

# Nurturing Plants Project

##### Grant Type

Mini Grant

##### Application Type

Preliminary Application

##### Project Manager 1 Name

Breanna

##### Project Manager 1 Status

Student

##### Project Manager 1 Email

blameman@arizona.edu

##### Project Manager 1 Department

Department of Health Sciences

##### Project Manager 2 Name

Felina Cordova-Marks

##### Project Manager 2 Email

felina@arizona.edu

##### Project Manager 2 Status

Faculty

##### Project Manager 2 Department

College of public health

##### Project Manager 2 Role

Back-up

##### Project Advisor Name

Felina Cordova-Marks

##### Project Advisor Email

felina@arizona.edu

##### Project Advisor Department

Department of Health Sciences

##### Fiscal Officer:

Jackie Kuchar Assini

##### Fiscal Officer Email

jassini@arizona.edu

##### Fiscal Officer Department Name

College of Public Health- health sciences

##### Requested Funding Amount

Only enter this number after completing the budget sheet (the budget template will round up your request).  
Mini Grants may request $250 up to $5,000.  
Annual Grants may request $5,001 up to $100,000, and up to three years of funding.

#### Year 1:

$5000

#### Year 2:

#### Year 3:

##### Official Project Name

Nurturing Plants Project

##### Primary Project Category

Food

##### Secondary Project Category

Water

##### Background and Context

Please provide relevant background about your organization/team including your mission and/or expertise. 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 plan and specifics.

###### Response:

Mission:   
The Nurturing Plants project is to improve food security and Indigenous food sovereignty, through training Indigenous people about hydroponics and traditional ecological knowledge. Additionally, to promote research with a community-based and Indigenous methodology approaches.   
  
Rationale:   
Indigenous People are at the front line of climate change and experiencing severe drought and heat waves due to the oil and gas companies near or around Indigenous communities, that is affecting our agriculture, food production, and food access. Climate change has been creating and exacerbating economic, social, environmental tensions, that contributes to food insecurity, poverty, adaption, migration, and water insecurity. We are all feeling the effects of climate change, especially Indigenous People who are closely related the land and rely on the land for sustenance and cultural vitality. This threatens the survival of traditional plants, traditional practices of farming, and food sovereignty. Hydroponic farming has the capacity and technology to mitigate these threats posed to our agricultural and food systems. Hydroponic farming has the potential to provide fresh and local Native foods available throughout the year, especially in areas with extreme droughts. This method uses up to 90% of less water and is cheaper and easier way to grow crops to supply in local communities. Hydroponics is a great opportunity to help transform our food system into a sustainable and Indigenous approach. The lead of the project, Breanna Lameman, is a first-year public health student in health behaviors health promotion with a focus in Indigenous food, water, and energy systems and 6th generational farmer. She has been leading the project for three years within her own community of Shiprock and other Navajo communities. She has successfully taught and trained over 50 students and 100 community members in hydroponics. With her work grounded in the land, family values, Diné cultural teachings and the language, and live experienced. She grew up caring for the land at a young age by reclaiming and revitalizing traditional agricultural techniques that ultimately led to a relationship with food and her ancestral foodways. She is dedicated in promoting, protecting, and preserving Indigenous culture, language, and practices, that have always sustained Indigenous health and wellbeing. By furthering her heart work, she wants to continue to share and expand her knowledge within Nurturing Plants, by educating and promoting sustainable agricultural practices that will nurture the land and the people.

##### Project Description

Please provide a thorough description and explanation of your project. Be explicit in what your team is proposing. What are the goals of your project? What will your project’s outcomes be? Outcomes should be SMART—specific, measurable, achievable, realistic, and timely. Describe how each objective will be achieved with the anticipated timeframes for each, including any key dates for when certain elements must start or be completed.

###### Response:

Project Description: The project Nurturing Plants leads a series of three hands-on hydroponic workshops to assist future farmers, beginning farmers, or advanced farmers with the skills and knowledge to apply sustainable and conservation practices to their own farm, garden, or backyard. Participants will receive free materials such a hydroponic system, seeds, farm tools, and more to implement practices taught within workshops.   
The program is designed for 2-month long and requires participants to attend two hands-on workshops and one community gathering. The workshops will range from one to two hours and will occur twice a month. The workshops will focus on skills related to 1) building and maintaining the hydroponic system, 2) gardening (planting, growing, and harvesting plants), 3) nutrient and traditional food education, 4) farm to table; Indigenous food demonstrations. All workshops use a community-based approach through peer learning, collaboration, open discussion, and peer activities. Workshops integrate the Navajo cultural practices including Hózhǫ́ógo Iiná (Navajo healing and restoring balance and harmony) to address participants spiritual health and wellness.   
Process Objectives:   
-By the end of hydroponic training 1, there will be 10 hydroponic systems distributed to 10 students.   
-By the end of the program, 10 participants will be trained to build, maintain, and harvest from the hydroponic system to grow their own food.   
Outcome Objectives   
-At the end of the program, 80% of participants will increase their understanding of climate change and the impact in the community, by discussing the challenges they witness or experience.   
-At the end of the workshop, 80% of the participants who complete the program will report utilizing sustainable practices and incorporate healthy eating practices as documented by the post survey evaluation.

##### Budget Narrative

Use this section to provide supplemental justification for the items you are requesting on your budget sheet. Please break down your justifications into the budget categories: Personnel or operating budget. Do not list out each expense or repeat notes made in the budget template, but instead address why the line items are being requested and the purpose they will serve, providing elaboration when necessary.  
If you are requesting funding for personnel, use this section to elaborate on the position you are creating and how the budget and timeline was established for it. If you plan to hire students, describe in what capacity. Describe relevant details thoroughly (wages, responsibilities, duration of job, extent of involvement, how you will solicit/ market these opportunities etc.).  
Ensure the descriptions match the line items in the budget sheet.  
If matching or supporting funds are secured for the project, identify the source and amount in this section, and detail the impact of the matching funds on your overall budget.

###### Response:

Budget Narrative:   
Personnel   
The project lead will allocate $2,400 on maintaining and monitoring the program plans, program schedules, prepare necessary presentation materials, and ensuring the program is meeting the goals and objectives throughout the year. This is budgeted in to support the work of a PhD student research work. The hourly wage is $20 for 10 hours/week for 12 weeks.   
  
DIRECT COST   
  
Hydroponics Supplies   
The hydroponic supplies serve as education materials to teach participants how to grow hydroponically. Each participant will receive a hydroponic system to take home and grow on their own. Supplies to be purchased is the hydroponic systems, nutrient solutions, growing trays, and a cart to haul all materials.   
  
Website development   
To extend and network with others, creating a website for the Nurturing Plant project is needed. Having a digital platform online will increase awareness, credibility, online visibility, and boost connection to produce more hydroponic workshops.   
  
Meals & Snacks   
After talking about sustainability practices and the production of food sovereignty, food is much needed after an exciting workshop about hydroponics. The food will nourish the mind, body, and soul to go home and set up their hydroponic system. Snacks will be provided to the participants during the workshop, in the event they came to workshop hungry, a nice snack will increase their focus and productivity.

##### Project Feasibility and Logistics

The Campus Sustainability Fund will only fund projects that have completed the necessary work to ensure they can succeed, be completed in the grant’s timeline, or have an accurate budget.  
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 to complete your project (such as from Housing and Residence Life, Facilities Management, Parking and Transportation, etc.)? Please identify them in your response.   
If you are making modifications to campus, do you have authorization or official quotes from Facilities Management to accurately identify the cost of labor and supplies?

###### Response:

Nurturing Plants has built the project into a curriculum by conducting pre-implementing of the project by conducting a literature review, pre-post questionnaire, develop an Indigenous advisory board, receive approvals from respective communities, create recruiting materials, and applied to UArizona IRB and Navajo Nation IRB. Additionally, Nurturing Plants has implemented this program in three Diné communities and have provided services to Diné College students,   
and local Navajo Nation high school students. This project has been implemented and evaluated. The evaluation of the program has been revamped and will be implemented with adjusted services and curriculum in the next workshop.   
  
To ensure this project and services are provided in an ethical way, communication with the necessary partners have been contacted and agreed to promote this project in the respective manner. A space for the workshop has been identified and will continue to set dates for the next workshop which is still in the works. All other task that are needed to complete for the potentials are still being planned, as the project is set to begin in January through February 2024.

##### 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 Guides and Tips page.

###### Response:

To advance environmental sustainability from an Indigenous perspective on hydroponics are to:   
- Increase knowledge in Indigenous food sovereignty and nexus of Indigenous food, water, and energy systems through hydroponics.   
- To investigate the increase in fruit and vegetable consumption through the hydroponic systems.   
- Advance traditional ecological knowledge in hydroponics to create a culturally root hydroponic program.

##### 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 Guides and Tips page.

###### Response:

The social sustainability outcomes for Nurturing Plants project are to:   
- Share knowledge and train Indigenous students about hydroponics from an Indigenous perspective.   
- Create opportunities for Indigenous students through hydroponics to increase food security, TEK, and renewable energy.   
- Increase a sense of community and identity for Indigenous students within food sovereignty.

##### Student Leadership & Involvement

Please provide a description of how your project will benefit students on campus regarding the creation of leadership opportunities or student engagement. What leadership opportunities exist within your proposal? If you plan to seek student involvement, include relevant details thoroughly and how you will solicit/ market these opportunities.

###### Response:

The Nurturing Plants project is currently led by a PhD student, Breanna Lameman and under faculty support of Dr. Felina Cordova. Since this project was created on the Navajo Nation with the support and assistance of Diné community members who come from various backgrounds, expertise, and experiences ranging from educators, scientist, healers, community organizers, farmers, and Indigenous chef. Their understanding of the community creates a learning experience with interactive intergenerational dialogue and knowledge exchanges with traditional knowledge holders, farmers, public health, artists, and teachers. This collaborative work is carried on by Ms. Lameman who is dedicated to promoting, persevering, and protecting Indigenous health and Indigenous food sovereignty through hydroponics.   
The project is intended to train Indigenous students in hydroponics, food sovereignty, and to gain knowledge in traditional ecological knowledge from a Diné perspective way. Providing these opportunities to Indigenous student on campus allows them to understand the importance of sustainable agricultural methods, environmental health, traditional ecological knowledge, and Indigenous food sovereignty. Further, these concepts and practices allows for the students to understand their potential role in food sovereignty and how they are contributing or will contribute to the nexus of food, water, and energy systems. These opportunities allow for students to contribute to Indigenous food sovereignty by training the next future or advanced farmers which then sparks an interest in sustainable farming methods which then is shared among their peers or family members.   
To make this opportunity available to Indigenous students, is to connect with my networks within the UArizona of the Indigenous club organizations such as American Indian and Indigenous Health Alliance (AIIHA), IndigiWellbeing, American Indian Science and Engineering Society (AISES), and the Native American Student Center (NASA), and hopefully with Native SOAR. Further, I have an interest list of potential students who have interest in partaking in the workshop. The project has about ab interest list of about 20 Indigenous students so far and I expect to receive more students to be interested in the program since I have been actively promoting the workshop.

##### 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, particularly beyond the "sustainability choir?"  
? Please provide a description of how you expect your project will communicate its impacts to the campus community.

###### Response:

The main goal of the project is to increase food security and food sovereignty through hydroponics while revitalizing Diné cultural values. The workshop is a cohort-based meaning the students will continue to work together until the very last workshop. During this time, they build relationships, creating a sense of community, which can provide a stronger professional and student environment. Further, this allows for the cohort to transform out of their comfort zone and assist each with growing hydroponically and much more. This much needed work of sustainable agriculture methods contributes to Indigenous food sovereignty, food security and learning new sustainable methods within Indigenous communities and students. Sustainability from an Indigenous perspective contributes to what Indigenous people have been practicing since time immemorial but with innovative technology added. Restoring and preserving sustainable and fresh foodways by revitalizing concepts of Hozhó, balance and harmony into hydroponics and agriculture ways will lead to more appreciation of Indigenous food ways and food in general. To understand sustainable methods is to acknowledge the historical disruption on Indigenous land and how it has impacted Indigenous farming methods, systems, and lifeways. The point is to provide a brief overview of historical trauma impact on the land and the people, and reasons for to revitalize cultural practices and knowledges into hydroponics.   
Within each workshop integrates Diné values and practices of Hózhóógo Iiná (Navajo healing and restoring balance and harmony). Additionally, the project uses the Indigenous frameworks of Diné Food Sovereignty (DFS) and the Navajo Wellness Model (NWM) that allows participants to grasp these concepts into their own daily lives and to move forward in a sustainable and ethic way of life. Some of the changes, the program intends to see are: 1) Train Indigenous students in hydroponics and the nexus of food, water, and energy systems; 2) Increase Indigenous students understanding about climate change, historical disruptions, and Indigenous food sovereignty; 3) Increase healthy eating practices of leafy greens; 4) Increase revitalization of Diné practices, values, and practices through hydroponics.

##### Committee Feedback

Please detail where you would specifically like feedback or application support from the Committee members. While they will give general feedback in all project criteria areas (Feasibility & Logistics, Environmental Sustainability Impact, Social Sustainability Impact, Student Leadership & Involvement, and Education, Outreach, & Behavior Change), you may note here where additional feedback could be most useful to you.

###### Response:

##### Where did you hear about this funding opportunity?

CSF Website