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Respondent

7

Nicholas Puddicombe

47:18

Time to complete

Instructions:

NOTE: To remain eligible for SSC funding after the Step 1 application, the SSC strongly suggests that project leads present their proposed projects at a working group meeting BEFORE submitting their Step 2 application. If you have not attended a working group meeting, please do so and then continue the Step 2 application.

Linked below is our calendar with all of our working group meetings
<https://studentengagement.illinois.edu/student-sustainability/ssc/calendar/>

If you have any questions about the application process, please contact the SSC at Sustainability-Committee@illinois.edu.

1. Please select the working group meeting at which you presented. *

- ☐ Energy + Transportation & Infrastructure
- ☒ Food & Waste + Land, Air, & Water
- ☐ Education & Justice

2. Date of Working Group Presentation: *

4/30/2024



3. Project Name: *

Precious Plastics UIUC Recycling Station

4. Total Funding Requested from the SSC: *

\$48,961.99

5. Project Lead Full Name: *

Nicholas Puddicombe

6. Project Lead Department: *

Siebel Center for Design

7. Project Lead University Email Address: *

puddicom@illinois.edu

8. Are you a student? (NOTE: All student-led projects must have a faculty/staff advisor. *)

- ☐ Yes
- ☒ No

9. Project Category: *

- ☐ Education & Justice
- ☐ Energy
- ☒ Food & Waste
- ☐ Land, Air & Water
- ☐ Transportation & Infrastructure

10. **Project Abstract:**

In 200 words describe the project *

We will create a plastics recycling hub at Siebel Center for Design (SCD) that focuses on collecting and recycling plastic waste from laser cut acrylics and 3D printing filament. SCD will house, support, and fund the ongoing operation of the recycling center as a core part of the Maker Network and our sustainability efforts. This project will kick-start the recycling center with new equipment, and labor to set up and test the system and develop processes.

Project Team Member List (Student projects must include their faculty/staff advisor's info)

Project Lead

11. Full Name: *

Nicholas Puddicombe

12. Department: *

Siebel Center for Design

13. University Email Address: *

puddicom@illinois.edu

14. Do you have a faculty/staff advisor? *

- ☐ Yes
- ☒ No

Project Team Member List (Student projects must include their faculty/staff advisor's info)

Additional Member

15. Full Name:

Neil Pearse

16. Department:

Siebel Center for Design

17. University Email Address:

npearse@illinois.edu

18. Do you have additional members? *

- ☐ Yes
- ☒ No

Project Questionnaire

19. Beyond SSC, do you have other sources contributing funding or support (e.g., staff time, external grants, etc.) to this project? *

- ☒ Yes
- ☐ No

20. Do you have a plan for ongoing funding beyond SSC? (SSC does not guarantee ongoing financial support) *

- ☒ Yes
- ☐ No

21. Have you spoken with anyone in UIUC's Division of Facilities & Services or a facility's site manager (if relevant) regarding project feasibility and/or approval? *

- ☒ Yes
- ☐ No

22. With whom did you speak? *

Nicholas Puddicombe (Facility's Site Manager)

23. Email address of person with whom you spoke: *

puddicom@illinois.edu

24. Please attach any letters of departmental commitment or support here along with any other supplemental media that will support your application (presentations, pictures, etc.).

 The Plastics Recycling Center at SCD Nicholas Puddicombe.pptx

25. **Project Timeline:**

List your project's timeline and milestones. (NOTE: SSC funding agreements remain active for two years and it is expected that the awarded amount will be spent within the award period.) *

Develop space for the Precious Plastics UIUC equipment at SCD, using the existing loading garage and storage cages 6/5/24 - 8/9/2024 (4 weeks, Summer Intern project)
Order equipment from FilaBot and Precious Plastics 6/14/24 - 7/1/24 (2 weeks to order)
7/1/24 - 10/15/24 (8 weeks for delivery)
Assemble equipment in place 10/15/24-12/5/24 (6 weeks)
Perform test runs using waste from SCD plastics 11/1/24 - 12/5/24 (4 weeks)
Develop and implement training standards for equipment use by staff and students 11/1/24 - 12/5/24 (4 weeks)
Debut and promote recycling station at Maker Network 25, an event produced at SCD that brings campus makers and facility managers together 1/7/25 - 1/15/2025 (1 week)
Develop collection process and sites across campus in collaboration with the Maker Network RSO and facility managers 1/20/25 - 3/14/25 (8 weeks)
Develop a distribution or sales process for returning recycled acrylic sheets and 3D printing filament to facilities that provided them for use by students 3/24/25 - 5/2/25 (8 weeks)
Establish metrics and reporting needs for waste diversion and promotion of the program on and off campus; use data and stories to seek additional contributors, collaborators, or funds to expand the program 6/1/25 - 7/31/25 (8 weeks, Summer Intern project)
Submit a final report on the project that includes details on the recycling center, operations and policies, and metrics on initial use and waste diversion 7/15/25 - 7/31/25 (2 weeks, Summer Intern project)

26. Project Description:

Describe your project in sufficient detail such that we can evaluate its merit and feasibility.
What does your project hope to accomplish?
What are your project's deliverables? *

We will utilize the loading garage at the Siebel Center for Design to create a plastics recycling center that focuses on plastics from laser cut acrylic and 3D printed filament. We are providing a permanent space for the recycling center as well as making it part of the ongoing operations at SCD supported by our student staff. We hope to make this center capable of recycling all viable plastic waste from the SCD labs as well as others on campus, and re-issue the recycled plastics to campus labs as a free alternative to bringing more plastics onto campus. We also hope to inspire a culture of awareness around plastic recycling, reduction of use, and the effort required to make sustainable products and solutions. Our deliverables will be the Recycling Center and the recycled plastics that we will produce and make available to students through the SCD Labs and others on campus.

27. Environmental Impact:

How does your project increase environmental stewardship at UIUC?
If applicable, what is the carbon, water, waste, and/or energy savings? *

This project will eliminate a significant amount of plastic waste that is created with 3D printing and laser cutting acrylics, and put those plastics back to use as free prototyping materials for students in campus labs. The Recycling Center will also be a physical representation of sustainability, and provide learning opportunities through operating the equipment, offering tours to classes and groups, and producing the recycled materials that will be available to students.

28. iCAP Objective Correspondence:

Does your project aim to advance one or more of the Illinois Climate Action Plan's (iCAP) objectives? If so, how?

A full list can be found here:

<https://icap.sustainability.illinois.edu/objectives>

This project meets the following iCAP objectives:

5.2 Reduce Landfilled Waste: By recycling plastics that are otherwise not recycled or able to be reused, this project will have an immediate impact on reducing the amount of plastic waste that goes to landfills. The proposed system can recycle 10 pound of plastic per hour, which is enough 3D printing filament to support the SCD labs for several days. Once the operations reach capacity, we could recycle hundreds of pounds of plastics each week.

5.3 Establish a Culture of Reuse: The Recycling Center will be a physical representation of sustainability efforts and provide an engaging way for students and visitors to learn about the importance of reusing materials. Students and campus users will benefit from the recycled plastics being free in campus labs, which will build the culture and demand for recycling instead of bringing new plastic onto campus.

6.1 Broaden Sustainability Education: The Recycling Center will be available to classes and groups for tours and learning opportunities that will build the culture of sustainability and responsible use of plastics. RSOs, campus groups and departments can partner with SCD to incorporate the Recycling Center into their activities, and we can develop more educational opportunities in collaboration with these partners.

29. Student Impact:

How many students will be directly impacted by this project? *

20-30 students will have the opportunity to setup the recycling center as part of the SCD staff and the Maker Network RSO

30. How many students will be indirectly impacted by this project? Please be realistic in your estimate. *

Everyone who uses 3D printers or laser cutters would be impacted: SCD had over 2,000 students use plastics in the labs, and across campus there are over 10,000 lab users that access 3D printers and laser cutters.

31. How will this project benefit students?

How will students be involved with this project?
What educational components are in your project? *

This project will benefit students by offering a place to learn about plastics recycling, allow them to get involved with the process of recycling, and provide usable plastics that will be offered for free in the SCD labs and other participating lab spaces on campus. Students will be involved with everything from setting up the Recycling Center to operating it, and will have opportunities to work with spaces on campus to create the systems and policies for collaborations and partnerships. Students can also learn about the equipment and processes, applying their own ideas to potentially create the next generation of recycling centers and solving sustainability issues. The educational components will start with learning how to set up and operate a plastics recycling center, including learning new machinery and operations management skills to have efficient manufacturing. Once set up, the recycling center can be used for classes, tours, and other educational partnerships that would benefit from having a physical recycling center to engage with.

Project Finances

32. Please Complete the Attached Budget and Timeline Excel File

Please be very descriptive when filling out the document. Submit the completed document below.

<https://studentengagement.illinois.edu/student-sustainability/ssc/docs/SSC-Supplemental-Budget-Timeline.xlsx>

*

 [SSC-Supplemental-Budget-Timeline \(SCD Recycli Nicholas Puddicombe.xlsx\)](#)

33. Project's Finance Manager:

Must be a fulltime UIUC faculty or staff member** *

Nicholas Puddicombe

34. Project's Finance Manager's Department: *

Siebel Center for Design

35. Project's Finance Manager's University Email: *

puddicom@illinois.edu

36. Has your project and/or project team applied for SSC funding previously? *

☒ Yes
☐ No

37. Did your project and/or project team receive SSC funding? *

☒ Yes
☐ No

38. What is the total amount of SSC funding received to date? *

\$8,000 was given to a previous project led by Neil Pearse, which started with the CU Fab Lab