President's Climate Commitment Fund

Amplify Grant Program

NAME OF PROJECT

Climate-Tech Hackathon & Incubator:
The Unconventional Catalysts for Climate Innovation & Conversation

PROJECT TEAM

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Professor Michael Wehar, Computer Science
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SUMMARY AND GOALS

Briefly restate the original **goals** and **scope** of the project. Please include any description of process, timelines or stakeholders. Please describe any changes to goals as the project developed.

The original goals of this project were to amplify climate action on campus, students, faculty, and staff in brainstorming and developing creative, innovative,and multidisciplinary solutions to address climate change. The project aimed to drive tangible solutions by organizing a 24-hour hackathon where participants from different backgrounds could come together to build actionable projects that would address Swarthmore campus sustainability concerns. In particular, we wanted to focus on bridging the gap between computer science and environmental studies students, to come up with tech-based climate solutions. Teams would work on actionable projects, such as sustainable energy solutions, waste reduction initiatives, or educational programs, with the goal of implementing and scaling these projects on campus and beyond. Ultimately, there was an emphasis on scaling the hackathon in driving meaningful change.

This grant was applied for in late October 2023, when the idea of bridging technology and sustainability initiatives arose. The grant award was received in November and immediately thereafter, the process involved designing posters and recruiting student organizers in December 2023, followed by outreach to potential sponsors and promotion in classes to gauge interest. In January 2024, the venue was booked, the judge panel composed of Office of Sustainability staff, professors, and alumni, as well as prize details were announced. We had also established partnerships with relevant teachers classes, such as Professor Steve Wang from Statistics, that would offer the hackathon as partial credit towards course projects. Late January, we also finalized our speaker outreach with a warm introduction from the Office of Sustainability and had 2 speakers, both with experience at the intersection of climate and technology, arrange for speaking remotely and in-person. To ensure the event brought change dedicated to solving specific problems on this campus rather than generic climate solutions, this hackathon's challenge questions were formulated by the Office of Sustainability (see Appendix 1). We also expanded our

hackathon to encompass students from more diverse backgrounds to make the event more inclusive and welcoming for students that had never completed a hackathon before.

We finalized logistics for the hackathon day as well as our guest speakers a week before the event. During this last week, we also had a “How to Use No-Code Tools” to help supplement teams with graphic design tools that could boost their products’ user interfaces. The hackathon took place on February 16-17th, with winners of promising projects announced at the end of the event on the 17th, 4:30pm. Successful teams were contacted for scaling opportunities in the week after.

PROGRESS AND CHALLENGES

The outcomes were to produce at least 3 functioning developmental projects aimed both at campus and beyond campus climate impact and ultimately scale at least 2 of the projects to campus-wide implementation. This was a widely successful event with 6 teams, each building functional projects that could be integrated into sustainability challenges the Swarthmore campus faced. Some of these projects included a CO2 emissions recorder on the Dash, a camera recognition waste sorter, and a carpooling app. Notably, these projects focused on tackling emissions reduction / carbon neutrality, transportation, waste management and reduction, as well as sustainable dining. A majority of these solutions, by feasibility, can be integrated to the Swarthmore campus. The climate talks also attracted over 15 additional students interested in climate-tech and paved the way for more conversation and understanding of how severe the climate problem is and how Swarthmore students could leverage their background to help drive solutions in climate change.

The biggest challenge we faced was breaking the stereotype of what a hackathon was. Swarthmore’s theoretical-focused curricula meant many students struggled to grasp what a hackathon was and were intimidated by the idea of having to build a fully fledged project in such a short amount of time. To counter this, we organized a “How to use No-Code Tools” workshop the week before the event as an independent but promotional event, as well as tabling sessions the week before the event. These experiences allowed us to actively dispel any concerns about skill set, team-building, and prizes. There were also several time conflicts that forced students interested in the event being unable to attend.

IMPACT

The intended impact of this hackathon was to inspire students for nontraditional methods of solving climate change and put students’ disciplines together to innovate. This has been widely successful - with 6 teams and 30+ students participating, we saw project ideas from various sustainability challenges on campus (see Figure 1 below). From this event, I have received heartfelt messages from students across all year groups and 10+ majors that have praised the event as a game changer, helping them recognize the impact they are able to create by themselves when a problem arises.

Each team had brainstormed and executed a well fleshed out idea as well, which is a huge sign of success for our event, and to measure lasting impact over time, we will continue to scale a select few projects. One of such projects is already in the process of incubation, with mentorship support from our team. This mentorship overarching is offered to all hackathon teams and builds upon our team's experience working on software and scaling tech-based solutions. It helps students find external funding support, campus stakeholder identification, and long-term strategy.

Lasting impact will also be tracked through follow-ups with teams that have won prizes with detailed steps on how to scale the product easily, spurring action. One limitation is that currently, we use team leaders / team contacts to reach each team. This means less involvement with the entire team and if there are inconsistencies with what each team member has in mind for these projects to move forward, it can mean extra time to communicate these discrepancies.

REFLECTION

This was a particularly exciting project for our team because it was the first of its kind on Swarthmore's campus. It brought students together from various disciplines to brainstorm creative solutions to our campus sustainability problems and the entire atmosphere with a small group meant students were able to discuss their ideas with each other, share building recommendations, and bond over their mutual interest to drive change on campus.

The greatest strengths of the project also came from it's multi-channeled approach: from the hackathon (technical building aspect) to the incubator (business scaling aspect) to the prizes (financial incentive) to the speaker events (networking opportunities), students were attracted to the project because of one or more of these aspects but ended up leaving with a well-rounded and bigger-picture appreciation for the climate, tech-based solutions, and a larger skillset of technical and soft skills.

I've come to realize that Swarthmore students face barriers when it comes to engaging with tech-based solutions and pursuing entrepreneurial ventures, and much of this stems from our curriculum. To truly foster opportunities in these areas, we need to prioritize making these subjects more approachable for beginners and provide robust tech support throughout the entire process of creating such products, allowing for a longer timeframe for development.

Additionally, we must address the fact that many students may not fully grasp entrepreneurial terminology, such as "incubator." During our hackathon promotion, we noticed confusion around the concept of incubating a project, which deterred some from participating. Therefore, it's crucial to offer detailed explanations and utilize various communication channels to bridge this knowledge gap effectively.

On a personal note, organizing this event was a rewarding experience that taught me valuable lessons. I learned how to communicate complex messages in a more accessible manner for the public, assign

team roles based on individual skill sets, and effectively manage various aspects of event planning, from coordinating food to organizing speaker series and recruiting judges.

LOOKING AHEAD

Please describe any future plans (or ideas) for funding, expansion, or continuation of the project.

As the incubating teams are brainstorming and planning out their next steps, we will be in close contact to ensure they have all the support they need from our team, as well as facilitating any conversations with the Office of Sustainability if needed. Yara is interested in continuing the hackathon next year, as Aarushi, Rodas, Abdelrahman, and myself graduate. I am keeping in touch with Jessica, Aarushi with Sylvia, for future talks if needed.

BUDGET

Please attach the final actual budget with the total award amount.

Adjusted Climate Hackathon - Amplify Grant - Budget Sheet

PHOTOS AND RESOURCES

Swarthmore Climate Tech Hackathon Website
Climate Hackathon - Office of Sustainability Brainstorming
Climate Hackathon Slideshow
Promotional Poster

A few photos:

CLIMATE VAULT

Mobile App
01
Web app could easily be made into a mobile app
Have an apple wallet feature for accessibility, similar to get app and student ID
SWARTHMORE
Dash
Dash

EXIT

T HAVE YOU BEEN LISTENING TO LATELY?
audio-technica