Green Fund
Annual Report 2019-2020

The power of the Green Fund lies in its cascading impacts. While these projects reduce greenhouse gas emissions and save operating cost, they simultaneously inspire learning, research, and career paths for students as well as new campus standards.

This report offers profiles of funded projects as well as those that students are currently developing. It describes other activities too, including a field trip to Wisconsin's largest rooftop solar array, a competition organized in collaboration with the Wisconsin School of Business, our communications activities, and the connections between the Green Fund and the UW-Madison Strategic Framework 2020 – 2025.

It has been an exciting year for the Green Fund. We received a record number of applications and awarded $99,198 to fund seven new projects. Students submitted two more proposals totaling $39,689 for which we did not have sufficient funds. Currently, we are working with an additional ten student teams on projects at varying stages in the development process.

Although the global pandemic requires that we deliver our program almost entirely virtually, the transition was seamless. Student engagement has remained steady. Some construction timelines have slowed, but all funded projects continue to move forward.

We are adjusting our recruitment strategy to cultivate the next generation of projects. For example:

- We are working with a videographer to support Green Fund students in building the skills to do digital storytelling about their projects. One use for these videos will be to engage future applicants.
- We adjusted the proposal evaluation criteria to more fully recognize social sustainability, inviting students to consider how their proposals contribute to a more welcoming and just campus.
- We awarded funds to the first project that falls outside of the traditional categories of energy, water, and solid waste: Ogg Residence Hall Bird Strike Mitigation.

We are grateful to all our campus partners for the time and expertise you offer to the project development and implementation process. As this report shows, your willingness to work with students yields major benefits in terms of cost savings, environmental impact, and learning outcomes.

As always, I welcome feedback and questions about process and projects. I look forward to another year of collaboration.

Warmly,

Ian Aley | Green Fund Program Manager
iraley@wisc.edu | 608.669.6163

Over 50 students attended the Green Fund fall engagement event. This was more than double the highest turn out of any other semester kick off event.

Student and staff visit the Arboretum to collect project data while maintaining physical distance.

Office of Sustainability
UNIVERSITY OF WISCONSIN–MADISON

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Green Fund Projects 2019 - 2020

Green Fund Activities

The UW–Madison Green Fund supports student-initiated projects that address the environmental footprint, social impact, and operating costs of campus facilities.

The Green Fund serves as an open invitation, empowering students to reimagine campus: their home and place of learning and work.

Students drive the project development process. They identify potential upgrades, meet with building managers and tradespeople to refine the project scope, run impact calculations, write funding proposals, and work with communicators to tell the story about the project outcomes.

Students gain invaluable experience navigating administrative processes, grounding their studies in practice, and sparking questions for future study. Meanwhile, Green Fund staff walk with students through the process, facilitating connections, offering feedback, and helping the students navigate and feel comfortable in professional settings.

The Green Fund supports students in turning their ideas into a reality. Students observe campus with different eyes than faculty and staff do. The campus community benefits from the perspectives of students when it can tap into and encourage this creativity.

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Arboretum Solar and Lighting

A team of undergraduates from the student organizations Helios and Sierra Student Coalition are working with Arboretum and FP&M staff and a group of partners to install energy-efficient LED lighting and a rooftop solar photovoltaic array at the Arboretum Visitor Center.

Students have been involved consistently throughout the process: reviewing the project specifications, calculating the impacts of the upgrades, meeting with project partners, and writing the grant proposals. Students are also playing a central role in the public engagement and communications related to the new installation, including capturing time lapse video footage of the installation, writing a storyboard for a video announcement, and developing signage about the evolution of solar technology at the Arboretum. Finally, the team is organizing a celebration in October for students, faculty, staff, and the broader community. This event will include students speaking about climate justice and partners who worked on the project sharing insights into how to pursue a career in energy efficiency and renewable energy.

As an environmental research center, the Arboretum is dedicated to decreasing its institutional carbon footprint, serving as an example of sustainable energy production and use, and informing the public about these efforts. Recently the Arboretum staff has worked with the Office of Sustainability interns to certify as a gold level green office. The engagement with students through the Green Fund flows naturally from the mission of the Arboretum. The high visibility of the Visitor Center presents exciting learning opportunities for the students.

A student organizer assesses the roof where the team will install the solar panels.

The students anticipate that the 66 panels will produce around 32,300 kWh of electricity per year for the next 30 years.

This represents about eight percent of the overall energy needs of the facility and $3,750 in annual utility cost savings. The lighting upgrade will save a similar amount of energy and money each year.

One of the students involved with the project, graduated in May and immediately began a job working for a solar developer. He shared the following, “I have learned a ton of valuable skills through the Green Fund. … The struggles and concerns I have seen and heard have helped me know how to manage processes with new clients.”

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Arboretum Solar and Lighting (continued)

Request: Two projects: $30,000 for a rooftop solar photovoltaic array and $20,000 for energy-efficient LED lighting

Status: Funded. The solar installation is scheduled for Fall 2020. The lighting installation will happen in Spring 2020.

Students

- Eliza Lindley, Undergraduate Student, Life Science Communications, Environmental Studies
- Emily Snelson, Undergraduate Student, Conservation Biology and Environmental Studies
- Emma Schatz, Undergraduate Student, Life Science Communications, Environmental Studies
- Erica Heinig, Undergraduate Student, Environmental Science and Wildlife Ecology
- Jessie Steckling, Undergraduate Student, Computer Science and Math
- Ryan Wenzel, Undergraduate Student, Operations and Technology Management and Marketing
- Sawyer Stuckey, Undergraduate Student, Engineering Mechanics-Astronautics
- Simon Brooks, Undergraduate Student, Engineering

Faculty and staff

- Karen Oberhauser, Director, Arboretum, Professor, Entomology
- Matt Harman, Facilities Specialist, FP&M
- Susan Day, Communications Coordinator Arboretum
- Scott Dyke, Communications Specialist Arboretum

Off-campus partners:

- Adam Hughes, Project Development Manager, Sun Peak
- Adam Snippen, Energy Advisor, Focus on Energy
- Sam Dunaiski, Program Manager, Solar for Good

The Green Fund will cover half of the cost of these two projects.

The team wrote and received a grant from Solar For Good that will provide the solar panels at no cost.

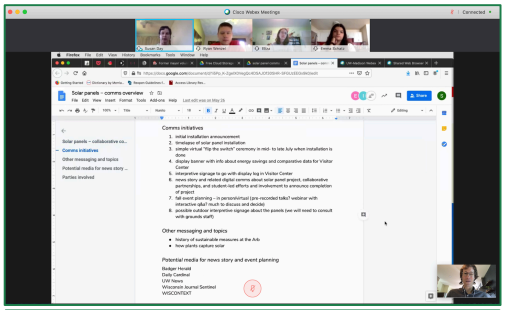
Focus on Energy will offer $4,600 towards the cost of the solar project and about $1,500 for the lighting upgrade.

The Friends of the Arboretum will cover the remaining costs.

"I love how we are using this development as an opportunity for education and engagement, as the prospect of getting kids (and even adults) excited about renewable energy sources is very meaningful to me.

Gaining experience with listening and participating in the kinds of meetings that we've been having has been invaluable. I now have an increased understanding of various types of solar technology that are available, and it's been fantastic to see Susan Day at work in the kind of communications position that I might like to have some day.

This has definitely increased my confidence in working with adults and people with much more expertise than I have, as well as recognizing that even though they might know more, I still have value to contribute to the team."
- Eliza Lindley



Students and staff discuss implementation

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Ogg Residence Hall Bird Strike Mitigation

Request: $9,990 for a window glazing that reduces bird collisions with glass

Status: Funded. Installation completed Summer 2020.

Students

- Shelby Weidenkopf, Undergraduate Student, President, Student Chapter of the Wildlife Society
- Twenty-eight other members of the Student Chapter of the Wildlife Society

Faculty & Staff

- Anna Pidgeon, Professor, Forest and Wildlife Ecology
- Aaron Williams, Assistant Campus Planner, FP&M
- Michael Kinderman, Director of Residence Hall Facilities, Division of University Housing

Off-campus partners

- Matt Reetz, Executive Director, Madison Audubon Society

This project added window glazing to the glass sections of Ogg Residence Hall seen above.

"This experience has helped me feel like I made a genuine difference on campus. Aside from all the learning that came out of the grant writing experience, I also learned the importance of communicating effectively to a team!" -Shelby Weidenkopf

The project team proposed adding a glazing to the windows of Ogg Residence Hall to reduce the frequency of bird death and harm from colliding with the glass. The members of the Student Chapter of the Wildlife Society, other students, and non-student members of Madison Audubon Society have collected data about bird collisions with campus buildings for the past two years, during spring and fall migrations.

This effort identified Ogg Residence Hall as an ideal site for testing the effectiveness of the intervention because of the high potential for bird collisions due to the design of the building. UW Housing welcomed the idea of serving as a test site. Campus Planning and Landscape Architecture will consider writing the window glazing into the campus building standards if it proves to be a successful deterrent to bird collisions. A representative from this department has supported the student team throughout the project design and implementation. The team will collect data during upcoming migration periods to determine the effectiveness of the glazing.

The anticipated reduction in harm benefits the human and non-human community through better ecological functioning and reduction in psychological stress.

This is the first proposal that the Green Fund Review Committee funded that fell outside of the areas of energy, water, and solid waste. They believed that the proposal fit well with the sustainability and educational goals of the Green Fund.

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Grainger Hall Catering Cart

Green Fund staff partnered with Net Impact, a student organization for MBA students, to organize a competition to improve the sustainability of Grainger Hall. Nick and Fiona won the competition with their proposal to design and test a "pop-up waste sorting station" to be used at catering events.

The students noticed that event spaces at Grainger often do not include composting and recycling bins and do not have sufficient capacity to handle the volume generated during a catering event. This means that a significant amount of food and recyclable materials from events end up in the landfill.

The students plan to partner with an engineering student organization, Insight Wisconsin, to develop and test the prototype in close conversation with the staff and event attendees who will use the carts.

The students imagine the cart as a scalable, flexible, on-demand solution. Grainger catering offers food service to around 2,000 events a year. Groups hold these events in a wide range of spaces from offices to classrooms to conference halls. Between events these spaces are used for teaching, study, and work and therefore require far less resource collection infrastructure. These mobile waste collection stations allow catering and custodial staff to match the waste collection infrastructure to the use of the space. Similarly, while a single cart will suffice for a small gathering, multiple carts could be deployed to handle both the volume of waste and flow of users to and from the waste storing stations during a larger event.

The Wisconsin School of Business teaches entrepreneurship and innovation. This project is a perfect example of these values in action. The project team has big dreams for their cart. The Unions, Dining, and other on campus caterers experience similar solid waste management issues at their events. If all goes well, the project team hopes to scale up production of their carts so that all catering entities on campus can benefit from their idea. Green Fund staff will facilitate connections and support the project team as they continue to develop their ideas in the months ahead.

Request: $6,500 for materials to prototype mobile waste sorting stations for use at catering events

Status: Funded. The project team anticipates testing to begin in Fall 2020.

Students

- Fiona Montie, Graduate Student, Master of Public Affairs, Concentration in Business, Environment and Social Responsibility
- Nick Schaefer, Undergraduate/ Graduate Student, Accelerated Master of International Public Affairs, Graduate Certificate in Business, Environment and Social Responsibility, Entrepreneurial experience with local Madison start-up, Three years of experience as a manager in UW foodservice

Staff

- Lindsey Bratton, Catering Food Service Manager, Wisconsin School of Business
- Tim Bent, Director of Facilities and Event Services, Wisconsin School of Business

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Science Hall Room 70 Lighting

Request: $11,900 to install energy-efficient LED lighting in a space where students and staff work

Status: Funded. Installed Summer 2020.

Students

- Anupama Chaudhari, Graduate Student, Environmental Conservation
- Jaclyn Lucas, Graduate Student, Environmental Conservation
- William Awve, Undergraduate Student, Environmental Science and Business Sustainability

Staff

- Adam Griffin, Facilities Specialist, FP&M
- Eddie Kieler, Facilities Specialist, FP&M
- Jill Folkerts, Financial Manager, Nelson Institute for Environmental Studies
- Lynn West, Assistant Dean of Administration, Nelson Institute for Environmental Studies

Off-campus partner

- Adam Snippen, Energy Advisor, Focus on Energy

Students identified Room 70 in Science Hall as a good candidate for energy efficiency upgrades because it is a high traffic space where staff and students meet regularly.

Science Hall is an older building with significant potential for added efficiencies. The students anticipate that upgrading 32 outdated light bulbs and fixtures to energy efficient LED bulbs and fixtures will save roughly 3,600 kWh a year, or around $2,800 in utility costs and 60 US tons of carbon over the life of the system.

FP&M is exploring how lighting design can be optimized for learning, health, and productivity. They may choose Room 70 as a test site for innovative lighting technologies.

Given that this is the home of the Nelson Institute, it is particularly appropriate for the space to reflect the values taught in its classrooms: those of environmental, social, and economic responsibility.

Outdated light fixtures in one of the offices within Room 70.

Members of the project team discusses the lighting options.

"In the future, I hope to help organizations and businesses to implement sustainability initiatives. By learning how to calculate metrics related to project success and communicating with others to reach a common goal, I believe the Green Fund program has set the stage for my future success." - Will Awve

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Ingraham Hall Resource Recovery

A group of students, faculty and staff at Ingraham Hall, the SPARK team, regularly observed overflowing waste receptacles and improper sorting of recyclables in their building. They partnered with the Office of Sustainability and Waste Cap, an organization hired as a consultant with expertise in resource management, to conduct a waste audit and survey users in February 2020. They found that 13% of recyclable materials, or about 2 tons per year, ended up in bins destined for the landfill.

The team proposed centralizing the collection of resources, improving signage, and adding sensors to alert custodial staff when a bin needs to be emptied. These improvements flow out of lessons learned from an earlier intervention at College Library and fit into a larger communications strategy devised by a Life Science Communications professor Bret Shaw and Office of Sustainability staff.

The Ingraham Hall project team will follow up with a post-intervention survey and waste audit to determine the effectiveness of the intervention. By continuing to test and hone the system, the team hopes to develop an effective and predictable messaging and waste collection process that could be uniformly applied to all buildings on campus.

The team anticipates that the new system will save the university around $1,700 a year from reduced staff time, material costs of bag liners for waste receptacles, and tipping fees at the landfill.

Request: $19,321 for solid waste collection stations, volume monitoring equipment, and signage

Status: Funded. The project team anticipates installation to begin in Fall 2020.

Students

- Caroline Machart, Undergraduate Student, Economics
- Colleen Williams, Graduate Student, Environmental Engineering
- Elizabeth Smith, Undergraduate Student, Zoology and Environmental Science
- Karina Kloth, Undergraduate Student, Economics and Environmental Studies
- Kristen Miller, Undergraduate Student, Biology
- Kendra Saunders, Undergraduate Student, Environmental Science
- Seok Ho Lee, Undergraduate Student, Economics

Staff

- Cristina Parente, Assistant Director and Academic Advisor, College of Letters and Science

Off-campus partners

- Travis Blomberg, Executive Director, WasteCap Resource Solutions

Students conduct a trash audit.

"From my participation in the Green Fund I have learned leadership, diligence, and people skills. This is a great resume booster."
- Karina Kloth

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College Library Writing Tool Reuse and Recycling

The project team will explore best practices in recycling and reuse of writing utensils and share their findings with the broader campus community. They will purchase refillable whiteboard markers from two suppliers and document how to do so through the UW-Madison purchasing channels. The students will collect feedback from the College Library staff and students who use the markers. The project team will summarize procurement process tips, user feedback, cost savings, and waste diversion information and share this via an informational sheet and other communications materials. The team will develop and distribute these materials in partnership with the Office of Sustainability Green Office Team.

The team will also set up a recycling system for pens, markers, and mechanical pencils. TerraCycle specializes in recycling non-standard resources, like writing utensils. The price of a collection container from TerraCycle includes the return shipping and the processing of the materials so that they can be used again. The students imagine College Library being a hub on campus for the recycling of writing utensils.

The students anticipate that the refillable markers could save about a dollar per marker by refilling a dry inkwell rather than buying a new writing tool and disposing of the spent one. College Library uses roughly 900 whiteboard markers a year, so the economic savings could add up over time. The reduction in plastic waste is relatively minor: only about 20 pounds a year. The true impact of this project lies in the way that it invites students and staff to think upstream in the Reduce - Reuse - Recycle hierarchy, to make procurement decisions that save money, and to treat materials as resources rather than disposable waste.

"I found the aspect of making my own workplace a little more sustainable very exciting as I believe it will inspire other projects at College and around campus and promote being more environmentally conscious. The skills that I have learned have made me more comfortable with writing grant applications and can be applied to any application that I may fill out in the future. I am eager to move our project forward and the experiences that I have gained from this project have made me interested in becoming a part of other Green Fund projects on campus in the future." -Kristy Morrow

Refillable whiteboard markers. Source: Auspen.us

Request: $1,487 for recycling boxes for writing utensils, refillable whiteboard markers sets, and educational signage.

Status: Funded. Implementation will begin in Fall 2020.

Students

- Kristy Morrow, Undergraduate Student, Conservation Biology, Student Employee, College Library
- Samantha Garlock, Graduate Student, Information Science

Staff

- Carrie Kruse, Director, College Library

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Grainger Hall HVAC Efficiency

This team of students won the second prize in the Net Impact competition. Originally, they proposed replacing the thermostats in the breakout rooms in Grainger Hall to reduce temperature extremes due to user error. As the conversation with facilities staff progressed, the project team decided the best solution to avoid the unwanted temperature swings would be to override the thermostats and set the room temperatures centrally. This change could be implemented at no cost.

The students were curious if there were any ways to conserve energy in Grainger Hall through HVAC controls. Dale Kraus, from UW Digital Controls, and Tim Bent, the building manager, pointed out that the classrooms in the west side of the building have pneumatic controls that do not allow for the same level of scheduling, adjustments informed by occupancy sensors, and zone control as HVAC systems that are controlled digitally. The students were excited to learn more, and Dale explained the options extensively. The students brought a background in mechanical engineering, project management, and sustainability, so they were able to keep pace with Dale and ask thoughtful questions as they explored the options.

The team decided to request Green Fund support to build out the network infrastructure, or the electrical and communications cables and devices, that would convert the HVAC system from pneumatic to digital controls and allow FP&M and Grainger Hall staff to incrementally upgrade sensors and air terminal controls. Dale pointed out that establishing this network infrastructure is often the barrier in the conversion from pneumatic to digital controls because of upfront cost. The sensors and other upgrades can happen as the operations and maintenance budget of Grainger Hall allows. Dale and Tim committed to paying for this incremental conversion once the network is in place.

The Green Fund Review Committee did not have sufficient funds to support all the project requests this year. They decided to defer this project until a future round of funding. All four of the students graduated in May but they were happy to have other students pick up the project where they left off, develop the proposal further, and take a lead on the implementation. Three other Net Impact competition groups proposed upgrades to the thermostat system. Green Fund staff will ask these students if they would be interested in carrying this project forward.

Request: $21,500 to build network infrastructure to convert HVAC system from pneumatic to digital controls

Status: Requested funds in Spring 2020. The review committee asked the project team to reapply in Fall 2020 because of insufficient funds available.

Students

- AJ Meinig, Graduate Student, MBA, Project management experience
- Grace Davis, Graduate Student, MBA, Focused on sustainability
- James Parke, Graduate Student, MBA, BS in mechanical engineering
- Johnnie Wagman, Graduate Student, MBA, BS in Mechanical engineering

Staff

- Dale Kraus, Senior Information Manager, Physical Plant, Digital Controls
- Tim Bent, Director of Facilities and Event Services, Wisconsin School of Business

Off-campus partner

- Adam Snippen, Energy Advisor, Focus on Energy

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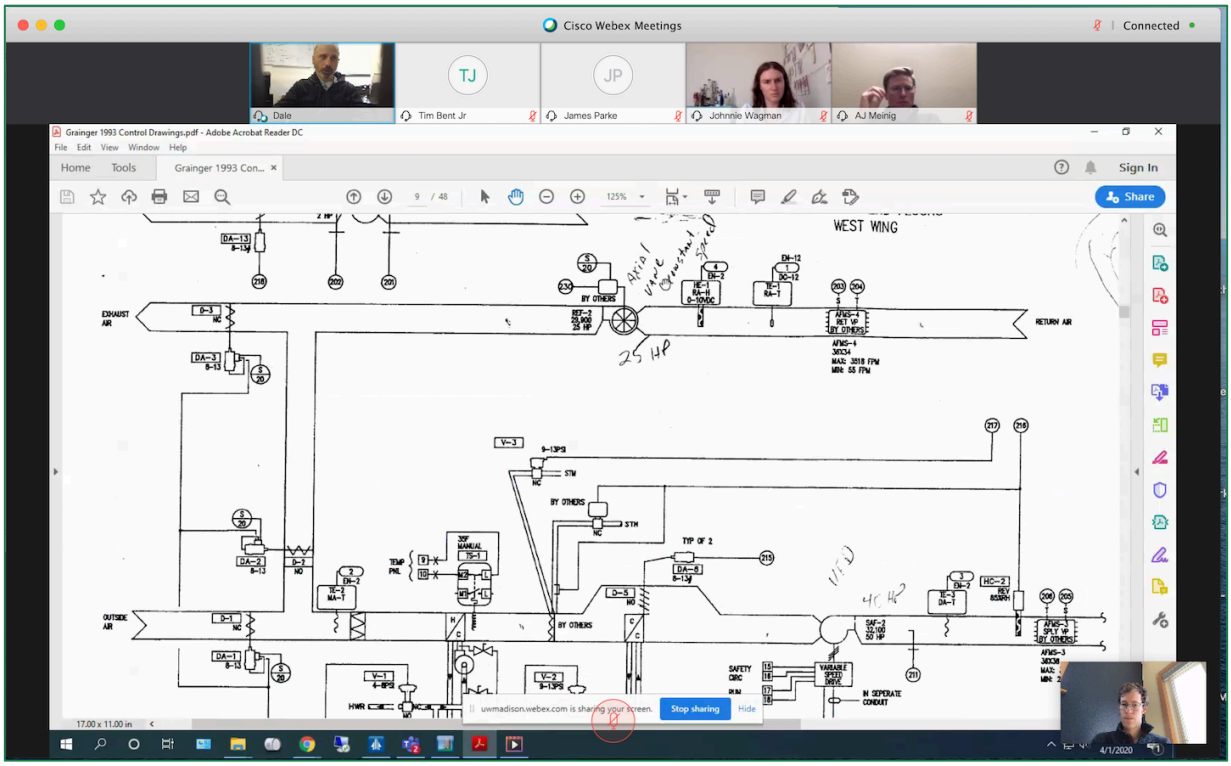
Grainger Hall HVAC Efficiency

Continued



Dale shares his screen with the students as the team discusses the design of the existing HVAC system.

"It was interesting to learn more about the building I was in everyday, both in terms of its environmental footprint and the work that goes into maintaining or improving it.

I was surprised at how willing everyone was to help and it was really interesting to meet some of the people doing behind the scenes work. I've really only interacted with instructors, so it was cool to meet people from Physical Plant, etc. I found it personally interesting to learn how the old pneumatic thermostats worked.

Studying business and seeking a product management role, the ability to write a convincing argument and influence others are essential skills that I was able to put to use through this project.

Ian has gone above and beyond in supporting our project. As a team, we discussed how he really was an example of skills that we were trying to build within ourselves and how we want to emulate the project management and communication skills that he displayed." -Johnnie Wagman

Students making their pitch in front of the judges and student organizers of the Net Impact competition.

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Gordon Dining Solar Addition

Students proposed adding 44 more solar photovoltaic panels to the existing solar array on the Gordon Dining and Event Center roof. This would add an additional 13,400 kWh a year of renewable energy production to campus for a lower per unit cost than the installation of panels on a new roof.

The solar panels generate electricity in direct current. An inverter is the device that converts direct current electricity into alternating current. This is one of the most expensive parts in the overall system. The inverter serving the solar system on the roof of Gordon is only at three-quarters capacity. The students identified this as an opportunity to install additional solar panels that could benefit from the existing inverter, wiring, roof engineering study, and interconnection agreement with MGE.

The building manager for Gordon, Mark Mueller, wrote the following in his letter of support for the project, "I am proud and excited to be part of this student funded project. It is amazing what great students we have here on campus. In my almost fourteen years the last few working with the Green Fund have been amazing. Change is sometimes hard but, with the energy saving projects, it has been a joy to see the outcome after projects are completed."

Request: $18,189 to add additional solar panels to the Gordon Dining roof

Status: Requested funds in Spring 2020. The review committee asked the project team to reapply in Fall 2020 because of insufficient funds.

Students

- Brandon Toye, Undergraduate Student, German, Environmental Studies
- Graham Mincks, Undergraduate Student
- Jessie Steckling, Undergraduate Student, Computer Science and Math
- Ryan Wenzel, Undergraduate Student, Operations and Technology Management and Marketing

Staff

- Mark Mueller, Maintenance Supervisor, University Housing

Off-campus partners

- Adam Hughes, Project Development Manager, Sun Peak
- Adam Snippen, Energy Advisor, Focus on Energy

The students propose adding two additional rows of panels to the existing solar array, pictured here. Photo credit: University Housing

"I have learned so much about how solar installations work and what is needed to lead successful energy sustainability projects in the future. The Green Fund always makes sure students are included in the entire process for the projects I have been a part of! These experiences have not directly supported my studies or work, but they have taught me a lot about how I can work to implement different sustainability projects in my community."
- Ryan Wenzel

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Natatorium Redevelopment

Green Fund staff and two groups of students met with Recreation and Wellbeing (RecWell) staff over the course of the 2019 - 2020 academic year to explore Green Fund projects that RecWell could include in the redevelopment of the Natatorium. The students conducted extensive research into many options, including adding a cistern to collect rainwater to use for flushing toilets; a green roof to slow rainwater runoff, provide habitat for insects, save energy, and improve aesthetic value; a living wall to improve indoor air quality; a rooftop vegetable garden; and a system to warm the pool with waste heat from the production of skating rink ice.

RecWell will implement the waste heat capture system, rainwater management systems, and energy efficiency measures on their own initiative, rather than doing so in partnership with the Green Fund. Large capital projects are governed by processes that are not as easily influenced by meetings with a subset of the planning team. In the future, Green Fund staff will seek out ways of inviting students into the formal planning processes in the hopes that their input can be integrated into the designs and official conversations rather than being a deviation from and addition to these processes.

Green Fund staff are supporting the students in exploring other locations for their project ideas. For instance, the students who are interested in rainwater harvesting have started to look into if the UW fleet services car wash may be able to capture and use rainwater to clean vehicles.

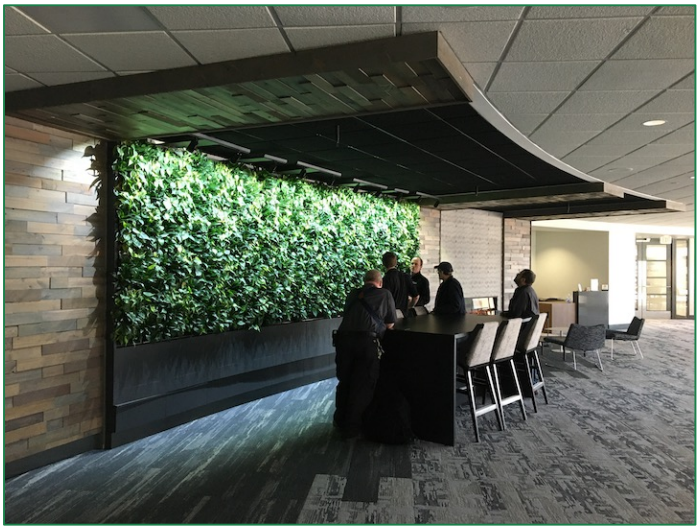
Status: In development.

Students

- Heidi Agnew, Undergraduate Student
- Lauren Jenny, Undergraduate Student
- Michael Bartlett Smith, Undergraduate Student
- Rose Adler-Rephan, Undergraduate Student
- See Won Lee, Undergraduate Student
- Sophia Thompson, Undergraduate Student
- Surya Teja Anumolu, Undergraduate Student
- Yeji Kwon, Undergraduate Student, Landscape Architecture

Staff

- Abby Diehl, Assistant Director of Wellbeing, Recreation and Wellbeing
- Sadat Khan, Associate Director of Member Experience, Recreation and Wellbeing



The students were curious about the indoor air quality, aesthetic, and acoustical benefits of a living wall like this one in the American Family Insurance building lobby.

Solar Bus Shelters

A team of students from Enactus, a student organization focused on the United Nations Sustainable Development Goals, approached the Green Fund with the idea of setting up an electric vehicle charging station that includes solar panels so that the campus community could charge vehicles with renewable energy. Through conversations with Transportation Services and Green Fund staff, the students shifted their focus to adding solar panels to the roofs of bus shelters.

Transportation Services would like to add nighttime lighting to bus shelters. Running electricity to bus shelters will be prohibitively expensive. Solar panels and a battery system would be both the most environmentally friendly and cost-effective solution. The students are exploring the available technology for the application and identifying shelters to pilot the panels in partnership with staff.

Status: In development. The student team will probably apply in Fall 2020.

Students

- Ben Sheres, Undergraduate Student, Enactus Member, Sol Solutions Group
- Sun Joo Hwang, Graduate Student, Public Affairs with focus on renewable energy, Enactus Member, Sol Solutions Group
- Tanner Wagner-Durr, Undergraduate Student, Enactus Member, Sol Solutions Group
- Tyler Steffensen, Undergraduate Student, Enactus Member, Sol Solutions Group

Staff

- Dar Ward, Commuter Solutions Manager, Transportation Services
- Kyle Hanson, Lab Manager, Wisconsin Electric Machines and Power Electronics Consortium
- Troy Ruland, Field Services Manager, Transportation Services

"By participating in the Green Fund, we've learned how to take ideas from the drawing board to real-world projects that make an impact. Along the way, we've learned what other universities are doing to promote sustainable energy, and have also met many other bright and passionate individuals from other project teams that have shared their own insights and experiences. Support from the Green Fund has made all of this possible.

As we've worked with the Green Fund and other campus departments, we have improved our collaboration and coordination skills. This project has also improved our organization and time management skills; a project like this has a lot of moving parts and we must push ourselves to meet deadlines. These skills are valuable to us as students and will continue to benefit us as we start our careers."

-Sol Solutions, an Enactus Project (Ben Sheres, Sun Joo Hwang, Tanner Wagner-Durr, and others)

Residence Hall Bidets

Vishal Manchala would like to see UW Housing introduce bidets to the bathrooms of residence halls. He is an international student and noted that he and many of his friends who are also international students would feel more welcome and comfortable on campus if bidets were available in bathrooms. He noted that bidets are the norm in many parts of the world.

He conducted extensive research into the options for retrofitting the institutional style toilets in residence halls and the sustainability impacts of the project. He pointed out that bidets would reduce the amount of toilet paper used and custodial time replacing rolls. Speaking from experience as a student custodial worker in residence halls, he noted that often custodial staff replace and discard partially full rolls of toilet paper so that rolls will not run out before the next custodial staff members visits the bathroom. The introduction of bidets would have environmental, economic, and social benefits. To start, he proposed installing bidets on one floor of a residence hall that consistently has a high concentration of international students.

UW Plumbing and Housing staff in charge of operations and maintenance are currently not ready to introduce bidets even at a pilot scale. Installation of bidets would require a reworking of pipes and training of staff and users, and could lead to vandalism. In addition to these practical considerations, a lack of cultural understanding was likely also at play for decision-makers whose lived experience did not include the regular use of bidets. Green Fund staff could have done more to bridge the gap and broker an agreement for a pilot program.

Status: In development. The student will probably not apply.

Student

- Vishal Manchala, Undergraduate Student, Student Custodial Worker, University Housing

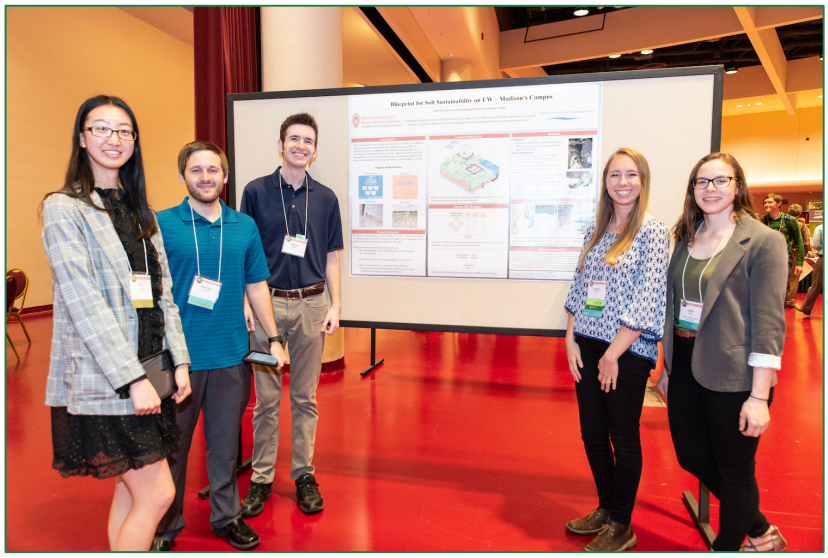
Staff

- Kathy Casper, Program Manager, University Housing, Physical Plant
- Marcella Otter, Shop Supervisor, Plumbing Shop

Water Softener Retrofits

Each year, second year masters in Water Resources Management (WRM) students take on a professional project. During the 2019 - 2020 academic year, these students worked with the Madison Metropolitan Sewerage District and the UW Plumbing shop to explore ways of reducing salt and water use on campus by identifying upgrades to water softener systems.

Two of the students who participated in this project contacted the Green Fund about implementing the recommendations of their report. As the conversation progressed, the students realized that they would not be able to see the project through to the implementation phase before they graduated but offered the recommendations of their report to any student who wanted to continue their work. Green Fund staff put out the call and connected with two graduate students interested in continuing their work.



WRM students presenting their research at the 2019 Nelson Institute Earth Day Conference. Photo credit: Ingrid Laas.

Status: In development. The students will likely apply in Spring 2021.

Students

- Abbie Ernst, Graduate Student, Water Resources Management
- Brian Flynn, Graduate Student, Water Resources Management
- Tristyn Forget, Graduate Student, Water Resources Management
- The rest of their Water Resources Management cohort that graduated in May 2020
- James Wilkelman, Graduate Student
- Mingxin Zhang, Graduate Student

Staff

- Marcella Otter, Shop Supervisor, Plumbing Shop

Pollinator Lawns

A team of students is exploring the feasibility of converting a few test plots of grass on campus to pollinator lawns. The students draw their inspiration from the bee lab at the University of Minnesota that has developed a mix of plants that offer forage for pollinators and grow close enough to the ground to offer the functional and aesthetic benefits of a lawn.

The team has identified staff in UW Grounds and faculty with research interests in pollinator habitats to engage in conversations about maintenance needs, potential locations for a pilot, and study design. The UW is currently exploring Bee Campus certification. This type of innovation would help the UW achieve accreditation.

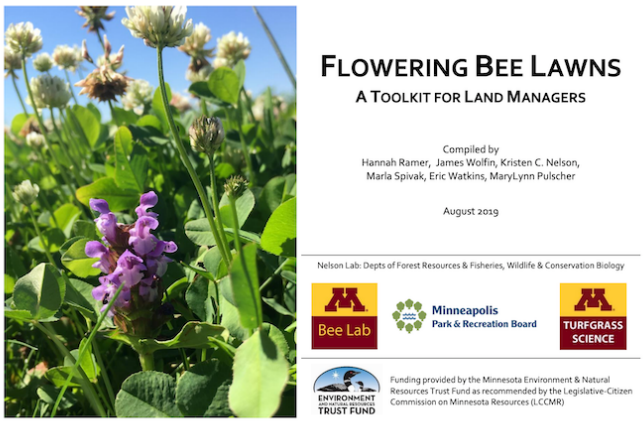
Status: In development. The students will likely apply in Spring 2021.

Students

- Ava Copple, Undergraduate Student
- Brianna Vanmatre, Undergraduate Student

Staff

- Claudio Gratton, Professor, Entomology
- Ellen Agnew, Grounds Supervisor, FP&M
- Rhonda James,
  Senior Landscape Architect, FP&M



The students will use this toolkit from the University of Minnesota as a starting place for their Green Fund proposal.

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Residence Hall Smart Strips

During the Spring 2020 semester, a life science communications capstone class worked with Housing staff to design a communication campaign to reduce energy use by students living in residence halls through the use of smart strips. Many electronics draw power when they are plugged into an outlet even if they are not on. Smart strips are a type of power strip that reduce this "phantom load" by shutting off electricity to devices plugged into it that are not in active use.

Because it was a capstone course, all of the students who worked on the project have now graduated. A graduate student has taken up the torch and is now working with the faculty member and Housing staff to prepare an application to the Green Fund to purchase power strips to accompany the communication campaign designed by the capstone course students.

Status: In development. The students will likely apply in Fall 2020.

Students

- Life Sciences Communication capstone class students
- Audrey Stanton, Graduate Student

Faculty and staff

- Bret Shaw, Associate Professor, Life Sciences Communication
- Mike Henry, Assistant Director of Residence Hall Facilities, University Housing

Solar at the Kohl Center

Helios, one of the student organizations behind the Gordon Dining and Arboretum Visitor Center solar projects, is interested in adding solar panels to the roof of the Kohl Center. They are drawn to this location because of the cultural importance of the building to the campus community. Green Fund staff and the student team have begun preliminary conversations with FP&M electricians and the building manager of the Kohl Center to explore the feasibility of an installation.

Status: In development. The students will likely apply in Spring 2021.

Students

- Jessie Steckling, Undergraduate Student, Computer Science and Math

Staff

- Adam Griffin, Facilities Specialist, FP&M, Physical Plant
- Brian Dodge, Building and Grounds Superintendent, Wisconsin Athletics: Kohl Center, LaBahn Arena, and Porter Boat House
- Dan Volk, Electrical Engineer, FP&M, Physical Plant
- Robert Seidl, Electrical Utilities Engineer, FP&M, Physical Plant

Union Waste

Over the course of this academic year a group of students has been exploring how the Union could reduce the amount of waste it sends to the landfill. They have been particularly interested in the introduction of reusable serving ware.

Green Fund staff has supported them in exploring if the reusable take out containers system used by Dining could be expanded to the Unions. Having met significant resistance to this idea from both Dining and the Unions, the students are exploring whether the Memorial Union could introduce a system for managing reusable beer cups and pitchers on the Terrace. Conversations are still in the preliminary stages.

Status: In development.

Students

- Savannah Holt, Undergraduate Student
- Sam Wood, Undergraduate Student

Staff

- Paul Broadhead, Assistant Director for Facilities Management, Wisconsin Union
- Carl Korz, Associate Director for Dining and Hospitality Services, Wisconsin Union

Vertical Farm

Leaders from student organization F.H. King Students for Sustainable Agriculture approached Green Fund staff to explore the feasibility of building vertical growing systems. They have grown vegetables on the roof of the Pyle Center for many years and no longer have access to the roof. They are looking for a new space and containers in which to grow food. Discussions are in the preliminary stages.

Status: In development.

Students

- Christopher Hastings, Undergraduate Student, Urban Agriculture Co-Director, F.H. King Students for Sustainable Agriculture
- Molly DeVore, Undergraduate Student, Urban Agriculture Co-Director, F.H. King Students for Sustainable Agriculture

School of Human Ecology Water Bottle Refilling Station

Leaders from the Student Retails Association based out of the School of Human Ecology raised some funds to install a water bottle refilling station beside the main lecture hall in their building. Through conversations with Physical Plant staff they realized that the project would be more expensive than anticipated. They met with Green Fund staff a few times to explore the application process, to think through the key players for their project, and to talk through the impact calculations. They did not submit an application for funding this year and likely will not in the future.

Status: In development. The students will probably not apply.

Students

- Katie Steib, Undergraduate Student
- Emma Brandenburg, Undergraduate Student

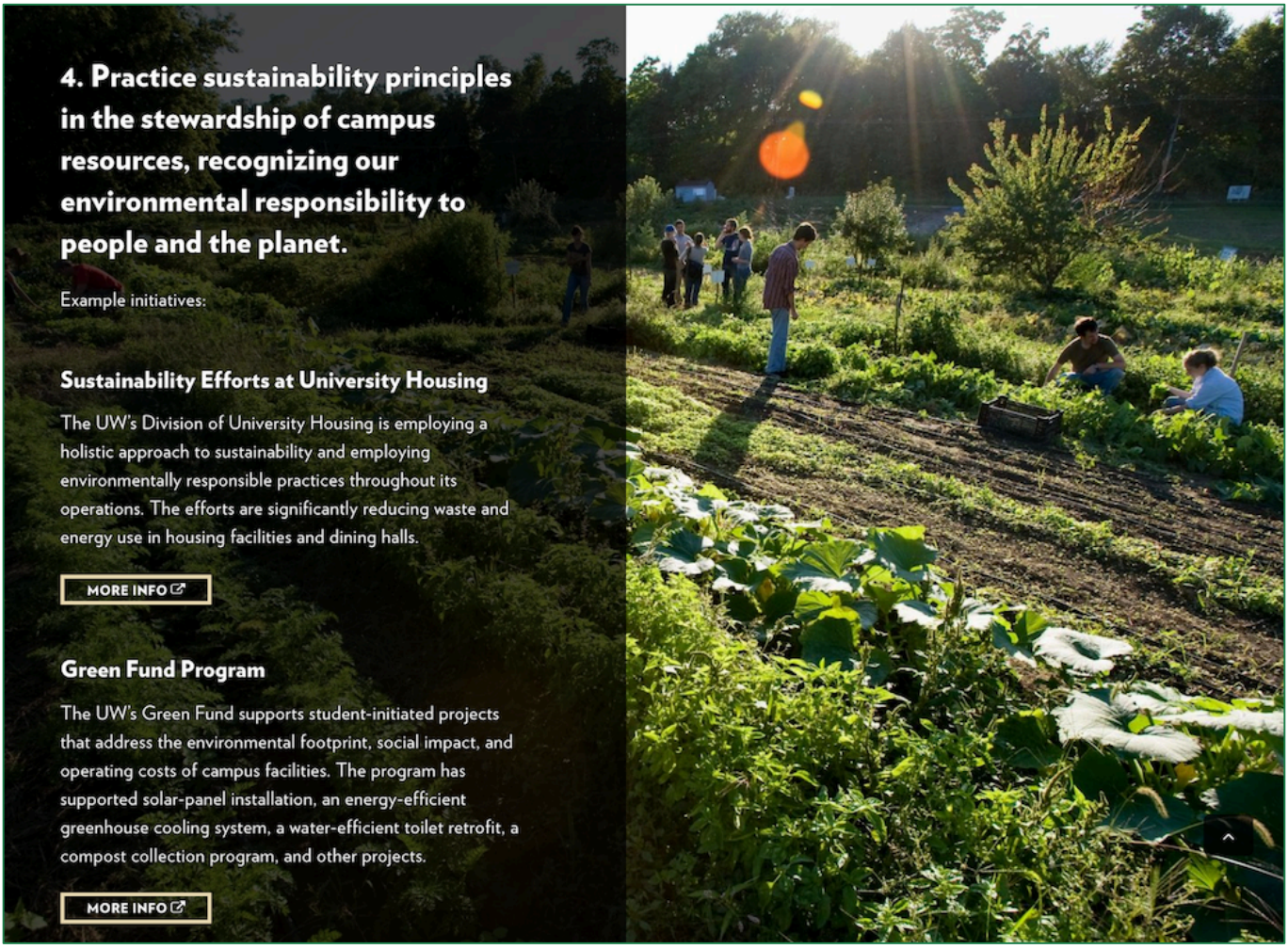
Staff

- Natalie Feggestad,
  Associate Dean of Administration,
  School of Human Ecology

UW-Madison Strategic Framework 2020-2025

The newly published UW-Madison Strategic Framework 2020-2025 explicitly calls out the Green Fund as an example initiative under the strategic priority, A High Performing Organization, item 4: Practice sustainability principles in the stewardship of campus resources, recognizing our environmental responsibility to people and the planet.

Given its emphasis on student learning and development, cross-campus partnerships, and engaging campus as a living lab, the Green Fund also supports the strategic priorities of Excellence in Research and Scholarship, A Vibrant Campus Community, and Excellence in Teaching and Educational Achievement.



Source: strategicframework.wisc.edu

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Wisconsin School of Business Net Impact Competition

Competition student organizers and judges, from left to right: Conrad Farner, Sonia Petty, Emily Litvak, Ann Terlaak, Ron Meissen, Tim Bent, and Thomas Landgraf.

Students and staff collecting data on light fixtures to prepare a competition submission.

During the spring semester, Green Fund staff partnered with a student organization, Net Impact, and Wisconsin School of Business faculty and staff to organize a competition in which students worked intensively for two weeks to develop an idea to improve the sustainability of Grainger Hall facilities. Thirty-four students formed 11 teams to participate, writing proposals and pitching their ideas to a panel of judges.

A donor and alumnus, Ron Meissen, offered $1,000 as prize money for the competition participants. He served as a judge along with senior lecturer Thomas Landgraf and Professor Ann Terlaak. Grainger Interim Director of Facilities and Event Services Tim Bent, Green Fund Manager Ian Aley, and Professor Terlaak supported the Net Impact students in organizing the competition. Bent and Aley held office hours to support competition participants in formulating their proposals.

The students with the top two ideas went on to apply to the Green Fund to implement their projects. The top team received funding and Green Fund staff will work with the other project team to refine their proposals for resubmission this coming fall. Descriptions of these projects can be found in Appendix E of this report. In addition, Grainger staff may implement some of the other ideas that arose during the competition on their own initiative and budget.

The donor generously offered prize money to hold a second year of the competition and the Net Impact leaders are already laying the groundwork for next year. All of the students who organized the competition graduated in May 2020. Before they left campus, Green Fund and Grainger staff encouraged them to design and administer an evaluation for the competition participants, judges, and support staff to offer feedback on this first year and then to convene a meeting to explore the results of the survey with the current and incoming leadership of Net Impact and competition support staff. This time of reflection was fruitful, offering notes to further refine the process for the coming year.

Madison College Solar Field Trip

Students, faculty, and staff on the bus ride from the UW-Madison campus to the Madison College campus.

Birds eye view of the Madison College campus with solar panels on its roof. Photo credit: Madison College

Trip host, Ken Walz, speaks with the group amongst the solar panels.

Green Fund staff and Scott Williams from the Green Fund Review Committee organized a field trip for students, faculty, and staff with an interest in renewable energy to visit the 1.85 MW solar array on the roof of Madison College Truax campus in November. This is the largest rooftop solar installation in the state of Wisconsin. Madison College installed the system with education and research in mind. The inclusion of a diversity of panel and roof technologies allow students to run experiments and gain hands-on experience with installation, operations, and maintenance of renewable energy systems.

Ken Walz, the director of the Madison College Renewable Energy program, facilitated a discussion about the evolution of the renewable energy industry and then led a rooftop tour. The 29 UW-Madison students, faculty and staff members who participated in the bus trip not only benefited from the inspiration of the visit, but also were able to meet potential collaborators for future projects on our own campus.

Testimonials from the trip evaluations:

- "Meeting people was really cool! Definitely an unexpected networking/ learning opportunity about our own campus. Learning about the market for renewable energy right now is interesting. Seeing the solar array and how it is used educationally was inspiring."
- "The tour guide was super knowledgeable and engaging! It was great to hear about the installation from the student and teacher perspective. Even cooler to go up and see the panels!"
- "Excellent start to finish: bus transportation, presentation and tour, relevant installation. Can't imagine any better tour!"
- "The presentation helped me learn about all the considerations that go into installing solar panels. It was helpful to see them in person to get a gage on size and orientation. It was also helpful to learn about how the cost is decreasing and job options are increasing."

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Publications and Communications

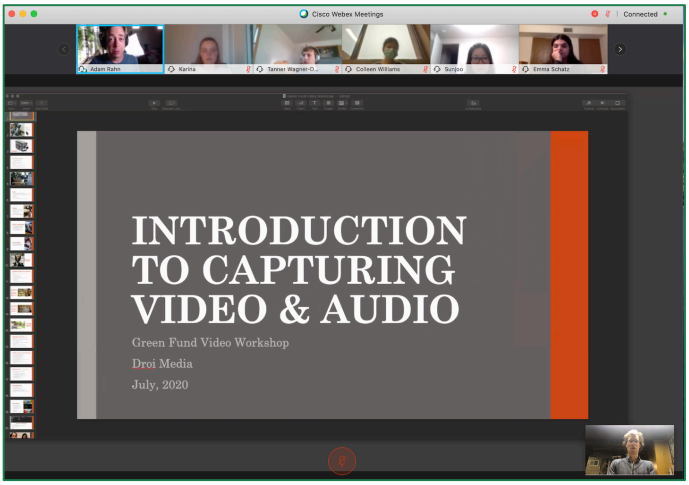
Green Fund staff facilitated a workshop for students, faculty, and staff from across the country who are involved with similar green funds at their host institutions during the annual meeting of the Association for the Advancement of Sustainability in Higher Education (AASHE).

AASHE published a case study written by Green Fund staff about the compost system at UW-Madison and selected the piece as a finalist for their Sustainability Award.

Green Fund staff and Andrea Hicks from the Green Fund Review Committee published an article in *Sustainability: The Journal of Record,* April 2020 issue describing the process and outcomes of upgrading the toilets of Tripp Residence Hall to low-flow units. Staff supported the Green Fund student in acting as the lead author for the article. The article is included on the next page.

Recognizing the importance of digital storytelling, particularly in the time of COVID-19, Green Fund staff hired a videographer to facilitate a workshop for Green Fund students on how to use a cell phone to capture audio, video, and photography to document their projects.

Johnny Uelmen received Green Fund support to retrofit the toilets of Tripp Residence Hall during the 2017 – 2018 academic year. Green Fund staff and a review committee member co-authored a journal article with him this year describing the process and outcomes of his project.



A screenshot from the digital storytelling workshop for Green Fund students.

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