



THE UNIVERSITY OF ARIZONA
ARIZONA INSTITUTE FOR RESILIENCE

Indigenous
Resilience Center



2023-2024

INDIGENOUS

RESILIENCE

CENTER

Annual Report





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ABOUT US

Located within the Arizona Institute for Resilience, the Indigenous Resilience Center resides in the Environmental & Natural Resources 2 Building– A perfect location for the IRes office and its vision of Indigenous communities' resilience toward adapting to environmental and societal challenges. The Indigenous Resilience Center (IRes) is supported by the Agnese Nelms Haury Program in Environment and Social Justice. Occupying Room N592, the space welcomes students, faculty, and community members to a safe environment. The ability to borrow technology and books, as well as enter a soundproof workspace, are some of the many resources available at the IRes Pod. Open from Monday through Friday, come and visit the space we call: the Indigenous Resilience Center.



WHO WE ARE



OUR MISSION:

We see a world in which Indigenous communities are thriving and adaptable to meet environmental and societal challenges.



OUR VISION:

Centering Indigenous ways of knowing into co-designed environmental solutions and training the next generation of community leaders.





OUR VALUES



Relationship

Our framework and guiding principles are focused on establishing long term relationships.



Respect

Respect for place, beliefs, culture, history, language and ways of knowing must be elevated and encouraged.



Reciprocity

IRes recognizes and prioritizes the cyclical nature of collaboration and emphasizes the need for balanced cooperation with partners.



Responsibility

It is the responsibility of the Center to care for and nurture the relationships and collaborative efforts that have and will be in place.



2022-2024 STRATEGIC GOALS

GOAL 1: BUILDING TRUST WITH TRIBAL PARTNERS AND UNIVERSITY OF ARIZONA RESEARCH NETWORK.

For any of our collaborations to be successful, they need to be based on trusting relationships and mutual understanding. We aim to work with tribal communities by developing trainings, Tribal Summits, listening sessions, and an elder in-residence program. In addition, the Center will create pathways for Indigenous students at UArizona and advocate for resources for and with tribal communities.

GOAL 2: DEVELOP AN IRES PROJECT THAT HIGHLIGHTS FACULTY EXPERTISE.

The IRes faculty has diverse and overlapping projects that relate to working with Indigenous communities. This goal is to bring together their expertise on a joint project. The team will identify a need, form a plan, develop a product, and disseminate the product.

GOAL 3: ESTABLISH AN IRES NETWORK OF TRUSTED AFFILIATES AND ALLIES.

As part of our core values, it is our responsibility to ensure that researchers are trained to engage with tribal communities. To facilitate this goal, we aim to expand the team of experts across the University of Arizona campus. IRes will create an affiliation process and promote the use of existing training tools for faculty, staff, and students. The affiliation process will include training, tracking, and the development of a vetting process.

GOAL 4: CREATE AN EFFICIENT, COMMUNICATIVE, AND COORDINATED TEAM TO IMPLEMENT CENTER OPERATIONS.

We strive to have our internal team embody the values of relationship, respect, reciprocity, and responsibility. To implement our strategic plan and build the intentionality of our work, IRes will create an operations plan and hold regular check-ins.



A NOTE FROM OUR DIRECTOR

Yá'at'ée'h (Greetings),

Through this published report, I hope that you will get to learn more about our work as a Center and hone in on key 2023-24 accomplishments, spotlight major events, and share research highlights in our faculty section.

The Indigenous Resilience Center (IRes) has continued to expand its reach both on and off the University of Arizona campus. Our team members go beyond the University land acknowledgement and put into practice our commitment to tribes to address environmental challenges with the guidance of Indigenous leaders. As a cohesive unit of 6 professional staff, 4 core faculty members, and 7 student staff members, IRes leveraged grants to implement its community-driven research, engaged in outreach, and kindled relationships within our Tribal communities. Our team overall has published 11 articles, attended and sponsored over 20 events, and hosted over 15 presentations.

IRes continues to advocate for our Tribal communities on a local and national level. We have developed frameworks for meaningful engagement guided by our cultural values (the 4 R's) and met goals outlined in our 2022-2024 strategic plan. We look forward to 2025-26, as we implement our work with tribes based on new strategic plan. Thank you for joining us in celebrating our accomplishments!

Ahé'hee (Thank you),



STAFF & ADVISORY BOARD

OUR STAFF



Daniel Sestiaga Jr.
Ft. Yuma Quechan
Program Manager



Torran Anderson
Community
Outreach Manager



Bernice Rodriguez
Pascua Yaqui
Program Coordinator



Christina Gargus
Grant & Project
Coordinator



Katie Holtsoi
Diné
Director's Senior Assistant



Ruth Pannill
Research
Professional



Dr. Vincent Whipple
Diné and Sioux
Postdoctoral Researcher



OUR STUDENT STAFF



Trinity Norris

Tohono O'odham

Marketing/Communications
Grad Student Assistant



Winona Little Owl-Ignacio

*Tohono O'odham and
Ihankthunwanna Dakota*

Waverly Student Assistant



Jevon Armani Smith

Diné

Administrative
Assistant



Miguel Corrales Valencia

Administrative Assistant



Aracely Rodriguez

Desk Assistant



Nahe Naho'opi'i

Kānaka Māoli

Desk Assistant



Nieves Vázquez

Huachichil Chichimeca
Graduate Research Assistant



LaCher Pacheco

Santo Domingo Pueblo
Indigenous Education Grad
Student Assistant

ADVISORY BOARD



MIGUEL FLORES JR.
Pascua Yaqui &
Tohono O'odham



**HERMINIA
FRIAS**
Pascua Yaqui



**DR. JOSEPH
HILLER**
Lakota



MONICA NUVAMSA
Hopi



AMY JUAN
Tohono O'odham



DR. TED JOJOLA
Pueblo of Isleta



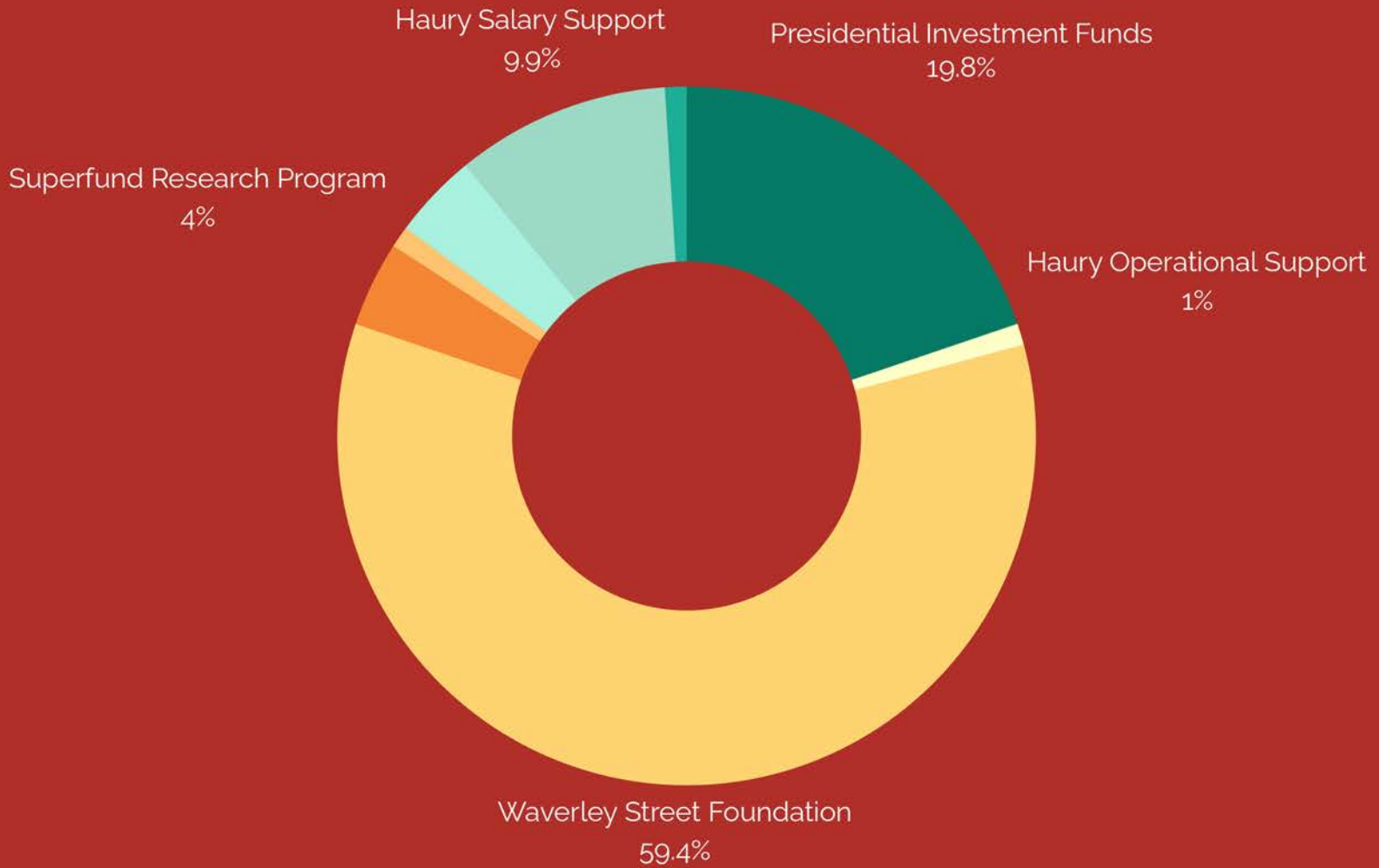
DR. MARTI LINDSEY



ROMAN ORONA
Apache, Pueblo,
& Yaqui

2023-2024 FISCAL BREAKDOWN

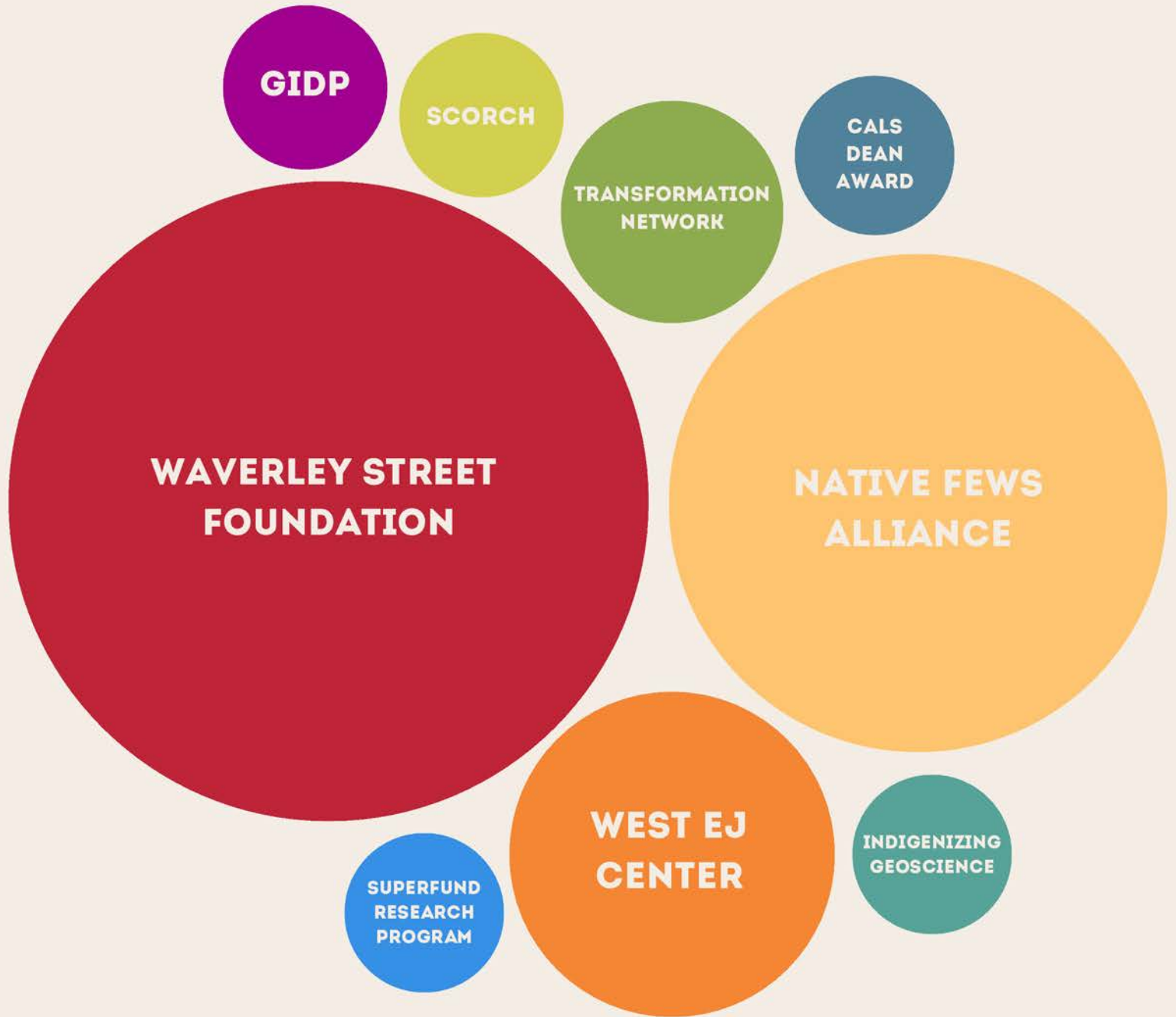
This graphic demonstrates various funding sources to support the overall IRes operations and salary lines.



- ▲ Presidential Investment Funds
- ▲ Haury Operational Support
- ▲ Waverley Street Foundation
- ▲ Superfund Research Program
- ▲ CALS Dean Award
- ▲ Transformation Network
- ▲ Haury Salary Support
- ▲ GIPD

PROJECT AWARD FUNDING

This graphic indicates funding sources to support faculty research projects and the IRes Center.



DR. KARLETTA CHIEF

Director of the Indigenous Resilience Center
Professor and Extension Specialist

Diné

My current research focuses primarily on the food, energy and water (FEW) insecurities disproportionately impacting Indigenous communities. This work is supported by several grants including the National Science Foundation, National Institute of Environmental Health Sciences, Agnes Nelms Haury Program in Social and Environmental Justice, US Department of Agriculture, and Canada's New Frontiers in Research Fund. Existing projects leveraged in this community-engaged research include 1) Investigated linkages between arsenic exposure, diabetes, and COVID-19 infections and risks on the Navajo Nation; 2) NSF INCLUDES Native FEWS Alliance; 3) NSF Transformation Network; 4) Jurisdiction Back: Infrastructure Beyond Extractivism; 5) Artificial Intelligence for Sustainable Water and Agriculture; and 6) The UArizona Superfund Research Program. In the next year, I look forward to continuing to work with the tribal communities on food, energy and water insecurities while training the next generation of community leaders!

Another key accomplishment was the piloting of off-grid water systems in Navajo communities impacted by mining where tribal citizens are drinking non-potable water. In partnership with Sixth World Solutions (SWS, a Navajo community-based organization), off-grid water systems were co-designed with SWS and Navajo citizens. Water quality was characterized across the Navajo Nation and a decision portal was created for Navajo decision makers to support their decision making in prioritizing high risk communities. Focus groups were conducted in these communities to understand the impact of COVID-19 on water and food security and the perceptions of off-grid solar powered water treatment systems. Overall, outreach to tribal communities regarding mining impacts has reached hundreds of tribal members virtually and increased the knowledge of mining impacts on tribal people and lands in an effort to contribute to informed decision-making for tribes regarding tribal activities and exposure especially with amplified impacts resulting from the COVID-19 pandemic.

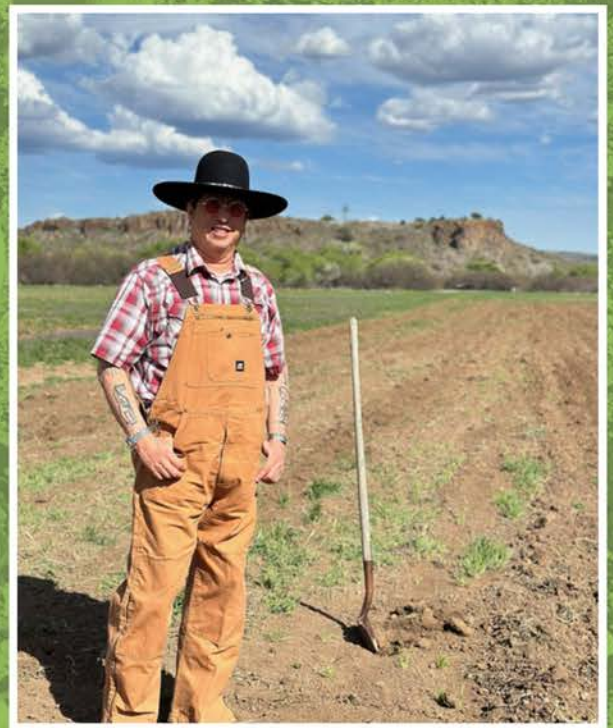


DR. MICHAEL KOTUTWA JOHNSON

SNRE Assistant Professor, Hopi Tribe

PROMOTING INDIGENOUS INGENUITY IN THE FIELD OF AGRICULTURE

I received grants from the Rockefeller Foundation and the Foundation for Food and Agriculture Research. My work has focused on growing traditional crops with seeds going back to the community as just one incentive to continue to raise these crops for the cultural and health benefits for the community. I am also currently working on an agriculture needs analysis of the 21 Pueblo tribes that are in Arizona, New Mexico and Texas. My work will lay the groundwork for my main goal which is creating policy and gathering data for the Revitalization of the American Indian Food System which has supported tribes in the United States since time immemorial. Most importantly my work is community centered as I continue to work with a variety of stakeholders (e.g. tribal governments and native led organizations).



Dr. JOHNSON AND His fArm in HOPI

DR. CHERIE DE VORE

Assistant Professor, Department of Chemical & Environmental Engineering

Diné

BIOGEOCHEMISTRY, BIOTECHNOLOGY, AND ENVIRONMENTAL REMEDIATION

The Nihi Laboratory at the Department of Chemical and Environmental Engineering, led by Dr. Cherie De Vore, has focused on building the laboratory into a functional space. Dr. De Vore is working with two undergraduate students from Plant Sciences and Chemical Engineering, as well as one student in Environmental Engineering. She is co-mentoring a Ph.D. Student in Environmental Science. They are currently conducting Nihi Lab's first experiments entitled, "Physio-chemical and biological processes affecting biosorption of metals on biotic and abiotic polymers chitin and cellulose." This project integrates laboratory batch experiments, geochemical modeling, spectroscopy, microscopy and microbiology tools to determine metal speciation and rate of adsorption onto biotic and abiotic biopolymers at pH 4 and 6 under surface oxidizing conditions. Subsequently, they will investigate functional group surface chemistry of biopolymers (chitin and cellulose) reacted with metal mixtures (2 mM U and As) using similar batch experiments. Biogeochemical insights gained from this project will help us differentiate between abiotic and biotic processes involved in the removal of mixed metals in environmental systems near rural and Native communities impacted by contamination. Finally, Dr. De Vore was named a Co-Principal Investigator to the Native FEWS Alliance in 2024. She looks forward to continuing her support of Native students and advancing our collective mission to co-create solutions to environmental challenges in our communities.



nihi LAB TEAM



DR. JOSEPH H. HOOVER

Assistant Professor, Department of Environmental Science

ENVIRONMENTAL SCIENCE, GEOSPATIAL DATA ANALYSIS AND GIS, INDIGENOUS ENVIRONMENTAL HEALTH AND COMMUNITY-BASED SCHOLARSHIP

My research group is working with a community in northern Arizona to co-create a project investigating the geographies of groundwater contaminant in shallow and bedrock aquifers. This information is critical for collecting missing water resources information necessary for augmenting current climate adaptation plans. To date, we have sampled nearly 30 groundwater wells for trace metals, major ions, stable isotopes, and radionuclides, as well as hosted community water workshops. In partnership with two communities in the northern Great Plains we have established a low cost sensor network to monitoring particulate matter in air. In September 2023 and June 2024 our team installed meteorological stations in multiple locations, in partnership with the State of Montana Climate Office. Additionally, we installed five PurpleAir particulate matter monitors in communities across the Community, and developed a solar-powered cell-telemetry system for remote long-term deployment. We have also adapted the GIS-based multi-criteria decision analysis (MCDA) exposure model, focusing on Unregulated Waste Disposal Sites (UWDS) and newly developed wind data. The UWDS data are a result from our team's efforts to identify and map these sites in impacted communities. For adaptations on model parameters and procedures, we used machine learning and GIS methods to evaluate the consistency of the forest-based classification and regression approach. We are also implementing a human study investigating chemical exposure using passive silicone bands. As of mid-Summer 2024 human studies are underway in two communities.



The background of the page is a photograph of several tall, columnar cacti, likely cholla, against a bright, hazy sky. The cacti are covered in small, dark spines. The entire image has a green color cast.

GRANTS & PROJECTS OVERVIEW



The dual vision of the Native FEWS Alliance (NFA) is to build a highly skilled Native American STEM workforce at the nexus of Food, Energy and Water, and to co-innovate and deploy Indigenous place-based FEWS education and community partnerships. Dr. Karletta Chief is one of the Co-PI's of the Native FEWS Alliance. The project incorporates the work of numerous university and tribal colleges including the University of Arizona and UC Berkeley. The American Indian Higher Education Consortium (AIHEC) serves as the backbone organization for the NFA. Each year the Native FEWS Alliance gathers to meet in person to further this vision.

“We are an Alliance of Alliances, collaborating virtually and meeting at conferences, projects, and meetings, to meet our goals and serve the Native American students.”

The Native FEWS Alliance participated in the events at AIHEC and concurrently ran it's own conference to further the following goals:



Support the AIHEC Student Conference goal and activities: “Honoring our traditions, adapting to our future.”



Celebrate the NFA impact on system change with our wise practices and foundational projects



Develop a sustainability platform in preparation for further funding, outreach, and dissemination.

Indigenizing INFORMATION GEOSCIENCES AT THE GRAND CANYON



Dr. Chief and Dr. De Vore also joined a new project with Arizona State University and University of New Mexico on *“Developing Partnerships Among Tribes, Geoscientists, and the National Park Service to Advance Informal Geoscience Learning at Grand Canyon.”* We have conducted listening sessions with tribes and gone on the San Juan River with Ancient Wayves and tribal knowledge holders. The goal of our National Science Foundation planning proposal is to build partnerships to help shape a more equitable and inclusive place-based informal geoscience learning plan for Grand Canyon National Park.



PHOTOS PROVIDED BY DR. KARLETTA CHIEF!



SCORCH

The Southwest Center on Resilience for Climate Change and Health (SCORCH) supports cross-disciplinary researchers and community partners to plan and implement programs that will help underserved communities in hot and dry geographic regions adapt to climate-driven health threats. Its applied research in the Southwestern United States will build knowledge and practice that will benefit communities globally.

SCORCH is dedicated to research and programs that will empower communities in dry regions, both locally and globally, to adapt to the health risks of climate change and to build health equity as heat, drought, wildfires, and other climate crises threaten population health.



Dr. Joseph Hoover is a Core Lead within the Center and is a Multiple Principal Investigator for SCORCH. Through systems thinking, Health Equity and a Science to Solutions, the Center is positioned to address Climate Change from a broad scale to a local community level.

SCORCH HAS THREE AREAS OF FOCUS AND ASKS THREE GUIDING QUESTIONS:

1. How do extreme weather events impact long-term health?
2. How can we predict when and where climate disasters will strike, and their severity?
3. How do we plan our built environment and modify our landscape to support health in the face of rapid growth?

WAVERLEY ST FOUNDATION

With the support of the **Waverley Street Foundation**, the Indigenous Resilience Center is beginning its long-term commitment to becoming a climate hub. The IRes Climate Hub (the Hub) is utilizing its financial support to develop various components of the overall center. Climate change, pandemics, droughts, and floods are among a list of perturbations disproportionately impacting Indigenous communities and amplifying food, energy and water (FEW) insecurities. Indigenous communities are only 5% of the world's population yet they maintain 90% of the cultural diversity and 80% of the world's remaining biodiversity. Indigenous peoples are deeply connected to the sacred spaces on which they have lived sustainably for

thousands of years and gained a repository of deep place-based local knowledge. Thus, as a rising climate hub, the IRes Climate Hub, works to build community capacity, engage in community driven research, build out its capacity to meet the demands of community partners and underscores a climate ambassador program at its foundation. Since the beginning of 2024, members on the IRes team have worked to coordinate grant efforts under a \$2M award from the Waverley St. Foundation. While supporting the work of the Center, climate adaptation work is beginning to unfold in local communities. The Hub is slated to award \$500,000 to communities by the end of the grant period, with \$250,000 being awarded in Spring 2024.



HERE ARE OUR 2024 COMMUNITY ENVIRONMENTAL IMPACT AWARDEES:

- Hopi Tutskwa Land Steward Fellowship - Hopi Tutskwa Permaculture Institute
- Analyzing the Environmental Impact of Illegal Dumpsites on the Navajo Reservation - HUBitual Learning and Outreach
- San Carlos Apache Regenerative Silvopasture Planning and Design Project- Nalwoodi Dezhone Community (NDC)
- Planted Relatives - IndigePlanted LLC
- A Just Transition Post-Coal Mining Plan for Black Mesa United- Black Mesa United
- Home-scale Purification- Sixth World Solutions
- Community Based Natural Leaders Learning Circle - McKinley Community Health Alliance





WEST ENVIRONMENTAL JUSTICE CENTER

The Environmental Protection Agency (EPA) awarded \$10 million to the University of Arizona to fund the Western Environmental Science Technical Assistance Center for Environmental Justice, or WEST EJ Center, for five years. IRes is one of the partner organizations for the West EJ Center. This funding will advance environmental justice, which is under the new Executive Order (EO) 14096 Revitalizing Our Nation's Commitment to Environmental Justice for All (2023) defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income for the development, implementation and enforcement of environmental laws, regulations and policies. The EPA's promise of clean air, land, and water has not reached many historically marginalized communities.



The WEST EJ Center brings together a diverse coalition with longstanding relationships and extensive expertise working with communities to overcome these barriers. The WEST EJ Center provides organizations or groups free hands-on help, training, resources, and support to tackle environmental or energy justice challenges. They serve Arizona, Nevada, California, Hawai'i, and the US Affiliated Pacific Islands.



TRANSFORMATION NETWORK

The Transformation Network (TN) is funded by the National Science Foundation to build resilient communities and ecosystems in the Intermountain Western United States. TN is a partnership between eight Western U.S. universities and over 50 partner organizations representing Tribal partners, non-governmental organizations, public utilities, municipalities, and more. IRes works with collaborators from the University of Arizona (UofA), Northern Arizona University (NAU), and New Mexico State University (NMSU) on the project charter focusing on "Small-Scale Sustainable Off-Grid Food-Energy-Water Systems." IRes is involved in several subprojects within our TN Charter.



SOLAR NANOFILTRATION AND UV PURIFICATION PROJECTS:

Dr. Vicky Karanikola had led a multi-year long effort to co-design and pilot off-grid water treatment systems in the Navajo Nation. Two systems are currently being piloted in a community within Monument Valley - a Solar Nanofiltration system, and a Solar UV system.

WATER HAULING SURVEYS:

In 2021, Dr. Karletta Chief led an effort to survey water haulers at various locations across Navajo Nation about their experiences hauling water during the COVID-19 pandemic. The team is currently working on data analysis & dissemination.

STAR SCHOOL:

IRes works with a team of folks from NAU and STAR School, a K-8 charter school for Native students in the Flagstaff area, to co-create classroom curricula about food, energy, and water that blend Indigenous Science & Western science.

AGRIVOLTAICS TEACHER TOUR:

In April 2024, teachers from STAR School and Puente de Hozho Elementary, a dual-language immersion school in Flagstaff, traveled to Tucson to tour several sites in the area where plants are being grown under solar panels - also known as Agrivoltaics. The tour is part of an ongoing effort to support the integration of agrivoltaics into K-8 curriculum.



INTERMOUNTAIN WEST
TRANSFORMATION
NETWORK



2023-2024 HIGHLIGHTS

NAVAJO NATION MOA SIGNING

Another exciting tribal partnership is a recent Data Agreement with the Navajo Nation where UArizona signed a MOA on August 6, 2024 to understand risks of Diné to COVID-19 infection. We are honored to work with the Navajo Nation on understanding risks of Diné to COVID-19 infection but investigating if the first COVID-19 infection wave can be linked to other factors such as lack of access to running water or electricity, household size, and other socio-economic factors. We have been working with the Navajo Nation Epidemiology Center on this MOA for 4 years and have engaged in collaborative dialogue. The results of this study will allow us to better prepare for future pandemics and improve emergency response and public health messaging. We thank the Navajo Nation for their partnership and the support of Navajo Nation President Dr. Buu Nygren. We look forward to continuing to work with you to support the resilience of the Navajo Nation while training Diné college students.

"I am very proud of the University of Arizona's work to mitigate the effects of the COVID-19 pandemic throughout Arizona and our efforts now to prepare for future public health threats. As we do so, it is supremely important that we address the social determinants of health, and we all look forward to the impact of this partnership with the Navajo Nation for this vital work. I know Dr. Karletta Chief and the other members of this multi-institutional team will do amazing work for the Navajo Nation and for the world, and I am grateful to President Nygren and the Nation for their partnership and support."

By President Dr. Robert Robbins - President, University of Arizona (attending via zoom)



Superfund
Research Center



CULTURAL COMPETENCY TRAINING



In fulfillment of the Indigenous Resilience Center's strategic plan, we successfully held a two-day cultural competency training on August 10th and 11th. This initiative, in collaboration with Holistic Wellness Counseling & Consultant Services & University of Arizona students, was designed for faculty, researchers, staff, and administrators from the University of Arizona who work with Native communities. The training focused on examining the history of trauma and resilience within Indigenous Communities, as well as exploring ethical research practices when engaging with Sovereign Nations.

Participants engaged meaningful dialogue tailored to their specific fields of work. Attendees gained valuable insights into the unique challenges and strengths of Native communities, enhancing their ability to work respectfully and effectively in these settings. The training offered Continuing Education Units (CEUs) for all who completed the program, emphasizing its importance and professional value. To ensure a safe and open environment for discussion, the training was conducted in person only, with no recording or Zoom options available. Given the sensitive nature of the topics covered, space was limited, and attendees committed to participating fully on both days. This training represented a significant step in our ongoing commitment to fostering cultural competency and ethical engagement within the University of Arizona community.

NATIVE FEWS GATHERING 2024

This year's annual gathering took place at the American Indian Higher Education Consortium (AIHEC) Student Conference. AIHEC is a 501(c)(3) organization governed by a board of directors composed of the presidents of the accredited United States based Tribal Colleges and Universities (TCUs). For 50 years, AIHEC has brought together the nation's 35 accredited TCUs and 2 developing institutions.



Iliiitchik: Indigenous Correspondents Program (ICP) is one of the mini-grant recipients of the NFA. IRes serves as the point of contact for ICP and works with their unique programming. The Iliiitchik: Indigenous Correspondents Program supports 10-12 Indigenous students from across the United States through a 10-month communication skill-building, professional development, and community-building program led by Indigenous mentors in fields ranging from environmental journalism to podcast production.

SACNAS 2023

The Society for Advancement of Chicanos and Native Americans in Science (SACNAS) is a nonprofit organization founded in 1973. It is the largest multicultural STEM diversity organization in the United States. This year SACNAS celebrated its 50th Anniversary with 6,500 participants attending the conference in Portland, Oregon. IRes participated in the conference and met with collaborators from the Native FEWS Alliance, the Transformation Network, and the Indigenous Correspondents program.



TRIBAL LEGISLATIVE DAY

The 29th Indian Nations and Tribes Legislative Day was held at the Arizona State Capitol. The day featured a Joint-Protocol Session hosted by the House of Representatives with floor privileges extended to tribal leaders to join their representative(s) during the session. Dr. Karletta Chief was recognized from the senate floor along with a proclamation on the work of IRes. Afterwards, IRes and the Haury Program hosted a luncheon for UA attendees and guests, including members of the Arizona Department of Education – Office of Indian Education, Arizona State University’ Labriola Program, the Inter-Tribal Council of AZ, and the United States Department of Agriculture and Phoenix Indian Center.



MEXICO IMMERSION TRIP 2023



IRes organized a Mexico immersion trip to collaborate with partners near Valladolid, Yucatan around sustainable development. Five Indige-FEWS trainees, two consultants, and one staff member shared their work in the area of food, energy, and water and learned about the community. Former Indige-FEWS trainee, Dr. Sarah Abney, who undertook a Fulbright Postdoc with the Center for Scientific Investigation of the Yucatan Peninsula (CICY) helped connect her experience as a trainee with her current research. The Indige-FEWS team met with staff members of CICY, toured their labs, and explored potential collaborations.



ANAYSA STARK ARTIST TALK

The Indigenous Resilience Center (IRes) co-sponsored an artist talk with Tohono O'odham Community College. Anaysa Stark was an intern with IRes during the Summer of 2022 as part of A Student's Journey. During this time, she played an essential role in assisting the center to develop its brand. Anaysa presented her work with IRes and her current portfolio with community members and colleagues from across campus.

Winter Storytelling Under the Stars was hosted by the Tohono O'odham Student Association (TOSA), Indigicat Student Association, and Cultural Resource Center Native American Student Affairs. TOSA hosted a traditional storytelling night to help give students a piece of home, and having staple O'odham food for dinner such as beans, squash and cheese, red chile, and popovers. TOSA brought in Kristopher Dosela, Akimel O'odham and San Carlos Apache, as their storyteller. Additionally, they were able to share traditional O'odham songs. Many students were so happy, stating how they haven't had a meal that reminded them of home in so long or made them happily remember loved ones who have passed on. Over 20 students, staff, and community members were in attendance.



LET'S WAILA! 2024 EVENT

Let's Waila! is the second annual dance hosted by Tohono O'odham Student Association (TOSA), Indigicat Student Association, The Queer Trans People of Color and Two Spirit Discussion Group, Cultural Resource Centers Native American Student Affairs, and the Common Ground Alliance. TOSA, in hosting this dance, is sharing parts of the O'odham culture with the greater Native students, staff, professional staff, and community surrounding UArizona. The waila band brought in was South Image, one of their members being a student at the University. There were over 100 students, staff, faculty, and community members in attendance throughout the night. Tohono O'odham students were happy to share this experience with everyone, and showing others how to dance if they didn't know how. Ben Jose, the lead of the band, noted that the ambience of the night was very joyful, with everyone dancing and smiling.

AISES 2023

The American Indian Science and Engineering Society (AISES) is a non-profit professional association to substantially increase American Indian, Alaskan Native, Native Hawaiian, Pacific Islander, First Nation, and other Indigenous peoples of North America representation in the fields of science, technology, engineering, math (STEM) and other related disciplines. The Indigenous Resilience Center participated in the conference and hosted a table to share the work of the Native FEWS Alliance. IRes organized and led the conference presentation, **“The Native FEWS Alliance Panel Presentation on Student Success: Reflections of the Native American Student Experience in the Nexus of Food, Energy, and Water.”**



SOUTHWEST 2024 ADAPTION FORUM



The Southwest Adaptation Forum (SWAF) is the biennial gathering of practitioners, professionals, researchers and community members who are working to accelerate effective climate adaptation and reduce the impacts of climate change in communities and landscapes across the Southwest. The gathering was organized by the Southwest Climate Adaptation Science Center, and co-convened with many partner organizations. The event was hosted at the Tohono O'odham Nation's Desert Diamond Casino & Hotel on February 27-29, 2024 in Tucson, Arizona.

SWAF offered participants a variety of ways to connect, through peer-to-peer learning, break out discussions, field trips, and networking opportunities. IRes hosted a Water Solutions Cafe & roundtable discussions for conversation about water in the Southwest with a diverse group of stakeholders, featuring a presentation about tribal water resources & climate change by Dr. Karletta Chief. Dr. Michael Kotutwa Johnson also gave a talk about food sovereignty, Indigenous foodways, and seeds.



Many of our team members participated in a field trip to the San Xavier Cooperative Farm. We learned about the history of the farm, the folks that care for the land, as well as many of the ways in which the farm follows the Tohono O'odham Himdag, or Way of Life. We were lucky enough to visit on a rainy day, as well as to meet their famous farm dog, Buddy!





In conjunction with the Southwest Adaptation Forum (SWAF) The Indigenous Resilience Center honored four individuals at the Indigenous Resilience Awards. These four individuals are Amy Juan, Clifford Pablo, Ray Martinez, and Dr. Selso Villegas, who all exemplify great service to their communities.

2024 INDIGENOUS RESILIENCE AWARDS

Amy Juan is a member from the Tohono O'odham Nation, belonging to the communities of Comobabi, Ali Cukson, and Wecij Oidag. From a young age, she has worked closely with traditional medicine and foods in Tohono O'odham programs, as well as researching climate change adaptation. In 2022, she joined the San Xavier Cooperative Farm as the Administration Manager where she is working towards strengthening O'odham foodways and Oidag Himdag.

Clifford Pablo is the Extension Agent/Farm Manager for the Tohono O'odham Community College's Agriculture Extension Program. Since 2008, he has been honored to work with the Tohono O'odham Community College Agriculture program to learn and teach about agriculture and the environment. He has been diligent in preserving his culture, environment, and precious water resources whilst adapting to a changing world.

Raymond Martinez is a tribal member and Tribal Council Representative of the Pueblo de San Ildefonso (New Mexico). As the current Director of the Environment Department, he is prioritizing continuous monitoring of the Chromium plume and providing accurate and frequent communications to Pueblo residents and Tribal Council.

Dr. Villegas is a member of the Tohono O'odham nation. He graduated from the University of Arizona with a Masters in Wildlife and Fisheries Science, his PHD dissertation being on environmental contaminants. Dr. Villegas has spent the last 25 years working in executive positions in Natural and Water Resource Management for his tribe, and 'as a protector of *Jewed Ka:cim*, a protector of water.'



*Ray
Martinez*

*Amy
Juan*

*Dr. Selso
Villegas*

*Clifford
Pablo*

Native Voices in Film 2023

IRes celebrated Native American Heritage Month with the second annual Native Voices in Film at the Loft Cinema. The afternoon of November 5th featured films, vendors, food, family-friendly activities, and community gathering. The highlights of the event included the screening of Indigenous films: Seed Mother; Beyond All Boundaries: Our Land, Our Water; Borne of Water, and the SNF (Solar nano-filtration) short film: Community-led water purification units to increase water access in remote areas of the Navajo Nation, a picture book reading of Finding Home: The Journey of Malachi (produced by the Pascua Yaqui Tribe's Office of the Attorney General), a performance by the band Reztones, and a thoughtful panel discussion (including panelists Madam Chairwoman Flores from the Colorado River Indian Tribes, filmmaker Deidra Peaches of DLP Productions and Paper Rocket Productions, and Dr. Karletta Chief from the Indigenous Resilience Center). The event also featured a Children's Corner run by the UA Indigenous Teacher Education Program, Native SOAR, and Arte de la Vision.

Indigenous Peoples Day 2023

Indigenous People's Day is hosted by the Indigicat Student Association and completely student-led. The goal of this event is to provide Native students with pockets of home by bringing in different performers from the surrounding tribes in Arizona. This year, they were able to bring in performers from White Mountain Apache, San Carlos Apache, Three Affiliated Tribes (MHA), Akimel O'odham, Tohono O'odham, and Pascua Yaqui. The magic that was created was able to allow students to feel at home, despite many being miles and hours away from home, with over 200 students attending throughout the day.

Tribal Sovereignty Forum 2023

In September 2023, the Indigenous Resilience Center, in collaboration with the University of Arizona Agnese Nelms Haury Program in the Environment and Social Justice, College of Law, and the Office of Native American Advancement & Tribal Engagement, convened a panel of top nationally recognized tribal law experts to explore the implications of recent Supreme Court rulings on Tribes. These Court cases included: *McGirt v. Oklahoma*; *Oklahoma v. Castro-Huerta*; *Arizona v. Navajo Nation*; *Sackett v. Environmental Protection Agency*; *Coughlin/Lac du Flambeau Case*; and *Brackeen v. Haaland*.

The facilitated panel engaged with Tribal leaders, judges, and university students to examine the Court's historical context, interpret recent decisions, and discuss the ongoing challenges to tribal sovereignty.

One Water Summit 2023

The One Water Summit was organized by The US Water Alliance in partnership with Tucson Water. The Summit included plenary sessions, learning labs, field trips, workshops, and networking opportunities. IRes brought its own delegation to the conference and worked with the tribal consultant of the One Water Summit to highlight Indigenous voices. IRes contributions included:

- Dr. Karletta Chief serving as a panelist on the Tucson Water Story opening plenary session. Panelists included: The Honorable Austin Nunez, Chairman, San Xavier District of the Tohono O'odham, Alexandra Jimenez, Artist, Alexclamations, John Kmiec, Director, Tucson Water, The Honorable Regina Romero, Mayor, City of Tucson, and Dr. Sharon Megdal (moderator), Director of the Water Resources Research Center at the University of Arizona.
- Organizing the University of Arizona Innovations in Reuse and Agriculture at WEST Center and CEAC tour. The tour was led by Indige-FEWSS trainees Jaymus Lee from Indigeponics and Calder Bethke at the UA Controlled Environment Agriculture Center. Indige-FEWSS trainee Luke Presson helped lead the tour at the Water & Energy Sustainable Technology (WEST) Center.
- IRes core faculty member, Dr. Michael Kotutwa Johnson presented on the panel Nourishing Soil, Stewarding Water: Agricultural Practices to Build Resiliency
- The IRes delegation met with Mami Hara, US Water Alliance CEO and Summit leadership to provide feedback on how to incorporate Indigenous perspectives in future programming.





HIGHER EDUCATION CLIMATE LEADERS SUMMIT

In February 2024, Karletta Chief, Michael Johnson, and Daniel Sestiaga attended the Higher Education Climate Leadership Summit in Long Beach, California. This conference was co-convened by the Waverley Street Foundation. Hosted by the Intentional Endowments Network and Second Nature, "over 450 changemakers dedicated to advancing sustainability through higher education gathered to learn and exchange ideas over the course of this three-day conference. University presidents, sustainability directors, students, endowment decision makers, were among those engaged in the Summit's 35 total sessions and numerous networking opportunities." This provided a chance for IRes staff to develop a working relationship with other Waverley Street Foundation grantees and prepare for its work to re-enter the climate space.

Dr. Karletta Chief joined (left to right) Denae King, Associate Director of the Bullard Center for Environmental and Climate Justice at Texas Southern University, Angela Mahecha, Director, EJ Disrupt Design Fellowship at the New School Tishman Environment and Design Center, Mathy Stanislaus, Vice-Provost & Executive Director at the Environmental Collaboratory (TEC) to host the session One Foot in, One Foot Out: The Role of Universities in Climate Justice Partnerships.



STEM DAY AT BABOQUIVARI HIGH SCHOOL

In March, members of the IRes team had the opportunity, alongside Tohono O'odham Community College and the American Indian College Fund traveled to the Baboquivari Secondary Campus in Topawa, Arizona for their 'Stem Day' Where members of the IRes team were able to engage and connect with the current high school students, while also building relationships with the Baboquivari Unified School District.



2024 INDIGENOUS DATA SOVEREIGNTY & GOVERNANCE SUMMIT

The Center was a sponsor for the Indigenous Data Sovereignty Conference and helped welcome attendees by hosting a cultural exchange dinner the first night. Attendees were different tribal and Indigenous nations located globally around the world. The Center brought in basket dancers from Akimel O'odham, Chi'Chino Spirit. Chi'Chino Spirit was able to share cultural songs and performances with the basket dancers, explaining the significance behind each one. The night ended with a kehina, O'odham social dancing, that everyone was able to be a part of. All attendees were happy to share in the dancing, many expressing their thanks to Chi'Chino Spirit.

2024 SPRING SOCIAL POW WOW

This year, as part of its commitment to build relationships and community, IRes was able to co-sponsor the 2024 Spring Social Pow Wow presented by the Tucson Indian Center and the University of Arizona. The purpose of the Social Pow Wow was to gather our local Native American and non-Native American community members together for a celebration of Native American cultural dancing, singing, artistry, health, wellness, and prayer. It was an important cultural event that reinforces cultural traditions and highlights the many different backgrounds of our Native American student population at the university. There are approximately 150 different tribal communities represented on our campus and over 570 federally recognized tribal communities in the U.S. This event had over 1200 participants in attendance.





THE UNIVERSITY OF ARIZONA
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Indigenous
Resilience Center



THANK YOU

The Indigenous Resilience Center would not have been able to accomplish the outstanding programming efforts and broaden our reach without partners and collaborators throughout the year. While there are too many to name, we recognize a few that have provided support and encouragement as the Center continues to fulfill its mission:

Agnese Nelms Haury Program, Office of Native American Advancement and Tribal Engagement, the Office of Native American Initiatives, the Native Peoples Technical Assistance Office, the Arizona Institute for Resilience, the Office of the President, the Office of the Provost, the Office of Research, Innovation and Impact, the IRes Community Advisory Board, NVIS Guest Lecturers, the Native FEWS Alliance, the Transformation Network, TRIF/WEES Funding, SWEHSC, Baboquivari Unified School District, the American Indian College Fund, the Waverly St. Foundation, the American Indian Higher Education Consortium, Native American Student Affairs, IRes Student Staff, Tohono O'odham Community College, Diné College, San Carlos Apache College, Tohono O'odham Nation, Pascua Yaqui Tribe, San Carlos Apache Tribe, Ak-Chin Indian Community, Gila River Indian Community, Navajo Nation, the Hopi Tribe, and Miguel Flores Jr.



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