

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

CARBON FUND

ANNUAL REPORT

2022-2023

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Acknowledgments

The Carbon Fund, on behalf of the UCSC Sustainability Office would like to thank the UCSC student body for continuing to combat local climate change on campus through student fees. We would like to thank all Carbon Fund project managers for their commitment to reducing emissions and creating opportunities for students and the community.

Thank you!

CARBON FUND'S MISSION AND HISTORY

Carbon Fund grants provide funding to projects that directly reduce greenhouse gas emissions, conduct relevant research, or carry out climate-related educational programs.

The Carbon Fund supports the UCSC's ultimate goal of becoming a fossil free campus through decarbonization and electrification. It allocates about \$135,000 annually to projects that will help reach this goal.

Grants have two funding levels: Macro grants are for projects requesting more than \$5,000 and Micro grants are for projects requesting less than \$5,000. The Carbon Fund provides grant funding on a yearly cycle based on the academic schedule.

2006 

In 2006, UCSC students passed Measure 26, a student fee measure that taxed students \$3 in order to buy Renewable Energy Certificates (REC's), which helped offset the climate impact of campus electricity purchases.

2010 

In 2010, students changed the use of these funds from REC's to funding projects through the passage of Measure 44.

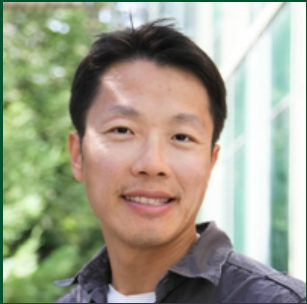
This amendment allowed funds to be used for sustainability projects that will reduce the campus's carbon footprint, ultimately creating the Carbon Fund.

2023 

In 2023, we awarded 3 micro projects and 6 macro projects!

THE CARBON FUND COMMITTEE

The Carbon Fund Committee consists of 10 voting members who review project proposals from students, staff, and faculty in accordance with the Carbon Fund criteria and mission statement. The Committee also provides assistance to proposal authors in both project development and post-funding implementation. Carbon Fund Committee meetings are open to the public. Interested students, staff, faculty, or community members may attend committee meetings but do not have speaking rights unless requested in advance. If you are interested in attending a meeting, please contact the Carbon Fund staff.



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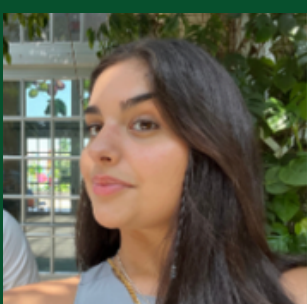
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AWARDED PROJECTS: MICRO

FALL CYCLE

Reducing Greenhouse Gas Emissions at the Arboretum & Botanic Garden - \$5,000

This project reduces greenhouse gas emissions from gas powered 2-stroke and 4-stroke engines, which includes weed whackers, chainsaws, lawnmowers and other gas equipment at the UCSC Arboretum and Botanic Garden. This will be accomplished by replacing gas powered equipment at the end of its life with electric equipment.

This equipment is known to produce smog-forming emissions and is currently estimated to quickly produce more smog-forming emissions than cars in California. One hour of lawn mower use is equivalent to driving a gas powered car 300 miles. This project will have a significant impact on reducing the Arboretum's carbon footprint.



AWARDED PROJECTS: MICRO

FALL CYCLE

FarmFuture (2022-2023) - \$1,491

This project is a continuation of a 2021 Carbon Fund approved project. The initial project tested aquaculture effluent upcycling and successfully constructed 12 wicking beds, established internship opportunities around operating the beds, and allowed two SUPERDAR (Supporting Undergraduates by Promoting Education, Extension, Research, Diversity, and Agricultural Resilience) students to conduct a pilot study that assessed lettuce growth in the beds.

The ways that this project will offset carbon impacts include; eliminating the need to have septic trucks remove the aquaculture effluent on site by reusing that water for plant production, directly replacing irrigation water that would otherwise be pumped to the farm, and by reducing the fertilizers that are normally introduced through drip irrigation.



AWARDED PROJECTS: MICRO

FALL CYCLE

No Time to Waste Spring Series - \$1,250

This project creates a community learning environment that empowers students to take action to address the climate crisis. The No Time to Waste campaign is committed to helping the university reach its Zero Waste goals. The Education for Sustainable Living Program (ESLP) is creating a space for students to learn about the campaign and community organizing efforts to help the university prioritize its sustainability goals.

In the Spring, ESLP wants to bring climate activists that can speak on issues of waste, community building, and collective action. The speaker series will be part of a course, but they intend to make the speaking engagement open to the public.



AWARDED PROJECTS: MACRO

FALL CYCLE

Mycelial Solutions: Mycoremediation for watershed resilience, wildfire response and waste diversion - \$20,247

Mycelial Solutions (MYSO) is a team of students dedicated to the research, development and targeted implementation of novel mycoremediation strategies that will assist in understanding carbon storage and carbon use efficiency while experimentally validating novel methods for waste diversion and polymer recycling. This project funds training fees, supplies, and student internships and employment.

Fungi play an important role in the regulation and storage of carbon and other nutrients as they break down organic matter into decomposing soil components like carbon dioxide (CO₂), energy, water, plant nutrients and resynthesized organic carbon compounds.

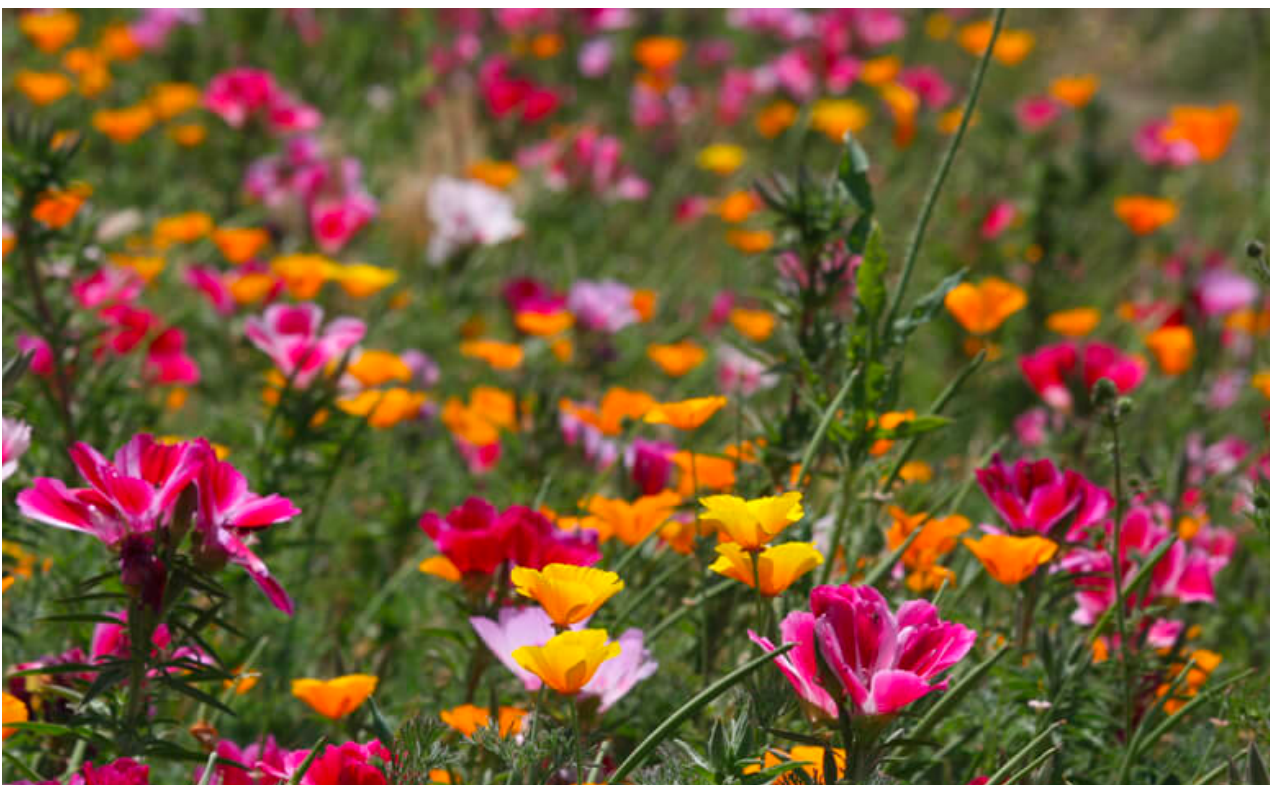


AWARDED PROJECTS: MACRO

FALL CYCLE

The Greenhouse Project - \$20,000

This project creates an intergenerational educational space that explores the relationship between art, food, and climate justice through the construction of a greenhouse. An essential part of the Greenhouse Project is the 1-acre community garden space, where students and the greater Santa Cruz community will have access to community garden plots. The programming at the Greenhouse Project will be expansive, diverse, and participatory, all while relating to the core themes of art, food, and climate justice. All programming will be free and open to the public to ensure accessibility and will take place throughout 2022 and 2023.



AWARDED PROJECTS: MACRO

WINTER CYCLE

UCSC Natural Reserves (NRS) Landscaping Equipment Electrification Project - \$18,000

The funds for this project will be used to replace all existing gas-powered maintenance equipment at the UCSC Natural Reserves. In addition, this project will purchase battery power packs to meet current staffing needs with zero-emission electric equipment, including blowers, chainsaws, trimmers, cutters, telescoping pole saws, a hedger and an electric mower.



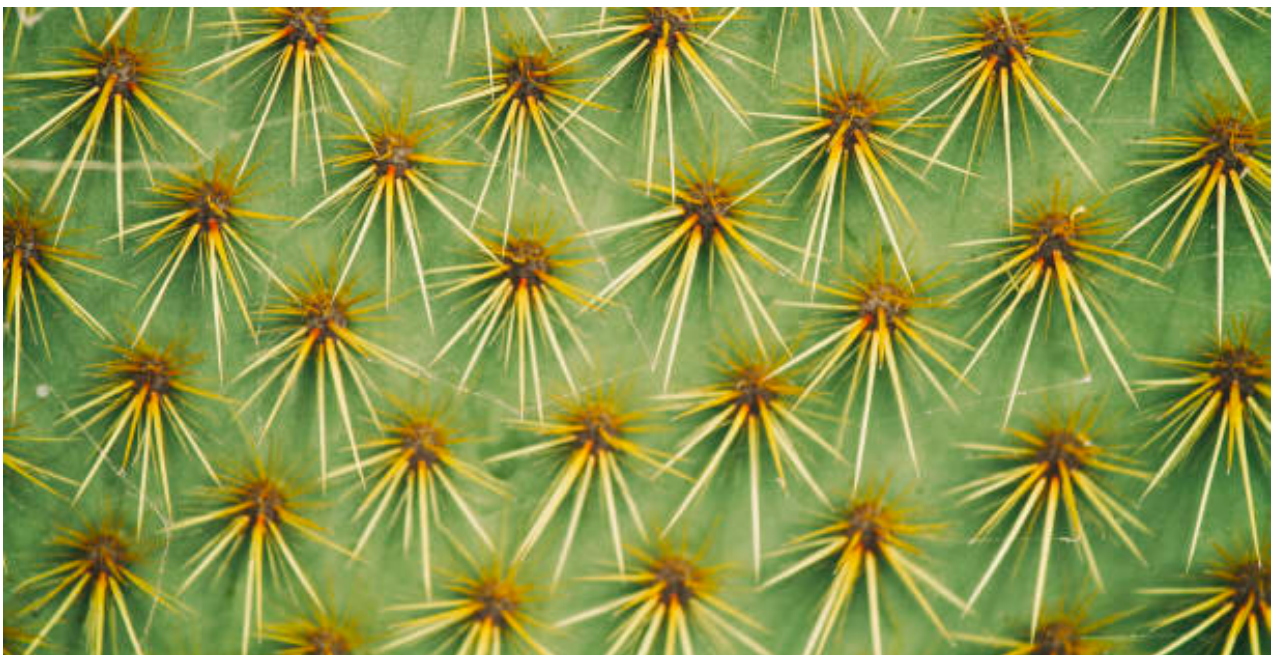
AWARDED PROJECTS: MACRO

WINTER CYCLE

Living Solar Panels: Cactus-Electricity Demonstration Plot - \$17,101

The project aims to create the first living-cactus electricity farm. The plot will demonstrate the ability of living solar panels to provide carbon-negative electricity. The plot will serve as a living testbed to explore how much electricity can be harvested from 20 living cactus stems, as well as providing undergraduate learning opportunities to gain hands-on experience and conduct independent research projects.

Harvested power will be stored in batteries that can be used by others at UCSC, such as for powering farm tools, lights, or even phones. Ultimately, the project serves as a stepping stone towards reducing UCSC's greenhouse gas emissions and carbon footprint by increasing UCSC's reliance on truly green electricity.



AWARDED PROJECTS: MACRO

WINTER CYCLE

Steam Boiler Removal and Kettle Replacement at Crown/Merrill Dining Hall - \$27,572

The purpose of this project is to reduce greenhouse gas emissions and save water. The Crown/Merrill Dining Hall currently uses a steam kettle which is powered by a steam boiler. The kettle is the only piece of equipment that is powered by the boiler, which is a waste of water and energy. The boiler, by design, runs 24 hours a day, 365 days per year, regardless of when the kettle is in use.

By decommissioning the steam boiler and replacing the steam kettle with a new electric kettle, there is an opportunity to save a large amount of water and energy. The electric kettle will not require water or natural gas to run and will only draw electricity when in use.



AWARDED PROJECTS: MACRO

WINTER CYCLE

Fog Water Collection for Irrigation at the UCSC Farm and Life Lab - \$10,840

This is a continuation of a project funded by the Carbon Fund last year that created a fog water collection system. Now that the previous project has demonstrated that they can construct an LFC relatively easily and cheaply, the overall purpose of this phase is to grow a demonstration garden and quantify what portion of the total water inputs can be supplied by fog water.

The other main purpose of the project is to design fog collectors for home and school use that are aesthetically pleasing yet functional as sources of water for growing vegetables and perennials.



EXECUTIVE SUMMARY

The Carbon Fund strives to implement our mission statement and allocate funds through processes which including research on calculated life span of projects, carbon mitigation calculations, and cost per ton of carbon saved.

In addition, we have other criteria to ensure a diversity of quality projects including social justice, project feasibility, project implementation plan, metrics and reporting, student involvement, direct savings aspect, quality budget, etc.

Below is a breakdown of the Carbon Fund budget, based on the funding from the 2022-2023 grant cycle.

Carbon Fund Budget Expenditures 2022-23

