



THE UNIVERSITY OF ARIZONA  
COLLEGE OF SOCIAL & BEHAVIORAL SCIENCES

# Southwest Institute for Research on Women

Recording...



## THE BIO/DIVERSITY PROJECT 2021 Program Report



COLLEGE OF SOCIAL & BEHAVIORAL SCIENCES  
**Women in Science  
& Engineering**



## 2020-21 PROGRAM OVERVIEW

The Bio/Diversity Project harnesses the power of University-community partnerships to create a K-16+ and into the workforce pipeline aimed at diversifying the environmental sciences and our local environmental science workforce. Each year, we recruit University of Arizona students from groups traditionally underrepresented in the environmental sciences - specifically women, students of color, and/or allies committed to fostering gender and racial equity within the environmental fields - and train them to serve as environmental science outreach educators in local K- 12 schools.

Over the course of a semester, university students receive training on developing hands-on and culturally-responsive environmental science lessons and then implement these lessons in K-12 schools that serve primarily students of color and students from low-income households. In doing so, we expand access to culturally responsive and place-based environmental science programming, while also exposing K-12 students to a diverse set of college-going mentors and role models. During their internship experience, university students participate in trainings and networking events with local environmental science organizations, enabling them to build career readiness skills and the professional networks necessary to enter and succeed in the environmental fields. Students who successfully complete the internship experience then have the opportunity to apply for paid positions with partner organizations where they can continue to develop knowledge and work experience in the environmental sciences and environmental education. Increasing access to innovative and culturally responsive environmental science programming in K-12 schools, in tandem with providing university level students with training, mentorship, and paid work experience, works to create a pipeline of engagement and support crucial for diversifying the environmental sciences.

**The Bio/Diversity Project addresses inequity and under-representation in the environmental sciences by:**



Increasing K-12 student access to culturally responsive, place-based, and engaging environmental science education.



Providing university students with training and mentorship at the nexus of environmental education and diversity and inclusion.



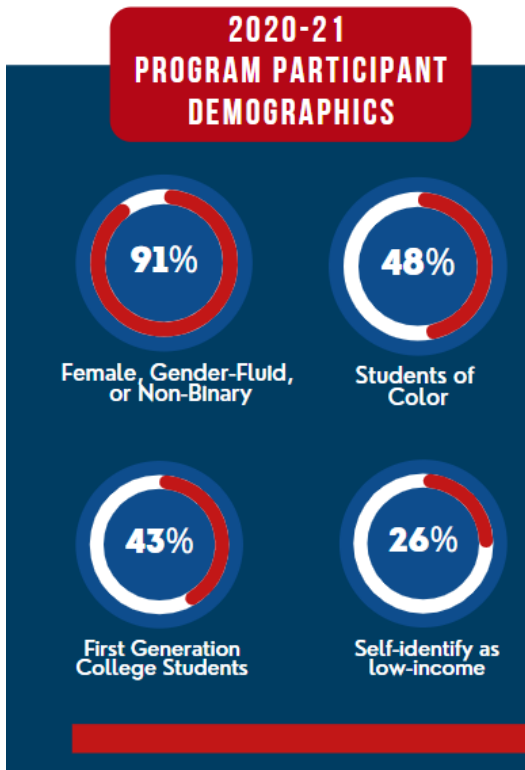
Increasing access to paid work experience in the environmental sciences and environmental education.

In addition to the established internship program, we piloted an additional Leadership Development Program during the 2020-21 academic year. This program provided a small cohort of UArizona students the opportunity to develop skills in program conceptualization, planning, and implementation; partnership building; and science communication and public speaking. Student leaders received a wage of \$15 per hour for their time in order to make participation accessible and recognize the value of the important work the students engaged in.

During the 2020-21 academic year, all components of The Bio/Diversity Project were pivoted to be conducted in 100% modalities. This helped ensure the safety of staff, interns, community partners, and K-12 students, while ensuring that we continued providing access to education, training, and work experience for students along the K-16+ pipeline.



## INTERNSHIP IMPACT AND OUTCOMES



This year, 36 students participated in The Bio/Diversity Project internship program and earned academic credit from 13 different departments across 6 University of Arizona colleges. This enabled us to provide engaging environmental science lessons to over 400 K-12 students in the Tucson metro area.

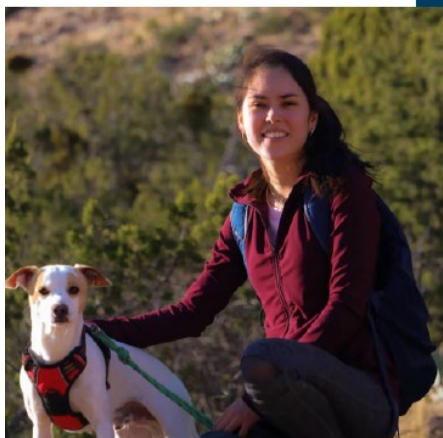
Each year we work with academic advisors, student clubs, and cultural centers across campus to recruit interns to participate in The Bio/Diversity Project Internship. We aim to create an intern cohort that is as or more diverse as the University of Arizona student body and with a focus on supporting students from groups historically marginalized in the environmental sciences and environmental organizations.

Post-program surveys and interviews with interns and partner teachers are utilized to assess program outcomes on science identity, motivation, and self-efficacy; interest in and commitment to issues of diversity and inclusion; and development of workforce readiness skills. Evaluations consistently demonstrate the program is impactful and successful at achieving these goals, while also providing pathways into paid positions with local environmental organizations.

Based on post-program surveys of 2020-21 participants:

- **96% showed increase confidence in their scientific knowledge and abilities**
- **100% indicated greater knowledge of issues of diversity, equity, and inclusion in the sciences**
- **100% indicated greater confidence to work as part of a team**
- **94% indicated greater confidence in their leadership ability**

During the 2020-21 academic year, 8 former interns drew on the experience and knowledge gained in the internship to transition into paid positions with environmental organizations.



“Being an intern and a student worker with The Bio/Diversity Project has impacted my life in many ways. During my time with the program, I had the chance to build new connections with amazing and supportive staff/co-interns, allowing me to gain many network opportunities that eventually led me to be a Natural Resource intern at Saguaro National Park. The Biodiversity project has also impacted my life in that I discovered a new passion for environmental outreach. As I continue working with Saguaro National Park, I realize the skills and opportunities I have gained thanks to The Bio/Diversity Project.”

- Berenice Chacon

## 2020-2021 TRANSITION TO 100% ONLINE PROGRAMMING

The pivot to online teaching required by the COVID-19 pandemic brought many challenges, but also opened a myriad of opportunities for our staff and interns. Interns led the way in creating innovative lessons by utilizing a variety of digital platforms that brought elements of excitement and curiosity to the online classroom. Through trainings provided by program staff and continual mentorship throughout the internship experience, interns gained competency in various on-line educational tools (see below for some of the tools interns found particularly useful), improved their science communication skills, and found unique ways to engage students. Moreover, interns worked with partner teachers to identify lessons and activities that inspired students to get outside and explore the natural environment of their neighborhoods, local parks, and walkways. Interns then utilized advanced technology, such as the ArcGIS Story Maps platform, to create collaborative maps and digital stories with students of the biodiversity that exists in their neighborhoods and communities.

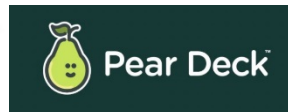
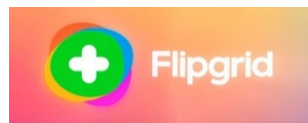
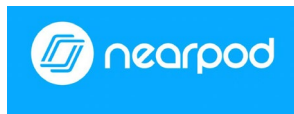
---

*“What a fantastic learning experience this was, not only as a first-time classroom educator, but as an educator teaching online. It’s clear to me that even after the pandemic is over, there will still be many reasons for courses or lessons to be communicated online...I see a future that relies heavily on online learning with in-person supplements as an additional learning opportunity, making the work I accomplished this semester that much more impactful.”*

*-Fall 2020 Intern*

---

The transition to 100% online, remote programming allowed us to engage 17 K-12 classes and provide programming to over 400 K-12 students each week, while ensuring the health and safety of program staff and interns and community partners.



# LESSONS LEARNED: BEST PRACTICES FOR 100% ONLINE PROGRAMMING

## Community Building is Key

Program staff started every weekly internship Zoom class with a short exercise or game that prompted community building and fostered personal connections between interns. These exercise prompts included "This or That," "Blob Tree ID," "Would You Rather," "If You Could Travel Anywhere," and "On A Scale of One to Ten." Each exercise lasted between 3-5 minutes and provided interns a lighthearted transition from the start of class into the topic and content for the week. We found this practice extremely helpful in elevating the spirits of interns while we were all navigating zoom exhaustion and disconnect from our friends and families. At the same time, interns adopted these types of strategies as they worked to build community with and within their assigned K-12 class. While on-line teaching and learning can be isolating, finding opportunities for building connections among students is key to ensuring positive learning environments.

## Bring the Enthusiasm to Teach as If No One Is Watching

Online environmental science lessons provided the additional challenge of a silent and empty audience. In order to protect the privacy of K-12 students and their families, video cameras were optional, and all students' microphones were muted. One of the best practices for overcoming the potential awkwardness of these online lessons was for interns to approach all lessons with immense enthusiasm and passion for their environmental science topic. Interns hooked students' attention with engaging environmental storytelling; utilized technology that got K-12 students excited; asked students to answer questions in the zoom chat, with zoom emojis and reactions; and facilitated online games and friendly competitions.

## Utilize Student Workers to Increase Organizational Capacity

Pivoting all programming to be online was necessary, but also incredibly time consuming. Increasing staff capacity was key to making this possible. Bringing former interns on as student workers provide students with the opportunity to gain additional work experience, while also increasing the capacity of the program to develop skills in new on-line technologies and provide interns with the one-on-one support needed to effectively adopt new technologies. Moreover, these positions provided student workers with additional economic resources that they could draw on as they navigated the challenges of the pandemic.



# THE BIO/DIVERSITY PROJECT LEADERSHIP PROGRAM

The lack of diversity in the environmental sciences and environmental organizations is related to a range of cultural and economic factors that shape who is interested in and has access to environmental science-related educational and career opportunities and who does not.

In order to expand opportunities for leadership development and career-readiness skills for students underrepresented within the environmental fields, The Bio/Diversity Project piloted a paid leadership development program this year. This program worked to expand access to training on program development, planning, and implementation and 4 students were selected to participate from a pool of 29 applicants. All participants were female Latinx, and first-generation college students and came from a range of academic majors across the environmental sciences and engineering.

Over the course of the year, program participants engaged in monthly trainings where they learned how to develop and implement self-directed projects that engage the campus community around issues of sustainability, biodiversity, and human diversity in environmental fields. These projects provided substantial opportunities for UArizona students and community members of Tucson to engage in issues of intersectional environmentalism. Through the process, students gained skills partnership development, collaboration, cooperation, and written and oral communication.

By providing this pathway into paid work and leadership positions, we have seen UArizona students develop confidence, self-efficacy, and further refine their skills into marketable experiences. The Bio/Diversity Project Leadership Program helped foster the next generation of diverse environmental leaders committed to collaborative problem solving and awareness raising.

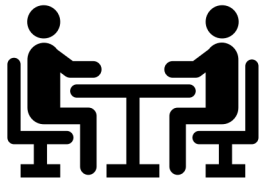


*"[B]eing involved in this program was life changing. It gave me an opportunity to explore my passion for conservation and biodiversity. I got to do this during a time in my life when racial and gender inequity became an important topic for me to engage in, learn about, and work towards anti-racism. I changed my major because (thankfully) I was able to engage in these important topics throughout the year. Without these opportunities, I might not have finished my first year here. Some days I do not feel like I have the energy to do anything, but the opportunity to engage in the things I found so important kept me inspired."*

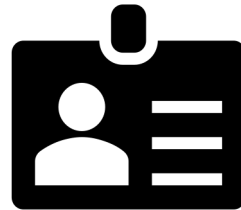
*-Leadership Program Participant*



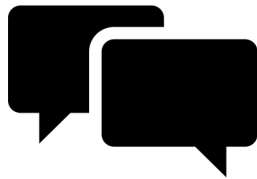
## LEADERSHIP PROGRAM IMPACT 2020-2021



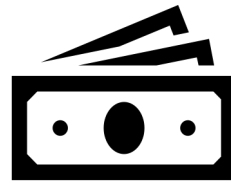
Participated in 25 monthly zoom workshops & weekly meetings



Attended the SpeakOut Youth Summit and engaged in a 100% online course on Race, Power, and Privilege



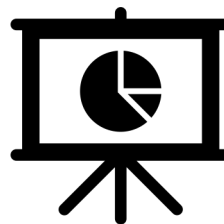
Networked with and recruited speakers from 12 local organizations & University departments



Developed, submitted, and were awarded a \$500 grant from the UArizona Green Fund



Facilitated a 4-part panel series on overcoming gender and racial barriers within the environmental fields



Presented program successes at the Advancing Women in Leadership Symposium

---

*“The Bio/Diversity Project Leadership Program allowed me to understand how I myself fit as an aspiring scientist among all the other students at UA, despite my background, previous knowledge or lack of experience in the field.”*

*-Leadership Program Participant*

---



## LOOKING FORWARD

The Bio/Diversity Project is made possible by a broad network of university and community partners. Primary program partners are the University of Arizona's Women in Science and Engineering (WISE) Program, Saguaro National Park, and the Friends of Saguaro National Park. Local environmental organizations including the Arizona-Sonora Desert Museum and UArizona's School of Natural Resources and the Environment, provide program participants with robust training in environmental education and biodiversity conservation.

The Bio/Diversity Project has been generously funded by the Agnes Nelms Haury Program in Environment and Social Justice (2016-18), the University of Arizona Green Fund (2018-2021), and the generous support of individual donors from across the community. In addition to the funds raised through grants and donations, partner organizations— the Women in Science and Engineering Program at the University of Arizona and Friends of Saguaro National Park/Saguaro National Park— contribute in-kind or matching funds of approximately \$48,000 annually to support and sustain the program. Matching funds enable partner organization staff to participate in program administration, supervise and train interns and student workers, and complete robust program evaluations. The funding provided through grants, donations, and in-kind/matching funds is necessary to provide University level students with training, mentorship, and work experience, while ensuring that the K-12 outreach lessons and activities are scientifically accurate, engaging, and culturally-responsive.

The Bio/Diversity project is made possible and sustained through the strong partnership among our collaborators who have made long-term institutional commitments to biodiversity education, developing STEM learning opportunities for under-represented Tucson youth, creating a science-career pipeline for diverse UArizona students, and increasing workplace diversity. As we look forward into the 2021-22 academic year and beyond, we are excited to return to in-person learning while utilizing the skills and knowledge we gained in remote engagement to continue expanding access to education, training, mentorship, and leadership development throughout the University of Arizona and greater Tucson communities.

Please contact us if you are interested in helping grow and sustain the program through partnerships or donations by emailing Elena Greenberg at [ElenaGreenberg@arizona.edu](mailto:ElenaGreenberg@arizona.edu).

---

This report was prepared by Elena Greenberg, Program Coordinator, Lizbeth Perez, Student Support Specialist, and Jill Williams, WISE Director, and reviewed by Bio/Diversity Project partners.

Questions about the report can be directed to Jill Williams at [JillMWilliams@arizona.edu](mailto:JillMWilliams@arizona.edu).

