

CSF - Mini Grant Final Application

Pollinator Equity Project

Grant Type

Mini Grant

Application Type

Final Application

Primary Project Manager

The Primary Project Manager is responsible for completing this application, answering questions posed by the Campus Sustainability Fund Committee, and completing all required reporting on project progress and outcomes. If the Primary Project Manager is a student who graduates in May 2023, the Secondary Project Manager must be a staff or faculty member OR a student who graduates after May 2023.

Primary Project Manager Name:

Lauren Jankowski

Primary Project Manager Status:

Student

Primary Project Manager Email:

laurenjankowski@arizona.edu

Primary Project Manager Department

Major: Conservation Biology in SNRE; primary and secondary manager are co-leads so there is equally split responsibility.

Secondary Project Manager

The Secondary Project Manager is the back-up for the Primary Project Manager if they are unable to complete any of the requirements of the Campus Sustainability Fund, particularly completing required reporting on project outcomes. Alternatively, the Secondary Project Manager could be co-facilitating the project with the Primary Project Manager should the proposal require or desire to have two Project Managers.

Secondary Project Manager Name:

Katie Perotti

Secondary Project Manager Email:

kperotti@arizona.edu

Secondary Project Manager Status:

Student

Secondary Project Manager Department

Major: Biology

Minor: Biochemistry

Project Advisor Name:

Projects where the Primary and Secondary Project Manager are both students require the involvement of a staff or faculty member within project's Fiscal Officer's department. The Project Advisor contact must be a staff or faculty member within your department who is responsible for monitoring the project's budget, communicating with the Fiscal Officer, and reporting if both project managers are unavailable. Please ensure you have received consent from this individual to be the Project Advisor for your proposal and have informed them of your proposal's intent and budgetary needs. If this does not apply to you, type N/A for these responses.

Elise Gornish

Project Advisor Email:

egornish@arizona.edu

Project Advisor Department:

School of Natural Resources

Fiscal Officer:

The Fiscal Officer is a staff member within your department who is responsible for financial transactions and who will support reporting by pulling requested expenses against awarded funding and ensuring that funding is spent within awarded categories. Please coordinate with your department to properly identify an individual who is a designated Fiscal Officer. If awarded, this will be the individual who will help you access your project's funding. Please ensure you have received consent from this individual to be the Fiscal Officer for your proposal and have informed them of your proposal's intent and budgetary needs.

Bethina Krogsgaard

Fiscal Officer Email:

bethinak@arizona.edu

Fiscal Officer Department Name:

School of Natural Resources

Request Funding Amount:

\$3,900 (FY23)

Official Project Name:

Please be specific but concise as this name will appear on reports and our website. Creativity is encouraged!

Pollinator Equity Project

Primary Project Category:

Social Sustainability (including Social/Environmental Justice)

Secondary Project Category:

Natural Environment

Background and Context:

Please provide any relevant background about your organization/team including your mission and/or expertise. Please also lay out the rationale for the proposed project, focusing on the issue that your project would address. This section is meant to give us more information about you and the context for the project, while the questions below provide space to go into detail about your proposal's specifics.

Response:

Pollinators are threatened by climate change and loss of habitat. Tucson is fortunate in that many of its residents already take pride in our region's extraordinary diversity of pollinating fauna. Luckily, many people create local plant habitats in their own yards, increasing widespread knowledge and increasing the amount of local plants that can be found in Tucson's nurseries. However, for many Tucsonans the price of nursery plants is a barrier to acquiring pollinator plants. Our project, the Pollinator Equity Project, would raise native pollinator plants for donation to sectors of the community that cannot afford to purchase them. This could include school and library gardens, and underfunded community planting projects, especially those scoring low on Tucson's Tree Equity index. The University of Arizona Ecological Restoration Club (UAERC) is seeking funding for the construction of facilities for the propagation of native pollinator plants at the Rincon Heights Community Garden (RHCG). The UAERC provides students the opportunity to learn about careers in restoration, network with those working in the field of restoration, and participate in research and volunteer activities related to restoration. We organize at least one pollinator garden installation each semester while maintaining existing gardens. At meetings, we do hands-on activities like making seed balls or constructing a seed bike that makes larger amounts of seed balls for future distribution. Meetings also have guest speakers who work in the field of restoration to expose members to the possibilities of a career in restoration. We are involved in community activities like pulling invasive species pulls and trash pick-ups. The RHCG is located on a university-owned lot at 1047 E. 8th Street. It was built and administered by the Rincon Heights Neighborhood Association. Since its founding in 2012, the garden has worked with student groups and community groups to fulfill the garden's mission, which is centered on community well-being, sustainability, and education. In 2014 two of our garden members received a Green Funds grant to design and build an Herb and Pollinator Garden in the southwest corner of our site. Both graduated before work was properly started, so Heather Gillette, a student in Ecology and Evolutionary Biology took over as project manager along with Gina Trautner, a landscape architecture student, who designed the garden. The grant paid for construction materials, construction by Facilities Management, and some plants. Remaining labor was provided by garden members, students from an arid lands class, and outside groups like Salpointe High School and the Rain Jar Group. Most plants were privately donated. A second grant the following year enabled the purchase of a garden shed, picnic benches, and garden tools as well as a series of educational events at the garden at which grade school children learned about plant and insect relationships through hands-on activities.

Project Description:

Please provide a thorough description and explanation of your project. Describe the objective(s) and what will be accomplished. Describe how each objective will be achieved (listed as steps or goals, with anticipated timeframes for each). Explain how the project will be implemented (who does what?). Finally, please identify the core goals of your project and how you will measure the degree of its success includes the metrics you will track to measure the success or impact of your project (e.g., number of kWh saved, gallons of water saved, number of student training hours, etc.). Responses are limited to 3,000 characters including spaces.

Response:

Phase One of our project includes these components:

- a dedicated outdoor propagation space for pollinator plants at RHCG,
- the construction of an irrigation system linked to two additional irrigation valve boxes, and
- educational materials.

Constructing a propagation facility entails grading, organic pre-emergent, irrigation, and potting equipment and supplies. RHCG's existing 90-square-foot pollinator garden, a 2014-2016 UA student-led and Green Fund-supported project, can provide hundreds of volunteer plants, cuttings, and wildflower seeds for potting. We will raise mostly native shrubs and perennial wildflowers but may grow some pollinator trees, like Tenaza (*Havardia pallens*), that are not commonly sold by local nurseries. An irrigation system along the property's west fence will enable us to increase the number and diversity of native drought-tolerant specimens that will provide cuttings for propagation. In return for pollinator plants that we will donate to them. Trees for Tucson will train our volunteers to install irrigation. The Engineers Without Borders UA Chapter (EWB) has also offered to assist in constructing the irrigation system. We are intending on having a meeting with EWB and Trees for Tucson to plan out the irrigation system. The irrigation specialist for Trees for Tucson said they could host training for volunteers from RHCG, EWB, and UAERC on how to do the installation. Our educational outreach component includes pollinator nesting boxes, printed, and electronic materials. A large free-standing structure, a Pollinator Condominium built back-to-back with a Little Free Plant and Seed Library, would be located outside the garden fence. Its south face, protected by a generous overhang, would feature nesting boxes for a variety of pollinators, and its north face, located next to the sidewalk, will have cubicles and drawers for free plants and seeds. Grant funding would also provide signage and interpretative materials. Donations from Rincon Heights Neighborhood Association (RHNA) will include the propagation space, native plants and seeds, gardening tools, and volunteer labor. On top of this, the Engineers Without Borders UA Chapter has offered to assist in constructing the irrigation system. The UAERC is only requesting funding for material, not wages. The seed library might be built as a UAERC activity, in which case they would not need grant funding.

- In Phase One, (summer/ fall 2023) in addition to starting up our propagation facility we will approach other organizations to help us with the educational component of the project. Arizona Master Naturalists has recently expressed an interest in working with us
- In Phase Two, (Spring 2024) the UAERC will use some plants in its own pollinator garden installations; most of the remainder we expect to donate to Trees for Tucson with the understanding that they will be used solely for underfunded projects, e.g., at local schools, public parks, or street tree plantings.

Project Summary Snapshot:

Please provide a short summary of your project. This summary will be used on our new website and other Office of Sustainability materials, if approved. Think of this as a hyper-concentrated summary to capture your project's scope and impact..

Response:

The goal of the Pollinator Equity Project is to foster the population and diversity of regional pollinators by raising native pollinator plants for donation to public planting projects. We prioritize those in underserved communities or those scoring low on Tucson's Tree Equity index, since it is an indicator of urban areas with a lack of vegetation. This will help UAERC and RHCG fulfill the ecological, educational, and social justice aspects of their respective missions. UAERC will take the lead in the design and construction of irrigation projects while the garden will dedicate space and propagation assistance. Trees for Tucson will use our native understory plants to complement their tree plantings in communities that need them most.

Project Feasibility and Logistics:

Please provide a description of the work that has been completed so far to make this project feasible. Have all relevant partners been contacted/coordinated with? Have you received consent or authorization from relevant departments or offices to complete your project (Housing and Residence Life, Facilities Management, Parking and Transportation, etc.)? Please identify them in your response. For example, have you received reasonable quotes for supplies? What research has been completed to lay the foundation for this project?

Response:

The UAERC and RHCG first met in April 2022. Members from both groups have met on-site and at the UA several times to discuss the project. Last spring, \$240 was raised by RHCG from the sale of tomato plants and donated to the project, but \$145 of that was spent on rent for a garden plot for in-ground storage of volunteer plants culled from the RHCG pollinator garden. This semester, another plant sales raised \$347 for the Pollinator Equity Project. On September 24, 2022, UAERC,

RHCG, and RHNA co-hosted a Plant and Seed Exchange to which all UA area neighborhoods were invited. RHNA donated \$150 for the purchase of wildflower seeds and refreshments. The event was well attended, a lot of plants found new homes, and attendees learned about our project. We received one cash donation of \$20. On October 15th, 2022, RHCG tabled at Tucson Organic Gardeners Plant Fair and raised \$191 for the project from the sale of wildflower seed and some pollinator plants; the garden group also gave out a local pollinator resource handout and information about the project. In addition to this, we have been in contact with Trevor Ledbetter, the UA Directory of Sustainability, as well as Julie Katsel and the UA Office of Government and Community Affairs. We are planning on getting input from the Hydrocats regarding our irrigation system, as well as communicating with the UA Chapter of Engineers Without Borders who are currently working on a rain jar project for the same garden. These are both clubs on campus so it will be very feasible to get in communication with them! In addition to all of these contacts, we have several outside groups who have expressed interest. This includes Sustainable Tucson's Ecological Restoration Committee, Tucson Organic Gardeners, Campus Community Relations Committee, various UA neighborhoods, Peace Garden (a pollinator garden planned for St. Mark's Presbyterian Church), Friends of Himmel Park (planning an expanded pollinator garden north of Himmel Park Library with cooperation and support from library staff), AZ Master Naturalists, Borderlands Plants nursery, and City of Tucson, Green Stormwater Infrastructure. We received a quote from Conserva regarding the installation of an underground irrigation system for 30 plants along the fence and an additional 150 individually potted plants. The quote came out to around \$4,200. We found this to be too expensive, which is why we decided to take a more student-led approach by receiving help from clubs on campus. This boosts both the financial and educational objectives of this project.

Environmental Sustainability Outcomes:

Please provide a description of how you expect your project to advance environmental sustainability on campus. A definition of environmental sustainability is provided on our Resources webpage.

Response:

This project would foster the biodiversity of native pollinating fauna by creating new opportunities for local involvement and education. In order to achieve this, we plan to research and showcase native pollinator plants that are currently underused by the commercial landscape trade. We also plan to observe and record plant and pollinator interactions and submit the data to the Phenology Network. By doing this, we hope to aid in plant decision-making, scientific discovery, and to provide a broader understanding of local pollinators native to our region. Alongside those, we also plan to learn different propagation methods for a variety of native plants and share our knowledge with the public so that they can also propagate similar plants. We then plan to work in person with outside groups to propagate plants either at our site or at theirs. By doing this we want to spread awareness of local pollinators while working with other groups locally. We then plan to encourage schools, libraries, and other groups that receive our plants to collect their seeds in the future and save culled volunteer native plants. They could distribute these themselves (Pima County Seed Library through Interlibrary loan, schools by sending plants home with students) or donate these to us for further propagation. Finally, we plan to reduce the use of plastic by retrieving and reusing nursery pots from past projects and recycling other plastic for use in compressed plastic construction blocks. To conserve water, we will be installing an in-ground irrigation system.

Social Sustainability Outcomes:

Please provide a description of how you expect your project to advance environmental sustainability on campus. A definition of social sustainability is provided on our Resources webpage.

Response:

The primary goal of the Pollinator Equity Project is to provide traditionally underserved communities with native pollinator plants that would otherwise be unaffordable. Our aim is to foster a sense of community pride via neighborhood beautification that will help connect residents with the environment around them. Observation of nature in all its diversity, intricacy, and beauty is healing and every individual deserves free access to the wonders of nature. We hope to promote an appreciation for the natural world that will inspire people to contribute to the environmentalist movement. This can broaden one's perspective and lead to a higher quality of life. Observing the interrelationships between pollinator fauna and plants helps us to recognize that we are all part of nature. Reflecting on this can deepen our understanding of our connections with everything around us, and foster compassion for nature and each other. Children are often drawn to investigate the small world of insects. Inspiring curiosity and aesthetic appreciation of nature not only enriches a child's life

but can also encourage a thirst for knowledge and lead a child into a STEM career. Within the University of Arizona campus, we plan to increase collective student awareness of social sustainability by advocating for native pollinators. This will be accomplished through social media and speaking about the club around campus, including tabling at the club fairs. We want to educate our peers on how underserved communities in Tucson are affected in regards to access and exposure to sustainability. Within UAERC, we plan to invite university students to tour and work in the garden to learn about local pollinator plants in Tucson and the project in general. This will provide hands-on experience related to social sustainability, which many students do not have the opportunity to do. In club meetings, we will invite guest speakers who are actively involved in local pollinator gardens, such as RHCG. We will advocate about how social sustainability not only benefits the environment but improves an individual's well-being and mental health.

Student Leadership & Involvement:

Please provide a description of how you expect your project to benefit students on campus regarding the creation of leadership opportunities or student engagement. What leadership opportunities exist within your proposal? If you plan to hire/ or involve students, please describe in what capacity. For example, if you plan to hire students, create an internship, or seek student involvement, please describe relevant details thoroughly (wages, responsibilities, duration of job, extent of involvement, how you will solicit/ market these opportunities etc.).

Response:

This project would engage the UAERC Pollinator Garden Committee Chair(s) in their community by maintaining the project and monitoring the pollinator gardens. This involvement would require monthly meetings with the RHCG and monthly updates on the project at UAERC officer meetings. The Pollinator Garden Committee as a whole would be in charge of making and implementing decisions, such as creating educational materials and identifying local plants for planting events. The UAERC Recruitment Committee will also plan outreach events to distribute the plants and teach kids about gardening, pollinators, ecological restoration, and sustainability. This would include fundraising, marketing, advertising, and running the events. Club members would also be invited to help maintain the garden and propagation station throughout the year at the discretion of the UAERC Pollinator Garden Committee, as well as eventually attend any events in the future. There is also a potential future research project for the UAERC Research Committee to study whether a string of at least 7 pollinator gardens between Mission Garden and the upcoming Peace Garden near Alvernon and 3rd St. constitute a useful pollinator corridor. There will also be involvement from the Engineers Without Borders club during the construction of the irrigation system, which provides a hands-on opportunity for these students to learn about PVC piping and how to use power tools.

Education, Outreach, and Behavior Change:

What opportunities does this project provide for members of the campus/ community to learn about sustainability? How will your project educate the campus community and/or incorporate outreach and behavior change? How are you reaching beyond the "sustainability choir?" Please provide a description of how you expect your project will communicate its impacts to the campus community. What is your plan for publicizing your project on campus? How visible and accessible will your project be to the general campus population?

Response:

Current and past educational Outreach at RHCG:

- RHCG continues to invite UA students of all disciplines to use its facility as an outdoor laboratory. RHCG also has an electronic newsletter that usually features seasonal information about the garden. Garden members and selected guests are invited to contribute; the newsletter is also sent to a "friends of the garden" mailing list.

The RHCG has hosted several educational and community outreach activities in the past. For example,

- They have had activities for school children centered on plant/insect relationships and blacklight insect events for the community to learn about nocturnal insects.
- They have held presentations on insects at Neighborhood potlucks held at the garden and constructed bee boxes.
- The RHCG has been interviewed by journalism students, KUAZ, and mainstream press.
- Several different groups of developmentally disabled students (from UA and TUSD) have worked in the garden to develop job and life skills.
- UAERC and RHCG will resume educational activities abandoned during the pandemic when it is safe to do so.

- The RHCG will also reestablish contact with the Phenology lab and organize a citizen science program. RHNA has an underutilized Phenology Trail that focuses on 10 insect/plant relationships.
- We will also use Little Free Plant and Seed Library to disseminate information about seasonal pollinators. Once our propagation facility is up and running, we hope to partner with other organizations in holding educational outreach events for a variety of age groups.

Educational Outreach and Celebration of Biodiversity:

- In this project, we will make use of pedestrian traffic- mostly students living in nearby apartment buildings. We will draw pedestrians' attention by planting colorful, eye-catching wildflowers on both sides of the sidewalk. There will be interpretive signage posted on the garden fence and near key landscape plants outside of the fence to educate visitors about the plants and our project.
- During peak pollinator activity, we will collaborate with students in entomology, art, and photography to install a live webcam that can be moved around the garden to catch the most pollinator activity. Once the project is complete, we will also establish a "pollinator of the month" that will be posted for students around campus to see.
- We are expecting to have student involvement from Tierra Seca, Fish & Wildlife, & SNRE as a whole. This will help in advertising any events, opportunities, or just the project in general to students in environmentally based majors across the campus to help us reach a broader audience.
- We plan to hold distribution events at the garden to expand the communities we aim to help. Advertising to several Tucson-based organizations, relating to gardens, nurseries, and plants in general, will take place to spread the word.
- We will continue to research and directly contact organizations we haven't talked to yet if we receive the funding.

Timeline:

Please describe the timeline of your project. The timeline may be estimations at the point of this Preliminary Application but providing this is especially important if your project is a time-sensitive event. Funds may not be used as reimbursement for projects already completed, therefore a realistic amount of lead time should be given in order for proposals to be eligible for review. Please describe when your project will take place, key dates for when certain elements must start or be completed by, or any other known dates. Timeline extensions will be granted on a case-by-case and limited basis.

Response:

Phase I of this project will take place this upcoming summer (2023). We will begin construction at the RHCG as soon as feasible, preferably in August 2023, and start propagating plants in the new nursery area in fall 2023. During the entirety of this phase, we will continue to forge partnerships with other organizations that might like to help with our educational outreach or participate in an annual Pollinator Festival on the UA Mall. We will look for donations of nursery pots and additional pollinator plants, as well as research the needs of both migratory and stationary pollinator species to ensure our plants support all kinds of local pollinators. We will coordinate with other pollinator gardens as needed.

Phase II of this project will take place during spring 2024. It will include the distribution of pollinator plants propagated and grown in the RHCG as well as outreach events put on by the UAERC and RHCG that are associated with the project. The UAERC will also continue to install pollinator gardens on the university campus and throughout the surrounding community, supported by plants grown at the RHCG. There is also a potential future research project for the UAERC Research Committee to begin in Phase II. It would study whether a string of at least seven pollinator gardens between Mission Garden and the upcoming Peace Garden near Alvernon and 3rd St. constitute an effective pollinator pathway.