



STUDENT SUSTAINABILITY COMMITTEE

Funding Application – Step 2

Please submit this completed application, the supplemental budget spreadsheet, and any relevant supporting documentation by the deadline indicated in your Step 1 notification letter to Sustainability-Committee@Illinois.edu. The Working Group Chairs will be in contact with you regarding any questions about the application. If you have any questions about the application process, please contact the SSC at Sustainability-Committee@Illinois.edu.

General Information

Project Name: Solar Panel Installation at the Master Gardener Idea Garden Shed

Total Amount Requested from SSC: \$56,400.00

Project Topic Area(s): Energy Education Food & Waste
 Land Water Transportation

Contact Information

Project Lead

Applicant Name: Ryan Pankau, Horticulture Educator
Unit/Department: University of Illinois Extension, Unit 13
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Financial Contact *(Must be Full-time University of Illinois Staff Member)*

Contact Name: Randy Barton, Business Manager
Unit/Department: University of Illinois Extension, Unit 13
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Phone Number: 217-333-7672
Organization Code: 1-631951-384811-191200

Facilities Management Contact *(If Applicable)*

Contact Name: NA
Email Address: NA

Primary Project Team

Name	Department	Email
Ryan Pankau	University of Illinois Extension	rcpankau@illinois.edu
Tabitha Elder	University of Illinois Extension	tabithae@illinois.edu
John Bergee	Master Gardner	jb_99@comcast.net
Name	Department/Organization	Email Address

Project Description

Please provide a brief background of the project, the goals, and the desired outcomes:

The Idea Garden's mission statement is "helping others learn to grow." The site is maintained entirely by volunteers in the Master Gardening program, with the primary objective of providing a learning environment for University of Illinois students, faculty and staff, and for promoting environmentally responsible gardening practices. The Idea Garden benefits all ages promoting interest, inspiring ideas, and providing education to citizens in Champaign-Urbana and the surrounding communities. It directly impacts the University's students as it adjoins the student run Arboretum.

A primary goal of this project is to advance Idea Garden's mission and provide an opportunity to "learn to grow" through the use of environmentally responsible practices, like solar-powered electricity generation. This project will involve installing solar panels on the roof of the Idea Garden shed or in an adjacent area at the garden to supply a source of electricity since the shed and garden does not have utilities.

The Idea Garden is so named because of its educational and outreach mission. The addition of solar panels would complement the existing program and further the current instances of sustainability already in place. For example, we encourage sustainable gardening practices, such as incorporating native plants in the landscape which provide habitat for pollinators. The shed at the garden is already equipped with rain barrels that are used to water plants and reduce our use of the public water supply. We compost all waste plant material generated at the garden to reduce our carbon footprint and reduce the amount of organic matter brought in from outside sources to keep our soils productive. In all gardening applications, we use the principles of "Integrated Pest Management" to approach plant insect and disease problems more sustainably. We are a source of local food, since the Idea Garden has a vegetable and small fruits gardens. Although, intended for donation to local food banks, fruits and vegetables are most often picked and consumed right off the plants by our visitors. These are all examples of sustainable practices the Student Sustainability Committee supports and promotes. The addition of solar power will compliment these practices and provide a wonderful learning opportunity for students seeking examples of sustainability on campus.

As part of this proposal, we plan to hold a free presentation at the site that will discuss how the system was designed to fit our needs. We will partner with the Student Sustainability Council and other renewable energy groups in the community to identify possible attendees and advertise the event to the campus community and the general public. It will be open to the public and will serve to educate attendees on our design process so they can apply it to other projects, with emphasis on the sustainability of solar energy. Following the installation of the system, we plan to highlight the project with a permanently installed educational sign near the shed so all future visitors can learn from our example of sustainability. As future educational events are planned at the Idea Garden, the solar project will certainly be a highlight of other programs and a centerpiece of the Idea Garden's example of sustainability.

The primary outcome of this project will be an increase in sustainable practices applied at the Idea Garden. In conjunction with other examples of sustainability already in place at the Idea Garden, this solar power project will be a shining example of sustainable energy use in close proximity to campus and open to the public.

How will the project improve the sustainability of the Illinois campus and how will the project go above and beyond campus standards?

Solar electrification at the Idea Garden shed will improve sustainability since our solar panels will generate electricity through photo voltaic cells, as opposed to other non-sustainable sources of electric power. This project will be a destination for students and the general public alike to view a solar power installation on a very intimate scale. We will lead by example, showing that solar power can be achieved on a small scale, inspiring students and faculty that visit the Idea Garden to implement similar solar projects at alternative locations, like garden sheds.

Where will the project be located? Will special permissions be required to enact the project on this site? If so, please explain and submit any relevant letters of support with the application.

This project will be complete at the Idea Garden, which is part of the University Arboretum system. No special permission will be needed to complete the project.

Other than the project team, who will have a stake in the project? Please list other individuals, groups, or departments affiliated directly or indirectly by the project. This includes any entity providing funding (immediate, future, ongoing, matching, in-kind, etc.) and any entities that will be benefitting from this project. Please attach letters of commitment or support at the end of the application.

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

The Idea Garden is a campus destination for students, faculty and the larger community seeking education about “learning to grow” or a relaxing place to view beautiful plants. Thousands of people visit the garden annually and benefit directly from the positive effects of greenspace on human health. The University of Illinois' very own Landscape and Human Health Laboratory (LHHL) researches these benefits.

Students benefit from the Idea Garden directly in an educational setting since classes use the Idea Garden for teaching about gardening, viewing plants that grow in our area, and a diversity of other educational uses. Each semester a variety of classes visit the Arboretum and/or the Idea Garden, specifically. During any of these visits, the solar project will be highly visible and will add to the educational value of the Idea Garden. In addition, the Idea Garden does have recreational benefit to students as many visit it in their free time or during campus events such as UIUC Family weekend. The Idea Garden may also be used for research conducted by students and faculty. This solar project will have educational value to researchers using the site who may also benefit from the addition of electricity at the site.

Although students will not have a role in the actual installation of the solar project, they will benefit greatly from the educational value it adds to the multiple sustainable practices already in use at the Idea Garden. Since the Idea Garden is open to the public and in close proximity to campus, it provides easy access for students to learn about many examples of sustainability right in their backyard.

Financial Information

In addition to the below questions, please submit the supplemental budget spreadsheet available on the Student Sustainability Committee website. Submission of both documents by the submission deadline is required for consideration of your project.

Have you applied for funding from SSC before? If so, for what project?

The Master Gardening Program has not applied for funding from SSC prior to this application.

If this project is implemented, will there be any ongoing funding required? What is the strategy for supporting the project in order to cover replacement, operation, or renewal costs?

If implemented, the only ongoing funding required for this project will be maintenance costs for the solar power system. The Idea Garden has an annual budget around \$18,000.00. If this solar project is implemented, maintenance costs will be included as part of the Idea Garden's budget going forward.

Please note that SSC provides funding on a case by case basis annually and should not be considered as an ongoing source of funding.

Please include any other sources of funding that have been obtained or applied for. Please attach any relevant letters of support as needed in a separate document.

The Master Gardner Program has not applied for any other funding prior to this application.

Environmental, Economic, and Awareness Impacts

In addition to the below questions, please indicate specific measurable impacts as applicable on the supplemental budget spreadsheet.

Which aspects of sustainability does your project address, and how? Does the project fit within any of the iCAP goals? If so, how does the project go beyond the university status quo standards and policies.

The Idea Garden addresses the campus iCAP goals related to energy generation, water and stormwater, recycling, agriculture and land use. Currently, we collect rainwater, which reduces our water use and attenuates stormwater to reduce urban runoff. We practice recycling by composting plant materials generated at the Idea Garden. Through the use of environmentally responsible gardening practices, such as the of Integrated Pest Management, planting natives and the above mentioned examples, we are working toward the iCAP goals related to more sustainable agriculture and land use. The addition of solar power at the Idea Garden will add one more goal category that we are addressing, energy generation.

The Idea Garden is currently contributing to two of the specific iCAP 2020 Objectives of: *reducing water consumption by 30% and reducing agricultural and landscape emissions by 30%*. Since the Idea Garden only occupies about 16,000 ft (0.3 acres), we do not have a large impact on the above two objectives due to our size relative to the rest of campus's water consumption and land use. With this solar project, we will be able to add another 2020 Objective to our list: *reduce campus energy usage and emissions by 30%*. We feel that our impact on campus energy use reduction would be much more substantial since our solar power system will certainly produce a great deal of excess, renewable energy to feed back into the grid and reduce overall campus energy use.

How will the environmental impacts of your project be measured in the near and long term? What specific monitoring and evaluation processes will you be using to track outcomes and progress?

We plan to measure the environmental impact of this project by tracking the kilowatts of power generated by our solar panels. On our website, we will publish the annual kilowatts used verses the annual kilowatts send back into the grid.

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

We will publicize the project through:

- University of Illinois Extension Website and social media channels
- Idea Garden Website: <https://sites.google.com/site/ideagardenccmg/more-resources>
 - We plan to develop a webpage specific to the solar project on the existing Idea Garden website

- Educational sign installed at the Idea Garden specific to the project
- Educational event highlighting the solar project
 - Event to be promoted on our website and through social media
 - We will post fliers at key locations around campus 2 weeks prior to the event

In addition to the SSC, information about this project will be reported to the:

- University of Illinois Extension Foundation
- Department of Natural Resources and Environmental Sciences
- Smart Energy Design Assistance Center

What are your specific, measurable outreach goals? How will these be measured?

Our specific and measurable, long-term outreach goal is the number of people that learn about our project. Every year, we estimate the annual number of visitors to the Idea Garden. We plan to develop a webpage on the Idea Garden website specific to this project. So, our outreach goal will be measured by number of hits on our website and the estimated annual visitor count at the Idea Garden.

In the short-term, we will measure the number of people that attend the free educational event that is part of this proposal. If future events focus on the solar project, we can measure attendance at those events as well.

Do you have any additional comments or relevant information to aid in evaluation of this application?

<http://arboretum.illinois.edu/gardens/IdeaGarden.php>

<http://web.extension.illinois.edu/cfiv/champaignmg/5225.html>

<https://www.facebook.com/pages/Idea-Garden/168432213215303>