



2023 ANNUAL REPORT TRANSITIONS

“Navajo Technical University honors Diné Culture and Language, while Educating for the Future.”



ESTABLISHED 1979



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**NTU IS ACCREDITED WITH THE
HIGHER LEARNING COMMISSION**

- 10 Year Approval 2018 -

SPECIAL PROGRAM ACCREDITATIONS WITH:



Electrical Engineering, Industrial Engineering



Veterinary Technology



Commerical Baking, Culinary Arts



Carpentry, Construction Technology,
Electrical Trades, and Welding

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NTU Core Values, Mission, Vision, and Philosophy

The NTU core values are in addition to its mission, vision, and philosophy statements, and help guide the university's day-to-day operations. They apply to students, faculty, staff, and the board of regents, and help us achieve our intended goals.

- **Íhoo'aah: Learning**
- **Éédééhtj: Innovation**
- **Ałk'izhdiitj: Communication**
- **Ahiłna'anish: Collaboration**
- **'Adiłjidlj: Integrity**
- **Ałhidilzin: Respect**
- **Na'alcaah: Research**

Mission Statement

Navajo Technical University honors Diné Culture and Language, while educating for the future.

Vision

Navajo Technical University provides an excellent educational experience in a supportive, culturally diverse environment, enabling all community members to grow intellectually, culturally, and economically.

Philosophy

Through the teachings of **Nitsahakees** (*thinking*), **Nahata** (*planning*), **lina** (*implementing*), and **Siih Hasin** (*reflection*), students acquire quality education in diverse fields, while preserving cultural quality education in diverse fields, and gaining economic opportunities.



Photo: University Marketing Department

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NTU Welding Program

Designing the rug took two weeks by Verna Sue Casamero and her interns, three days to put it together, and another four days to put it into the ground. The interns have also assisted with the summer programs by helping fellow students and helping with the outdoor learning centers in Chinle and Teec Nos Pos. The rug is located at the front of NTU Main entrance.

Navajo Technical University welding interns; Marcus Burbank, Andre Beno, Kani-sha Faber, and Wade Brown have welded NTU's traditional rug.

STATEMENT FROM OUR PRESIDENT



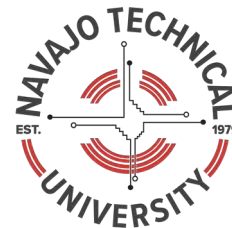
Elmer J. Guy, Ph.D.
NTU President

The journey at Navajo Technical University (NTU) proved to be a transformative experience for us. We embraced the challenges with open arms and discovered the power of resilience within us. Despite the obstacles, we learned to channel our creativity and resourcefulness to overcome dilemmas and make the most of the opportunities at hand. This experience has helped us evolve into stronger and more capable individuals, ready to take on any challenge that comes our way.

This year, I am immensely proud to witness the collective strength of NTU's students, their families, and the dedicated faculty, staff, and administrators. Together, we confronted the challenges presented by the pandemic head-on, not merely surviving but thriving in the face of adversity. As exemplified by NTU, Indigenous higher education emerges as a potent force, uncovering boundless possibilities within our classrooms, projects, research endeavors, and daily activities.

These possibilities manifest in various forms—a hotspot skillfully set up by our IT experts, a biology graduate's ambitious application to Harvard University for graduate school, the tireless efforts of faculty in developing hybrid in-class and virtual education lessons, and virtual counseling sessions facilitated by our counseling staff. Across disciplines such as trades, STEM, general education, and the arts, our faculty pioneers projects that keep students engaged and equip them to contribute meaningfully to their families and the Navajo or Zuni communities.

The essence of Navajo Technical University lies in its learn-by-doing approach, a dynamic embodiment of the Diné Philosophy of Education. We have not only faced the challenges posed by the pandemic but transformed this year into a tapestry of endless possibilities, enriching the lives of our students, faculty, staff, student families, and the Navajo and Zuni Nations. In truth, despite the adversities, we emerge from this extraordinary year as a stronger and more dynamic institution of higher learning,



A handwritten signature in blue ink that reads "Elmer J. Guy".

Elmer J. Guy, Ph.D.
NTU President

Our Resilience



The 2023 calendar year marked a year of transition for Navajo Technical University. The covid and respiratory pandemic still hung around during the year, causing illness among students, faculty, and staff, but mostly the pandemic was in the rearview mirror. This meant that new efforts could be launched to heal some of the challenges that developed because of the pandemic for the university and lay the groundwork for an ever-brighter future for students and the university. Fortunately, a number of these efforts, because of the hard work of students, faculty, and staff, led to good results.

A lot of our past efforts, to make NTU a respected research university as envisioned by Dr. Elmer Guy, our President, and efforts to improve assessment, financial management, E-learning, and add important new academic programs continued. The university also successfully launched its first Doctor of Philosophy program in Diné Culture and Language Sustainability with three students. All these efforts resulted in significant accomplishments during the year.

However, new efforts in recruitment and retention helped make 2023 stand out. During the pandemic the enrollment at all the campuses

in New Mexico and Arizona receded. This phenomenon was one that affected institutions of higher learning throughout New Mexico and Arizona and in the rest of the country. Since funding to support colleges and universities, including NTU, is tied closely to enrollment trends, the concern at the beginning of the year was that if the trends established during the pandemic were not reversed, NTU could face future dilemmas that would be difficult to address.

Significant efforts were made to engage the faculty and staff in conversations about enrollment, persistence, and retention. Plans were put into place to improve programs designed to address the concerns about these measures of higher education institutional success. A general sense that NTU had to transition from past efforts to a new set of attitudes and efforts was put into place. Then the new efforts were implemented, especially by the recruitment and Student Services administrators and staff supported by the faculty.

This year's Annual Report details that success and describes the other efforts made during the year to improve NTU's operations and achieve strategic planning goals.

“Lay the groundwork for an ever-brighter future for students and the university”

2023 - Year of the Skyhawks!

Sunshare Grant Award Ceremony

August 29, 2023 - SunShare, a community-solar company, awarded a \$6 million grant to Navajo Technical University (NTU) toward renewable energy. NTU faculty and staff, Coalition to Stop Violence Against Native Women, and the SunShare team met inside the wellness center to celebrate the partnership of the Navajo Nation's profound connection with the land, sun, wind, and water.



U.S Department of Higher Education Visits NTU campus

September 25, 2023 - The visit of the U.S Department of Education Under Secretary James Kvaal to Navajo Technical University was an excellent opportunity for the university to showcase its exceptional programs and initiatives. It demonstrates the university's commitment to excellence and its ability to attract high-profile visitors. The visit also provided a chance for the university to engage with important figures and establish valuable connections that can benefit the entire community. Overall, it was a significant milestone for NTU, and we are confident that it will lead to more positive developments in the future.



NTU Nursing Director Inducted into the American Academy of Nursing

October 5-7, 2023 - Navajo Technical University Nursing Director Dr. Michelle Kahn-John was inducted into the American Academy of Nursing's 2023 Class of Fellows, comprising 252 distinguished nurse leaders, recognized for their substantial impact on health and healthcare, with Dr. Kahn-John, an Indigenous nurse scientist, focusing on addressing mental health disparities in Native American communities and contributing to health equity through her clinical expertise and cultural research.





Navajo Transitional Energy Co. Partners with Navajo Technical University

September 25, 2023 - Navajo Technical University and Navajo Transitional Energy signed an agreement to start a new welding internship for NTU students. Dr. Elmer Guy, President of NTU, and Dragan Bogunovic, General Manager of NTEC's Navajo Mine, were at the University to finalize the new partnership. As part of the arrangement, selected NTU students will spend six weeks working at Navajo Mine in the Navajo Nation alongside seasoned welders and get a first-hand look into mining operations. In addition to real-world experience, the students will have a potential career path after graduation.



Introducing Miss NTU 2023-2024

September 6, 2023 - Samatha Antone was crowned as the new Miss Navajo Technical University 2023 - 2024. Samantha is from Baboquivari, AZ, and is an Automotive major residing in Crownpoint, NM. She displayed her traditional talent and skill by demonstrating and explaining the use of the Tohono O'odham Nation dress and clothes. For her modern talent and skill, she played a Navajo flute (6-hole) and a totem made from Spanish cedar.

- First Runner-Up: Malorie McKerry, Tuba City, AZ
- Second Runner-up: D'Andre Harker, Ganado, AZ



Navajo Technical University Recognized for Accredited Ph.D. Program

October 17, 2023 - During the session the 25th Navajo Nation Council Speaker Crystalyne Curley and Council Delegate Dr. Andy Nez recognized NTU for establishing the Navajo Nation's first accredited PhD program, as well as the first Tribal College University (TCU) to establish such a prestigious degree

Biology Students Fall Semester Research Findings

December 9, 2023 - In Fall 2023, three NMSU-sponsored biology interns presented their research findings. Avery Begay, David Willi, and Francesca Noble worked under Dr. Germaine Daye's supervision, guided by Professor of Biology and Microbiology, Dr. Irene Ane Anyangwe. Avery focused on mycobiome communities in the Populus nigra tree bark, while David researched novel soil antibiotics against Mycobacterium smegmatis. Francesca analyzed antimicrobial resistance in desert microbes.



Counseling Program Internship Presentations

November 9 2023 - During Fall 2023 Counseling Program Interns provided a presentation to their classmates, advisors, and upcoming interns. The interns were at the following locations:

- Tina Bowannie - Zuni Public Schools
- Shyler Martin - Four Corners Detox - Gallup
- Tia Curley - Chinle Public Schools
- Karen Willie - Nova III (Gallup)

The intern's showcase and presentation were remarkable. The Counseling program equips students with skills to support individuals with emotional, behavioral, or substance abuse disorders.



DigDeep Visits NTU Kirtland Site

October 4, 2023 - In preparation for the start of the Navajo Nation's first dedicated plumbing training program, the International Water, Sanitation and Hygiene Foundation (IWSH) finished the construction and setup of a new plumbing classroom and wet lab at the Navajo Technical University Kirtland Instructional Site in Kirtland, New Mexico. The new education facility will offer a 34-credit plumbing certificate program. IWSH developed introductory courses covering plumbing concepts and applications, which will equip learners with the skillsets and understanding needed for a career in the plumbing profession.





CAPSTONE Research Project

May 10, 2023 - NTU Biology student Kyra Capitan (Senior) poses with Dr. Palmer (Left) and Provost Dr. Bowman (Right) after presenting her CAPSTONE Research Project on the discovery of Bioactive Antimicrobial Metabolites in Endophytic Fungi of Desert Plants. Congratulations, Kyra Capitan, on a successful semester.

Navajo Technical University provides an excellent educational experience in a supportive, culturally diverse environment, enabling all community members to grow intellectually, culturally, and economically.



SkillsUSA New Mexico Championships 2023

April 13 - 15, 2023 - NTU students participated in the NM SkillsUSA State Leadership and Skills Conference in Albuquerque, NM. The students competed in technical competitions in Central New Mexico (CNM) and other locations. The SkillsUSA New Mexico Championships are highly competitive events that showcase the state's best career and technical education students. The Championships aim to recognize and reward students for their excellence, involve the industry in evaluating student performance, and ensure that the training aligns with the employers' requirements.



2023 NTU Spring Commencement

May 12, 2023 - The 2023 Spring Commencement was held at the NTU Wellness Center on the main campus in Crownpoint, NM. The event was attended by NTU alumni, faculty, staff, graduating students family and friends who recognized the graduates of their accomplishments, perseverance, and dedication

2023 NTU Fall Commencement

December 15, 2023 - NTU community, friends, and family celebrated the graduation of ninety-nine students who earned their respective certificate, associate, bachelor, or master degree. The Commencement Speaker was Trisha Moquino, Co-Founder Indigenous Montessori Institute Keres Children's Learning Center. Both Trisha and Navajo Nation President Dr. Buu Nygren congratulated the graduates and their accomplishments.



NTU Students compete in the AIHEC TCJ Student Writing, Art, and Film Contest

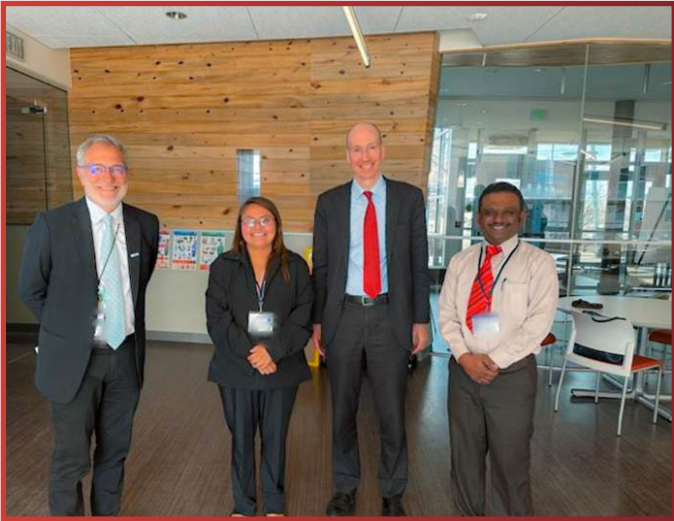
March 6-7, 2023 - The Tribal College Journal (TCJ) seeks exceptional creative writing, art, photography, and film by tribal college students for its student writing, art, and film contests. The top writing and art submissions are featured in both the fall print edition of Tribal College Journal.



NTU 2023 Trout Fishing Tournament

August 5, 2023 - Tsaile Lake hosted the highly anticipated Navajo Tech Trout Fishing Tournament. The event, organized by Navajo Technical University (NTU), brought together over ninety participants, casting their lines in pursuit of the prized trout that inhabit the lake.





NTU Solar Decathlon Competition

April 20-23, 2023, - NTU Navajo Builders team participated in the U.S. Department of Energy Solar Decathlon® 2023 Design Challenge, presenting their Keyah House design for renewable energy and sustainability in the Navajo Nation, aiming to connect with diverse industries and implement innovative solutions like Starlink for rural internet connectivity.



NTU Student presented the DiversiFlite Scholar Award at the Forum 79 Awards Banquet

April 18, 2023 - In Fairfax, Virginia, Felicia Trebian, a dedicated engineering student at Navajo Technical University, was honored with the prestigious DiversiFlite Scholar Award at the Vertical Flight Society’s Forum 79 Awards Banquet. This recognition for her outstanding academic achievements and passion for vertical flight took place during the 79th Annual Forum & Technology Display in West Palm Beach, Florida, where she participated from May 16-18, 2023, connecting with industry leaders and gaining valuable insights, making her involvement an invaluable experience.



Navajo Technical University, Culinary Arts Program, Earned Numerous Awards and Accolades

July 17-19, 2023 - NTU’s Culinary Arts Program led by Chef Robert L. Witte received several accolades recently. Chef Witte was honored with the Presidential Medallion at the American Culinary Federation’s National Convention, while Chef Brian Tatsukawa was inducted into the American Academy of Chefs. The student culinary team also showcased Navajo culture at the ACF Student Team of the Year Competition.

Early Childhood Multicultural Education (ECME) Milestone Ceremony for The CDA Equivalent

December 6, 2023 - NTU recently hosted the ECME Milestone Ceremony to celebrate students who completed foundational courses necessary to apply for the Child Development Associate (CDA) Credential. Dr. Bowman recognized the faculty and staff for their dedication to keeping multicultural education thriving and inspiring the students. It was a significant achievement for the students and the university.



American Culinary Federation (ACF) Certifies Three Outstanding Culinary Professionals

May 26, 2023 - The ACF recognized Walter Cloud, Lorencita Billiman, and Lorena Giesbrecht for their outstanding certification achievements. These chefs have demonstrated exceptional skills and dedication, meeting the high standards set by ACF certification. Their success is a testament to their unwavering commitment to excellence, and they have the support of mentors and evaluators like Chef Carlton Brooks, Chef Leonard Bailey, Chef Garry Waldie, and Chef Jay Rathmann to guide them along the way.



NTU President Dr. Guy Visits Skyhawks Men's Basketball Team

August 15, 2023 - NTU President Dr. Elmer Guy and Vice President of Operations Jason Arviso visited the men's basketball team inside the wellness center. During the visit, Dr. Guy and Jason Arviso got acquainted with the NTU Men's team and Coach Robb Floco before the start of the season as the team gifted Dr. Guy and Jason with a team-signed basketball and t-shirt in appreciation for the opportunity to play basketball at the collegiate level.





NTU Student Awards Day

May 1st, 2023 - Students on the Dean’s and President’s list from Spring 2022 and Fall 2022 were recognized by the registrar on this day. Colleen Bowman gave the opening address to the event- “It has been an honor to work with and alongside our NTU Students.” Faculty and staff acknowledged each student with an award for their outstanding academic achievements.



NTU Marketing Coffee Shop

November 29, 2023 - NTU Marketing Department hosted a free coffee shop inside the Wellness Center foyer on the Crownpoint campus. The coffee shop was open just after 9:30 am till the supplies ran out around 11:30 am. The event was available to the students, faculty, and staff at the NTU Campus. Merial Simpson led the NTU Marketing team coffee shop as she came up with the menu and provided training for the marketing team event. It was a huge success and drew out much of the NTU community. There was high praise from the students, faculty, and staff about the taste and presentation of the coffee. Customers also receive NTU stickers and small pastries along with the coffee.



NTU Innovation Center Building Connections

November 17, 2023 - Navajo Technical University built connections at the Navajo Tech Innovation Center (NTIC) while enjoying good food, giveaways, door prizes, and activities for local NTIC tenants, businesses, vendors, and special guests. NTIC Director Matt Tafoya hosted, and local business vendors participated in the event as they set up booths. Matt Tafoya was excited about the Cultural Arts Program at NTIC. The center intends to enhance and revitalize traditional Navajo cultural arts practices while providing opportunities for Navajo cultural arts knowledge holders and master artisans to share their unique skills in a multigenerational setting.

Navajo Technical University Weightlifters Make an Appearance at Wowies

November 25th, 2023 - NTU weightlifters participated in this year's 2023 Wowies Gym Feel the Power Competition—a huge congratulations to the phenomenal medal winners. Your outstanding performances have earned you both medals and the admiration and respect of everyone witnessing your incredible feats of strength. Your dedication, hard work, and relentless determination have propelled you to the top, motivating others to tackle any obstacle in our everyday lives.



Navajo Technical University Sponsors MMIW, United Through Metal

November 11, 2023 - Through these tough times when our indigenous women are murdered or go missing, the heavy metal community comes together at the Juggernaut in Downtown Gallup, New Mexico. Each band showcased insane levels of musicianship and played heavy music on such a serious subject. The event felt like more than just a concert. It was a gathering of like-minded people where attendees and bands showed their love and support for the MMIW community.



Navajo Technical University 2023 Crownpoint Christmas Light Parade

December 21, 2023 - The fall semester at NTU in Crownpoint, New Mexico, ended on a high note with an impressive turnout of students, staff, and faculty members. The community of NTU took part in the Christmas Light parade, one of the largest Christmas parades the small town had seen in a long time. It was a time of the year when everyone came together to celebrate a day that promoted love and unity, preparing us for the New Year



Skyhawks Athletics Department

To establish a thriving university, a key component is a strong athletic program. In 2012, NTU laid the foundation for its success by constructing the Wellness Center, complete with a gymnasium. The recent addition of NTU's inaugural conference men's basketball team marks a significant milestone, and rodeo have been important parts of the competitive athletic mix. Looking ahead, the university is set to broaden its athletic horizon by adding women's basketball to the Crownpoint campus in theyear. This strategic approach reflects NTU's commitment to enhancing its athletic program and fostering a well-rounded university experience.

SKYHAWKS BASKETBALL



BUILDING A NAVAJO DREAM TEAM

June 8th, 2023 - The Head Coach of the NTU Men's Basketball program, Robb Floco, recently presented his proposal to Navajo Nation President Buu Nygren to establish a community health and wellness athletic basketball program. His vision is to create a dream team for Navajo Technical University basketball, and it seems he has already found his first big supporter. With such an ambitious plan to promote health and wellness through sports, we look forward to seeing the positive impact that this program will have on the community.



NTU Mens Basketball player Jose Miguel completing welding certificate and associates.

December 15, 2023 - Jose Miguel, an NTU SkyHawk Basketball player, successfully graduated from the NTU welding program, proving that hard work and determination truly do lead to a successful career. As one of the first athletes in the program to achieve this feat, Jose Miguel has set an inspiring example of how grit and perseverance can lead to success both on and off the court. Congratulations to him on this remarkable achievement, and we wish him all the best for his future endeavors!

SKYHAWKS RODEO



NTU Rodeo Demonstration- Crownpoint Elementary

January 1st, 2023 - NTU Rodeo coach Nicole Pino welcomed students (2nd to 5th grade) and staff as she brought rodeo to the classrooms at Crownpoint Elementary. Nicole explained the technique behind the saddle and the competitive sport of the rodeo discipline to throw a rope with a loop around the head, horns, or legs, based on the size and age of the animal, and prevent it from moving.



NTU Rodeo Team Excels at NMSU Rodeo

April 21 - 22, 2023 - The NTU Rodeo Team recently competed at the NMSU Spring Rodeo at the Landmark Mercantile arena in Mesquite, NM. The team comprised of Amytheiss Marvin, LaBelle LaFrance, Matthew Jodie, and Hiyo Yazzie. All students demonstrated their skills and determination throughout the competition.



NTU Rodeo Team attends CNFR Armband Ceremony

June 10, 2023 - The Navajo Technical University Rodeo Team is thrilled to announce their participation in the College National Finals Rodeo (CNFR) at the Ford Wyoming Center in Casper, WY. The team is prepared to demonstrate their exceptional skills and dedication during this prestigious event, which will commence with the highly anticipated Armband Ceremony.



New Programs Accredited

New Programs the Higher Learning Commission Approved in 2023

Two new programs approved by the HLC:

- A Master of Science degree in Electrical Engineering, approved in November 2023
- A Ph.D. degree in Diné Culture and Language Sustainability, approved in March 2023

The celebration for achieving the first doctoral program by any of the Tribal Colleges and Universities was one of the highlights of the year. For the first time ever, the TCU movement has produced a Ph.D. granting institution of higher learning. The significance of this degree to both the Navajo people and the TCU community is difficult to overstate. When the tribal college and university movement was first started, one of the key principles was imbedded in the idea that by emphasizing Native culture and language, the new kinds of college could leave the old boarding school era behind and create a new educational age where the pride of different tribal peoples could express itself through an increasing number of college graduates and the scholarship that goes with the strength of a major university. With the approval of the doctoral degree and the enrollment of the first students in that program, NTU has taken a giant step toward realizing the founding TCU movement dream. A lot of years will be necessary before the promise inherent in training PhD capable professionals in Diné Culture and Language Sustainability is fully realized through both scholarship and the contributions of those who earn the degree, but 2023 is the year when NTU moved the university to a new level of accomplishment.

Establishing the master's degree in electrical engineering is also significant. his program is one of three master's degree offered by NTU. Plans are in place to continue developing the graduate program as Navajo Technical University continues on its path to becoming a full-fledged research university designed to benefit the Navajo people and their long-term interests. An application for a master's in industrial engineering has already been submitted to the HLC.

As this report was being written, the HLC also informed NTU that the application for a baccalaureate of science degree in Accounting submitted during 2023 has been approved. The Business School is already one of the most successful schools in terms of enrollment at NTU. Approval of this degree will continue strengthening what that school is achieving.



ABET Accreditation



Photo: University Marketing Department

One of the most significant accomplishments realized by NTU was when two of our Engineering programs became ABET accredited. ABET is the highest level of specialty accreditation for engineering and technical degree programs in the world, and this accomplishment cemented NTU's reputation as a significant engineering school in the United States.

This year some of our engineering programs needed to renew their ABET accreditation. Our faculty also wanted to add new programs to the ABET accreditation mix. On October 1-3, 2023, Accreditations Board for Engineering and Technology (ABET) was at NTU for a site visit and reviewed the following programs for accreditation:

- B.A.S. Degree in Advanced Manufacturing Engineering
- A.A.S. Degree in Chemical Engineering
- B.S. Degree in Electrical Engineering
- A.A.S. in Engineering Technology
- B.S. Degree in Industrial Engineering
- B.A.S. Degree in Information Technology



Photo: University Marketing Department



Construction



Photo: University Marketing Department

The most significant construction project of the year, the academic building on the main campus in Crownpoint, NM. The Navajo Technical University Academic Building will house classrooms and instructor office space. The new building holds 13 new regular classrooms, 2 vocational classrooms for computer-based programs and 14 new offices along with services that include areas of gathering / study, restrooms, stairs, and will be a LEED Sliver Certified building. Work to become LEED certified continues to show NTU's commitment to trying to make the campus more sustainable.

Plans for New Building Projects

Two other projects are still in the planning stages. NTU has needed to expand its trades building space for some time. Enrollment in the trades programs has remained strong, and the old building has faced several serious challenges over the decades it has been in place. Architectural work on an expansion of the current building was completed. In 2023 construction documents were completed. A hearing has been scheduled for 2024 when the New Mexico Higher Education Department will review NTU's plans and decide whether or not the project will be approved as part of that year's funding request to the New Mexico State Legislature.

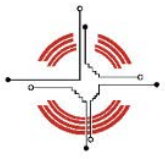
SKYHAWK HIGHLIGHT

Navajo Technical University vs. Eastern Arizona Community College

Chinle, AZ — The Skyhawks men's and women's basketball team took on the experienced and disciplined Gila Monsters from Eastern Arizona College, a highly anticipated competition for the Skyhawks to continue building their new foundation for year 2.



Plans were also made to request funding for a new interdisciplinary building that provides new space for the Engineering programs at NTU:



NMHED – Interdisciplinary Building


This project was originally the Engineering Building

- Civil Engineering
- Environmental Engineering
- Mechanical Engineering
- Industrial Engineering
- Power Engineering
- Advanced Manufacturing

- An RFP will be issued January 2024

3/29/23
Floorplan 2

Changes made
 1. Included Advanced Manufacturing
 2. Included Janitor's Closet
 3. Included Mechanical room
 4. Included Conference room



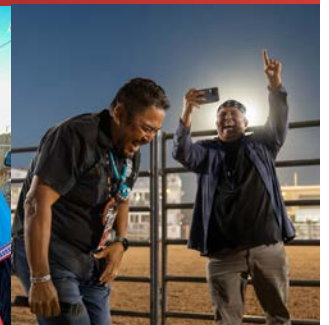
The Metrology Lab project that has the funding necessary to proceed is waiting on a site review from the Economic Development Administration. After the site is approved, NTU will be scheduling a groundbreaking, hopefully in early 2024.



SKYHAWK HIGHLIGHT

NTU Hosts Live Stream of Cody Jesus Invitational Bull Riding

WINDOW ROCK, AZ — On July 15, 2023, Navajo Technical University hosted a Live Stream at the Cody Jesus Invitational Bull Riding at the Dean C. Jackson Memorial Arena in Window Rock, Arizona. The turnout was a success, and many viewed the sporting event from home through our current Navajo Technical University Youtube Channel, where you can view our updated NTU videos.



Recruitment and Retention Efforts for 2023

An aggressive recruitment effort to increase enrollment at all sites for the upcoming semesters was implemented this year. Recruiters were directed to take the lead in meeting with Student Services and the Marketing department to establish a formal Comprehensive Recruitment Plan



Current Status of the implementation and projected completion date:

Enrollment for the Fall 2023 increased by 13% from the Fall 2022 semester and 19% from the Spring 2023 semester. The main campus enrollment reached 99.5% of the target (697 of 700 students). Teec Nos Pos Instructional Site did not improve and only reached 10% of their target of 100 students. Recruiters have a Recruitment Schedule, which is shared with faculty/staff and includes significant events, such as the New Mexico and Arizona legislative days. Data charts are included in the next section of this report.

The purpose of the dual credit program is to provide more dual credit courses with high schools where NTU has existing agreements and to secure new agreements with other high schools that serve Navajo students, including Utah public schools. The Dual Credit program provides dual credit courses at New Mexico and Arizona high schools. Partnering with school districts allows NTU to offer more courses at the schools and online. The goal is to create pathways that will allow high school students to be better prepared for college and to continue to pursue their certificate or degree after graduating and matriculating into the University.

SKYHAWK HIGHLIGHT

Sandia Labs Visit NTU

Crownpoint, NM – On June 30, 2023, Navajo Technical University (NTU) and Sandia National Laboratories Director Dr. James Peery met in a historic visit to Navajo Technical University, marking the first time a sitting national lab director has visited a tribal college or university. The event is designed to build on Sandia's growing partnership with NTU.

NTU is collaborating with Sandia National Laboratories in the following five areas:

1. Intellectual property protection
2. Increase student internships
3. Setting up Artificial Intelligence (AI)/Machine Learning (ML) curriculum
4. Creation of an LLC for economic development
5. Joint research in Lithium batteries





Photo: University Marketing Department

Current Status of the implementation and projected completion date:

- Fall 2023 Semester – Total of 399 unduplicated students
- NM – 19 high schools/52 courses/350 students (9 withdrew)
- AZ – 5 high schools/8 courses/49 students

Partnership established with Gallup-McKinley County Schools – College, Career, & Civic Readiness program to increase pathways at all GMCS schools. Goal was to enroll 1000 students for the 2024-2025 School Year with NTU. Another partnership that will be established is with the Facilitators of Innovative Education, Leadership Development, and Sustainability program to assist in attaining Dual Credit agreements with Arizona high schools and Four-Corner high schools in New Mexico and Utah (that we do not currently have). New Mexico Higher Education Dual Credit Council was recently established. Best practices and review of dual credit policies/procedures will be the focus for the Council. NTU's Enrollment Director and Dual Credit Coordinator are participants.



One Dual Credit Coordinator was hired in December 2023 for the New Mexico area. A new Dual Credit Coordinator position was established for Arizona/Utah area (currently being advertised). Plans are to have an Open House for high school Counselors and Principals to tour the main campus and meet with faculty. Another similar event will be for parents and students, to include the Financial Aid (FAFSA applications) and Navajo Nation Scholarship Office. The Dual Credit handbook will be reviewed and revised by Summer 2024.



Retention



Purpose: Increase student retention by creating strategies that will support students' persistence toward graduation. Creating a friendly and helpful atmosphere is important for students to be comfortable and seek the assistance/support they need at NTU. Research shows that students who move around the campus with ease are more likely to succeed in earning their degree.

Current Status of the implementation and projected completion date:



One-stop-shop located at Skyhawk Central for the main campus has allowed students to complete enrollment with ease. Recommendation is to do similar function at the Chinle Instructional Site. This allows not only students to complete their enrollment, but it allows advisors, admission, Registrar, and financial aid staff to work in collaboration.

The Enrollment Director is currently analyzing all enrollment data to identify strategies in the Enrollment Management Plan (*to be finalized by February 2024 and reviewed by the Board of Regents in April 2024*). This Plan will include enrollment, retention, and graduation goals and strategies to branch out to further in-depth Recruitment Plan and Retention Plan. Financial Aid, Admission and registration policies and procedures will be reviewed and revised by Summer 2024.

SKYHAWK HIGHLIGHT

NTU FALL 2023 NEW STUDENT ORIENTATION

Crownpoint, NM – On August 17, 2023, Navajo Technical University welcomed new students for registration and orientation inside the Wellness Center (In-Person) and via Zoom (Virtual). The orientation discussed safety protocols, IT policies, financial aid, and residential/transportation/meals.

Dr. Colleen Bowman warmly welcomed actor and motivational speaker Mr. Forrie Smith (Lloyd Pierce, *Yellowstone*) as Wilbur Tso and Sherietta Martinez hosted the orientation. At the same time, Mr. Forrie Smith spoke to those who have been with NTU for a long time and are new. "NTU is doing a heck of a job as everybody is involved in running the campus." Mr. Smith remarked. "I heard of your biology program at NTU studying native plants; I use medicinal plants myself following back to my Native heritage."

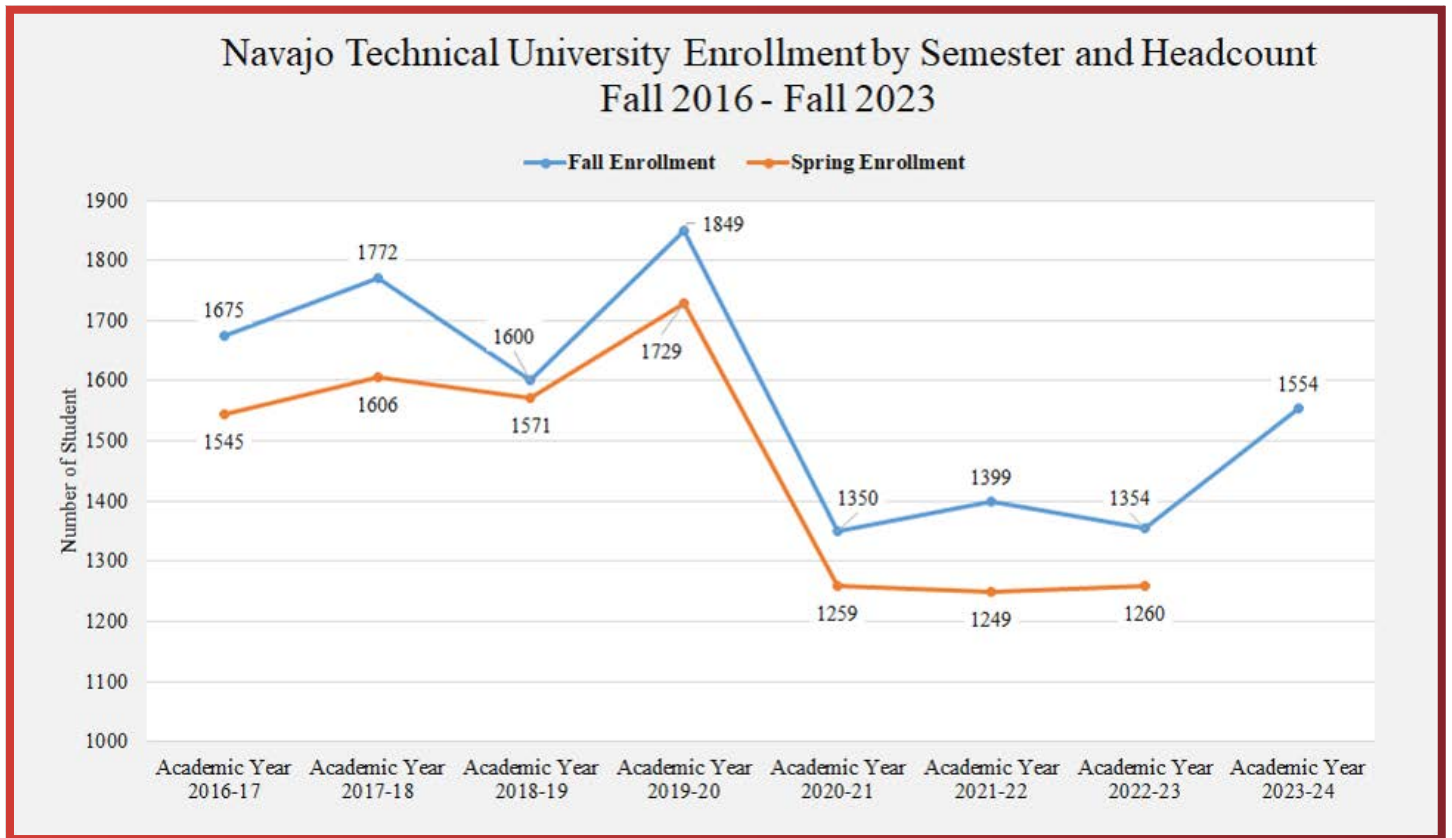


Enrollment Data 2023

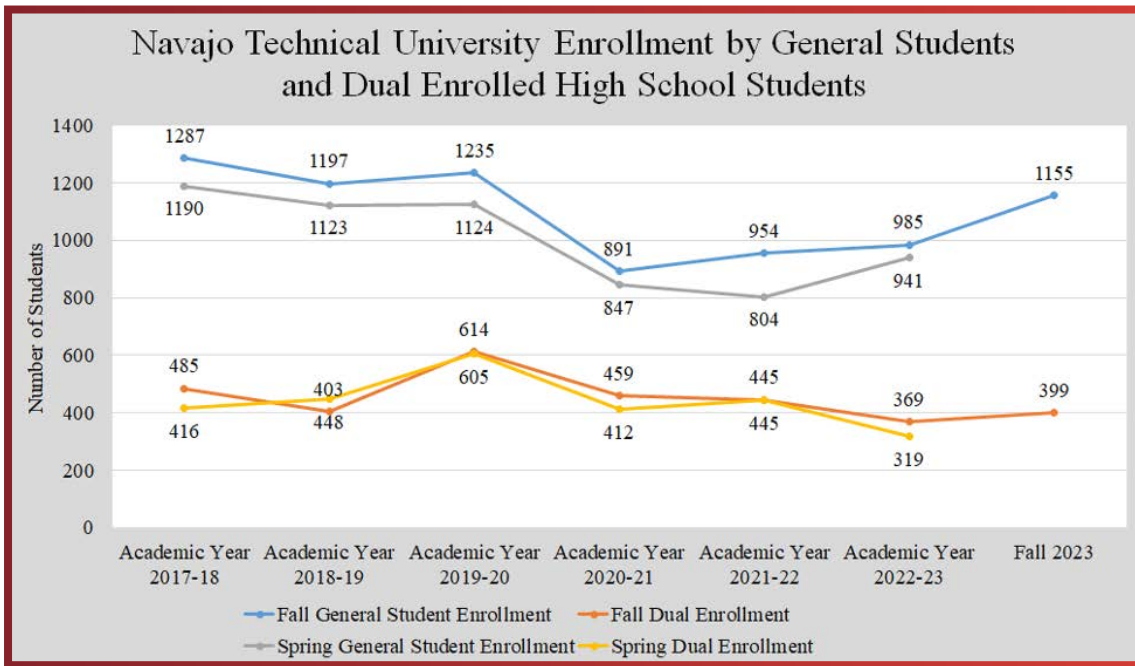
Data of NTU's performance for the 2023 calendar year shows several improvements. This is significant because of the challenges presented by the pandemic. The challenges of respiratory disease are still affecting the university community, but clearly these challenges are being tackled one by one, and some success is coming out of those efforts.



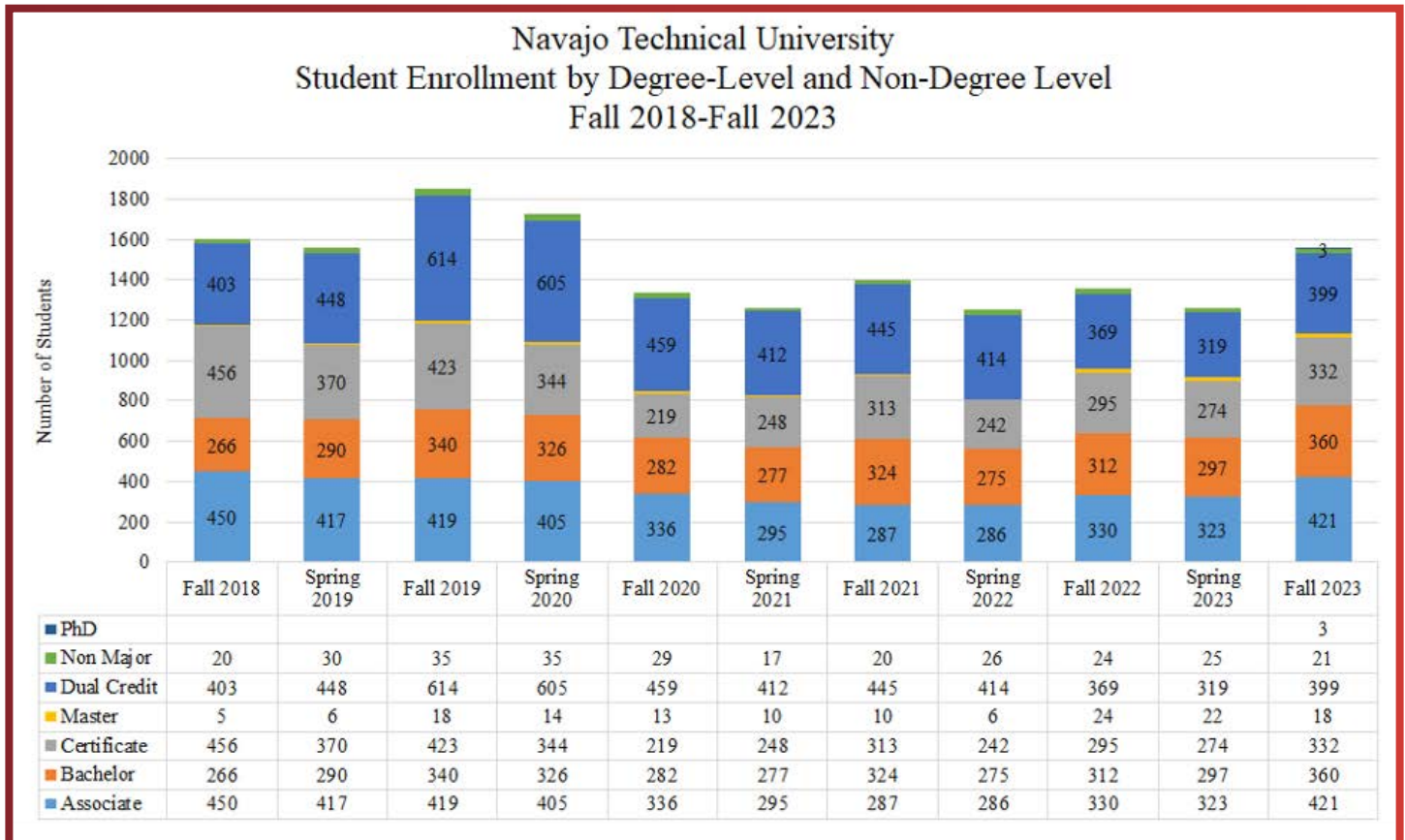
The first of these successes is in enrollment:



Enrollment is still not back to 2019-2020 levels, but the growth in enrollment this year shows that the aggressive recruitment and enrollment management campaigns are having a positive effect. Plans are in place to continue and expand these efforts next year.

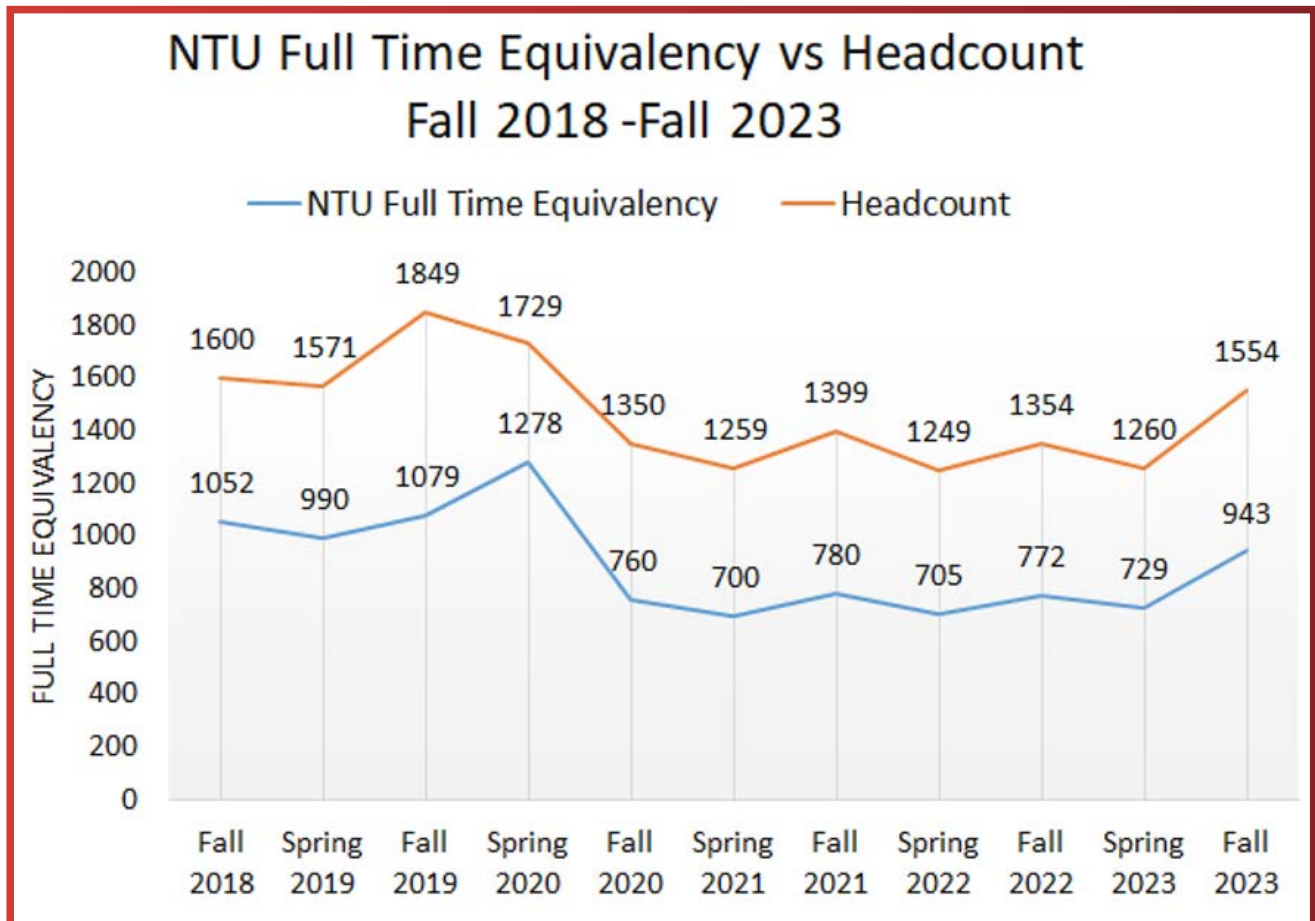


While General Enrollment showed a solid increase, which is especially encouraging, dual enrollment basically remained steady. NTU’s dual enrollment program is important to the entire Navajo Nation. It gives students a head start on becoming successful students at institutions of higher education. Not all dual enrollment students will attend NTU. They will enroll in colleges and universities throughout the nation. However, NTU is dedicated to serving the long-term interests of the Navajo people. We always encourage dual enrollment students to attend NTU and give them good reasons for doing so, but our mission is to serve the Navajo people, and our dual enrollment programs are one of the tools we use to meet that responsibility.

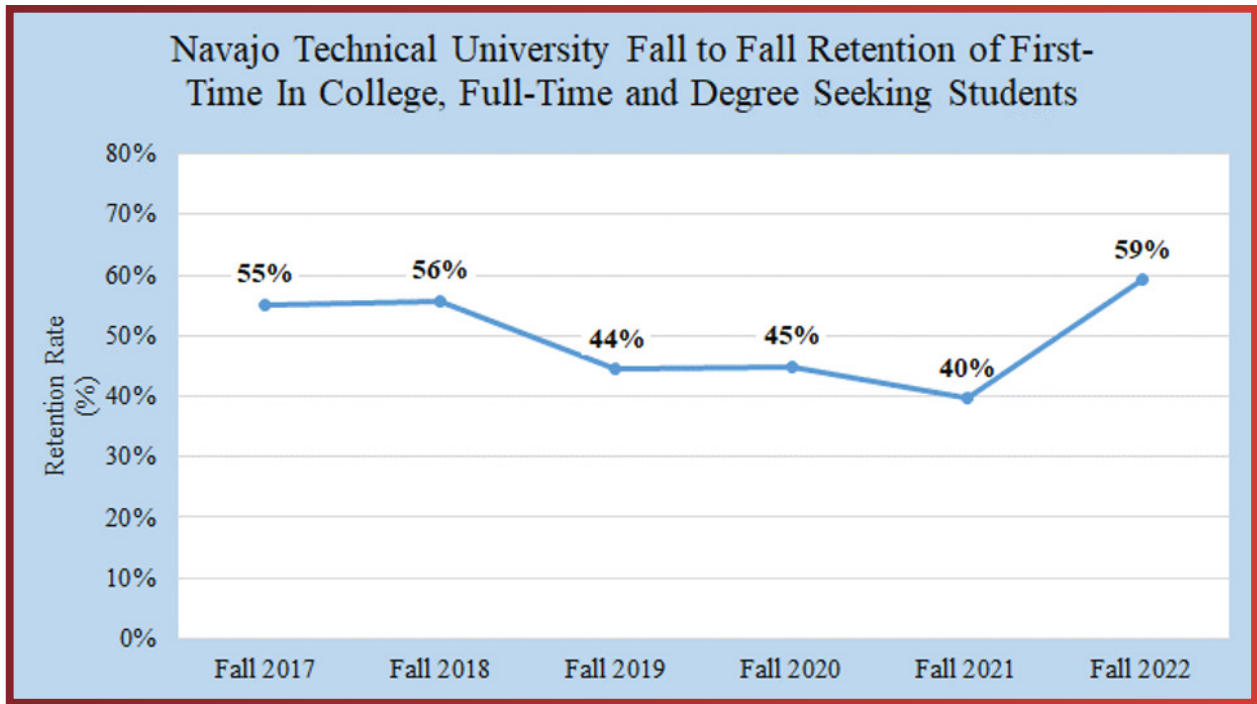




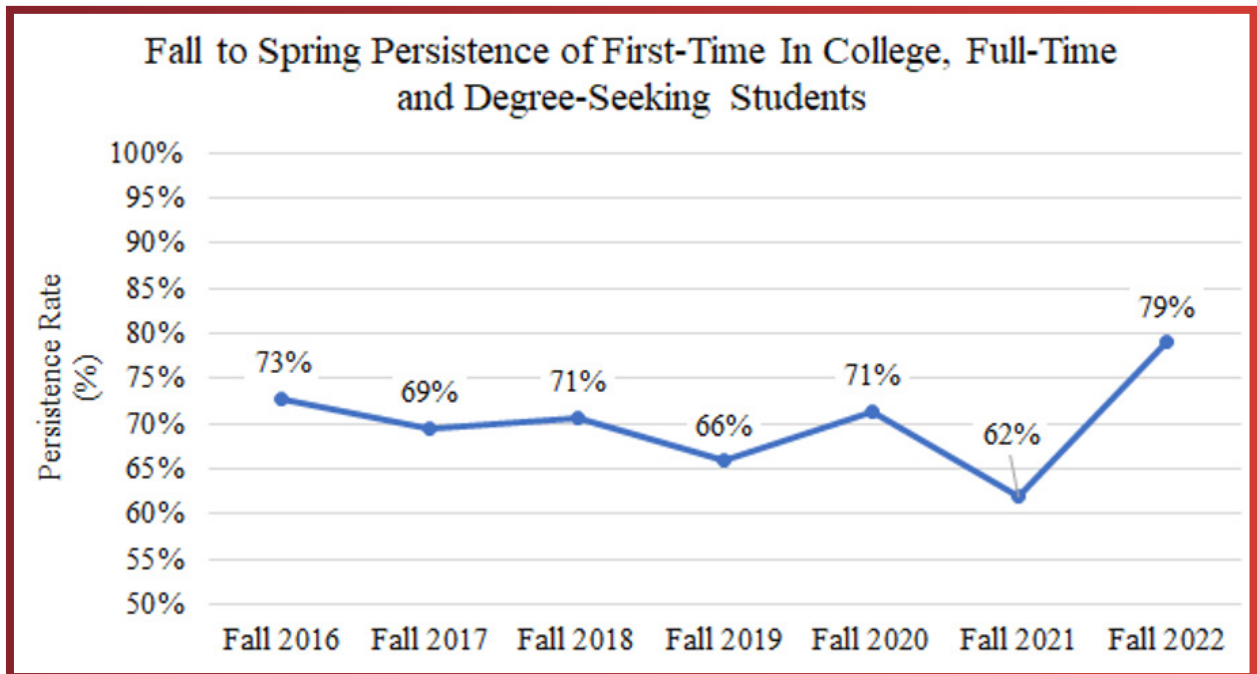
This chart gives student enrollment by degree-level and non-degree level over time. The Fall 2023 numbers are especially encouraging. This is the first time PhD enrollment shows up on the chart, and, although the numbers are small, these are expected to grow over time. Baccalaureate degree enrollment throughout 2023, Spring and Fall semesters, grew over 2021 and 2022. The Fall baccalaureate degree enrollment set a new record for NTU. Associate degree enrollment during the Fall was the highest since the Fall of 2018 before the pandemic. All of this is positive news and bodes well for future enrollments.



Taking a look at headcount, or the exact number of students enrolled, vs. Full Time Equivalency, or the total number of credits enrolled in by students divided by 12 credits, the data shows pretty much the same trends as the rest of the enrollment data. This chart shows that the total number of students is on an upward trend after the pandemic. It also shows that students continue to enroll in more than 12 credits, which means that they are working diligently toward earning a degree. This chart is also good news.



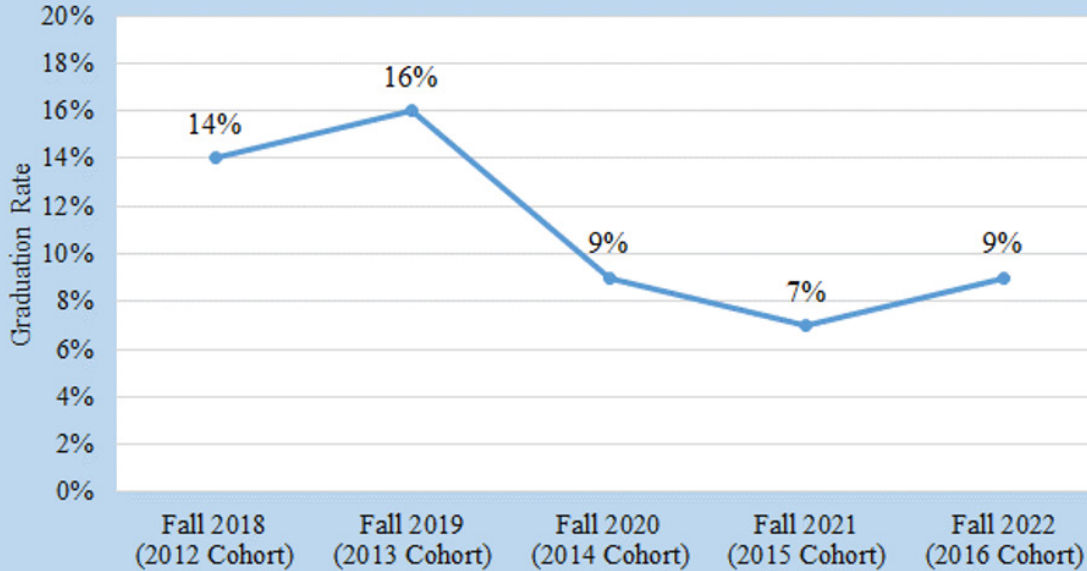
This chart is especially encouraging. Fall to Fall retention is one of the major goals of all colleges and universities nationwide. The retention is also, on average, 50% or lower, depending on the institution, nationwide. NTU's Student Services department has, for some time, been developing aggressive strategies to strengthen retention for all students. A 59% rate is one of the best that NTU has ever achieved, especially for First-Time in College degree seeking students.



This chart, showing persistence rates, is as positive as the preceding retention rate chart. Most students who are going to drop out often drop out after their first semester. This chart shows that NTU current retention programs are helping students stay in school through their entire first year of studies. An 80% persistence rate among degree-seeking students would be considered a strong rate at almost any college or university in the country. A 79% rate would be among the very best for minority-serving institutions in the United States.

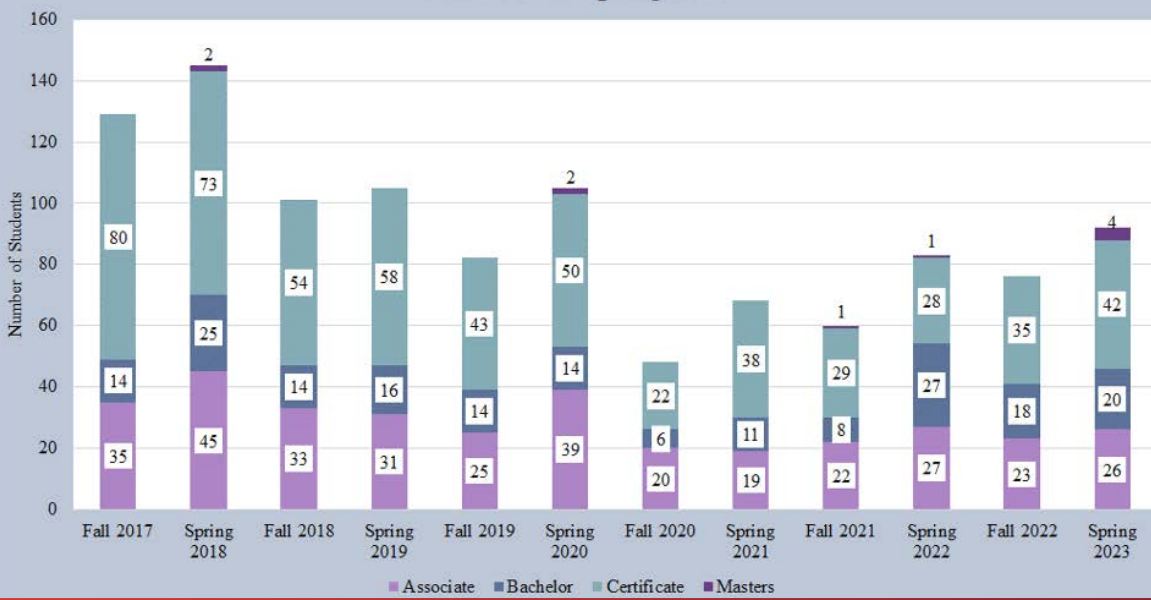
Navajo Technical University's Graduation Rate

Source: IPEDS

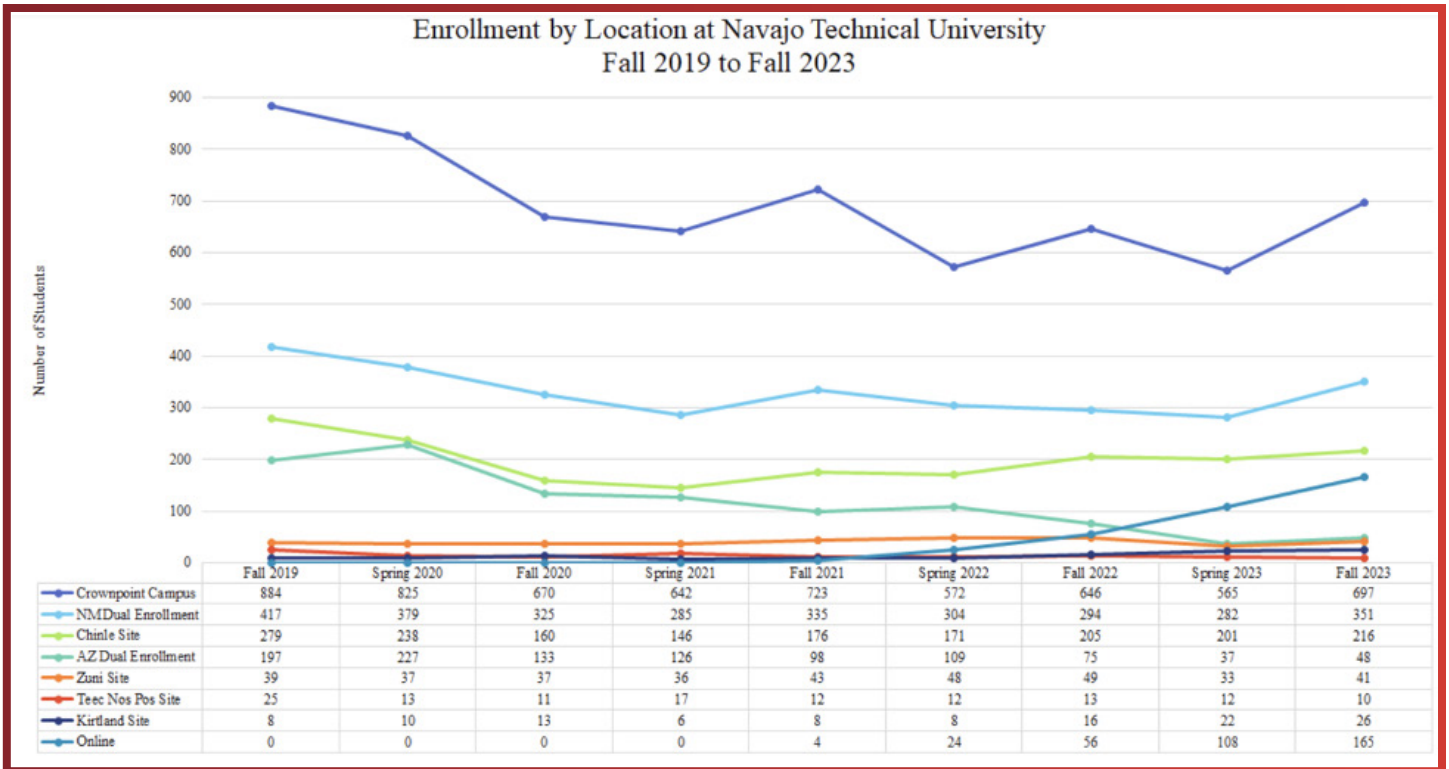


Our graduation rates, established on a cohort basis, are still low since the cohort effects are still showing results that reflect the difficulty the pandemic had on the university. Given the other enrollment and retention data, NTU should see an improvement, hopefully a marked improvement, during the coming years.

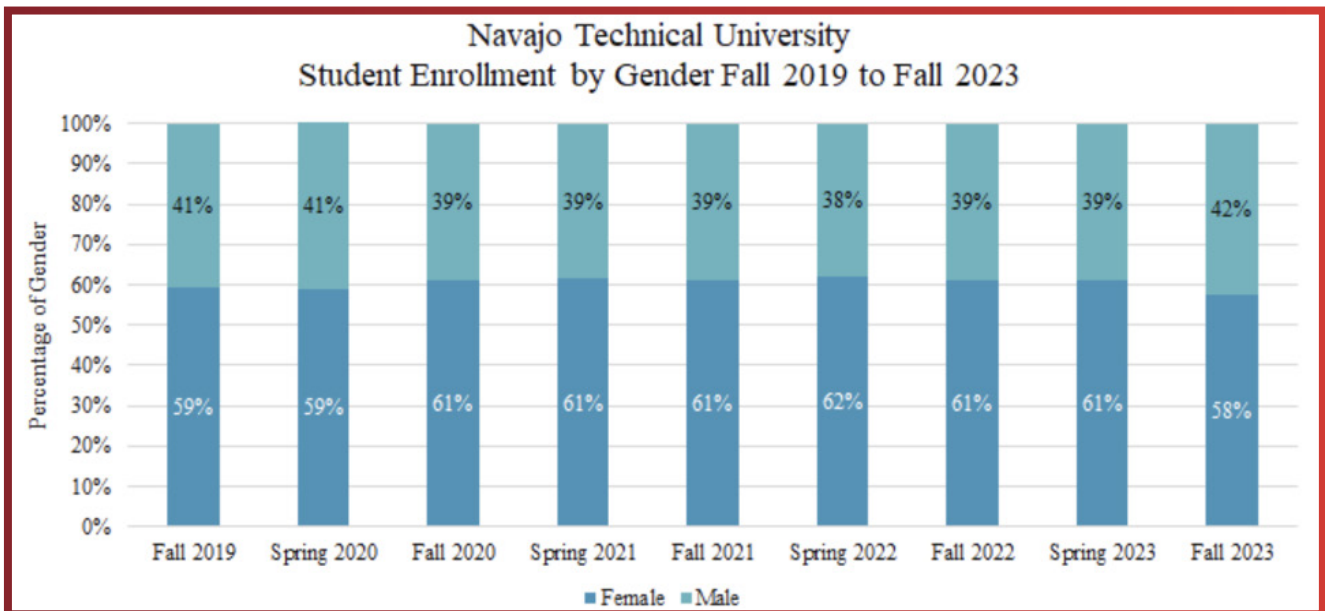
Navajo Technical University Conferred Degrees by Degree Level Fall 2017 to Spring 2023



The good news from this chart, which shows degrees conferred by NTU by Degree level, come from the small increase in master's degrees awarded. Baccalaureate degrees awarded are also higher than for any semester other than the Spring of 2018. Associate degrees earned are still below pre-pandemic levels, but given the other data, this measure should improve over time.



This chart shows what is happening at each of the campuses. The biggest improvement occurred at the Crownpoint campus. Online enrollment is also showing a strong upward trend. Some improvement was realized with the dual credit program. Chinle also showed a slight improvement and seems to be on a gradual upward trend. Kirtland also showed a small improvement. Zuni and Teec Nos Pos continued low enrollment trends. Zuni's enrollment in fall 2023 is 41, while Teec is 10.



Over the past several semesters, the percentage of female/male students have remained roughly the same. This year, however, there was a slight increase in the number of males attending NTU. Fifteen years ago, more males attended than females. TCUs have a tradition of attracting more females than males, so NTU was an anomaly at the time. Since that time NTU enrollment has mirrored the reality in other TCUs with more female than male students. An increase in the percentage of male students would strengthen NTU, but we'll have to see if this is a new trend coming out of recent recruitment efforts.

Student Competitions

NTU has, for decades, emphasized the importance of student competitions. Not only do such competitions benefit students and improve their involvement in NTU and their areas of study, but they also help to solidify NTU's reputation as a strong institution of higher education in the estimation of students, the Navajo and Zuni nations, faculty, and other colleges and universities.

Not all the competitions NTU students compete in are with other colleges and universities, however. NTU also has internal competitions that showcase student abilities. What all the internal and intermural competitions illustrate is that NTU students have every reason to be proud of themselves and their school.

Results from this year's slate of academic competitions follows:

NTU Annual Research Conference



On March 2, 2023, the 10th NTU annual research conference was held in the NTU gymnasium, and the following students received awards:

- **1st Place:** Darlene Wilson – Environmental Science. - *Restore: Addressing Decades-Long Water Issues in the Navajo Nation.*
- **2nd Place:** Tionna Tapaha - Biology - *Developing a Novel Droplet Sorting Device Using Electrophoresis.*
- **3rd Place:** Chelsea Whitewater - Biology/Environmental Engineering - *Antimicrobial Activity of Native Medicinal Plants.*



Spring AIHEC Conference Competitions



On March 4 - 7, the American Indian Higher Education Consortium (AIHEC) Student Conference was held in Albuquerque. NTU students won or placed in the following competitions. These competed with students from every tribal college and university in the United States:



Tribal College Student Writing

Best Fiction:

- "First Man" by Anthony Ryan Edaakie of Navajo Technical University

Best Creative Nonfiction:

- "Listening for Her Loom" by Alyssa Nakai of Navajo Technical University

Best Poetry:

- "Dear Bluebird Flour" by Kyle White of Navajo Technical University

Honorable Mention in Creative Nonfiction:

- Essie L. Yazzie of Navajo Technical University

Honorable Mention in Creative Nonfiction:

- Jeremy Begay of Navajo Technical University

Link to the article about the writing competition: [https://tribalcollegejournal.org/kelli-jo-ford.../...](https://tribalcollegejournal.org/kelli-jo-ford.../)

Film Festival

Best Cinematography:

- Alyssa Nakai of Navajo Technical University

Best Documentary:

- Aaron Francisco of Navajo Technical University

Audience Choice Award:

- Aaron Francisco of Navajo Technical University

Math Bowl

- **3rd Place:** Terrance Jim, Oscar Kyle, and Kyera Craig of Navajo Technical University

Science Oral

- **3rd Place:** Chelsie Whitewater of Navajo Technical University

Science Poster Presentation

- **1st Place:** Jonathan Chinana of Navajo Technical University
- **2nd Place:** Chase Bebo of Navajo Technical University
- **3rd Place:** Darlene Wilson of Navajo Technical University

American Indigenous Business Leaders Competition (AIBL)

On April 4, 2023, NTU American Indigenous Business Leaders (AIBL) Chapter won First Place in the category of Chapter of the Year - Tribal College.

The AIBL Chapter of the Year Competition made history at the Caesars Palace in Las Vegas, NV, with AIBL's National Business & Leadership Student Conference.



Skills USA Competitions



New Mexico State Leadership and Skills conference was held in Albuquerque on April 13-15, 2023. Twenty-one (21) students competed and eighteen (18) of them returned with a medal or medals. 7 gold (by category); 4 silver (by category); 4 bronze (by category).

Gold medalists:

- Alayne Kinlacheenie for Baking
- Andre Beno for Prepared Speech
- Dylan Dale for JSDO
- Dylan Dale and Royan Begay for Digital Cinema Production
- Greg Perry for Restaurant Services
- Harrison Largo Jr. for Electric Construction Wiring
- Jalio Jake for Culinary Arts
- Jennelle King for Job Skill Demonstration
- Julian Martinez for Carpentry
- Royan Begay for Job Interview
- Teva Castillo for Prepared Speech

Silver medalists:

- Avery Velasquez (AJ) for Prepared Speech
- Amber Castillo for First Aid/CPR
- Cristopher Wesley for Auto Service Technology
- Randy Washee, Marlin Hardy, and Candice Cly for Welding Fab. Team A
- Vivianne Joe for Culinary Arts

Bronze medalists:

- Andre Beno for Welding
- Angela Shepherd for Job Skill Demo
- Gregg Perry for JSDA
- Sarah Dennison, Irvin Charley, and Henry Charley for Welding Fab. Team B

Other Significant Student Accomplishments

- All six (6) nursing assistant student that graduated from the nursing assistant program in Crownpoint passed the New Mexico State clinical skills examination and written examination.
- One of the biology students, Makeiyla Begay, traveled to Japan from May to August 2023 with a couple of students from ASU and their professors for a summer internship research program.

FY 2023 Financial Highlights

	AUDITED - 05/31	UNAUDITED - 05/31
REVENUES	2022	2023
Tuition and Fees, Net	1,643,365	3,849,024
Auxiliary Enterprises	1,177,295	2,182,936
Other Revenue	130,758	46,791
Total Revenue	2,951,418	6,078,751
EXPENSES		
Instructional	9,662,976	11,594,604.99
Student Services	3,733,377	2,244,010.18
Academic Support	1,998,748	2,068,228
Public Services	444,774	684,014.65
Student Assistance	5,216,643	7,356,366.28
Institutional	11,384,384	13,225,393.47
Auxiliary Services	2,603,333	2,510,971.13
Depreciation	4,687,257	5,754,047.71
Total Expenses	39,731,492	45,437,637
Net Operating Results	(36,780,074)	(39,358,886)
NON-OPERATING ACTIVITIES REVENUE		
Federal Grants and Contracts	33,387,717	31,673,415
Government Appropriations	4,759,726	4,961,469
State and Tribal Grants and Contracts	1,665,083	6,450,215
Private Grants and Contracts	1,936,726	1,051,905
Other Revenue	760,974	(316,764)
Interest Income	381,689	423,712
Total Non-Operating Activities	42,891,915	44,243,952
CHANGE IN NET ASSETS	6,111,841	4,885,067

Newly Funded Projects



To build a strong research university, the faculty need to accomplish three things: **1.)** Write and achieve funding for projects that either help further student academic careers through experiential learning, **2.)** write and fund projects dedicated to primary research activities that have the potential to increase human knowledge or result in economic development, and **3.)** publish the results of research efforts to enhance the researcher's professional reputation and the reputation of the university. NTU faculty recorded significant achievements in all these areas during 2023.

1. U.S. Department of Energy (DOE)

PI: Dr. Abhishek RoyChowdhury

Project Title: Water Equity and Building Workforce on the Navajo Nation (PI- Dr. Abhishek RoyChowdhury)

Funding Agency: U.S. Department of Energy

Total Project Amount: \$6,000,000

Project Summary: This project aims to install water filtration units in the remote parts of the Navajo Nation. It will also create a local Navajo workforce in the field of water research. Additionally, this project will educate Navajo community members, students, and other stakeholders about water issues in the Navajo Nation.

PI: Dr. Monsuru Ramoni

Project Title: Controlling Additive Manufacturing Properties of Surfaces (CAMPS)

Funding Agency: U.S. Department of Energy

Total Project Amount: \$2,241,898

Partner: Lawrence Berkeley National Laboratory

2. National Science Foundation (NSF)

PI: Dr. Monsuru Ramoni

Lead University: Arizona State University

Project Title: Global Centers Track 1: Global Hydrogen Production Technologies (HyPT) Center

Funding Agency: National Science Foundation (NSF)

Total Project Amount: \$2,500,000

PI: Shasha Han

Project Title: TSETS: *Tribal Steppingstones in Educational Transformative STEM: A TCU-Led Secondary and Middle School Teachers Mathematics Networking Strategy*

Funding Agency: National Science Foundation (NSF)

Total Project Amount: \$1,714,719

PI: Mohamed Illafe

Project Title: Analytics for Equity Initiative

Funding Agency: National Science Foundation (NSF)

Total Project Amount: \$74,923.80

These projects join the menu of funded projects that are already underway at NTU.

NTU Publications in 2023

- Abraham, J., Abimbola, T., Braid, W., Terracciano, A., Su, T-L., Christodoulatos, C., Koutsospyros, A., RoyChowdhury, A., Smolinski, B., Lawal, A. (2023).** On-site pilot scale microalgae cultivation using industrial wastewater for bioenergy production: a case study towards circular bioeconomy. *Bioengineering*. 2023, 10, 1339 <https://doi.org/10.3390/bioengineering10121339>.
- Adeniran, O., Osa-Uwagboe, N., Cong, W., & Ramoni, M. (2023).** Fabrication temperature-related porosity effects on the mechanical properties of additively manufactured CFRP composites. *Journal of Composites Science*, 7(1), 12.
- Ashok Kumar, J.; Muthuvel, S.; Issac Selvaraj, R.V.; Ramoni, M.; Shanmugam, R.; Pandian, R.S. (2023).** Mechanical Property Comparison of Geopolymer Brick Dried by Electrical and Passive Solar Devices with Phase Change Material (Paraffin Wax). *Processes* 2024, 12, 28. <https://doi.org/10.3390/pr12010028>.
- Bevans, B., Barrett, C. Thomas Spears, T., Gaikwad A., Riensche A., Smoqi, Z., Harold H. (Scott) and Prahalada Rao, P., (2023).** Heterogeneous sensor data fusion for multiscale, shape agnostic flaw detection in laser powder bed fusion additive manufacturing, *Virtual and Physical Prototyping*, 18:1, DOI: 10.1080/17452759.2023.2196266.
- Dey, A. Rahman, Md M., Yodo, N., Grewell, D. (2023).** Development of biocomposite filament for fused filament fabrication from soy hulls and soy protein isolate, *Elvesierm Vol. 34*
- Dey, A., Yodo, N., Yadav, O. P., Shanmugam, R., & Ramoni, M. (2023).** Addressing Uncertainty in Tool Wear Prediction with Dropout-Based Neural Network. *Computers*, 12(9), 187.
- Henry L., Atcitty, S., Terry, D., Lee, D. Romine, P. (2023).** Daily electrical energy consumption characteristics and design implications for off-grid homes on the Navajo Nation, *Elsevier*, Vol. 73, pp. 315-325.
- Iams, A. D., Lienert, T. J., Otazu, D. A., & Ramoni, M. (2023).** Effects of deposition sequence on microstructural evolution in additively manufactured Cu-Cr-Nb alloy/superalloy bimetallic structures. *Additive Manufacturing Letters*, 6, 100151.
- Ide, M.F.A., Bite, B., Balotin, F., Estelle E., Franklin M., Christiane D., Rodrigue K., Glwadys C., Nina M., Celine S., Sylvie K., Noella E., Ronald P., Sandrine, E.N, Carole, E.E., Else, E.M., Assam, A. J.P., Xavier, F.E., Tracey, J.L., *, Lawrence. A., Ayong * (2023).** High prevalence of polyclonal Plasmodium falciparum infections and association with low adaptive immune responses in a hyper-endemic area in Cameroon. *Trop Med Infect Dis*. 2023 Jul 29. doi: 10.3390/tropicalmed8080390.
- Illafe M, Yousef F, Haji Mohd M, Supramaniam S. (2023).** Initial Coefficients Estimates and Fekete–Szegő Inequality Problem for a General Subclass of Bi-Univalent Functions Defined by Subordination. *Axioms*. 12(3):235.
- Illafe M, Hussien A, Haji Mohd M, Youse F. (2023).** On a Subclass of Bi-univalent Functions Affiliated with Bell Distribution and Gegenbauer Polynomials. *Bol. Soc. Paran. Mat.*, Pre-Print.
- Illafe M, Yousef F, Haji Mohd M, Supramaniam S. (2023).** Second Hankel determinant of Bi-Univalent Functions incorporating Gegenbauer Polynomials Kragujev. *J. Math.*, Pre-Print.
- Karunakaran, R., Sotelo, L. D., Maharaja, H., Nez, C., Ramoni, M., Halliday, S., ... & Sealy, M. P. (2023).** Increased ductility of Ti-6Al-4V by interlayer milling during directed energy deposition. *Additive Manufacturing*, 78, 103818.
- Mashauri, F., Mbuluyo, M., Nkongolo, N. (2023).** Use of Geographic Information System and Digital Elevation Model to Analyze the Hydro-Morphometric Characteristics of the Tshopo River Sub-Catchments, Democratic Republic of Congo. *Revue Internationale de Géomatique*, 32, 99–122. <https://doi.org/10.32604/rig.2023.044899>
- Mashauri, F., Mbuluyo, M., Nkongolo, N.V. (2023).** Influence des paramètres hydro-morphométriques sur l'écoulement des eaux des sous-bassins versants de la Tshopo, République démocratique du Congo. *Revue Internationale de Géomatique*, 32, 79–98. <https://doi.org/10.32604/RIG.2023.044124>
- Mokea, D.A.; Nkongolo, N.V. (2023).** Contribution to the study of the exploitation of plant species for medicinal use in the Democratic Republic of Congo. *Trends Agric. Sci.* 2:93-98; <https://doi.org/10.17311/tas.2023.93.98>.
- Mokea, D.A.; Basia, A.A.; Nkongolo, N.V. (2023).** Predicting the distribution of tree species and their biomass in Yangambi Biosphere using spatial interpolation. *Trends Agric. Sci.* 2, 221-231. <https://doi.org/10.17311/tas.2023.221.231>
- Moyebi, O.D., Fatmi, Z., Carpenter, D.O., Santoso, M., Siddique, A., Khan, K., Zeb, J., Hussain, M.H., Khwaja, H.A. (2023).** Fine particulate matter and its chemical constituents' levels: A troubling environmental and human health situation in Karachi, Pakistan. *The Science of the Total Environment*, 161474. doi: 10.1016/j.scitotenv.2023.161474.
- Moyebi, O.D., Sannoh, F., Fatmi, Z., Siddique, A., Khan, K., Zeb, J., Hussain, M.H., Carpenter, D.O., Khwaja, H.A. (2023).** State of gaseous air pollutants and resulting health effects in Karachi, Pakistan. *Environmental Monitoring and Assessment*, 195:266. doi: 10.1007/s10661-022-10787-1.
- Raja, R., Shanmugam, R., Jannet, S., Kumar, G. V., Venkateshwaran, N., Naresh, K., & Ramoni, M. (2023).** Development of Al-Mg₂Si Alloy Hybrid Surface Composites by Friction Stir Processing: Mechanical, Wear, and Microstructure Evaluation. *Materials*, 16(11), 4131.
- Tekerek, T., Perumal, V., Jacquemetton, L. Beckett, D., Halliday, H.S., Wisner, B. Kotsos, A. (2023).** On the process of designing material qualification type specimens manufactured using laser powder bed fusion, *Science Direct*, Vol. 229, <https://www.sciencedirect.com/science/article/pii/S0264127523003088?via%3Dihub>.

Conference Proceedings 2023

The conference proceedings participated by NTU students and faculty are presented below.

Bebo, C., Tibbits, D., Chang, C., Pinnella, M., Prabhakar, L., Danyi, C., Witkowski, R., Slibeck, B., RoyChowdhury, A., Olsen, P., Kinney, S. Mapping the distribution of geogenic contaminants in bedrock from Colorado Plateau cores using continuous X-ray fluorescence spectroscopy. American Geophysical Union (AGU) Fall 2023 Meeting, San Francisco, CA (December 11-15, 2023).

Chang, C., Tibbits, D., Kinney, S., Pinnella, M., *Bebo, C., Prabhakar, L., Danyi, C., Witkowski, R., Slibeck, B., Yazzie, O., Lepre, C., RoyChowdhury, A., Kent, D., Olsen, P. Computed Tomography Scans of Cores from the Colorado Plateau Coring Project Phase 1: Preliminary Results. American Geophysical Union (AGU) Fall 2023 Meeting, San Francisco, CA (December 11-15, 2023).

Basu, A., Kinney, S., Maio, M.D., *Bebo, C., Chang, C., Tibbits, D., RoyChowdhury, A., Halliday, A. Isotopic characterization of uranium-rich sediments to trace U cycling in aquifers. American Geophysical Union (AGU) Fall 2023 Meeting, San Francisco, CA (December 11-15, 2023).

Tibbits, D., Chang, C., Kinney, S., *Bebo, C., Pinnella, M., Witkowski, R., Prabhakar, L., Danyi, C., Basu, A., RoyChowdhury, A., Olsen, P. Leveraging scanning X-ray fluorescence spectroscopy and high-resolution X-ray computed tomography to map density changes along cores from the Colorado Plateau Coring Project Phase 1: Implications for early Mesozoic climate and geogenic groundwater contamination. American Geophysical Union (AGU) Fall 2023 Meeting, San Francisco, CA (December 11-15, 2023).

Tsosie, R., RoyChowdhury, A., *Yazzie, T., *Wilson, D., *Tome, M., Frey, B., Sturgis, L., Yu, J., Grey, S. N4WPP: Making an Impact, Building Capacity and Restoring Water Quality. 2023 American Indian Science and Engineering Society (AISES) National Conference. Spokane, WA (October 19-21, 2023).

***Yazzie, T., *Woody, J., *Arthur, C., Frey, B., El-Osrey, A., Tsosie, R., RoyChowdhury, A., *Wilson, D., Prush, V., Bowman, C.** Navajo Technical University and New Mexico Tech collaborate to support Indigenous students through graduate school. 2023 American Indian Science and Engineering Society (AISES) National Conference. Spokane, WA (October 19-21, 2023).

Olsen, P. E., Suarez, C. A., RoyChowdhury, A. Colorado Plateau Coring Project phase 2 (CPCP-2): A continuous record of Triassic-Jurassic continental environmental change. Geological Society of America 2023 annual meeting. Pittsburgh, PA (October 15-18, 2023).

Olsen, P., Kent, D., Lepre, C., Kinney, S. RoyChowdhury, A., Chang, C., Tibbetts, D., *Bebo, C. Searching for Manicouagan: astrochronological predictions and tests of alternative age models in the Late Triassic Chinle Formation [Colorado Plateau Coring Project-1 (CPCP-1), Arizona, USA]. European Geosciences Union General Assembly 2023. Vienna, Austria (April 23-28, 2023).

Ramoni, M. O., & Chinana, J., & Shurley, T., & Hollar, K. (2023, June). Applying Entrepreneurially Minded Learning to the Design and Fabrication of Soft Robotic Fish with Native American Engineering Students. Paper presented at 2023 ASEE Annual Conference & Exposition, Baltimore, Maryland. <https://strategy.asee.org/42277>

Wilson, D., RoyChowdhury, A., Frey, B., Yu, J. Restóre: Addressing decade-long water issues in the Navajo Nation. American Indian Higher Education Consortium Conference 2023. Albuquerque, NM (March 4-7, 2023).

Shekhar, P., Khan, M.T.H., Patil, A.A. and Memarian, B., 2023, June. Examining the differences in the grade point average (GPA) for engineering students enrolled in entrepreneurial education programs. In 2023 ASEE Annual Conference & Exposition.

Shekhar, M. T. H. Khan, S. Gajjar, and H. Duff, "Investigating the predictive relationship of grade point average (GPA) on engineering students' enrollment in entrepreneurial education programs: A Decision Tree Analysis," in Proc. 2023 Frontiers in Education Conference (FIE), Texas, USA, 2023.



SKYHAWK HIGHLIGHT

NTU FALL 2023 FALL OPEN HOUSE

Crownpoint, NM – Wednesday, November 16, 2023, Navajo Technical University held an open house at its main campus in Crownpoint, NM. The NTU community, the public, and local high schools like (Shiprock, Northwestern, Tohatchi, Gallup, Thoreau, and Crownpoint) attended.

Faculty, clubs, and resources set up tables and booths in the Wellness Center. Students benefited from the programs and athletics. Experiencing along the way with financial aid and admissions to help prospective students get an idea of what will be needed to attend NTU in the future. Schools attended also took a campus tour and visited programs and departments like Welding, Automotive, Information Technology, Fabrication Lab, and Culinary Arts.

NTU Spotlight in 2023

Literary Arts & Oral Stories Symposium



FREE REGISTRATION:
LIMITED SEATING/CAPACITY
REGISTER BY APRIL 19, 2023
<https://forms.gle/5y9jpmr2zcy/rhskV44>

**SHIŁ NAHÓLNE':
Literary Arts & Oral Stories
Symposium** with Special Guests

LAURA TOHE, PH.D.
Navajo Nation Poet Laureate

STEVEN DARDEN
Traditional Practitioner
& Public Speaker

LUCI TAPAHONSO
Inaugural Navajo Nation
Poet Laureate

CONNOR CHEE
Diné Pianist

RADMILLA CODY
Recording Artist (Diné Naahil)

& Presenters
Esther Belin, Delbert Anderson,
Amber Blaese, Daniel Vandever,
Bennie Begay, Erik Bitsui, NTU
Professors & Creative Writing
Students and more!

**APRIL 24-25, 2023
TWIN ARROWS NAVAJO
CASINO RESORT,
FLAGSTAFF, AZ**

MORE INFO
Jennifer Wheeler at
jwheeler@navajotech.edu
Anita Roastingear at
aroastingear@navajotech.edu

FIRST COME, FIRST SERVE! REGISTRATION REQUIRED!
In recognition of National Poetry Month 2023, we want to celebrate the literary arts, encompassing poetry, fiction, nonfiction, new media, and more; recognize the multi-talented artists and scholars among us and share their work; and honor our community elders and storytellers. The Symposium event will be bilingual, English and Navajo. We invite local and regional writers, emerging writers, language arts, literature and English educators, Navajo language and culture teachers, students, and communities. This is an in-person event, and because it is a Navajo Technical University function, masks must be worn at the Symposium.

On April 24-25, 2023, the NTU Arts and Humanities professors (Dr. Wheeler, Anita, Dr. Mullet, the Creative Writing Program, the Navajo Nation Poet Laureate Committee, English faculty, Diné Studies, and Early Childhood Multicultural Education faculty, and others) held the first Literary Arts & Oral Stories Symposium (Shił Nahólne') at Twin Arrows.

NTU Biology Symposium



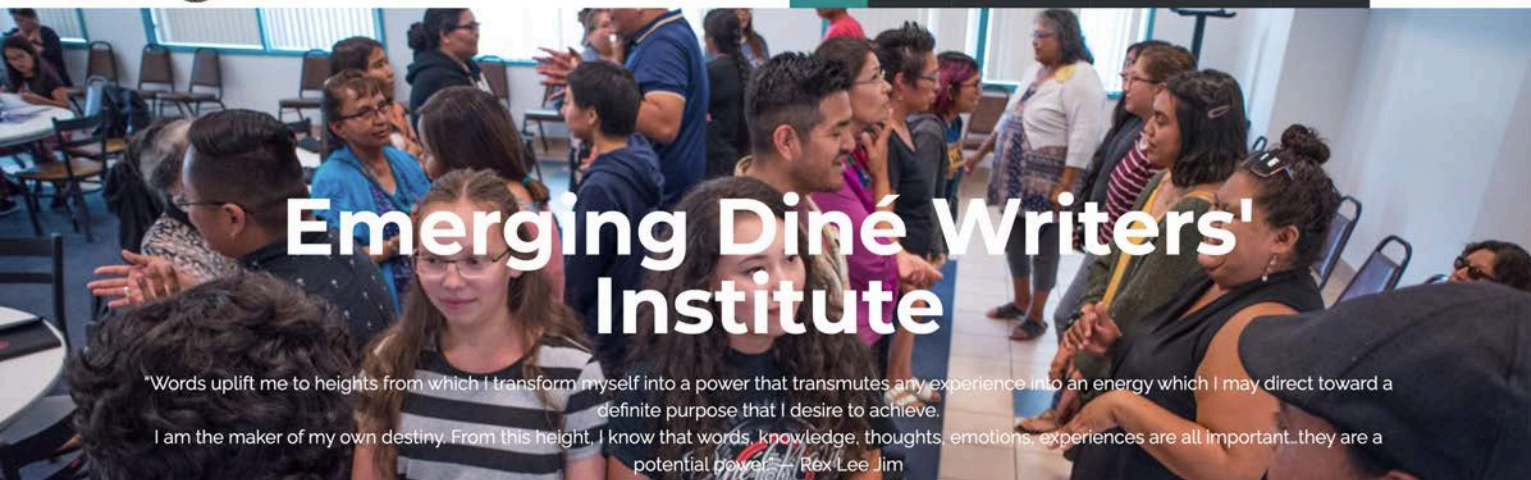
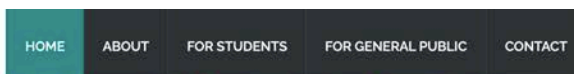
Crownpoint, NM - On Thursday, November 30, 2023, the NTU School of Science and Biology program hosted its annual Biology Symposium at the Crownpoint Campus inside the Hospitality House. Zabarria Bell, a Ph.D. A candidate from Harvard School of Medicine and a graduate of the NTU Biology Program highlighted the symposium as a keynote speaker. During her presentation, she highlighted her academic journey and the research she completed at NTU that helped her get admitted to Harvard. She thanked the NTU Biology program faculty for helping and encouraging her to continue her educational journey. She hopes to return to educate the Navajo Nation's future generations.

The inaugural Chemistry Program and Research Seminar Series



A chemistry seminar on USDA-National Institute of Food and Agriculture (NIFA) Electrochemistry Research Grant took place on November 20, 2023. The inaugural Chemistry Program and Research Seminar Series at Navajo Technical University, meticulously organized by Dr. Soundappan, Associate Professor of Chemistry and The Chemistry Program head and the NEST LAB team, proved exceptional. Dr. Agbaraji, Dean of Undergraduate Studies, delivered a warm welcome remark, emphasizing the importance of such STEM scholarly events in enriching the university's academic environment.

Emerging Diné Writers Institute (EDWI)



The Diné Writers' Institute (EDWI) took place on July 23-28, 2023. It was organized by Dr. Lemanuel Loley, Denver University, formerly worked for NTU as career services coordinator.

- 16 writing fellows took part in the 2023 EDWI.
- There were 61 general participants for 2023 EDWI.
- There was a total of 77 participants for the EDWI.
 - Most of the writing fellows are college students or working adults in various professions that are interested in creative writing and storytelling.
 - They've been working in different genres of creative writing all week, including fiction, creative nonfiction, poetry, and screenwriting.

The N4WPP Project



The Navajo Technical University- New Mexico Tech Navajo Nation Water Purification Project (N4WPP) is a joint endeavor to install water filtration equipment testing facilities on the Navajo Nation. Sites where the innovation filtration equipment will be installed will be used to train students to test water quality and maintain filtration units to provide sustainable long-term water resources suitable for agriculture and livestock use, cleaning, and eventually clean drinking water. This is a major new project by the Environmental Science and Environmental Engineering Departments.

Quality water on the Navajo Nation has been a long-time challenge. Water on the nation suffers from high levels of dissolved salts and metal contaminants, which can occur naturally or by human activities, such as mining and oil extraction. Affected water can be unsuitable for agricultural and livestock use, let alone human consumption.

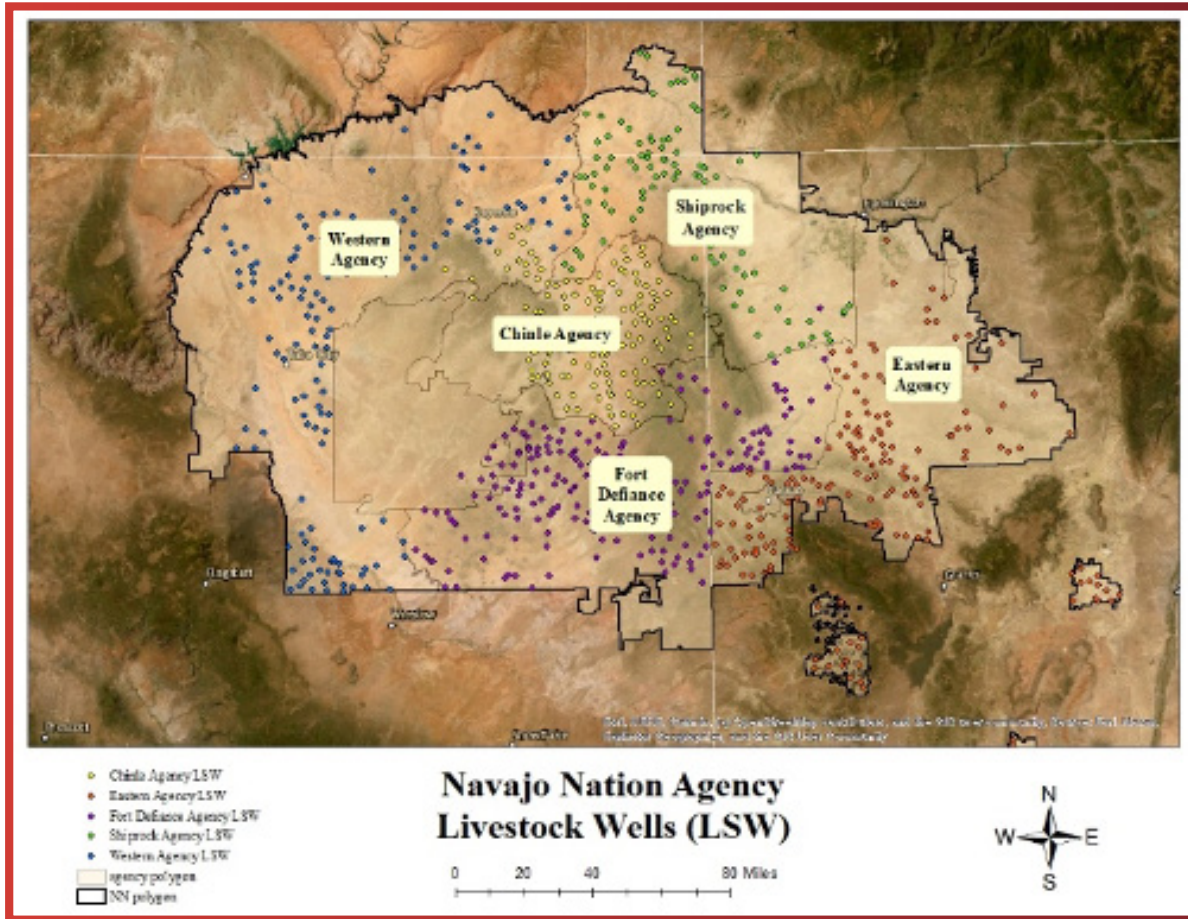
The idea of the N4WPP project is to deploy technologies to help with the water purification needs of the Navajo Nation. In doing so, the project will pair innovation with business knowledge and capacity to produce cost-effective solutions to the problem. The long-term goal is to provide portable units throughout the Navajo Nation through NTU, NMT, and their industry partner PESCO's (Process Equipment and Service Company, Inc.) combined efforts.

N4WPP received a total of \$6.0 million funding over five years with \$1.2 million annual obligation under the U.S. Department of Energy- Office of Legacy Management (USDOE-LM) Environmental Justice (EJ) program. This program is in support of President Biden's Executive Order 14008 and Public Law 117- 328.

This project will install the filtration system beside livestock wells with contaminated water. The first system will be installed in Becenti Chapter.



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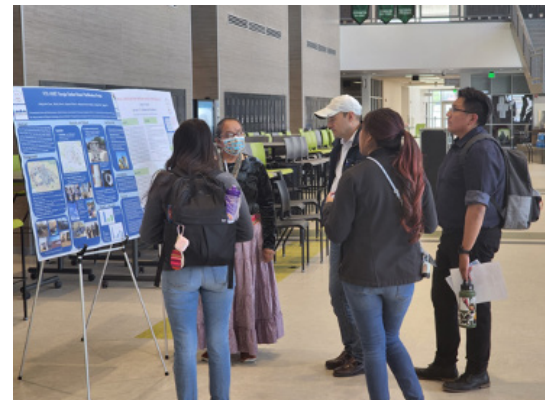


In preparation for this project, the project team, which included NTU faculty and students, mapped over 770 livestock wells in the Navajo Nation.

Meetings were held at chapterhouses throughout the Nation of a period of three years.



NTU and New Mexico Tech students have been presenting findings from the project's research to a variety of conferences.



New Developments at the Center for Advanced Manufacturing



Student Activity:



Six students are working as interns for Los Alamos National Laboratory (LANL) conducting LANL work at the Center for Advance Manufacturing (CAM) in metal and polymer additive manufacturing for electrochemistry (battery/fuel cell development). This is a continuing collaboration with LANL and is expected to grow. Students from Mechanical Engineering, Industrial Engineering, and even New Media are working for LANL. There are four other students employed as interns at the CAM learning the equipment and working on research projects with partners.

Continued partnerships in research include Virginia Tech as a major partner. New Mexico State University and Prairie View A&M University are other partners under a QCAM NNSA grant working on quality control in which NTU has hosted a two-week workshop for 5 students from each partner institute.

One new grant has been awarded; a Department of Defense funded subaward from Arizona State University to create virtual technical training using Virtual Reality Technology.

New equipment for the lab acquired includes a new metal AM powder characterization equipment, a new metal AM powder atomizer, a new polymer printer with increased capabilities as an upgrade to existing polymer machines.

Three publications have included the lab as one of the co-authors:

<https://www.sciencedirect.com/science/article/abs/pii/S2214860423004311>

<https://www.tandfonline.com/doi/full/10.1080/17452759.2023.2196266>

<https://www.sciencedirect.com/science/article/pii/S0264127523003088?via%3Dihub>

Articles about the Lab that have been published:

<https://nativesciencereport.org/2023/08/architects-of-progress/>

<https://www.americanprogress.org/article/at-navajo-technical-university-a-world-class-laboratory-is-building-native-american-manufacturing-capacity/>

Navajo Technical University's Environmental Center Marks Milestones in Education and Research



In a transformative journey that began with a prayer in the 1960s, Navajo Technical University (NTU) has evolved into a beacon of self-determination, fostering education and research on the Navajo Nation. Founded in 1979 as the Navajo Skill Center, NTU has grown to become the first university on the Navajo Nation, embodying the vision of tribes establishing their own institutions of higher education.

From Trade Skills to University Status: A Remarkable Evolution

Originally established to address the immediate needs of the unemployed population on the Navajo Nation, the institution underwent a significant transformation in 2013, becoming NTU. What started as a center for learning trade skills expanded as students expressed a desire for more comprehensive education.

Navajo Technical University's Environmental Center (NCE): A Hub of Innovation

At the heart of NTU's commitment to excellence lies the Navajo Technical University's Environmental Center (NCE), serving three vital purposes. First, it operates as a certified lab under the U.S. Environmental Protection Agency (EPA), conducting environmental testing and monitoring for northern Arizona and the four corners' region. Second, the NCE is a hub for STEM and workforce education, preparing students for high-tech, high-paying jobs in environmental remediation, medical testing, and research. Lastly, it conducts research focused on the Navajo Nation's environment and health.

Advancing Education and Research Through Funding Initiatives

The NCE's journey to fulfillment involves completing critical phases, such as interior rough framing for Mechanical, Electric, and Plumbing (MEP) and installing a fire suppression system. These measures are essential to meet health and safety standards and achieve EPA certification.

Funding for the NCE has been a collaborative effort, initially supported by Navajo Nation funds, Arizona Capital Outlay funding (House bill 2858, Capital Outlay: Appropriations: 2022-2023), and Arizona Transaction Privilege Tax (TPT) income. NTU continues its pursuit of funding, actively seeking support from private foundations for capital outlay and private sources to acquire necessary lab equipment.

As NTU progresses on its journey, the institution stands as a testament to the power of community-driven education, research, and determination, marking milestones that resonate far beyond the Navajo Nation.

Navajo Nation awarded a \$1 million grant to NTU to build a database for the Missing & Murdered Diné Relatives (MMDR) initiative

In March 2019, under the leadership of Council Delegate Amber Kanazbah Crotty, the MMDR work group was established to address the crisis of missing and murdered relatives on the Navajo Nation. The primary work plan has focused on encouraging and supporting community action. The MMDR team developed a “Missing Persons Community Action” toolkit to empower Navajo communities to be proactive in prevention, awareness, and mobilization to recover missing relatives and to provide support to families of MMDR. NTU joined the work group in the summer of 2023. The MMDR work group expanded their work to include development of a framework for a “Missing & Murdered Diné Relatives Data Institute”. As part of the proposed Institute, NTU was asked to utilize the framework to develop a database adequate to house the MMDR data. The task is a complex and sensitive undertaking. Such a database will serve as a vital tool for raising awareness, conducting research, and advocating for justice in cases of violence against Indigenous women. MMDR cases continue on the Navajo Nation and NTU is committed to being part of the solution to the ongoing crisis.

SKYHAWK HIGHLIGHT

Where Science and Engineering Converge

Chinle, AZ – Tuesday, May 26, 2023, Navajo Technical University (NTU) and Harvard’s Materials Research Science and Engineering Centers (MRSEC) have a unique partnership with students during pasts summer research programs, and NTU has brought Harvard postdoctoral fellows and graduate students to the NTU campus for workshops on soft robotics and microfluidics

Therefore, NTU would like to inform you that three of our students at our Chinle Instructional site Biology program are accepted to join the Research Experiences for Undergraduates (REU) programs in bioengineering, scientific computing, computer science, robotics, and materials science and engineering at Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS) through the NSF Program for Research and Education in Materials (PREM).

The students are:

- Bianca Todacheenie
- Drealle Estrada
- Oliver Yellowhair



NTU Strategic Plan 2020 - 2025



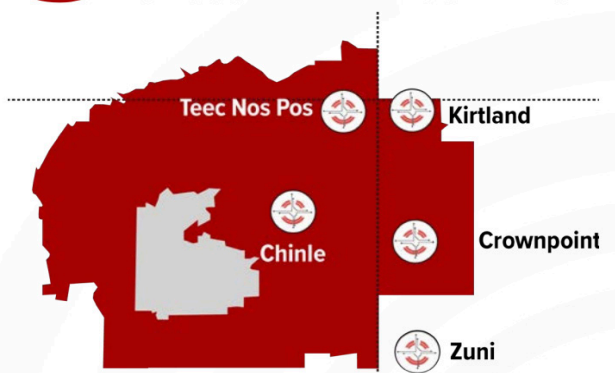
The Board of Regents approved a new strategic plan that will be implemented at all NTU locations for the next five years. The plan's priorities were established based on information collected from were established from information collected at listening sessions held by the Committee on Institutional Effectiveness (CIE) over two years at each of NTU's five locations. The plan is aimed at strengthening the culture and integrity of NTU; increasing the diversity of Navajo communities; and improving the university with a variety of innovative programs.



THE STRATEGIC PLAN INCLUDES SIX PRIORITIES:

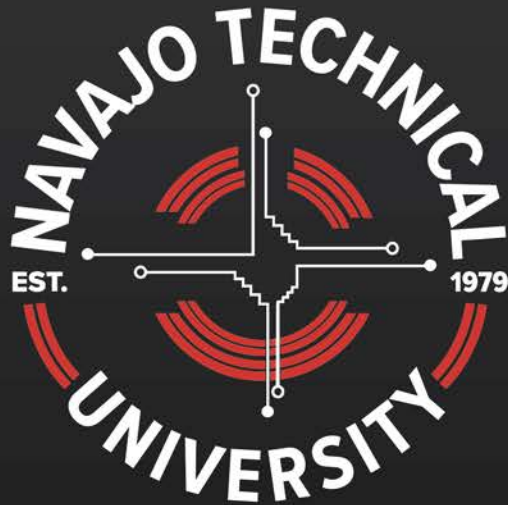
- Academic Excellence
- Financial Services
- Communication and Institutional Research
- Infrastructure
- Development of Instructional Sites
- Sustainability

5 LOCATIONS ACROSS THE NAVAJO NATION



AZ NM

New Mexico: Crownpoint, Kirtland, and Zuni.
Arizona: Chinle, Teec Nos Pos.






TRANSITIONS

"Navajo Technical University honors Diné Culture and Language, while Educating for the Future."

NAVAJOTECH.EDU

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