
SWARTHMORE COLLEGE

**PSRF
ANNUAL
REPORT**

2020-2021

PRESIDENT'S SUSTAINABILITY RESEARCH FELLOWSHIP

LETTER FROM THE PRESIDENT

Valerie Smith, *President*

Friends,

When I think of the President's Sustainability Research Fellowship, I see the liberal arts at work. Through this program, students learn project management, collaboration, and effective communication. They also develop an openness of mind that will allow them to seek out and receive the unanticipated lessons that life has to teach. During the 2020-21 academic year, when the pandemic required PSRFs to meet with their teammates, advisors and mentors remotely, they adapted and persevered. This program reminds me that Swarthmore changes the world not only through the work that happens here on our campus, but also by preparing our students to create new and exciting forms of social change as alumni.

PSRF projects are truly a model for what it means to use rigorous intellectual study to develop solutions for some of the most complex and urgent challenges facing the world today. The projects you'll read about in this annual report break down silos and catalyze change across the College. These Fellows have provided us all with greater awareness that allows us to become stronger advocates for sustainability within our own communities.

When our country's recognition of and response to climate change is in doubt, this work is a source of hope to me personally and to our entire campus. I am especially appreciative of Aurora Winslade, Elizabeth Drake, Clare Hyre, Terrence Xiao, and others in the Office of Sustainability for stewarding this program. I am also deeply grateful to Joy Charlton, Professor of Sociology and Anthropology, who served as the faculty lead for the PSRF program last year. Special thanks to all of the mentors and advisors who have given so generously of their time and expertise to the projects, especially under the challenging circumstances of the past year.

I look forward to the sixth year of the President's Sustainability Research Fellowship and meeting -- in person -- with the new cohort of Fellows.

With gratitude,



Valerie Smith



INTRODUCTION

Ben Berger, Director for the Lang Center for Civic and Social Responsibility

Aurora Winslade, Director of Sustainability

Joy Charlton, Professor of Sociology and Anthropology

Carr Everbach, Professor of Engineering

How do students learn to lead? In the President's Sustainability Research Fellowship (PSRF) at Swarthmore College, they learn by taking stewardship over vital sustainability challenges. The program matches students with staff and faculty mentors to research, develop, and implement sustainability projects in a year-long course and associated internship. The innovative PSRF program—a collaboration between the President's Office, the Office of Sustainability, the Environmental Studies Program, and the Lang Center for Civic and Social Responsibility—fosters interdisciplinary collaboration throughout the institution. As students learn, lead, and innovate, they apply their knowledge to pressing needs and produce replicable solutions for our campus and beyond.

In the program's fifth year, the course was co-instructed by Joy Charlton, Professor of Sociology and Anthropology, and Aurora Winslade, Director of Sustainability. Eleven students conducted ten separate projects. Throughout a unique and challenging year, pervaded by the global pandemic and a remote learning and working environment, the students and their teams were pushed to adapt, to be resilient, and to collaborate and problem-solve more than ever before. Students learned about change management, environmental justice, and the climate crisis, and worked closely with their project mentors and boards to design and implement a truly impressive array of projects. Final presentations were held virtually and were attended by over 100 students, staff, faculty, and alumni, a testament to the deep and far-reaching impact of the PSRF program on the Swarthmore community.

Through their work, the PSRF students have helped Swarthmore College make exciting progress on its sustainability goals at the institutional level. This year, three projects focused on carbon and energy and connected with the recently passed Energy Plan: Roadmap to Zero Carbon, which maps out the pathways for Swarthmore to become carbon neutral by 2035. The Indigenous Interconnections project supported the hiring of Dr. Adrienne Benally, Swarthmore's first tenure-track professor in the Environmental Studies program, alongside two other Native scholars joining the College next fall. The Climate Essentials short course, hosted by the Climate Community PSRF project, fostered virtual community-building and engagement during a difficult semester. These are but a few highlights we are excited to share through this annual report.

Next year, ten PSRFs will take on nine new and continuing sustainability projects across campus. Although the global pandemic continues to create unprecedented circumstances for our community, we fully expect Fellows to continue doing what they do best: research, collaborate, design, and lead, with the goal of making Swarthmore, and the world, a more sustainable place. For now, we invite you to read the executive summaries of the final reports of the 2020-2021 cohort of PSRF Fellows.

2020-2021 PSRF TEACHING TEAM

Aurora Winslade
Director, Office of Sustainability

Co-instructor



Joy Charlton
Sociology and Anthropology

Co-instructor

Carr Everbach
Engineering, Environmental Studies

Teaching Team Member



Elizabeth Drake
Climate Action Manager, Office of Sustainability

Teaching Team Member

Terrence Xiao '20
Sustainability and Engaged Scholarship Fellow

Teaching Assistant



Chloe Klaus '19
Office of Sustainability, Environmental Studies

Teaching Assistant

To the many students, staff, faculty, alumni, and friends of the College who participated in the PSRF program this year...



ACKNOWLEDGEMENTS

Class of 1968 Fellow

Thank you to the class of 1968 for endowing this position as part of their 50th reunion gift

Olivia Stoetzer '23



Campus Sustainability Champions

Pennsylvania Environmental Research Consortium

The Campus Sustainability Champion title is awarded to students, faculty, administrators, and staff of Pennsylvania colleges and universities who have made meaningful contributions benefiting social, economic and/or environmental sustainability on their campus, in their community, or in society at large.

Alex Flowers '21 | Ananya Bhattacharya '21 | Chelsea Semper '22

EXECUTIVE SUMMARIES

2020-2021

Alex Flowers '21... *Sustainable Space Management* (6)

Alfi Muhamad '23... *International Climate Engagement* (8)

Ananya Bhattacharya '21... *ChesterSemester* (10)

Chelsea Semper '22... *Crum Woods: Sewer Line Right of Way Restoration* (12)

Chris Stone '23... *Energy Efficiency Strategy* (14)

Colin Donahue '22... *Sustainability in the Curriculum* (16)

Daniel Balauro '23... *Indigenous Interconnections* (18)

Martin Tomlinson '23... *Climate Community* (21)

Maya Tipton '23... *Climate Community* (21)

Olivia Stoetzer '23... *Carbon Offsets* (23)

Zach Lytle '21... *Food and Dining* (25)

Senior PSRFs (27)

SUSTAINABLE SPACE MANAGEMENT



PROJECT TEAM

PSRF: Alexander Flowers '21

Project Mentor: Roderick Wolfson
Planner/Project Manager, Capital Planning and Project Management

Sustainability Sage: Ethan Landis '84

Project Board Members:

Aurora Winslade, *Sustainability Director, Office of Sustainability*

Elizabeth Drake, *Climate Action Manager, Office of Sustainability*

Greg Brown, *Vice President for Finance and Administration, Finance & Treasurer's Office/Facilities and Services*

Janet Semler, *Director, Capital Planning and Project Management*

Katherine Cerino, *Events Manager, Events Management*

Lynne Steuerle Schofield, *Associate Dean of Faculty for Diversity, Recruitment, and Retention Associate Professor of Statistics, Provost's Office, Mathematics and Statistics*

Susan Eagar, *Director, Events Management*

Andrew Feick, *Associate Vice President for Sustainable Facilities Operation and Capital Planning, Sustainable Facilities Operations & Capital Planning*

Terrence Xiao '20, *Teaching Assistant, Sustainability Engaged Scholarship Fellow*

PURPOSE

The purpose of the Sustainable Space Management project was to advocate that Swarthmore College's work on reducing carbon emissions expand to include using built spaces more efficiently.

BACKGROUND

Buildings at Swarthmore College are responsible for a majority of carbon emissions and represent a substantial financial investment. It is thus essential to explicitly treat our space as a valuable resource by making the best use of what we have and only adding space when necessary.

In this way, sustainable space management complements Swarthmore's other work on energy efficiency and renewable energy sourcing like the Energy Plan: Roadmap to Zero Carbon. Avoiding new emissions starts with avoiding new construction and focusing on existing resources. This in turn requires that existing spaces serve the needs of the community as well as possible.

OBJECTIVES

This project defined and made recommendations for sustainable space management strategy by making the connection between Swarthmore College's sustainability goals and existing space management processes, with an emphasis on using data to improve space utilization.

The project accomplished this goal in three ways:

#1: Learning about and using Swarthmore College's existing space management data

#2: Researching literature and resources that describe best space management and utilization practice

#3: Conducting interviews and facilitating conversations about space management both within and outside Swarthmore.

SUSTAINABLE SPACE MANAGEMENT

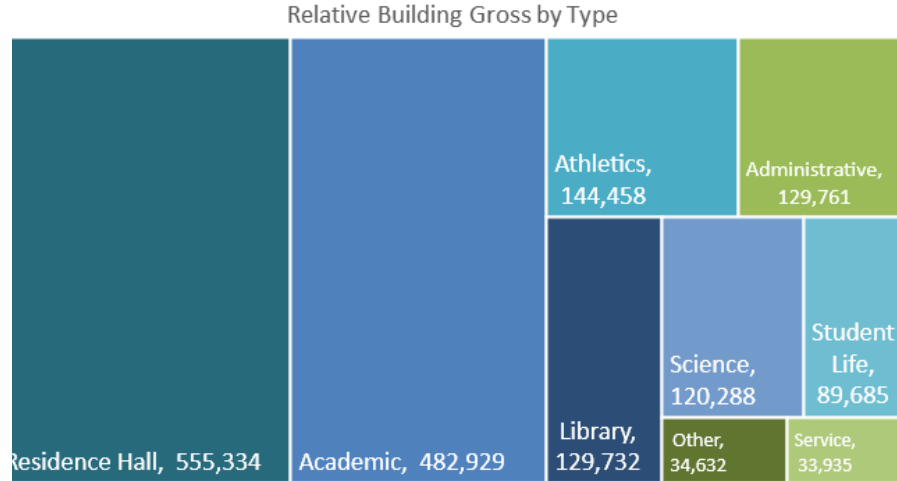


Figure 1. Tree map showing relative square footage of building types on campus

FUTURE WORK

- Minimize new space growth by seeking sufficiency.** Sufficiency means shifting mindsets from more and better space to enough and the right space. Sufficiency strategies include redefining need, maximizing the use of existing space, optimizing space operation and management, and designing spaces in ways that promote flexibility and sharing of spaces. These efforts can complement Swarthmore's other emissions-reducing actions like improving energy efficiency and transitioning to renewable energy sourcing.
- Space data should provide a starting point for planning conversations.** Space data is one piece of the space management puzzle. A variety of analysis may be conducted which provide both broad overviews of the space Swarthmore has and can inform specific planning conversations. For instance, our facilities data tells us that Swarthmore is at the upper end of overall space per student among peer institutions, suggesting we should focus on adapting and improving the spaces we already have. As a more granular example, space analysis can also allow planners to obtain lists of classrooms for space allocation.
- There are opportunities to improve Swarthmore's existing space data IT infrastructure.** While Swarthmore maintains a facilities database to industry standards, the College should invest in the IT infrastructure necessary to make this data more integrated, robust, and accessible. This will make obtaining data to inform specific conversations like classroom assignment, office strategies, and study space planning easier for a broader range of potential users.
- Recognize that improving space utilization to avoid new growth requires a multi-faceted, collaborative approach.** Studying the size of campus spaces and trying to reduce them in new construction is important, but only one aspect of minimizing new growth. At Swarthmore, other efforts that can improve our space management process include increasing collaboration when scheduling classrooms, piloting long-term alternative working strategies in select departments to free up office space, and supporting training and investment in our space reservation system to decrease friction and increase buy-in.

Ultimately, sustainable space management is about judiciously aligning Swarthmore's space portfolio and the use of those spaces with the College's mission and values. This is necessarily an ongoing and collaborative process, and provides the exciting opportunity to celebrate and emphasize the values of collaboration, innovation, equity, and stewardship that define Swarthmore.

INTERNATIONAL CLIMATE ENGAGEMENT



PROJECT TEAM

PSRF: Alfi Muhamad '23

Project Mentor: Carr Everbach
Professor of Engineering and Environmental Studies

Faculty Advisor: Carol Nackenoff
Richter Professor of Political Science

Sustainability Sage: Anne Kolker '08

Project Board Members:

Joy Charlton, *Professor of Sociology*

Elizabeth Drake, *Climate Action Manager, Office of Sustainability*

Clare Hyre, *Sustainability Program Manager, Office of Sustainability*

Chris Graves, *Professor of Chemistry, Chemistry and Environmental Studies*

Melissa Tier '14, *Project Board Member*

Kyle Richmond-Crosset '19, *Project Board Member*

Chloe Klaus '19, *Teaching Assistant*

MISSION

To explore how Swarthmore can make the Conference of the Parties (COP) program a more beneficial experience for those who attend, and how student delegates can bring what they learn back to campus to expand campus knowledge and conversation on international climate negotiations and Swarthmore's engagement with it.

BACKGROUND

I witnessed substandard environmental conditions while visiting my family in Indonesia, including deforestation around villages, the extreme weather conditions of monsoon seasons, and towns being overtaken by rising sea levels. I recognized that with its lack of resources and environmental education, civilians from this area were disproportionately suffering from the effects of climate change. Being a student at Swarthmore, I recognized that as an institution, we are privileged in that we do not have to experience climate change at the same extremes. I also came to understand that we have the ability and resources to create a positive impact on a global scale.

The United Nations Framework Climate Change Conference: Conference of the Parties (UNFCCC COP) is an international climate conference held every year, where the 197 nations of the world, along with other organizations and communities, come together to develop and reinstate climate change policy and conversations. There is currently a UNFCCC COP delegation at Swarthmore that attends COP annually, but the existing program is not as beneficial as it could be.

INTERNATIONAL CLIMATE ENGAGEMENT

OUTCOMES

Outcome #1: Redeveloping the curriculum

I proposed that Swarthmore College adopt the "360" program currently offered at Bryn Mawr College, in which students curate and enroll in 4 courses across multiple disciplines, tackling the broad, umbrella theme of climate., including the COP course. The COP course prepares students for the conference itself. The idea is to learn about climate from different disciplinary lens, and ultimately provide students with a holistic, intersectional, and diverse understanding of its issues.

Outcome #2: Cross-campus partnerships

I held college delegation meetings with the University of Pennsylvania, Cornell University, Dickinson College, Drexel University, the College of the Atlantic, and Pomona College. Through these meetings, we formed the COP college consortium, with the goal of mutual learning, resource sharing, and connecting over international and domestic climate conferences.

Outcome #3: Facilitated group discussions

I facilitated three group discussions over the course of the academic year:

- Introduction to Environmental Studies: I led a class to teach students about COP, and its relevance in the context of the global climate crisis. Students were able to recognize how COP, as an international climate conference, affects communities worldwide, including our own.
- Former Swarthmore COP delegates: I convened and collected feedback from past COP delegates from Swarthmore, in order to collect feedback on the program and develop a shared vision on improving campus engagement with international climate regimes.



Figure 1. Overview of project outcomes

- Panel discussion with Pomona College: My last facilitation will be held this upcoming summer in collaboration with Pomona College. It will include a panel with both Swarthmore and Pomona alumni who have attended COP.

FUTURE WORK

I proposed a number of recommendations that I believe will help further improve Swarthmore's COP program:

- Work with Environmental Studies and Global Studies to develop the 360 program and curriculum.
- Continue developing contact and expanding ideas with the college consortium in order to share resources (badges, teaching resources, client relationships) and event information and to connect student groups.
- Explore opportunities to collaborate with an indigenous delegation/small nation delegation regarding COP to assist with their projects in the form of engaged scholarship.
- Collaborate with the Office of Sustainability to ensure a clear, consistent, and sustained role in the program. regarding student engagement.
- Commit to purchasing carbon offsets for all travel related to COP for the Swarthmore delegation in order to mitigate the carbon cost of COP attendance.

CHESTERSEMESTER



PROJECT TEAM

PSRF: Ananya Bhattacharya '20

Project Mentor: Mark Wallace

Professor of Religion, Religion and Environmental Studies

Sustainability Sage: Ben Seigel '96

Project Board Members:

Ashley Henry, *Project Director, Youth Empowerment, Lang Center for Civic & Social Responsibility*

Jennifer Magee, *Senior Associate Director, Lang Center for Civic & Social Responsibility*

Aurora Winslade, *Sustainability Director, Office of Sustainability*

Clare Hyre, *Sustainability Program Manager, Office of Sustainability*

Ben Berger, *Executive Director of the Lang Center for Civic & Social Responsibility*

Terrence Xiao '20, *Teaching Assistant, Sustainability Engaged Scholarship Fellow*

MISSION

The mission of the ChesterSemester PSRF project is to facilitate the integration of environmental justice into College community engagement programs like the ChesterSemester course and identify opportunities for program improvement in order to best serve Swarthmore students and Chester community partners.

BACKGROUND

ChesterSemester is an engaged scholarship course where student Fellows learn about pressing social and environmental justice issues in class while working for a Chester-based community organization each week. Community partners from Chester partake in leading and participating in class discussions. Topics covered in the course include education access, food justice, environmental justice, and the school to prison pipeline, among others. The ChesterSemester PSRF project is designed to support the ChesterSemester program by creating stronger structures for the course via project documentation, supporting the ChesterSemester teaching team, and integrating further exploration of environmental justice and sustainability topics into the course.

OUTCOMES

Outcome #1: Stakeholder Discussions

With the support of the ChesterSemester teaching team and Lang Center, I facilitated a stakeholder discussion session with the College's community partners regarding the responses to the community partner impact assessment. The session brought together community members, College faculty, staff, and students in a lively discussion about the strengths, challenges, and opportunities within the College's community partnerships. I created a set of program recommendations for the ChesterSemester teaching team based on this session with ideas for how the program may improve in the future.

Outcome #2: Program Development

I was also able to strengthen the structure of the ChesterSemester program by providing documentation tools to the teaching team. In collaboration with the team, I created a program concept document for recruitment purposes. I adapted the PSRF program's project proposal template for ChesterSemester use, so that future student Fellows can articulate their project goals and set mutual expectations with their community mentors.

CHESTERSEMESTER

This helped create sustainability metrics and opportunities for reflection for ChesterSemester community partners and College stakeholders, as well as a body of research on the topic of institutional best practices for community engagement. Issue area categories like “environmental justice” and “food security” were added to the categories of the Lang Center’s community partner impact assessment. helped ChesterSemester obtain Environmental Studies program designation, with the goal of recognizing the deep ties to sustainability and environmental justice within the course, and allowing students to fulfill degree requirements would encourage more students to participate in the course.

Outcome #3: Environmental Justice

I supported efforts to integrate the Council in This Time of Reckoning into the class, which provided an opportunity for ChesterSemester to focus on environmental justice and relationship building with community partners. Students, faculty, staff, and community members were able to connect and discuss the many intersecting environmental and social issues in Swarthmore, Chester, and beyond. This session laid a foundation for continued conversations like this in future semesters with new student cohorts and community partners.

I also I partnered with an environmental justice group called Chester Residents Concerned for Quality Living (CRCQL). Through mutual connections with my project mentor and other faculty members at the College, I became aware of CRCQL’s strong environmental justice advocacy and I started to connect with other students who were interested in supporting CRCQL facilitating meetings with a newly revitalized Swarthmore College chapter of Campus Coalition Concerning Chester (C-4).

A future partnership with CRCQL, which is specifically focused on environmental justice, will allow for more conversations about environmental justice in Chester and more opportunities for students to become involved in this work. This semester has laid the foundation for community members to learn and engage with CRCQL, with students at the forefront.



Figure 1. Group discussion with Chester partners

FUTURE WORK

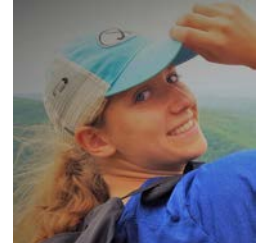
As the year progressed, my project started to focus on a guiding question: how can we turn individual faculty, staff, and student relationships with community partners into institutional ones?

Through the efforts outlined above, both programmatic and student-led, my project is beginning to foster a stronger, more sustainable relationship between Swarthmore College and the City of Chester that allows for mutually beneficial transformation for members of both communities.

To continue to build momentum, it is important that the partnerships that started this academic year continue. The C-4 student group is already working to sustain its partnerships in the long term by working to secure long-term funding through the Project Pericles grant. Future ChesterSemester PSRFs should support this initiative and continue building relationships with CRCQL, even as students cycle in and out of the College. It is essential that the institutional relationship with CRCQL continues to grow. The ChesterSemester course should actively partner with CRCQL and match students up with them for their semester-long internships.

C-4 and the Lang Center will undoubtedly continue discussions about how the College can best support environmental justice and other initiatives in Chester. Together, these groups can think of ways that funding, resources, and students from the College can support Chester, and how Chester residents can play larger roles in decision making and community engagement at the College.

CRUM WOODS: SEWER LINE RIGHT OF WAY RESTORATION



PROJECT TEAM

PSRF: Chelsea Semper '22

Project Mentor: Jeff Jabco
Director of Grounds and Horticulture, Scott Arboretum

Project Mentor: Lars Rasmussen
Garden Supervisor/Plant Health, Grounds and Horticulture

Sustainability Sage: Brad Gentry '77

Project Board Members:

Jake Grossman, *Professor of Biology*

Sue MacQueen, *Campus Engagement Coordinator, Grounds and Horticulture*

Joy Charlton, *Professor of Sociology*

Mike McGraw, *Pennsylvania Branch Manager, Applied Ecological Services, Project Board Member*

Chloe Klaus '19, *Teaching Assistant*

BACKGROUND AND OBJECTIVES

The Crum Woods is an invaluable asset and resource to Swarthmore College due to its numerous uses for education, research, recreation, and relaxation. As one of the last remaining continuous patches of forest in this metropolitan area dominated by human activity, the woods serve as a critical habitat for countless flora and fauna. It is a part of Swarthmore College's mission to promote stewardship of this land.

Recent disturbances in the Crum have complicated the fulfillment of this goal. In 2011, the reinstallation of the CDCA Sewer Line, which runs in parallel to the Crum Creek through the middle of the woods, caused extensive damage and deforestation. In the decade since this ecological destruction, minimal restoration efforts have been executed to restore this area to the way it was before the reinstallation. Hence, the core mission of my project is to improve the ecological functioning of the Crum Woods by creating a restoration plan for the Sewer Line Right of Way (ROW) that will detail how to successfully restore the ROW with native flora to recreate lost habitats.

MISSION

The mission of the 20-21 Crum Woods PSRF project was to develop a restoration plan for the the Sewer Line Right of Way (ROW) located in the Crum Woods. The restoration will be achieved through the replanting of native flora in order to reestablish critical habitats for the ecological conservation and benefit of the Crum Woods.

OUTCOMES

Outcome #1: Right-of-Way Restoration Plan

The first series of outputs were developed in relation to the ROW restoration plan.

Before creating this plan, ecological data, such as ecosystem type, hydrology, and restoration needs, was collected and used to separate the ROW into various management units.

This ecological data was compiled into the final restoration plan alongside other information including, but not limited, to a recommended timeline and rationale for restoration, seed mix, herbaceous, and woody species planting information, an invasive species management strategy, a maintenance and monitoring plan, and a list of recommended contractors to partner with for the completion of this work.

CRUM WOODS: SEWER LINE RIGHT OF WAY RESTORATION

Lastly, a budget was created for the restoration project which details the costs of supplies, land preparation, installation, and maintenance for each of the units and the project as a whole.

Outcome #2: Spring 2021 Restoration Planting

The second major output was the in-person tree planting event I helped coordinate that occurred in Spring 2021 in Management Unit 4b. This event was hosted over Spring Break, and with the assistance of 75 participants, over 700 bare root trees and live stakes of over 20 different species were planted along the streambank and wooded hillside. This planting event was the first step towards any physical restoration occurring in accordance with the plan I created.



Figure 1. Students at the Restoration Planting Event, hillside planting



Figure 2. Students at the Restoration Planting Event, stream-bank planting

RECOMMENDATIONS

My main recommendation is to continue conducting ecological research on the various management units of the ROW in order to finish creating more specific planting and invasive species management plans. Additionally, I would encourage that the Grounds Department be in conversation with contractors as soon as possible in order to begin determining who is conducting this restoration work.

To the College, I recommend that funding for this project be prioritized despite its relatively high monetary cost. The Crum is a critical asset to the College and restoring the ROW is a time sensitive matter if permanent ecological damage is to be avoided. Hence, the College should strongly consider allocating funding to at least a portion of this restoration work, as they have done for similar projects in the past that have increased the ecological health of the Crum such as the Crum Meadow and Land Swale restorations.

Finally, in regards to future community tree planting events, I encourage that these be continued and that the planning for spring events begin as early as the Fall Semester, as it can take more time than expected to organize these events, especially if much of the campus community is to be involved. Much of the feedback I received from the planting I hosted indicated that participants appreciated the opportunity to learn about and connect with the woods, and that there is a desire to increase the frequency or scale of these events. I recommend partnering with other on campus groups to create a larger scale, inclusive Crum Woods planting plus event that will help to promote community engagement and investment in the Crum and its long term ecological health.

ENERGY EFFICIENCY STRATEGY



PROJECT TEAM

PSRF: Christian Stone '23

Project Mentor: Elizabeth Drake
Climate Action Manager, Office of Sustainability

Project Mentor: Domenic Porrini
Heat Plant/Energy Supervisor, Maintenance

Faculty Advisor: Giovanna DiChiro, *Professor of Environmental Studies*

Sustainability Sage: Eric Studer '97

Project Board Members:

Greg Brown, *Vice President for Finance and Administration, Finance & Treasurer's Office/Facilities and Services*

Jim Adams, *Director of Sustainable Maintenance, Maintenance*

Janet Semler, *Director, Capital Planning and Project Management*

Roderick Wolfson, *Planner/Project Manager, Capital Planning & Project Management*

Aurora Winslade, *Sustainability Director, Office of Sustainability*

Carr Everbach, *Professor of Engineering and Environmental Studies*

Andy Feick, *Associate Vice President for Sustainable Facilities Operation and Capital Planning*

Chloe Klaus '19, *Teaching Assistant*

MISSION

This project was focused on determining the feasibility and breadth of work necessary to strategically integrate individual building energy efficiency goals with the larger Energy Plan: Roadmap to Zero Carbon.

OUTCOMES

We began by providing a platform for all key stakeholders, including faculty, facilities and capital planning managers, and administrators, to have their perspectives considered through the interviewing process led by Dallase Scott, Founder and Principal of Trust. Thoughts were organized on the interactive whiteboard platform known as “Jamboard” using the model shown in Figure 1. This allowed stakeholders to form a shared understanding of the pathway between our goals and our tasks.

BACKGROUND

In response to the circumstances of the current climate crises, Swarthmore has been developing the Energy Plan: Roadmap to Zero Carbon. Along with the College's commitment to achieving carbon neutrality, or net zero-carbon emissions, by 2035, this plan overall charts the path to decarbonizing campus energy systems by transitioning away from fossil fuel combustion to a low temperature hot water network coupled with geexchange and renewable energy. An important component to successfully implementing this plan is achieving deep energy efficiency for our buildings so that they operate both efficiently and sustainably. In order to accomplish this goal, collaborative discussions between key stakeholders were conducted to form a strategy that connects directly to the day-to-day operations of Swarthmore to ensure continued institutional progress.



ENERGY EFFICIENCY STRATEGY

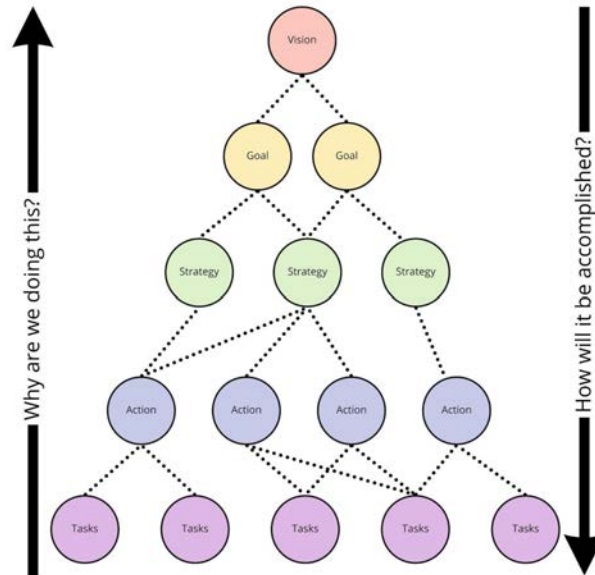


Figure 1. Diagram model of stakeholder feedback organization and strategic planning

Using this model as a reference for our overall vision, we had continued discussions on maximizing the efficiency of our system, examining redundancies, as well as continuing to hold ourselves to rigorous sustainable building standards. We also considered where we would need the help of an experienced consultant to help us formulate a set energy efficiency framework with specific phases for our deep energy retrofits.

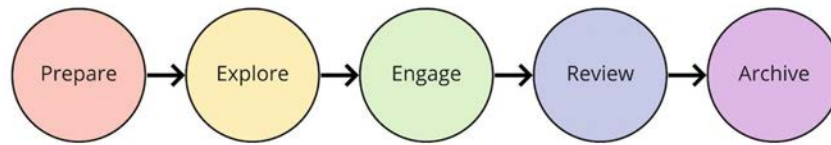


Figure 2. Diagram model of research workflow and archival process

These conversations were informed by outside research, including researching carbon neutrality work at other leading “green colleges”, interviewing faculty and staff at these colleges, and reaching out to sustainability consultants with experience working on Swarthmore’s building development process. Along the way, other potential initiatives were posed that may supplement this work in the future, such as mapping past building development projects or creating a database of our sustainable building standards.

FUTURE WORK

Buildings have an impact on people and the environment from the moment of their conception. Well-documented materials will improve our overall institutional memory and sharing this information will expand the potential for more stakeholders to be involved in the decision-making around the place they call home. With the recent approval of the Energy Plan: Roadmap to Zero Carbon by the College’s Board of Managers in February 2021, this project has ensured that the key stakeholders have the context necessary to tie individual energy efficiency goals with the larger Energy Plan.

SUSTAINABILITY IN THE CURRICULUM



PROJECT TEAM

PSRF: Colin Donahue '22

Project Mentor: Carr Everbach

Professor of Engineering and Environmental Studies, Faculty Coordinator of Environmental Studies

Sustainability Sage: Kevin Quigley '74

Project Board Members:

Aurora Winslade, *Sustainability Director, Director of Office of Sustainability*

Joy Charlton, *Professor of Sociology and Anthropology*

Betsy Bolton, *Professor of English and Environmental Studies*

James Padilioni, *Visiting Assistant Professor of Religion*

Jason Martin, *Assistant Director for Institutional Analysis, Institutional Research*

Chloe Klaus '19, *Teaching Assistant*

BACKGROUND AND MISSION

The climate crisis represents one of the greatest threats to humanity. As an institution, Swarthmore should integrate sustainability across the curriculum. After completing three focus groups to measure the environmental literacy of the student body, it became clear that many students are experiencing climate anxiety and feel unprepared to navigate the climate future. If Swarthmore truly cares about its students and wants to uphold its mission of “empower[ing] all who share in our community [Swarthmore College] to flourish and contribute to a better world,” Swarthmore needs to address student concerns and prepare them for the world they will inherit. If Swarthmore wants to contribute to a more equitable world and emerge as leaders in the field of sustainability, they should make it a priority to equip students with the skills to face the environmental and social realities of the climate crisis.

The mission of the PSRF Curriculum Project was to transform Swarthmore’s curriculum across departments to actively engage with topics in sustainability and the climate crisis so that Swarthmore can advance its mission of helping students realize their full intellectual and personal potential combined with a deep sense of ethical and social concern.



Figure 1. Results of national survey conducted by the University of Chicago on American, young adults' feelings about climate change

OUTCOMES

The primary outcome for this project comes from benchmarking and comparative research conducted on the sustainability curricula of other institutions of higher education. Two groups of institutions were chosen for the benchmarking process: peer institutions were the most similar to Swarthmore’s liberal arts structure and typically located in the northeast, non-peer institutions were larger institutions located around the country.

SUSTAINABILITY IN THE CURRICULUM

KEY FINDINGS

1.) Swarthmore College's ENVS curriculum structure is similar to peer institutions. All institutions require an intro course, a capstone or senior seminar, two to three electives, and about eleven total credits. All institutions required one to two Natural Science (NS), Social Science (SS), and Humanities (HU) courses. Most institutions required students to have a major focus.

2.) The biggest difference between Swarthmore and peer institutions is that Swarthmore does not offer structured focus tracks. Structured foci allow majors to choose a specific topic to specialize in. Swarthmore does not have clearly mapped focus tracks because environmental studies course offerings are inconsistent, and there are not enough ENVS course offerings.

3.) The biggest difference between Swarthmore and its non-peer institutions is that Swarthmore does not put an emphasis on professional development. Many non-peer institutions put a greater emphasis on professional development through required internships or careers in sustainability courses. This is uncommon at Swarthmore and other peer liberal arts schools.

4.) Swarthmore College's ENVS learning outcomes are more similar to peer institutions than non-peer institutions. Peer institutions generally put a greater emphasis on values thinking, research, ethical engagement, collaboration and communication, and understanding root causes & consequences. Non-peer institutions, in contrast, emphasized systems- and future-thinking.

5.) Neither Swarthmore nor peer/non-peer institutions utilized Sustainable Development Goals (SDGs) as a framework for their ENVS curriculum. While SDGs are not a common framework used by higher education, SDGs were created in 2015 as part of the 2030 Agenda for Sustainable Development, and there may be a lag in the adoption of SDGs.

Institution	Intro	Capstone	Number of SS	Number of HU	Number of NS	Electives / Track / Foci	Average Number of Credits
Swarthmore	1	1	2	2	2	2	10
Peer Institutions Averages	1	1	(1-2)	(1-2)	(2-3)	(2-3)	≈11

Figure 2. Sustainability in Swarthmore's majors curriculum

Institution	Intro	Number of SS	Number of HU	Number of NS	Electives	Average Number of Credits
Swarthmore	✓	2 (SS or HU)	2	1	6	6
Peer Institutions Averages	✓	≈1 (SS or HU)	≈2	≈2	≈6	≈6

Figure 3. Sustainability in Swarthmore's minors curriculum

RECOMMENDATIONS

Strategies applicable to Swarthmore are:

- A faculty affiliates program to increase the number of courses without requiring a large time commitment from professors
- Curriculum workshops to help professors identify places in their curriculum where sustainability can be added
- A collaboration between the ENVS Program and Career Services to encourage students to make connections between sustainability, and their post-graduate careers.



Figure 4. United Nations Sustainable Development Goals

INDIGENOUS INTERCONNECTIONS



PROJECT TEAM

PSRF: Daniel Balauro '23

Project Mentor: Aurora Winslade
Director of Sustainability, Office of Sustainability

Project Mentor: Carr Everbach
Professor of Engineering and Environmental Studies

Sustainability Sage: Sean Thackurdeen '12

Project Board Members:

Giovanna Di Chiro, *Professor of Environmental Studies*

Hanan Ahmed '19, *Program Manager, Intercultural Center*

Ted Fernald, *Professor and Chair of Linguistics*

Ben Berger, *Executive Director of the Lang Center for Civic & Social Responsibility*

T. Shá Duncan, *Assistant Vice President and Dean of Inclusive Excellence and Community Development, Dean's Office*

Sarah Willie-LeBreton, *Provost and Dean of the Faculty, Professor of Sociology*

Chloe Klaus '19, *Teaching Assistant*

KEY PRINCIPLES

When we talk about the climate crisis, who do we forget? Oftentimes, we forget the fact that Indigenous people are disproportionately affected by the climate crisis as a result of racial and environmental injustice. We forget the stories of indigenous resilience, adaptation informed by ancestral wisdom, and the communal love that comes within the process. Disregarding these stories means not only inadvertently reinforcing the vulnerability of these marginalized groups, but also undermining the values of Indigenous ways of knowing in our climate mitigation and adaptation policies and in the ways we can collectively begin to heal and repair relationships.

As an institution situated on Lenapehoking, the land of the Lenape people, we must begin to acknowledge these values and begin learning Indigenous Interconnections. Informed by an understanding that “systems change starts with the people work,” a saying I picked up from Matt Kamakani Lynch, the Indigenous Interconnections project aimed to not simply learn Indigenous ways of knowing, but actually worked to begin relationships with community members across the campus.

MISSION

Indigenous Interconnections aims to recenter Indigenous perspectives and ways of knowing in Swarthmore’s sustainability efforts, reconnect with the campus community, and help collectively reconceptualize our roles and responsibilities in preparing for our uncertain future.

OUTCOMES

There were three main areas of work that the 20-21 Indigenous Interconnections PSRF project focused on, which were developed into outcomes throughout the course of the year:

- Building relationships with Indigenous community members
- Welcoming a new Indigenous scholar to Swarthmore
- Indigenous Environmentalism Lecture Series

INDIGENOUS INTERCONNECTIONS

Outcome #1: Building relationships with Indigenous community members

It was through my conversations with Indigenous community members that I understood the importance of key topics such as Indigenous representation, the intentionality required in inviting Indigenous community members to the table, the importance of decolonizing frameworks often found in environmental justice conversations, and more. It is my goal and hope to continue building these relationships, and to continue listening to the perspectives of Indigenous peoples.



Figure 1. Overview of key Indigenous community members engaged by this project

#2: Welcoming a new Indigenous scholar to Swarthmore

Last summer, the Environmental Studies committee posted a new faculty tenure-track position for a scholar focused in environmental humanities, with a focus on Native American and Indigenous Studies. During the Fall Semester 2020, I assisted in the process of researching and contacting various scholars of Indigenous studies to potentially apply for the open-rank tenure track position — globally!

Second, I formed a student committee consisting of Swarthmore Indigenous students and students dedicated to environmental justice and Indigenous studies to meet with the four finalists of this position and provide feedback to the hiring committee.

In these conversations, I was not only able to listen to four different Indigenous scholars of Indigenous studies, but I was also able to receive insight into what our students wanted to see at Swarthmore.

Lastly, I am so happy to welcome Dr. Adrienne Benally, a member of the Navajo nation, who will begin teaching this fall a new course entitled: Environmental Issues in Native American Communities. Dr. Benally brings a wealth of experience and a strong connection with the Navajo Nation.

INDIGENOUS INTERCONNECTIONS

#3: Indigenous Environmentalism Lecture Series

Through various visioning exercises held with my project board team, members and alumni of the Swarthmore Student Indigenous Student Association all throughout Spring 2021, I was able to gain insight into how Indigenous Interconnections can appear here at Swarthmore. The purpose of these visioning exercises was to create a space for a meaningful and productive conversation to gain ideas of what the idea of Indigenous Interconnections meant here at Swarthmore. While the idea of Indigenous Environmentalism Lecture Series is still at the conceptual stage, there are two important details I learned: the first is the idea of acknowledging our positionality when uplifting Indigenous voices, and the second is celebrating Indigenous excellence.



Figure 2. Overview of project outcomes

FUTURE WORK

It is crucial that the work of signifying the interconnectedness of Indigeneity within this institution continues even after my project. During the Spring 2021 Semester, I will be working with the Office of Sustainability in incorporating Indigeneity into the Climate Crisis strategy. goal to help bring these words into action.

And during the Fall 2021 and Spring 2022 semester, I will be working with the Land Acknowledgement Task Force committee appointed by President Valerie Smith in formally developing a Land Acknowledgement for Swarthmore College.

These statements without action are empty commitments — and it is my

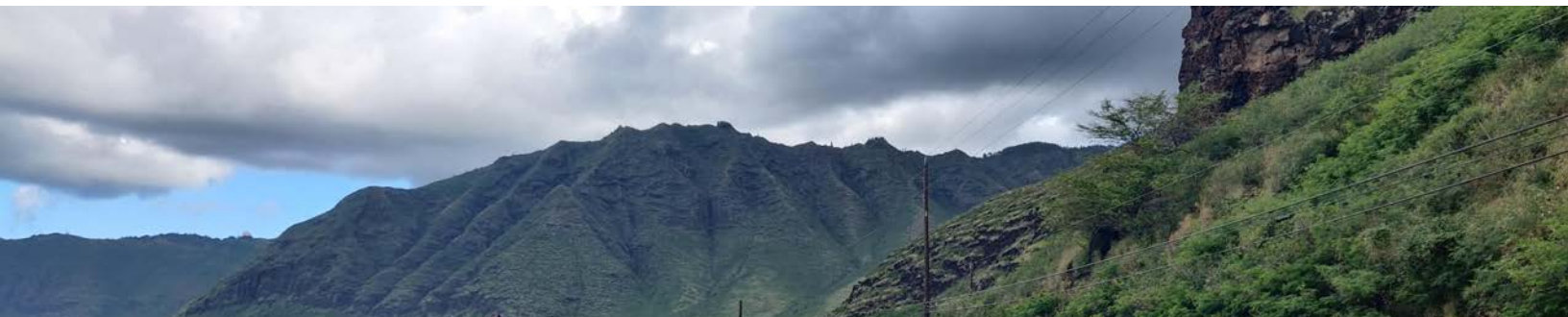
Similar to what Robin Wall Kimmerer states,

“To love a place is not enough. We must find ways to heal it.”

In order to continue this effort, I recommend the following ideas:

- Collaboration with incoming Indigenous Faculty Members
- Maintenance of Relationships with Swarthmore Indigenous Student Association
- Maintenance of Relationship-Building with Indigenous Communities Outside Swarthmore
- Indigenous Interconnections Environmentalism Lecture Series
- Advocate and Explore Ways to Reenter Indigeneity Existing Sustainability Opportunities

With these recommendations in mind, I hope to sustain the efforts to recenter Indigeneity and continue to hold ourselves to environmental justice.



CLIMATE COMMUNITY



PROJECT TEAM

PSRF: Maya Tipton '23

PSRF: Martin Tomlinson '23

Project Mentor: Aurora Winslade

Sustainability Director, Director of Office of Sustainability

Project Mentor: Elizabeth Drake

Climate Action Manager, Office of Sustainability

Sustainability Sage: Charles Bailey '67

Project Board Members:

Alex Sastre, *Associate Director for Campus Communication, Communications*

Andy Hirsch, *Vice President for Communications and Acting Chief of Staff, Communications, President's Office*

Katie Price, *Associate Director, Lang Center for Civic & Social Responsibility*

José Vergara, *Assistant Professor of Russian, Modern Languages and Literature*

Carr Everbach, *Professor of Engineering and Environmental Studies*

Betsy Bolton, *Professor of English and Environmental Studies*

Terrence Xiao '20, *Teaching Assistant, Sustainability and Engaged Scholarship Fellow*

BACKGROUND

We understand that concern about the climate crisis is a major factor in students' and the Swarthmore community's thoughts about the future, and many of us have already felt its impacts. The crisis is a defining issue of our generation, and it is inseparable from many other social justice issues. We are proud to recognize Swarthmore College as a leader in climate advocacy and action. However, given the radical societal transformation needed to respond to the climate crisis adequately, we need to support community and policy solutions with a concerted effort to shift the College's collective paradigm.



Figure 1. Dr. Ali's class visit to Climate Essentials

MISSION

The Climate Community PSRF project seeks to engage Swarthmore's community in the urgent work of building resilience in the face of the climate crisis and its intersecting crises.

OBJECTIVES

This involved building a community of engaged students, staff, faculty, alumni, and off-campus community members. This year's projects included:

- Expanding the Council on the Uncertain Human Future
- Generating recommendations for Swarthmore College's future engagement with fossil fuel policy in Pennsylvania
- Planning for a potential Year on Advancing Climate Justice
- Organizing and facilitating the Climate Essentials workshop series

CLIMATE COMMUNITY

OUTCOMES

Outcome #1: Council on the Uncertain Human Future

- 18 council circles convened
- Approximately 100 new participants reached
- Climate Essentials Council session held
- Convener group meetings held on a regular basis

Outcome #2: Fossil Fuels in Pennsylvania

- Connections established with Pennsylvania Environmental Resource Consortium (PERC)
- Group facilitation activities pushed back until next year due to time constraints of Climate Essentials
- Strategic planning began with Declan's summer research and PERC presentation and Maya's whitepaper on fracking

Outcome #3: Year on Advancing Climate Justice

- Hosted discussion with GAs and PSRFs about future directions for the Year on Climate.
- Changing from an institutional approach to prioritizing the most impactful events

Outcome #4: Climate Essentials

The main focus of the Climate Community project was Climate Essentials; a weekly workshop series offered to students, faculty, staff, alumni, and other members of the Swarthmore community. We held six virtual sessions of Climate Essentials this year, with most sessions featuring a guest speaker, followed by a question and answer session and breakout room discussions. At the end of several of our sessions, we collected feedback from participants, including several key findings below. The program was well-received and will continue into the 2021-22 academic year.

- Speakers and syllabus were completed in the early spring semester
- Website created with program information
- Climate Essentials 2021 was completed successfully.
- Climate Essentials handbook created to facilitate transition into next year

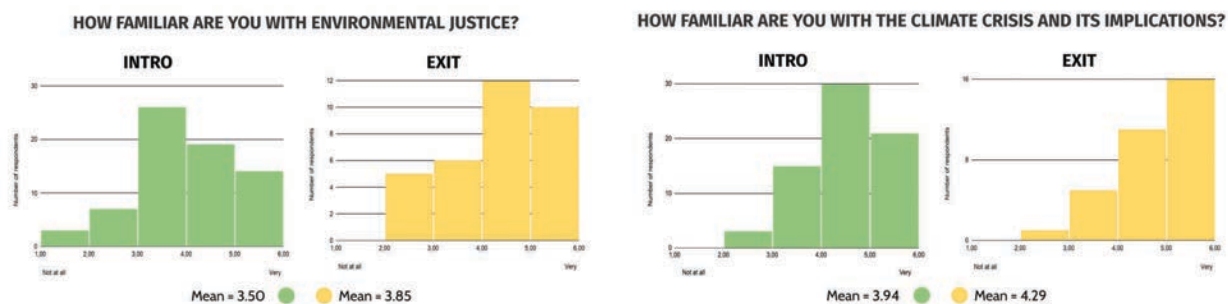


Figure 2. Comparative results of entry and exit surveys to the Climate Essentials course around environmental justice and the climate crisis

FUTURE WORK

Future directions for the Climate Community project include organizing the third year of Climate Essentials, expanding the offerings of the Council on the Uncertain Human Future, planning for a Year on Climate Justice, and increasing the campus community's engagement with fossil fuel policy in Pennsylvania.

Through the virtual year, we were able to connect to a broad group of people. The connections we made and the actions we've been able to accomplish have changed our conception of the Swarthmore College community. The virtual year allowed us to engage with people we would have never been able to reach otherwise. This complicated year has changed our perspective of who the Swarthmore college community could be!

CARBON OFFSETS



PROJECT TEAM

PSRF: Olivia Stoetzer '23
Class of 1968 PSRF Fellow

Project Mentor: Elizabeth Drake
Climate Action Manager, Office of Sustainability

Sustainability Sage: Matthew St. Clair '97

Project Board Members:

Jim Adams, *Director of Sustainable Maintenance, Maintenance*

Joel Cooper, *Chief Information Technology Officer, Information Technology Services*

Nusaybah Estes '21, *Student, Engineering, Environmental Studies*

Patricia Martin, *Director for Off Campus Study, Off-Campus Studies*

Matthew Niels '22, *Student*

Jennifer Peck, *Assistant Professor of Economics and Environmental Studies*

Domenic Porrini, *Heat Plant/Energy Supervisor, Maintenance*

Nikki Senecal, *Director of Donor Relations, Advancement*

Ernest Wright, *Budget Director, Controller's Office*

Tao Wang, *Assistant Professor of Economics*

Aurora Winslade, *Sustainability Director, Office of Sustainability*

Andrew Feick, *Associate Vice President for Sustainable Facilities Operation and Capital Planning*

Terrence Xiao '20, *Teaching Assistant, Sustainability Engaged Scholarship Fellow, Office of Sustainability*

BACKGROUND

Swarthmore's Board of Managers recently passed the Energy Plan: Roadmap to Zero Carbon, which specifically works on decarbonizing our campus from fossil fuel emissions. To reach carbon neutrality, we must look to other options for reducing Scope 3 emissions, or indirect emissions from sources like travel and commuting. It is important to recognize that we may never be able to eliminate all Scope 3 emissions through mitigation alone. The purpose of this project was to investigate the use of offsets at the institutional level and to develop an approach for offsetting Swarthmore's Scope 3 emissions with community input. Second Nature defines carbon offsets as financial credits that pay for products or services that reduce greenhouse gas emissions elsewhere. Each credit is equal to one ton of greenhouse gas emissions reductions. When an institution buys an offset credit, they are able to apply the credit to their carbon footprint to decrease their net emissions. This report summarizes my work this past year, specifically focusing on the benchmarking interviews I conducted and the two Carbon Offsets Community Conversations I hosted, and describes my recommendations and next steps.

MISSION

The purpose of this project was to investigate the use of carbon offsets at the institutional level and to offset Swarthmore's Scope 3 emissions.

Through research, a series of interviews with peer institutions and carbon offset vendors, as well as Swarthmore community conversations, this project sought to lay the foundation for an institutional policy for purchasing carbon offsets to support the College's carbon neutrality commitment.

CARBON OFFSETS

OUTCOMES

Outcome #1: Benchmarking Interviews

To better understand the use of offsets at the institutional level, I conducted benchmarking interviews with nine other colleges and universities. I focused on institutions that were already carbon neutral or had a known carbon offsets program. I wanted to learn about the decision-making process, the stakeholders involved, the funding sources, and community engagement at these schools.

Every institution took a different approach to buying offsets, but there were definitely some similarities in the structures of such decision-making. However, the overall trend I saw was that for schools that are currently carbon neutral, carbon offsets are a necessity and are actually the tool that got these institutions to carbon neutrality in the first place. The Benchmarking Interviews Report (Appendix Item #1) goes into greater detail about the interviews and the specific findings.



Figure 1. Example of collected community feedback on various offset models

FUTURE WORK

Swarthmore is fully capable of carrying out a pilot program where both the criteria and governance structure could be used and tested. However, to make sure that Swarthmore is investing in the most high-quality offsets, I recommend that we hire a consultant to help with finding the projects that will have the most real and quantifiable impacts. Swarthmore should investigate a partnership with the Offset Network, which would allow community members to create their own offsets and for those projects to be validated by peer institutions. With the passing of the Energy Plan: Roadmap to Zero Carbon and the future decrease in Scope 1 and 2 emissions, the Carbon Charge should be updated to only cover Scope 3 emissions, which would then be used to fund carbon offsets purchases. Finally, I recommend that there is constant community engagement and transparency to ensure that Swarthmore community members have the chance to engage and learn through this process.

Outcome #2: Carbon Offsets Community Conversations

I hosted two events with faculty, students, and staff to gather community feedback and preferences. The first event took place on March 15, 2021 and worked to share information about my project, carbon offsets as a concept, and to collect community preferences for criteria. Around 50 people signed up for the event and 30 people attended.

This information was used to create a draft of a proposed criteria and governance structure for purchasing offsets at Swarthmore.

The overall trend was that participants felt that if Swarthmore purchased these offsets, then the projects should have as many additional benefits and positive impacts as possible. Participants wanted the opportunity to really connect to these projects, through educational or research opportunities.

The second event took place on April 19, 2021 and focused on decision-making and governance in terms of picking offsets. Around 30 people signed up for the event and 20 attended. I presented the proposed criteria and governance structure based on past feedback. The governance structure has a large emphasis on community engagement, specifically through the process of voting on offset projects to purchase. This governance structure also works to ensure that only quality offsets are being considered and that there is constant community engagement throughout the process. I used feedback from this event to further edit the documents.

FOOD PRODUCTION



PROJECT TEAM

PSRF (Fall 2020): Zach Lytle '21

Project Mentor: Clare Hyre
Sustainability Program Manger, Office of Sustainability

Project Mentor: Sue MacQueen
Campus Engagement Coordinator, Scott Arboretum

Project Board Members:
Jennifer Pfluger, *Assistant Professor of Environmental Studies*
Timothy Smith, *Assistant Retail Operations Manager, Dining Services*
Chloe Klaus '19, *Teaching Assistant*

BACKGROUND

Previous PSRF projects have focused time and resources on the food system at Swarthmore College, such as supporting sustainable procurement and waste management, as well as improving community engagement and education around food systems generally.

Since March of 2020, Lucy Fetterman '22 has facilitated the design and planning of the new Our Food Garden. During the summer of 2020, Daniel Fernandez '23 conducted a literature review of the Office of Sustainability's work on food systems.

Food production at Swarthmore College has historically been at a small scale. The Good Food Garden was located at the corner of Cedar Lane and Elm Avenue and migrated to the courtyard between the Faulkner Tennis Courts, Women's Resource Center, Olde Club, and Kitao Gallery. It is a student-run space that has hosted hobbyist food growing. The Our Food Garden supports the laboratory component of the Our Food course taught by Prof. Jennifer Pfluger. Additionally, the Arboretum supports a community garden across the street from Mary Lyons. The Our Food Garden was moved due to the expansion of Sharples Dining Hall.

MISSION

Swarthmore College is committed to sustainability and social responsibility. Recognizing that the global food industry is a major source of pollution and injustice, Swarthmore should be committed to engaged scholarship in food growing and distribution. By developing scalable food production spaces on campus, Swarthmore College will be able to study and practice the solutions that will lead to a sustainable and equitable food system.

This PSRF project, which took place over the Fall 2020 semester, focused on food production on campus, particularly the development of the new Our Food Garden and revival of the Good Food Garden. This resource will help expand Swarthmore's capabilities to grow food, and improve the College's ability to build scholarship and engagement around food systems. While this project will have little impact on the College's carbon footprint, the curricular advancements the garden brings can be leveraged in later years into measurable decreases in the College's carbon footprint.

FOOD PRODUCTION

OUTCOMES

The scope for this project was primarily the design and planning for the new location of the Our Food Garden, and revitalization of the Good Food Garden, centered around future development of academic and extracurricular programming that will help the gardens become a vibrant community space that leads to greater engagement with food systems and sustainability. Due to COVID and time constraints, the intention was to develop resources and outlines for programming that could be implemented once the garden is planted and social distancing restrictions have loosened.

This project had 4 main outcomes, and additionally included a group facilitation with key project stakeholders that addressed multiple outcomes:

Outcome #1: Benchmarking interviews

Interviews and research were conducted into best practices surrounding community garden management and related food systems sustainability / environmental curricula. A write-up summarizing the results of this research was completed and included in the labor plan proposal.

Outcome #2: Development of a labor plan

A labor plan designed to help with managing and programming for the Our Food Garden and Good Food Garden was created and proposed to key project stakeholders.



Figure 1. Students helping manage the Good Food Garden

Feedback was received on the proposal and revisions were incorporated by the project mentors. The implementation of the labor plan is being addressed by colleagues familiar with budgeting and capacity for staff support and curricular/community programming.

Outcome #3: Finalize garden design

Another major outcome of this PSRF project was the finalization of the design of the Our Food Garden.

Design decisions such as bed placement and design, walking paths to hoses, key herbs and plants, fencing were included in the design plan.

Outcome #4: Planting schedule

Preliminary research into an appropriate planting schedule for the Our Food Garden was conducted. Particular attention was paid to planting herbs and perennial berries, due to potential for community engagement.

FUTURE WORK

The long-term vision of the project involves expanding food production beyond the Our Food Garden and Our Food Garden. Furthermore, leveraging the lessons and engagement of previous food systems work, Swarthmore College will work to transition its food system to be local and carbon neutral. Since this vision is several years out, the intention of this project is to support the development and engagement of key stakeholders around a long-term process to decarbonize the food system.



SENIOR PRESIDENTS SUSTAINABILITY RESEARCH FELLOWS

This year, the PSRF program supported 7 previous PSRFs to return as Senior PSRFs and complete an additional year of project work - this year's cohort of Senior PSRFs worked on a wide-range of sustainability projects, ranging from continuing previous work, to supporting current PSRFs, to starting new projects!



Declan Murphy '21

Declan's Senior PSRF project focused on supporting the Climate Community PSRF project, particularly the Climate Essentials short course.

Atticus Maloney '22

Atticus' Senior PSRF project focused on synthesizing and developing a framework for institutional goals and metrics around sustainability



Lucy Fetterman '22

Lucy's Senior PSRF project focused on supporting the design and construction of the latest community garden, the Council on Uncertain Human Future, and the ChesterSemester PSRF project.

Oswaldo Morales Solorzano '21

Oswaldo's Senior PSRF project focused on supporting the Office of Sustainability's work around intersectional sustainability, and the PSRF-Hawai'i summer program

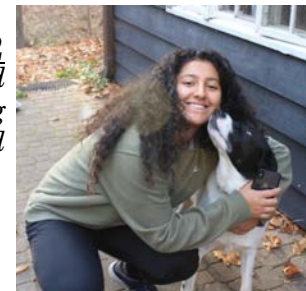


Nusaybah Estes '21

Nusaybah's Senior PSRF project focused on the annual Greenhouse Gas emission inventory and report.

Chantal Reyes '22

Chantal's Senior PSRF project focused on supporting the Zero Waste Working Group with purchasing, data, and environmental justice research.



Tyler White '22

Tyler's Senior PSRF project focused on supporting the Zero Waste Working Group with purchasing, data, and environmental justice research.
