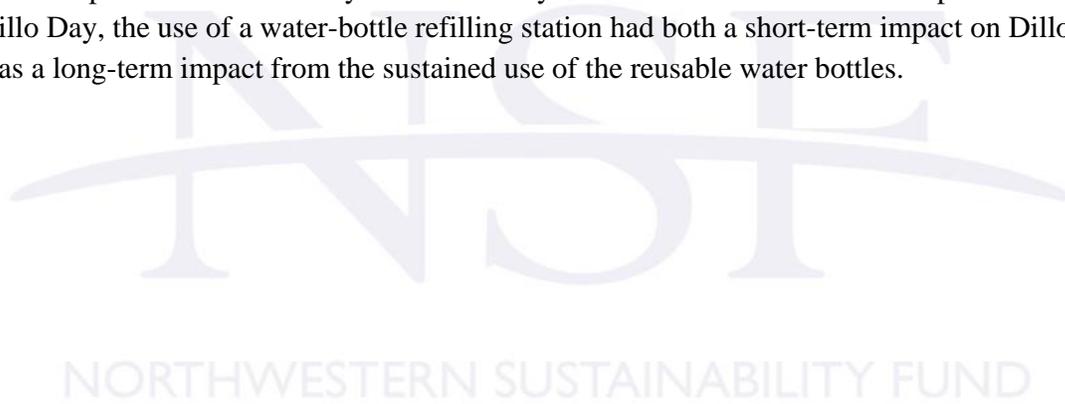


Mayfest Water Bottle Refilling Station

Dillo Day is among the most well-attended events hosted on Northwestern's campus. As such, incorporating elements of sustainability into Dillo Day's programming exposes a large number of students to sustainability and encourages students to participate in a more environmentally friendly lifestyle. This year, NSF funded Dillo Day's purchase of a water bottle refilling station from the City of Evanston. In conjunction with the water bottle refilling station, Dillo Day provided students with reusable water bottles.



The purchase of a water-bottle refilling station reduced the number of single-use plastic water bottles used and disposed of on Dillo Day. Because many students reuse the water bottle provided to them on Dillo Day, the use of a water-bottle refilling station had both a short-term impact on Dillo Day, as well as a long-term impact from the sustained use of the reusable water bottles.

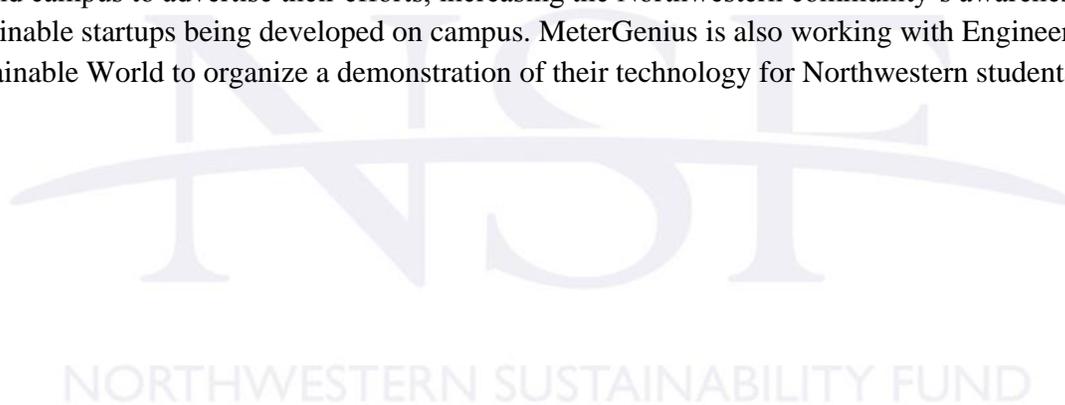




MeterGenius

MeterGenius is a pre-revenue startup founded by Northwestern students from the undergraduate and graduate level. MeterGenius gives residential electricity users with smart meters the ability to track electricity consumption at a granular level, set goals and track their progress, compare themselves to similar neighbors, and earn points that can be redeemed for bill credits. MeterGenius is designed to decrease the attrition rate of customers of retail electricity providers by creating a product electricity providers can give to their users that will increase customer engagement.

MeterGenius will direct money from NSF towards its front-end development to make the product more robust. Although MeterGenius does not currently have a contract with ComEd (which provides electricity to most Northwestern students) and although many Northwestern students do not have smart meters, MeterGenius is attempting to have an impact on the Northwestern community. MeterGenius has had talks with ComEd, which would potentially make their product available to Northwestern students in the future. Additionally, MeterGenius has reached out to publications around campus to advertise their efforts, increasing the Northwestern community's awareness of sustainable startups being developed on campus. MeterGenius is also working with Engineers for a Sustainable World to organize a demonstration of their technology for Northwestern students.





Norris Sustainability Screen

The Norris Sustainability Screen is a project dedicated to promoting awareness of all things sustainable at Northwestern. The screen will be an interactive touch screen housed in the entrance of the Norris University Center. The screen will display information such as wind speed data taken from Clean Energy Project's anemometers on the roofs of Norris and the Henry Crown Sports Pavilion, a calendar of sustainability-themed events, and a list of Northwestern's energy initiatives. The screen will also use interactive features that will teach students about how to live sustainably and conserve energy.



Originally, CEP was planning to purchase a screen and software from Lucid, but both the screen and software were ultimately deemed too expensive. During Spring Quarter, CEP enlisted the help of a Design Thinking and Communication (DTC) team to research hardware and software options for the screen. The DTC team designed a possible software setup that would focus around “Play-Engage-Learn.” The “Play” section would include games to teach users how to recycle, conserve energy, and reduce water use. The “Engage” section would highlight campus events and initiatives around campus. The “Learn” section would feature information such as campus energy data, wind speeds from CEP's anemometers, or energy savings from certain campus initiatives. NSF's grant has given CEP the flexibility to find the right hardware and software options for its intended purpose.

NORTHWESTERN SUSTAINABILITY FUND



Sodexo Travel Mugs

This project comprises the distribution of free thermoses to interested coffee purchasers at Lisa's Café and Plaza Café in Main Library. During Fall Quarter 2014, customers at Sodexo-run cafes will have the opportunity to obtain one of 300 thermoses to be sponsored by NSF and Sodexo. Only students who express interest will be given the travel mugs, and they will be required to pick up the mug at the Northwestern dining office to ensure they are committed to using the mug and to allow the student to interact with the Sodexo sustainability intern. By providing these travel mugs to interested students, Northwestern students will reduce their overall consumption of single-use coffee mugs, reducing the environmental impact of their coffee purchases.

Following distribution of the mugs, Sodexo's sustainability intern will compare coffee cup requisitions for both retail and residential units from previous years to those of the 2014-2015 school year to roughly approximate the economic and environmental impact of the reusable mugs. Furthermore, in a recent survey conducted by Sodexo's sustainability intern that targeted coffee-drinkers in particular, over half of the respondents indicated that they were not aware of the discount available for those that bring their own mugs to Northwestern retail locations. This suggests that Sodexo needs to improve its efforts to promote and publicize this discount, possibly through use of increased signage or social media. The use of the reusable thermos discount will be tracked from the 2013-2014 school year to the 2014-2015 school year. An increase in the use of the discount will suggest that the mugs successfully advertised the discount to students.

NORTHWESTERN SUSTAINABILITY FUND



Spark Clean Energy Tesla Innovation Fellowship

The Spark Energy Innovation Fellowship is a nine-month fellowship for undergraduate and graduate students attending accredited colleges and universities in the United States. The fellowship provides transportation stipends to converge 30-40 of the most innovative young energy leaders from across the country to advance energy innovation, gain mentorship, and form an influential alumni network. This elite group will provide the national face and vision for the future of energy innovation. The Fellows will participate in two national summits coinciding with existing student energy conference such as the BERC Symposium and the MIT Energy Conference. In order to ensure ongoing mentorship and strategic planning for future fellowships, a select number of Fellows will be appointed to serve on the Spark Clean Energy advisory board.

Premier Sponsor support from Northwestern Sustainability Fund will finance the participation of two Northwestern students in the fellowship.

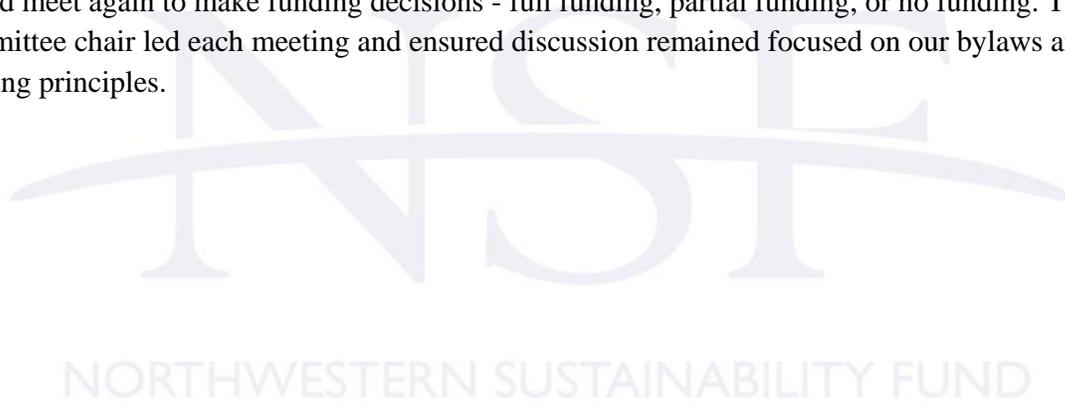




FIRST YEAR SUCCESSES

One of the major successes of NSF in its first year was its public relations efforts. Our team was able to attract applications from a large number of student groups, including those not dedicated to sustainability. If NSF becomes a permanent fixture on campus, we expect the number of incoming applications to grow, and we are especially excited to help a variety of student groups engage in sustainable projects.

The decision process for the committee was also relatively fast and efficient. At each application submission deadline, the applications would be sent to all members of the committee. After one week of collecting comments and questions in an online form, the committee would meet to discuss each project. Each project was assigned a project mentor, and this mentor was responsible for contacting the project team and discussing the committee's initial comments and concerns. This gave each project a chance to clear up the goals of their project, meaning the committee was able to choose based on merit, rather than grant-writing ability. After a week of contacting groups, the committee would meet again to make funding decisions - full funding, partial funding, or no funding. The committee chair led each meeting and ensured discussion remained focused on our bylaws and our guiding principles.





FIRST YEAR CHALLENGES

One of the major challenges for the first-year was establishing guiding principles for what could and could not be funded. Although the NSF committee attempted to follow the guidelines set forth in the bylaws, it was also necessary to prioritize certain funding to ensure NSF funds were not depleted early in the year. The committee failed to explicitly advertise this to groups during later funding cycles. For example, while NSF is willing to pay the marginal cost of upgrading a meal at an event to a sustainable meal, it is unable to pay the full cost of a sustainable meal.

Second, the disbursement of funding needs to be improved. At present, groups are asked to make purchases on their own, and can then be reimbursed by the Office of Sustainability (which controls NSF's money). For large purchases, funds could be distributed directly to the student group's account. However, this policy was generally difficult for both the Office of Sustainability and for student groups. The policies were not explained well to funded projects, which made distributing funds a challenge from both sides. In the future, NSF is pursuing other means for distributing funds to make it easier for student groups. One promising possibility would be for NSF funds to be deposited in a SOFO account, which would allow for easier transfers and would reduce the workload for the Office of Sustainability.

The third difficulty was a lack of protocol for regular updates from groups. Once groups received their funding decisions, they generally did not receive communications from NSF unless there was a challenge with funding disbursement. This meant that NSF was unaware if a student group chose to change the direction of their project or abandon a portion of their project. In the future, it will be important to establish a specific protocol for contacting project teams for updates. Because we already assign project mentors to each project, this should be a simple change to implement. Additionally, NSF would like to implement a required final presentation for funded projects. This would be an excellent opportunity, not only to see the progress made by student groups, but also to advertise NSF-funded projects to the rest of Northwestern. This will help raise awareness of student-led sustainability projects at Northwestern.



STEPS FOR 2014-2015

Based on its successes in the first year, the NSF committee would like to formally request a funding renewal of \$50,000 for the 2014-2015 academic year. This amount of funding provides NSF with the flexibility to fund larger projects without risking its funding to smaller projects.

If NSF is renewed, a formal update system will be implemented. Groups will be required to provide their NSF project mentor with progress reports on regular intervals listed in each group's award letters. This will insure projects are proceeding as expected, and that NSF funds are being used productively.

Additionally, the NSF committee will be looking into a way to provide increased support to funded projects. In addition to providing funds, NSF has the potential to provide additional mentorship and consulting past funding to projects. NSF members can help projects reach contacts around the university - whether they come from student groups, faculty, or staff. This additional support would provide further incentive for student groups to apply for NSF funding and would help increase the success rate and overall impact of funded projects.

