

NAU GREEN FUND COMMITTEE



ANNUAL REPORT

2022 - 2023

Vision Statement

Implementing student-led projects and developing campus-wide partnerships to drive visionary, impactful, and sustainable initiatives and serve as a leading example in higher education.

Mission Statement

The NAU Green Fund promotes student participation in and provides funding for projects that reduce NAU's impact on the environment and create a culture of sustainability on campus.



Table of Contents

Introduction.....04

Projects.....05

Women of Color Honorarium.....06

Ecoinformatics Seminar Honorarium.....07

Indoor Recycling Improvement Project.....08

Passive Radiative Cooling.....09

Towards an Electric-Powered Campus: Proposal to Electrify
Small-Engine Landscaping Equipment on Northern Arizona
University’s Flagstaff Mountain Campus.....10

Turner Hybrid Flatbed Printer11

Earth Jam 2023.....12

Student Research Grants.....13

Improving Agricultural Sustainability through Ecosystem
Services at Local and Global Scales.....14

Quantifying Financed Emissions at NAU: A Novel, Data-based
Approach to the Fossil Fuel Divestment Movement.....15

Eco-Emotion Resilience as a Key Factor to Climate Change
Action.....16

Evaluating the benefits of the 2022 True Blue Summer flex
policy: Financial, human, and environmental sustainability of
the “New NAU workplace”17

Categorizing NAU’s Scope 3 Category 1 & 2 Emissions.....18

Events.....19

Sustainability Career Panel with CSS and Career
Development.....20

Arizona Sustainability Summit.....21

Seed Bombs and Sweets with SSLUG and Green Jacks
.....22

Better World Film Series with Green
Jacks.....23

Introduction

In March 2010, the Northern Arizona University (NAU) student body established the Green Fund. This fund began as a \$5.00 per student, per semester Green Fee, and in the spring of 2019, this fee was raised to \$15.00. The goal of the Green Fund is to promote student involved and funded sustainability projects on campus.

These projects include reducing NAU's environmental impacts and improving the culture of sustainability on campus. The Green Fund is a student-led committee that helps to aid students with the proposal process as well as vote on submitted proposals, which can come from students, faculty, and staff. The Green Fund voting committee is made up of seven students, a graduate student representative, and 3 faculty/staff advisors, who vote to approve projects. All approved projects must align with one of the seven Climate Action Plan categories, which include: energy, water use, transportation, waste minimization, landscape management, resilience, and environmental justice.

Since the committee's creation, we have approved over 110 projects with over \$3,000,000 being spent on student and campus initiatives. The results from these projects include allowing students to use their fee money to make NAU's campus a better place for themselves and other students, increase awareness of sustainability on campus, and decrease NAU's environmental footprint. This report contains all projects approved during the 2022 Fiscal Year. This includes the Fall 2022 and Spring 2023 semesters.

Projects

An integral part of the Green Fund's purpose on NAU campus is to fund sustainability related projects. This year, we saw an influx of creative new ideas that have the potential to deeply impact NAU and the surrounding community. In the following pages, please observe the projects that were approved for a funding by the committee, a brief description of the project and associated project costs.

See a full list of past projects on the Green Fund [website](#).

Women of Color Honorarium

\$3,175.00

The WOC Honorarium Fund will create an NAU interdepartmental WOC seminar speaker fund. This fund was used to bring two professionals who self-identify as WOC and who are experts in the field of sustainability, environmental science, ecology, conservation, or climate science.

The speakers, Lauren Pharr and Paloma Medina, will benefit the NAU community by sharing their expertise, exchanging perspectives, and networking as a leader in their field. This fund enhanced student knowledge about sustainability and environmental fields, while also widening student perspectives about WOC leaders. Nearly half of NAU students identify as racial or ethnic minorities. By funding this seminar, the student body benefited by witnessing representation in the scientific community and including diverse perspectives. This seminar will also make statements about diversity, equity, and inclusion issues while contributing to NAU's overall values. The WOC Honorarium Fund aligns with the Environmental Justice goals of the CAP by promoting the voices of people historically excluded from environmental science research.

Ecoinformatics

Honorarium Fund

\$3,250.00

The Ecoinformatics Honorarium Fund's purpose was to bring 2 qualified speakers to NAU's campus in order to speak on behalf of their experiences as a professionals within the field of informatics while also enhancing student knowledge.

With the fund, the School of Informatics, Computing and Cyber Systems invited Alana Ayasse, a research scientists for Carbon Mapper, to speak to NAU undergraduate and graduate students about her experiences within the field. Students were able to learn about improving remote sensing techniques to map methane and carbon dioxide plumes, understanding the role of satellites in a global carbon monitoring system, and using remote sensing data to further understand trends in carbon emissions.

The second installation of the speaker series is scheduled for fall of 2023.

Indoor Recycling Improvement \$175,000

The Green Fund partnered with the NAU Office of the President to update the indoor recycling system and target the Flagstaff Mountain Campus' waste production. There has been a lack of structure in NAU's recycling bin system, especially indoors. Without a consistent bin system, students, faculty, and staff cannot be properly educated on how to recycle, let alone encouraged to, because bins are placed randomly and have no consistent color scheme. Many studies have shown that increasing the convenience of recycling can significantly improve recycling rates. Establishing a consistent, convenient, and simple recycling system across campus will not only divert a significant amount of waste from the landfill but also display NAU's commitment to sustainability.

Since deployment of the new containers began during Spring 2023, the Office of Sustainability has worked hard to integrate the program and support employees in the transition. There are also many students and classes interested in conducting relevant research, and at least two groups presented at the 2023 Undergraduate Research Symposium. In addition, there is a comprehensive plan to monitor the effectiveness of the new recycling bin system through the use of Sensoneo waste sensors (paid for by the Green Fund), recycling audits, and surveys.

Passive Radiative Cooling

\$4,752.41

The Committee funded a Mechanical Engineering Capstone group to design and build a radiative heat exchanger rig to test the effectiveness of a new paint material that can cool surfaces below ambient temperatures. The research objectives include exploring new cooling applications to lower cooling energy loads, like cooling the return lines of chilled water hydronic loops, and demonstrating heat transfer principles and their relation to sustainable building design, specifically at NAU Mountain Campus. The group's innovative research will directly support the Research and Development Company that designed the paint and influence the market potential of the product.

Towards an Electric-Powered Campus: Proposal to Electrify Small-Engine Landscaping Equipment on Northern Arizona University's Flagstaff Mountain Campus

\$38,178.50

Sustainability Leadership Award Winner

Before this project, NAU's groundskeeping equipment relied on internal combustion engines, which increased air pollution, greenhouse gas emissions, and noise pollution. After extensive research on the adverse effects of existing fossil fuel-powered equipment, an assessment of NAU community opinions, feedback from NAU Facilities crew members, a greenhouse gas inventory of current equipment, and research on available electric alternatives, the Climate Science and Solutions graduate ENV 675 class proposed a switch to electric equipment. The replacement of two-stroke and four-stroke groundskeeping equipment with electric groundskeeping equipment will improve air quality and community health, reduce particulate and noise pollution, increase community morale, improve the work environment, and reduce greenhouse gas emissions on NAU's campus and beyond. This proposal will completely replace the push mowers and trimmers, and begin replacing the hedge-clippers, chainsaws, pole-pruners, and leaf blowers. The funding also covers batteries, chargers, and in-line power meters so the group can collect appropriate data to justify another phase to complete the transition.

Turner Hybrid Flatbed Printer

\$65,000

The Green Fund partnered with University Printing Services to fund a new direct to substrate flatbed printing device that will enhance their current printing and finishing processes in a more economic and environmental way. Beyond increased energy and material efficiency, their new method will eliminate more than 1800 square feet per year of vinyl waste, create a 'Go Green' line of signs made from paper-based materials, divert 5300 sq/ft of plastic and PVC per year, and vastly reduce outsourced orders.

Earth Jam 2023

\$9,769.08

Earth Jam is an annual Earth Day event sponsored by the Green Fund. This year the Committee partnered with SUN Entertainment to expand the event to include an after-event concert. All NAU students, staff, faculty, and the general Flagstaff public were welcome to attend this Earth Day celebration. The purpose of this event is to come together as a university and city community and recognize the progress made by various sustainability organizations. Earth Jam took place on April 22, 2023 and included tabling from clubs and organizations, free vegan and vegetarian food for students, bike-powered toast and smoothies, and other sustainable activities. This event promotes a culture of sustainability at NAU while also bringing awareness to environmental issues, such as food production, the impact of animal-based products, and waste minimization. The food, provided by the WTF Truck, was served in compostable bowls, and volunteers ensured that the plates were properly being composted at the event. Food left over after the event was donated to Sunshine Rescue Mission by Food Recovery Network members.

The Green Fund paid for First Class Sanitation Portable Toilets, SUN Entertainment Peak Audio Stage Productions, WTF Food Truck Catering, the traditional canvas and paint, and terracotta pots and paint.

Student Research Grants

To further support the Green Fund's mission statement and improve sustainability on campus, the Green Fund also accepts proposals for research grants on a semesterly basis. The application process was updated this semester to accept proposal submissions year round, but with rolling deadlines and a soft close towards the end of the semester, giving the Committee sufficient time to review and vote on the proposals. These grants are for research that is aimed at helping to understand and reduce NAU's environmental impact and are open to both undergraduate and graduate level students. The ultimate goal of this funding is to spark ideas for future Green Fund project proposals.

Improving Agricultural Sustainability through Ecosystem Services at Local and Global Scales by Alejandro Grajal-Puche

\$2,500

Rice cultivation comprises a significant percentage of global agricultural lands and methane emissions. Grajal-Puche's research investigates sustainable methods of crop production by asking if rice plants inoculated with soil fungi have the potential to affect greenhouse gas emissions and if rice plants inoculated with soil fungi produce higher overall yields. This research can elucidate additional ecosystem services that sustainably increase crop yields, reducing the negative environmental effects caused by human activities.

Quantifying Financed Emissions at NAU: A Novel, Data-based Approach to the Fossil Fuel Divestment Movement by Brandon McNamara \$3,000

McNamara's research approaches fossil fuel divestment from a quantitative, ranking perspective. His primary objectives include analyzing NAU's endowment, quantifying the impacts of divestment using greenhouse gas metrics, and engaging with the NAU Foundation Board regarding opportunities to align and integrate their investments with NAU's Climate Action Plan.

Eco-Emotion Resilience as a Key Factor to Climate Change Action by Lindsey Falkenberg \$3,727.5

The goal of Falkenberg's research is to explore the root challenges, or eco-emotions, that keep NAU students, faculty, and staff from participating in sustainability projects and culture. Eco-emotions include feelings like climate grief, anxiety, and guilt and can prohibit people from engaging in transformative change and sustainable action. In order to improve the way that climate crisis-related information is communicated and discussed at NAU, Falkenberg is evaluating underlying systems, student well-being, and insufficiencies in NAU's current support resources.

Evaluating the benefits of the 2022 True Blue Summer flex policy: Financial, human, and environmental sustainability of the “New NAU workplace” by Tongayi Mwedzi

\$3,100

This study evaluates the influence of the NAU Summer flex policy program on energy and greenhouse gas emissions savings. The results from Mwedzi’s research will inform future Human Resource decisions.

Categorizing NAU's Scope 3 Category 1 & 2 Emissions by Ross Priehs \$5,400

The objective of this study is to quantify the cradle-to-gate greenhouse gas emissions associated with NAU's purchases of goods, services, and capital equipment and develop an inventory management plan focused on Scope 3 Category 1 and 2 emissions to ensure a robust, transparent, and consistent methodology for quantifying these emissions moving forward.

Events

The Green Fund is an integral part of Green NAU, and continues to partner with other on campus clubs and organizations to create fun and sustainable events, along with hosting their own. This year, Green Fund helped with many different and educational events, all open to the Students of Northern Arizona University.

In the next few pages, we have the different events the Green Fund was apart of in the past academic year.

Sustainability Career Panel with CSS & Career Development

Climate Science and Solutions students came together with the Green Fund and Northern Arizona University Career Development to put on a 3 day sustainability career panel. There were 16 sustainability and environmental professionals that were alumni/professionals local to Flagstaff. They hosted three panels with a networking session as well. Many students from all around campus joined and learned so much from the panelists about working in sustainability.

Seed Bombs and Sweets with SSLUG and Green Jacks

The Green Fund, Green Jacks, and SSLUG (Students for Sustainable Living and Urban Gardening), all collaborated and put on this educational event in February. Students were invited to the Union to make seed bombs and learn about the history of resistive gardening. The bombs were all filled with native and wild seeds to Flagstaff.

Better World Film Series with Green Jacks

The Green Fund, Green Jacks, SSLUG, Flagstaff Sustainability Office, and Flagstaff Water Services all came together to put on three nights of different sustainability films along with speakers after. The films included were *Truth Tellers*, *Last Call at the Oasis*, and *The Monarch*. The speakers included were Ted Martinez, Flagstaff Water, SSLUG (Students for Sustainable Living and Urban Gardening), and The Flagstaff Sustainability Office. Many students attended and it was a very successful three nights.