**Funding Criteria**

**A. General Rules**

1. Students, faculty, and staff are encouraged to submit requests for funding. Student-led projects require a faculty or staff sponsor in order to have funds awarded.
2. Funding can only go to university-affiliated projects from students, faculty, staff, and departments.
3. All SSC projects must make a substantial impact on students. This may be a direct impact or an impact through education and engagement. All SSC funding is 100% from student green fees, so the projects funded by the students must benefit them.
4. SSC encourages innovation and new technologies – creative projects are encouraged to apply.
5. Unless a type of expense is specifically listed below as having restrictions, SSC can generally fund it. The items referenced below should not be taken as comprehensive list.

**B. Things SSC Can Fund, On A Case-By-Case Basis**

1. SSC can fund feasibility studies and design work; however, it must work toward ultimately addressing a sustainability need on campus.
2. SSC can fund staff positions that are related to improving campus sustainability. Strong preference will be given to proposals receiving matching funding from departments and/or plans for maintaining continuity of the position after the end of the initial grant.
3. SSC can fund outreach events with a central theme of sustainability, provided their primary audience is the general campus community.
4. SSC discourages funding requests for food and prizes but will consider proposals on a case by case basis that prove significant reasoning.
5. SSC can fund repairs and improvements to existing building systems as long as it works toward the goal of improving campus sustainability; however, a preference is shown to projects utilizing new or innovative ideas.
6. SSC can provide departments with loans for projects with a distinct payback on a case by case base. Loans will require a separate memorandum of understanding between SSC and departmental leadership pledging to repay the award in full and detailing the payback plan.

**C. Things SSC Will Not Fund:**

1. SSC will not fund projects with a primary end goal of generating revenue for non-University entities.
2. SSC will not fund personal lodging, food, beverage, and other travel expenses.
3. SSC will not fund any travel expenses.
4. SSC will not fund tuition or other forms of personal financial assistance for students beyond standard student employee wages.

**Your Step 2 funding application should include this application, the supplemental budget form, and any letters of support.**

*Please submit this completed application and any relevant supporting documentation to* *Sustainability-Committee@Illinois.edu**. The Working Group Chairs will be in contact with you regarding any questions about the application. If you have any questions about the application process, please contact the Student Sustainability Committee at* *sustainability-committee@illinois.edu.*

**General & Contact Information**

**Project Name:** Improving UI campus land sustainability with cover crops

**Total Amount Requested from SSC:** $110,000

**Project Topic Areas:** [x]  Land & Water [x]  Education [ ]  Energy

[x]  Transportation [x]  Food & Waste

**Applicant Name:** Allen Parrish

**Campus Affiliation (Unit/Department or RSO/Organization):** Crop Sciences

**Email Address:** aparrish@illinois.edu

**Check one:**

 [ ]  This project is solely my own ***OR***

 [x]  This project is proposed on behalf of (name of student org., campus dept., etc.): Research and Education Center Farm Operations

**Project Team Members**

|  |  |  |
| --- | --- | --- |
| **Name** | **Department** | **Email** |
| Allen Parrish | Crop Sciences | aparrish@illinois.edu |
| María Villamil | Crop Sciences | villamil@illinois.edu |
| Jonathon Mosley | Animal Sciences | jfmosley@illinois.edu |
| Name | Department/Organization | Email Address |

**Student-Led Projects (Mandatory):**

Name of Faculty or Staff Project Advisor:
Advisor’s Email Address:

**Financial Contact *(Must be a full-time University of Illinois staff member)***

Contact Name: Jennifer Black

Unit/Department: Crop Sciences

Email Address: jkblack@illinois.edu

**Project Information**

*Please review the proposal materials and online content carefully. It is highly recommended you visit a working group meeting sometime during the proposal submission process.*

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

*You may copy and paste your Step 1 application answer if nothing has changed.*

Cover crops are increasingly common in agricultural settings as a tool to increase sustainability of farm operations. A workforce with the skills and experience to work with and assess results from cover crops is urgently needed to encourage adoption of this practice throughout the Midwest region. Graduating students currently lack the required experience. The project’s main goal is to fill in this gap allowing students to gain hands-on experience in all aspects of cover cropping while simultaneously evaluating impacts of this practice on soil fertility and crop yields. Our second goal is to obtain the equipment needed to seed large acres for cover crops in an efficient and sustainable manner. In this regard, the use of an air seeder while harvesting corn would allow for the two farm operations, harvesting cash crops and seeding of cover crops, to happen simultaneously, saving resources and reducing labor costs. We will evaluate a wide range of cover crop seed blends on their fall establishment, overwintering capabilities, as well as most benefits to soil quality and cash crop yields. The deliverables for this project include education and hands on experience for our students, and a thorough evaluation of cover cropping practices for our UI agricultural land, within the College of ACES.

**Where will the project be located? Are special permissions required for this project site?**

*If special permission is required for this location, please explain and submit any relevant letters of support with the application.*

**No special permissions are needed. The directors for the land are involved in this 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 benefit from this project.**

*Please attach letters of commitment or support at the end of the application.*

Cover cropping campus farm lands is an iCAP objective with extensive benefits not only to improve the sustainability of our own farming operations but to provide a tangible example of the feasibility of this strategy for stakeholders, research experiences for students, along a comprehensive preliminary data set on several aspects associated with this practice (soil fertility, animal performance, etc.) The Department of Animal Sciences will have an opportunity to test and evaluate various mixtures for winter forage or spring hay crops. The Department of Crop Sciences will have an opportunity to evaluate the effects of cover croping on soil, water, and cash crop production. The diverse set of student led projects will generate a substantial preliminary data set that will be made available to faculty to submit proposals for future external funding opportunities (USDA, NRCS, EPA, etc.) The information generated by this funded proposal will also be shared during our outreach activities with producers and associations with an interest in increasing the sustainability of farming operations around the state.

**How will this project involve and/or benefit students?**

*This includes both direct and indirect impact.*

**Students will participate and gain experience and skills in all aspects of this project. Students interested in cover cropping will be recruited to assist with the planting, evaluation, and sampling while working on their own individualized research projects. Students interested in cover cropping might enroll in CPSC 393, 395, 396 or ANSC 398 to obtain research or internship credit hours which are required for our academic programs. Student selection and project assignment will occur during the spring semester in coordination with the academic program advisors at each of the Departments of Animal Sciences and Crop Sciences. Their projects will start in the summer learning about the different aspects of the farm operations while cover crop plantings, growth, and termination would continue over the fall and spring semesters. Students will develop essential questions to guide their research, analyze their data, and prepare posters and presentations at local and national venues according to their preferences. They will learn about crop rotations, equipment maintenance, calibration, as well as getting first-hand experience operating farm equipment (after completing proper safety training).**

**How will you bring awareness and publicize the project on campus? In addition to SSC, where will information about this project be reported?**

Digital marketing and videos are critical to reaching targetted audiences specially during the covid-19 pandemic times. The students will have the opportunity to work with the college of ACES marketing department and UI Extension to create short social media pieces on their experiences with cover crops. The information generated by this funded proposal will also be shared with our outreach activities (i.e Agronomy Days, International Agronomy Days, etc.) with student led presentations to producers and producer associations around state.

# Financial Information

*In addition to the below questions, please submit the supplemental budget spreadsheet available on the Student Sustainability Committee* [*website*](http://ssc.sustainability.illinois.edu/?page_id=2087)*. 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?**

Yes. South Farm Draper Purchase and ACES Farm Drainage Assessment

**If this project is implemented, will you require any ongoing funding required? What is the strategy for supporting the project in order to cover replacement, operation, or renewal costs?***Please note that SSC provides funding on a case by case basis annually and should not be considered as an ongoing source of funding.*

Yes. Repairs and maintenance would be covered by the departments on equipment. Future funding for student labor, seed and soil sampling would be requested before funds ran out. If we see boosts in yields or can market commodities (forages) from cover crops the need for funding may not be needed. Future funding would be related to student labor, seed and soil sample annalysis.

**Please include any other obtained sources of funding. Have you applied for funding elsewhere?**

*Please attach any relevant letters of support as needed in a separate document.*

The farms have an operating budget to help pay for fuel and equipment usage. Amazone is offering a discount of 20% on their air seeder unit. The Hiniker equipment dealer is offering to accept trade-ins against the air drill. Excess equipment will be used to lower the cost of this item as well. Considering the volume of seed we will need, bulk pricing will more than likely be possible as well. Once we have established ourselves as a committed cover cropping University, these tools will lead to more research grant opportunities for faculty and Extension personnel to apply for.

# Environmental, Economic, and Awareness Impacts

**How will the project improve environmental sustainability at the Urbana-Champaign campus? If applicable, how does this project fit within any of the** [**Illinois Climate Action Plan**](https://icap.sustainability.illinois.edu/) **(iCAP) goals?**

This project will help create a path forward for the College of ACES in developing and maintaining a cover crop educational program while fulfilling our commitment to the campus mandate. This ultimately will establish and develop protocols to increase environmental stewardship. Not all cover crops are equal and there is a learning curve to understanding how they can impact the soil quality while still providing the optimal production of cash crops. Cover crops can help sequester carbon, scavenge and retain nutrients, increase water infiltration, and reduce soil erosion. They could provide energy savings if they are used as a replacement for fall tillage too. The true energy savings could be an additional data point to collect. Cover cropping 20% of the College of ACES south farms is a new iCAP goal. Creating a baseline soil fertility map is also an iCAP objective. Farm budgets are strained due to low commodity prices, high input costs and the impact of COVID-19 on external funding sources, making these purchases unfeasible under current budgets.

**How will you monitor and evaluate the project’s progress and environmental outcomes? What short-term and long-term environmental impacts do you expect?**

*Some examples include carbon emissions, water conservation, green behavior, and reduced landfill waste.*

**Student participation and project progress will be evaluated weekly as the PD will work directly with them in the field and lab. Completion of internship or research credit hours required by their programs of study will be another outcome monitored by our academic advisors. The practical aspects of cover crop implementation and management, and soil and plant sampling and field and lab determinations will be monitored weekly as well. The generated data sets on cover crop biomass will be analyzed by the PDs for evaluation on mixture and seeding methods of cover crops. Regular soil fertility assessment will ensure we maintain or improve soil health in our fields while providing a record of environmental impacts of this management strategy. In the long term we expect the implementation of cover crops will help reduce nutrient losses, in particular nitrogen and phosphorus, and increase the carbon sequestration potential of U of I Campus. As carbon markets are being developed, we expect that use of cover crops could help us offset emissions generated by our regular activitites and those of other units on campus.**

**What are your specific outreach goals? How will this project inspire change at UIUC?**

**Our farms are multi-purpose operations that attract students and producers alike. The farms are active laboratories and classrooms, used on a regular basis to reach students through hands-on activities and opportunities for research and mentoring. Because of the national and international impact of our research, our farms are visited yearly by hundreds of producers from around the state and from other countries. Our outreach events (Agronomy Day and International Agronomy Day among others) and now more importantly, our extensive use of social media platforms help us reach a wider audience. The data sets generated will be made available through our operation website so faculty, students, and anyone interested in cover cropping might use it for a class, conference, or webinar.**

**We want to encourage adoption of cover cropping as an essential tool to improve nutrient retention and carbon sequestration. Increased adoption of cover crops will results in increased soil health and reduced nitrogen losses to the environment, to waterways as nitrate and to the air as grennhouse gas emissions. We also want to help our students and interested producers to learn how to actually implement this strategy in their fields and manage for success. Various regions will need to use different techniques for seeding cover crops. Helping to demonstrate new and innovative methods will improve cover cropping feasibility. By combining activities between Crop Sciences and Animal Sciences, cover crops can be utilized as an additional feedstock for animals. By targeting land that is harvest early we can possibly improve cash crop production. Anytime we can increase our rate of return on cash crop production acres, skeptics of cover cropping are easly converted to true believers of the value cover crops can bring to a farm operation.**

**If applicable, how does this project impact environmental injustice or social injustice?**

**By targeting land that is used for cash crops that are harvested prior to mid-September, cover crops will have the most environment impact as well as the least amount of strain on farm operations. The cover crops can take full advantage of several months of growth in the fall which will help them survive longer into the winter. The species that can survive the winter months will have extra reserves to jump start growth in the early spring. All that extra growth will aid in reducing soil and nutrient loss. The University research farms are very visible to the Champaign-Urbana community too. Our community will be able to see us committing to a change in our operations. On a broader scale cover cropping will also take extra labor which will help employ additional people for seed production, seed cleaning, shipping, planting, etc. that will help depressed rural communities find new value in their land resources.**