2024

NAVAJO TECHNICAL UNIVERSITY

EST. 1979



ANNUAL REPORT

EMPOWERING

NITSÁHÁKEES | *NÁHATÁ* | *IINÁ* | *SIH HASIN*

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

NAVAJOTECH.EDU

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NTU IS ACCREDITED WITH THE

HIGHER LEARNING COMMISSION

- 10 Year Approval 2018 -

SPECIAL PROGRAM ACCREDITATIONS WITH:

ABET Engineering Accreditation Commission

Electrical Engineering, Industrial Engineering

AVMA American Veterinary Medical Association

Veterinary Technology

ACF American Culinary Federation The Standard of Excellence for Chefs

Commercial Baking, Culinary Arts

nccer

Automotive Technology, Carpentry,
Construction Technology,
Electrical Trades, and Welding

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NTU | NAVAJO TECHNICAL UNIVERSITY

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
- **Éédééhtį:** Innovation
- **Ałk'izhdiitį:** Communication
- **Ahiłna'anish:** Collaboration
- **'Adiłjidlį:** Integrity
- **Ałhidilzin:** Respect
- **Na'alkaah:** Research



Mission

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 enviroment, enabling all community members to grow intellectually, and culturally.

Philosophy

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

BOARD OF REGENTS



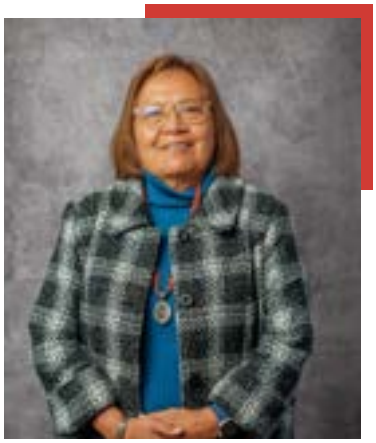
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Fort Defiance Agency



Board Vice Chairperson

Delores Greyeyes, Ph.D.
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Board Member

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NTU President

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NTU Provost

Jason Arviso, Ed.D.
Vice-President of Operations

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Interim Dean of Dine & Graduate Studies

Casmir Agbaraji, Ph.D.
Dean of Undergraduate Studies

Jerlynn Henry
Dean of Student Services

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Director of Communication & Marketing

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Director of Enrollment

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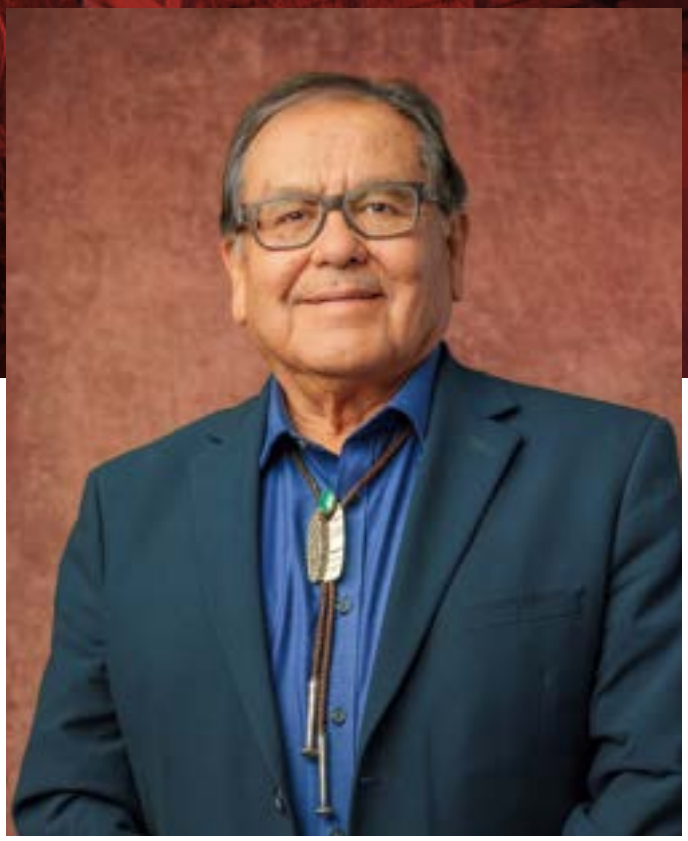
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Legal Counsel

Daryl R. Begay
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NTU NAVAJO TECHNICAL UNIVERSITY

STATEMENT FROM OUR NTU 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 testament to our unwavering spirit and commitment to excellence.



Elmer J. Guy, Ph.D
NTU President

Our Resilience



Navajo Skills Center (1979 - 1985)

Beginnings

A tribal college that became a tribal university, NTU, as it's often referred to by the Navajo, or Diné, people, started out at as the Navajo Skills Center in 1979. The Navajo Nation is roughly the size of the state of West Virginia, and few people living on the huge reservation had jobs in 1979. The unemployment rate on Navajo at that point was 62.1% of the workforce.

At that time the Navajo Reservation was one of the largest pockets of deep poverty in the United States, a circumstance that had existed since the return of the Diné to their homelands after the devastation of the Long Walk where the entire tribe was marched at gunpoint to Bosque Redondo in eastern New Mexico. Thousands of people died during multiple torturous 18-day journeys. The Long Walk was followed by disaster when crops repeatedly failed, causing widespread starvation, and water and even firewood were too limited for the Navajo and Mescalero Apache interned there. The Navajo returned to their homelands in Northern New Mexico and Arizona and Southern Utah after the Treaty of Bosque Redondo was negotiated and signed on June 1, 1868.

Navajo Skills Center was set up through a grant from the federal government to provide what today is known as workforce training with the hope that, by providing vocational/technical training, the unemployment rate could be reduced and some of the widespread poverty could be at least partially alleviated. The Navajo legislature and President appointed a Diné board to oversee education activities at the center under the Navajo Division of Labor. The headquarters for the center was then established in some old buildings that were unused in Crownpoint, New Mexico, although the expectation was that the center would serve all Diné people. The original curriculum emphasized skills like carpentry, electrical trades, and secretarial science, all of which exists as courses of study at NTU today in one form or another.

The Beginning of the Tribal College University Movement

In 1966, a group of visionary Navajo leaders and the Superintendent of the School District in Rough Rock, Arizona founded the Rough Rock Demonstration School, which started the journey toward the tribal colleges and universities movement chartered by tribes throughout



Crownpoint Institute of Technology (1985 - 2006)

the United States. The idea behind the Demonstration School was that by emphasizing Navajo culture, history, and language, and trying to reverse the direction of American Indian education initiated with the start of the boarding and religious school era at Carlisle Indian School in Pennsylvania in 1869, the widespread failure of young Native students to succeed in education could be reversed. By emphasizing the strength of Navajo culture, language, the entire history of the people, and even the spirituality of the tribe, the founders of Rough Rock reasoned, young students would discard feelings of inferiority and frustration and succeed by embracing the knowledge and skills education had to offer.

The Rough Rock experiment, largely discounted by both the federal government and other mainstream educators, quickly evolved into two movements, the tribal college and Indian controlled schools movements. The tribal college movement started when the leaders of the demonstration school, including Dr. Robert Roessel and his wife, Ruth Roessel, and others like Dr. Dylan Platero, decided that what was being accomplished for young students at Rough Rock would be equally effective and powerful at the community college level. Working again with the tribal legislature and Navajo Nation President, Navajo Community College was started and located in Tsaile, Arizona.

In 1972, the founding of the American Indian Higher Education Consortium (AIHEC) by six colleges that had little, or no funding launched the tribal college movement in the United States. With American Indian leaders increasingly aware of how their communities were struggling as a result on under-educated population, the ideas behind Navajo Community College seemed like they could potentially contain a long-term answer to at least some of the problems their peoples were facing by succeeding at higher education. Mainstream institutions of higher learning had largely failed at graduating significant numbers of Native students.

Navajo Technical University's Historical Development

As the tribal colleges and universities movement got underway, the developing college was starting to evolve from its workforce development roots, maintaining those roots but looking toward a larger role in Diné education.



Navajo Technical College (2006 - 2013)

In 1984, Navajo Skills Center was accredited by the North Central Association of Colleges and Schools. In 1985, the Board of Directors changed the center's name to the Crownpoint Institute of Technology (CIT). The idea was to develop beyond the certificates, which had up to that time been the most advanced credential a student could earn. The goal was to create opportunities for students to earn technical associate degrees.

Along with other members of AIHEC, CIT became a land grant college in 1994. In February 2006, CIT achieved initial accreditation as a full-fledged community college from the North Central Association of Colleges and Schools. Shortly after, CIT was renamed Navajo Technical College. In 2007, the first of its instructional sites was established in Chinle, Arizona. In 2010, three baccalaureate degrees, Information Technology, Digital Manufacturing, and New Media, became accredited. This accomplishment was followed by the accreditation of NTU's first Masters' degree in Diné Language, Culture, and Leadership in 2013. That same year, the Navajo legislature and Navajo Nation President implemented legislation that changed the college's name to Navajo Technical University. In 2023, the University became a Ph.D. granting institution when the Higher Learning Commission approved a Doctor of Philosophy degree in Navajo Culture and Language Sustainability, the first doctoral degree offered by any of the U.S.'s 34 tribal colleges and universities (TCUs).

MAIN CAMPUS & INSTRUCTIONAL SITE

5 LOCATIONS ACROSS THE NAVAJO NATION



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



Navajo Technical University (2013 - Present)

Navajo Technical University Today

This history is only the start of NTU's remarkable development as an innovative institution of higher learning. Today the University offers an extraordinary career ladder of micro-credentials, certificates, and associate, baccalaureate, master's, and PhD degree programs. A student that earns a micro-credential in carpentry can then earn a certificate in electrical trades, then decide to earn a baccalaureate degree in Electrical Engineering, and then go from there into the master's degree program in Electrical Engineering. NTU is currently preparing to launch a doctorate in Electrical Engineering in 2026.

Most of the curriculum at NTU is either centered in trade programs like Culinary Arts, Baking, carpentry, automotive technician, welding, plumbing, or Alternative Energy, or in Science, Technology, Engineering, Math (STEM), or health degrees, although it also offers degrees in areas like Early Childhood Education, Law Advocate, Veterinary Technology, and Creative Writing. In addition to accreditation from the Higher Learning Commission, NTU also offers additional accreditation in areas like Culinary Arts, Baking, and the construction trades as well as ABET accreditation for Electrical Engineering (B.S.), Industrial Engineering (B.S.), Information Technology (B.A.S.), Advanced Manufacturing Engineering Technology (B.A.S.), Chemical Engineering Technology (A.A.S.), and Engineering Technology (A.A.S.).

The University is the largest tribal university in the United States, serving mostly Navajo students but also students from other tribes, especially the Zuni Nation, as well as from other communities.

NTU AT A GLANCE

9:1 STUDENT TO FACULTY RATIO

43.2% AMERICAN INDIAN FACULTY

163 DEGREES CONFERRED
SP'23 and FA'23

68 ACADEMIC PROGRAMS

35 PHD/EDD FACULTY
6 AMERICAN INDIAN FACULTY



The Extraordinary Navajo Technical University Educational Model

The history of NTU explains some of its foundations, and the current curriculum tells another part of the story. The University is still, as was true when it was the Navajo Skill Center, driven by the effort the Navajo Nation originally charged it to work toward accomplishing, developing the knowledge, skills, attributes, and values of the Navajo work force so that the Nation's economic well-being benefits from those efforts. The reasons the University has such an unusual infrastructure, unlike most of the higher education systems in the U.S., is that it is charged with not only educating students but also with helping to develop employment opportunities for those students in the Navajo Nation and surrounding communities. This means that the economic development mission of NTU is as important as the educational mission, which helps to explain the career ladders, from micro-credentials dedicated to vocational jobs to doctoral degrees, that is still being constructed.

In addition to the career ladder design of the University, however, other elements are equally important. When Elmer Guy was first hired by the CIT Board of Directors as President, he made the decision to start concentrating on developing new degrees in STEM fields. The feeling of Dr. Guy and his education leadership at the time was that the American economy's future was centered in the constant changes in the world's economy by new technologies. Most of these technologies were coming out of STEM fields, including those in health, vocational/technical, and other areas where employment was likely to expand into the foreseeable future.

As CIT became a college and then a university, the administration also worked to get the faculty to adopt an experiential approach to education. The trades fields had always worked at teaching students by combining classroom work with projects that took place in labs or in Navajo communities surrounding. Carpentry students even had repaired homes, or even built a home, for veterans or someone else that was deserving in the Navajo Nation. The Culinary Arts program ran the cafeteria on campus. Now NTU wanted STEM course instructors to do the same thing. Knowledge would be learned in the classroom and then applied through projects that were to be done in either the classroom or



Building a Research University

A special emphasis was put upon research at the undergraduate level with the idea that, as NTU developed graduate degrees, it had in place the foundations to become a research university that could provide intellectual property, as well as, high skill/high wage Diné professionals to the Navajo Nation and the Nation's families. Intellectual property, copyrights, trademarks, and patents realized through student and faculty research, was especially important in this push since such property is the foundation for much of the economic growth in areas like the Silicon Valley in California or the North Carolina Research Triangle.

As all of this was put into place, NTU also started developing laboratories, achieved mostly because of National Aeronautics and Space Administration (NASA) and National Science Foundation (NSF) grants originally. Over time labs such as the Center for Advanced Manufacturing in Crownpoint or the Chemistry and Biology labs in both Crownpoint and Chinle, were built into worldclass facilities. This was designed to eventually realize the creation of entrepreneurial and new industry economic development in partnership with the Navajo Nation.

One of the unusual steps taken in the operation of NTU labs has been that undergraduate students, even freshmen are taught how to use machinery and instruments only graduate students are allowed to touch in other major universities. The idea is to make engineering or Advanced Manufacturing students, as an example, proficient from their earliest educational experiences in the practical side of science and processes that lead to research and the evolvement of scientific knowledge.



The Center for Advanced Manufacturing

Developing the Center for Advanced Manufacturing and research projects led to an increasing number of partnerships with private sector businesses, other universities, national laboratories like Sandia National Laboratory in Albuquerque, and other researchers and groups from around the United States. Following the lead of the Center, other laboratories and programs at NTU began developing similar partnerships. The extent of these partnerships in cutting edge fields such as Engineering, Environmental Science, Chemistry, and Biology at NTU is truly extraordinary.

The NTU Veterinary Hospital and Educational Programs







Long before the Center for Advanced Manufacturing was created, a veterinary technician training program was established. Navajo have embraced the herding of sheep, cattle, and horses as a central part of Navajo culture for centuries. Developing a program that trained students to care for animals made sense because the tradition is so strongly ingrained within the Navajo tribe. As part of the training program, a veterinarian clinic was developed so that students could get real world experience both operating a viable clinic business and treating both small and large animals.

The Navajo Technical University Veterinarian Hospital has been operating successfully, training students and treating animals, for decades. In addition to its veterinary technical associate degree program, it also has an Animal Sciences baccalaureate degree, an extension program that is part of NTU's land grant status, and an active research program. The teaching hospital first introduced Llamas as guard animals, conducted research in several diseases that affect sheep, introduced breeding stock for both sheep and cattle herds, conducted research designed to find solutions to the domestic dogs that have gone wild and created packs throughout the Navajo Reservation, and other projects designed to help Navajo farmers and ranchers succeed.

Other Research/Educational Projects

Currently, NTU is doing Artificial Intelligence research, research in water filtration for community, livestock, and farming wells, research in battery technologies, and several other areas, often applying that research for the benefit of the Navajo Nation. We are also exploring how waste from abandoned uranium mines can be mined to extract actinium-225 while achieving remediation at sites that have created disastrous health outcomes for so many Navajo families. The decay properties of actinium-225 are favorable for usage in targeted alpha therapy (TAT); clinical trials have demonstrated the applicability of radiopharmaceuticals containing 225Ac to treat various types of cancer. Currently one gram is worth around three million dollars.

A good example of the research being done is the work by students and faculty in the Environmental Science and Environmental Engineering departments. The ongoing Sustainable Water Infrastructure Project, developed through a partnership with New Mexico Technical University and a private industry partner, Process Equipment and Service Company, Inc., "relies on innovative desalination units that filter water through hollow-fiber membranes." Currently the project is focusing on providing safe water for livestock management and irrigation.

> This phase will be followed by ensuring drinkable water for human consumption. Pilot models will also be introduced to high schools, showcasing the technology's functionality and potential mobility. Maintenance of these units will be undertaken by students from the community, ensuring sustainability and local involvement. Other community members will be trained on maintenance as well.[iii]









Supporting students in all the aspects of the University they become involved in is an integral effort to develop programs that inspire and support efforts to earn certificates or degrees. Academic Advisement, Accommodation Services, the Bookstore, Career Services, Childcare Services, First Year Experience, the Substance Abuse and Prevention Program, Student Activities, Student Residential Services, the Nitsáhákees Bee'anooséél Student Success Center, the Wellness Center, and Student Athletics, are available to NTU students. A focused emphasis is placed on improving retention and graduation rates. NTU, in partnership with the federal government, Arizona and New Mexico state governments, the American Indian College Fund, and the Navajo Nation also works hard to provide as many scholarships as possible to students. Research conducted by the university over the years has established that financial challenges are one of the major reasons students fail to complete their degree programs.



NTU Men's Basketball vs Justice College

January 6th, 2024 - The NTU SkyHawk Men's Basketball Team delivered an outstanding performance in their January 6, 2024, game against Justice College of Chandler, Arizona. Both teams played strong defense and offense, keeping the game tight throughout. Ultimately, the SkyHawks triumphed 97-91, highlighting their excellence both on the court and in the classroom. We're incredibly proud of their efforts.

NTU Competes in the 32nd Annual Chocolate Fantasy

February 3rd, 2024 - NTU's Culinary Arts and Baking program participated in the 32nd Annual Chocolate Fantasy event at the Sandia Resort & Casino. The event featured chocolate sculptures, bonbons, dinner, dancing, and more. NTU pastry chef Sheila Begay showed off her chocolate sculpture, "The Charleston Hop Trot." The event raised money for the New Mexico Museum of Natural History Foundation.





Forrie J. Smith visits the NTU Rodeo Team

February 5th, 2024 - Navajo Technical University's Rodeo Team had a special visit from Forrie J. Smith, an actor from Yellowstone. He talked to the team about rodeo riding, working hard, and staying focused to reach their goals. He also shared tips about roping, caring for horses, and never giving up.

Provost Colleen Bowman and Coach Nicole Pino encouraged the team to keep working hard and thanked Forrie for inspiring them. The team is excited and ready to do their best in the rodeo season ahead!

NM MESA Dream Catcher Day

February 6th & October 1st, 2024 - NTU hosted two engaging workshops aimed at inspiring middle and high school students to explore careers in STEM. Students participated in activities such as building solar cars, solving an escape room challenge, and learning about 3D printing in NTU's Fabrication Lab, with assistance from volunteers at Sandia Labs. Organizer Shawndeana Smith, West Region Coordinator, thanked volunteers for their vital role in inspiring students. These workshops underscored NTU's commitment to encouraging young minds in science and technology.





NTU-UTEP Partnership: Workshop on Energy, Surface & Interface Analysis of Electric Materials

February 20th, 2024 - NTU's Chemistry department hosted a workshop to teach students and faculty about exciting science topics. Experts from the University of Texas at El Paso shared ideas about batteries, tiny surfaces, and how light helps study materials. Students even got hands-on practice with cool science tools. The event inspired students to learn more about science and its benefits for their community.

NTU Easter Family Night

March 28th, 2024 - Miss NTU Samantha Antone and former Miss NTU Cajaun Cleveland hosted a fun family Easter night at the NTU Wellness Center. The event included an Easter egg hunt for kids of different ages. Children enjoyed coloring and art activities while spending time with their families. Everyone got candy-filled eggs, and some lucky kids found special prizes inside. It was a fun and rewarding event for all!





10th Annual Tribal College Research Symposium

April 24th & 25th, 2024 - Four Navajo Technical University students—Conrad Begay, Dallen Plummer, Adrien, and Edwina Leslie—presented at the Tribal College Research Symposium, showing their skills in engineering research. After their excellent presentation, they toured United Tribes College and the University of Mary in North Dakota, visiting classes and labs to learn more about engineering. Their work was guided by Dr. Peter Romine, Dr. Sundaram Arumugam, and Jodi Chase, who praised their efforts.

Yale School of Medicine and Quinnipiac University Equity and Inclusion Leadership Presentation Empowers Navajo Students for Medical Track

April 25th, 2024 - NTU, Yale, and Quinnipiac hosted an event at NTU's Chinle Site to help students learn about medical careers. NTU students shared their experiences, including internships at Harvard. Speakers talked about diversity, medical programs with benefits like paid stipends, and how to build confidence. The event supported Navajo students in reaching their medical career goals.





PNM Navajo Nation Workforce Training Scholarship Awards

May 1st, 2024 - PNM gave NTU and San Juan College students scholarships for their hard work in helping their communities. At the event, Pete Atcitty from PNM praised the students, and Dr. Delores Becenti thanked PNM for their support.

Students, like Nylana Murphy, who want to build rockets with NASA, shared their inspiring stories. The event celebrated their achievements and encouraged them to keep working toward their goals.

NTU Students Receive 2024 BHP Scholarships

May 3rd, 2024 - At NTU's Chinle site, students were honored to receive the BHP scholarship. Arlena Benallie, the site director, welcomed everyone and thanked BHP for supporting students with scholarships and tablets. She also sang a special Navajo song about NTU's mission. Garrett Holm praised the students for their hard work, and NTU student Andrea Begay encouraged everyone to keep learning and making a difference for the Navajo Nation. Arlena reminded students that the scholarships help them follow their dreams and thanked BHP for helping support their futures.





2024 Navajo Nation Energy Summit

June 4th, 2024 - Students and faculty from NTU participated in the 2024 Navajo Nation Energy Summit in Albuquerque. The event, themed "Educating and Empowering," focused on various types of energy, including oil, gas, wind, and solar The summit opened with a lively panel discussion featuring professionals from the Department of the Interior's Division of Energy & Mineral Development. Zane Gordon shared insights on oil and gas energy generation, Kyle Levin highlighted advancements in wind and solar energy, and Darrell Brown explored the potential of hydrogen energy. The event provided valuable knowledge on energy solutions and their potential benefits for the Navajo Nation.

Spring Graduation 2024

May 10th, 2024 - NTU celebrated its Spring 2024 Graduation with 143 graduates from 45 programs. Families and special guests, including Chief Justice JoAnn Jayne and Dr. Cherie De Vore. The ceremony included speeches, prayers, and degrees for graduates. Dr. Elmer J. Guy encouraged students to use education to help their communities. Dr. De Vore inspired them to follow their dreams. Chief Justice Jayne reminded graduates to honor Navajo traditions while embracing new opportunities. Congratulations to all the graduates!





2024 TCU Faculty & Student Success Convening

May 28th, 2024 - NTU is improving its internet to help students in remote areas learn better online. Drs. Coleen and Jason Arviso's project aims to make distance learning easier and meet high education standards. A roundtable with TCU leaders, including NTU's Dr. Elmer Guy, discussed how to support Native students and strengthen schools. Dr. Jason Arviso said the new network shows NTU's commitment to quality education for all students, no matter where they are.

The NTU Rodeo Team is Gearing up for the College National Finals Rodeo

June 9th - 15th, 2024 - The Navajo Technical University Rodeo Team is thrilled to announce Hyan Ramos and Isaiah Tom's participation in the College National Finals Rodeo (CNFR) at the Ford Wyoming Center in Casper, WY, from June 9 to 15, 2024. The team is prepared to demonstrate exceptional skills and dedication during this prestigious event.





Diné Bizaad Naalkaah / Navajo Language Academy Workshop

June 10th, 2024 - This summer, a workshop will teach Navajo grammar, focusing on commands and requests. It will also create online tools to help learners learn Diné Bizaad. Professors Sharon Nelson and Ted Fernald lead the program, which is funded by the National Endowment for the Humanities. Dr. Fernald shared that Navajo grammar has been studied for over 100 years, with linguists like Dr. Paul Platero and Dr. Ellavina Perkins earning Ph.Ds since the 1970s.

"Power of the Run" Cross-Country Camp

June 11th - 13th, 2024 - Coach Leonard Lee's three-day Cross-Country Camp at NTU taught students about running and Navajo culture. They trained on different surfaces and trails, learning pacing and tracking techniques. Students ran a mile around campus, and Coach Lee praised their progress. At the award ceremony, Dr. Franklin Sage spoke about staying healthy, and certificates were given to the fastest and most improved runners. Coach Lee thanked everyone for making the camp a success.





NTU Summer and STEM Skills - Trail Development

June 14th, 2024 - Navajo Technical University's summer dual-credit program teaches Wingate High School students skills like Culinary Arts, Welding, and Construction. Students in Welding and Construction are building concrete tables and benches for a pergola at the Office of Diné Youth Loop Trailhead. The 2024 Summer STEM & Skills program will improve a mile of trail in Crownpoint with picnic benches, signs, and peach trees. Over 60 students are helping, and the project is funded by a grant from the NM Outdoor Recreation Division to support the Crownpoint community.

Summer STEM and Skills Maker Faire

June 26th, 2024 - Navajo Technical University and Wingate High School students presented the five programs featured in the 2024 Summer STEM and Skills program. These programs include welding, construction, business, culinary arts, and engineering. The program culminated in the Maker Faire, an event where students displayed their creations from their courses. This event allowed sixty students to exhibit their work and inspire others to pursue their interests.





Navajo Culture Perspectives and Teachings

June 28th, 2024 - Navajo Technical University's Environmental Science department hosted Sharon Nelson, Dr. Perry James, and students from NTU and Northern Arizona University. The event taught students how to respect nature and make offerings to plants during their studies. Students learned about Navajo teachings, like Hózhǫǫjí and Naayéé'jí, which focus on harmony and balance. They also learned how the male and female parts of nature work together, as designed by Spiritual Beings. The event helped students connect spiritually with nature.

GlobalMindED First Gen Leadership Program

June 28th, 2024 - Navajo Technical University's American Indigenous Business Leaders students attended the 2024 GlobalMindEd Conference. They listened to first-generation college students share how they built successful careers. Wyndi Martinez, an NTU graduate, shared her story about earning her Business Administration degree. Accounting student Larris Enrico joined a workshop about finance in Native communities and learned valuable lessons. Both students were inspired and excited to use what they learned in their studies and future careers.





Youth Basketball Camp

July 2nd & 3rd, 2024 - Navajo Technical University held its first youth basketball camp, and over 50 kids joined. Led by George LaFrance and Michael K. McMillan, the camp taught dribbling, passing, shooting, and conditioning. On the last day, kids played 5-on-5 games to show their skills.

The camp is one of six free NTU youth camps for ages 10-17 in July. The other two are basketball camps and cycling camps. Kids can sign up on the first day of each camp!

Eastern Navajo Nation Fair

July 27th, 2024 - Navajo Technical University joined the 46th Annual Eastern Navajo Nation Parade during the Eastern Navajo Fair. With the theme “Honoring our Dine’ Legacy of Service,” the parade started at Crownpoint Mid/High School and ended at the Crownpoint Chapter.

NTU’s float featured Miss NTU and Sammy the Skyhawk, bringing smiles and joy to the community. The colorful parade celebrated Navajo culture with floats from local schools, businesses, and groups.





Youth Softball/Baseball Camp

July 27th, 2024 - Navajo Technical University hosted summer softball and baseball camps led by Athletics Director George LaFrance. Over two days, kids learned catching, throwing, batting, and pitching through fun drills and practice games. George taught teamwork and sportsmanship while giving helpful tips to each camper.

The camp had a friendly and supportive atmosphere, and George thanked the campers and coaches for making it a success. He looks forward to next year’s camp at NTU!



New Mexico Higher Ed Basic Needs Visit

July 31st, 2024 - Secretary Patricia Trujillo from the New Mexico Higher Education Department visited NTU to introduce the New Mexico College Basic Needs Project. NTU shared exciting news about funding received to help students with food needs in 2023 and 2024. Jerlynn Henry, Dean of Student Services, said this support will help students succeed. NTU also received a grant to hire two student advocates trained by UNM. These advocates have been helping students by connecting them with resources like food and gas cards. The visit showed strong support for NTU and its students.

New Student Orientation

August 15th, 2024 - Navajo Technical University held an orientation for new students at the Wellness Center and on Zoom. Students learned about safety, financial aid, and campus services. Miss NTU Samantha Antone gave an inspiring speech, and President Dr. Elmer Guy welcomed everyone. Dean Jerlynn Henry explained that the event helped students learn NTU's rules and meet staff and classmates. The day included campus tours, team activities, and info sessions for parents, helping students prepare for success.





Central Navajo Fair Kids Day at NTU Chinle Site

August 15th, 2024 - The Central Navajo Nation Fair Kids Day at NTU's Chinle site was full of fun and excitement! Thanks to local vendor, Bryan Yazzie, kids enjoyed games, music, snacks, and even a bouncy house, snow cones, and popcorn. Navajo Nation leaders and Miss Navajo Nation contestants shared inspiring messages. The event was well-organized, with NTU Security helping out, and many local agencies showed great support. Everyone had a fantastic day!

NTU Participates in the Central Navajo Fair

August 17th, 2024 - NTU joined the 38th Annual Central Navajo Nation Parade with the theme “Celebrating Life, Íiná Bahoózhó.” Miss NTU and NTU Chinle Site Director Arlena Benallie greeted people and thanked them for their support. Chinle recruiter Jarvis Draper helped organize volunteers to share information about NTU’s programs, like the CDL program that trains people to drive big trucks and operate heavy equipment.





Marketing Free Coffee Event

August 20th, 2024 - NTU’s Marketing Department hosted a fun welcome-back event with a free coffee shop in the Wellness Center foyer. From 10:00 a.m. to 11:30 a.m., students, faculty, staff, and community members enjoyed great coffee, NTU stickers, and tasty pastries. The event, led by Meriel Simpson, brought everyone together and received great feedback for the coffee and snacks.

Miss NTU Pageant

September 4th, 2024 - Navajo Technical University crowned Starr O’riah LaPahe as Miss NTU 2024-2025. Starr, a student at NTU’s Chinle site studying Early Childhood Multicultural Education, wowed the judges with traditional song and rifle drill skills from her JROTC experience. Runner-up D’Andre Harker, studying IT and Automotive, sang a ceremonial song and showed her sewing talent by making hair scrunchies. NTU thanked Samantha Antone, Miss NTU 2023-2024, for her contributions. Starr shared her excitement and looks forward to the year ahead as Miss NTU!





NTU attends Navajo Nation Kids Day

September 4th, 2024 - NTU had a great time at the Navajo Nation Fair in Window Rock, Arizona, celebrating Ashkii Happy Kids Day. The event had fun activities and helpful booths for students and youth groups. NTU distributed free notebooks, bags, pens, and information about the university. Kids also met Sammy the Skyhawk. It was a fun day filled with excitement and memorable moments!

Navajo Nation Parade

September 7th, 2024 - Navajo Technical University proudly participated in the 76th Annual Navajo Nation parade; “Honoring Our Heritage: Celebrating Harvest, Livelihood, and Kinship.” Thousands gathered along Highway 264 to enjoy over 100 vibrant floats, showcasing local businesses, schools, and community groups. The festivities, began at 8 AM, included NTU’s float, highlighted by the newly crowned Miss NTU Starr, O’riah LaPahe, and the energetic Sammy the Skyhawk, bringing joy and excitement to attendees as they celebrated the importance of cultural heritage.





NASA visits the NTU Science Students

September 19th, 2024 - Dr. Robert Swap and Steve Platnick from NASA’s Goddard Space Flight Center visited NTU to discuss their work in Earth Sciences. They shared new technologies and projects, focusing on extreme weather, climate change, and biomass burning. Dr. Swap spoke about his research in places like Africa and Brazil. At the same time, Platnick explained his work studying clouds using satellites and aircraft. They also discussed possible ways in which NTU could collaborate with NASA.

NTU Club Drive

September 24th, 2024 - The Navajo Technical University Student Senate hosted its annual club drive at the Student Union Building. From 1 PM to 3 PM, students learned about different NTU clubs. They could sign up and learn about the clubs' activities, like competitions, conferences, and events. The event helped students connect with others, develop networking skills, and learn how to get more involved at Navajo Tech.





USC Collaborates with NTU Chemistry Department

September 25th, 2024 - NTU worked with the University of Southern California, School of Engineering, to offer a workshop about new tools and techniques for using sensors to test things like saliva and glucose. Students learned how to make and use sensors to measure glucose in milk. The workshop gave students helpful skills for their projects and future work at NTU.

USDA APHIS TCU/ Vet Tech Internship Presentations

September 24th & 25th, 2024 - NTU worked with USDA-APHIS to offer students internships in areas like pest control, wildlife management, and lab research. Interns shared their experiences with the community and met their supervisors. The program gives students paid summer and fall jobs to learn real-world skills as veterinarians and wildlife biologists. Students also get extra training and build connections for future public service and government jobs.





NTU Basketball at Chinle

October 3rd, 2024 - The Skyhawks basketball teams played against the Gila Monsters from Eastern Arizona College. The Lady Skyhawks started their second season confidently, while the men's team struggled but worked hard in the second half. The game was exciting, and many fans came to support the teams. Even though the Skyhawks didn't win this time, they learned what they needed to improve upon for their next games.

NTU Students Participate in ASPV Training Focused on NC Clean Energy Technology

October 21st - 25th, 2024 - NTU students took a Solar PV Design and Installation course at the North Carolina Clean Energy Technology Center. The course taught students about solar energy systems, including design, installation, and maintenance. This hands-on learning helps students gain skills for careers in renewable energy, especially in the Navajo Nation. The course, offered by North Carolina State University, prepares students to be leaders in clean energy and sustainability. Each student earned a certificate for completing 40 hours of training.





Fall Career Expo

October 30th, 2024 - NTU's Office of Career Services hosted a two-day career expo on campus. The first day featured in-person and online workshops about jobs and opportunities led by Shawnna Begay, Career Services Coordinator. The second day featured a career expo with 24 companies, including Sandia National Labs, the Navajo Police Department, and the FBI. Many students attended, met with recruiters, and learned about different career options.

Women Skyhawks Basketball Host Yavapai College

November 1st, 2024 - The NTU Women's Basketball team played their first home game against Yavapai College at the Skyhawk Gymnasium. Yavapai quickly took a big lead, but NTU made some good changes in the second quarter to improve their play. At halftime, the team honored senior Sarah Dennison for her leadership. In the second half, NTU played better, closing the gap to nine points. However, Yavapai won the game 60-44 with a strong finish.





NTU Students Participate in the Annual Conference of the IEEE Electronics Society

November 3rd - 6th, 2024 - NTU Electrical Engineering students Victoria Charlie and Conrad Begay, as well as Dr. Sundaram Arumugam, attended the IEEE 50th IECON conference in Chicago. They presented a paper called "Improving Indoor Air Quality Using a Box Fan Filter in a Navajo Nation Home—Healthy Hooghan Project." This project focused on improving health and living conditions in the Navajo community. The conference allowed them to share ideas and work on new engineering projects to help their community.



Out4Undergrad Visit

November 6th, 2024 - Jordan Dillard and Iman Serbones, recruiters from Out4Undergrad, visited NTU's main campus in Crownpoint, NM. During their visit, they shared valuable information about the opportunities Out4Undergrad offers students. The information provided included nationwide conferences focused on business, engineering, life sciences, and digital. Each event attracts numerous companies and organizations looking to recruit upcoming graduates and provides additional internship opportunities for students during their undergraduate studies.



NTU Skills Fest

November 19th, 2024 - High school students from the Four Corners area visited NTU's main campus to explore trade programs and join in fun competitions. They competed in automotive, welding, culinary arts, sports, and more events. The top three performers in each event won medallions, and all students enjoyed snacks, NTU gifts, and lunch. The event showed students the many career opportunities at NTU and encouraged them to explore these fields in the future.

NTU's Career Carnival

November 20th, 2024 - These events allow staff members, faculty, and administrators to interact with students through quick, 5-minute chats about their educational and career journeys. Students can explore how their major or degree choices can lead to career opportunities and potential future paths.





A Night to Remember at NTU's Chinle Site 2nd Annual Christmas Tree Lighting!

December 4th, 2024 - NTU's Chinle Site had a fun 2nd Annual Christmas Tree Lighting event! The beautiful tree inside the new building shone brightly, and guests joyfully smiled. Families enjoyed free hot cocoa, met Santa and Sparky, and took festive photos. The evening was filled with lights, laughter, and holiday cheer. Thank you to everyone who joined in and helped make the season brighter!

NTU/USDA/NIFA Hydroponic Workshop

November 21st & 22nd, 2024 - NTU hosted a two-day event about hydroponics, a way to grow plants in water with nutrients instead of soil. Richard C. Schultz and Gabe Smith from Santa Fe Community College taught about the benefits, like faster plant growth and using less water. The event had a workshop and hands-on learning about hydroponics and aquaponics. Participants also toured NTU's Green House and the Mariano Lake Chapter House, where a new greenhouse is being built to teach sustainable farming.





Culinary Arts Finals Fall 2024

December 3rd - 6th, 2024 - The Culinary Arts Program held its semester finals inside the Hospitality Center on NTU's Main Campus. The culinary finals is an opportunity for students to demonstrate their skills by preparing a six-course meal for guests, including NTU faculty, staff, and the students' families. Seven students participated in this fall semester's culinary finals: DJ Mayweathers, Lambert Abbeya, Nicole Livingston, Sterling Holiday, Sheldon Tsosie, Ohmry Secatero, and Justina Smith. They prepared six courses: an appetizer, salad, soup, fish course, entrée, and dessert (the latter prepared tableside). Each student received a mystery box of ingredients, which they used to create their themed menus.



Fall Graduation 2024

December 13th, 2024 - NTU celebrated its graduates with a ceremony where 97 students received certificates, Associate's, Bachelor's, and Master's degrees. The event featured a performance of the National Anthem and a speech from Miss NTU Starr LaPahe, who talked about the importance of family support. Dr. Elmer J. Guy welcomed guests, including Navajo Nation President Buu Nygren. The ceremony was broadcast live on YouTube and radio. President Nygren and Student Senate President Krista Goodluck gave congratulatory speeches, and the event ended with thanks to everyone who helped make the ceremony a success.



2024 Késhjéé' Navajo Shoe Game

December 20th, 2024 - NTU's Early Childhood Multicultural Education Program hosted a Navajo shoe game at the Wellness Center. Isaiah Tsosie shared stories and showed how to play the game. The event taught children and families important lessons about balance, respect, and working together. Through the game, children learned skills like problem-solving and cooperation. The event helped everyone learn more about Navajo traditions and the importance of community. Thanks to Iron-Moc Catering for providing food for everyone!

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Visit: https://www.navajotech.edu/newsroom/

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Skyhawks Athletics Department

To build a thriving university, a robust athletic program is essential. NTU took a major step in this direction in 2012 by establishing the Wellness Center, which features a gymnasium. The recent debut of NTU's first-ever conference men's basketball team is a significant achievement, while rodeo has long been a vital part of the university's competitive athletic offerings. Looking to the future, NTU has expanded its athletic program with a women's basketball team. This strategic initiative underscores NTU's dedication to strengthening its athletic program and enriching the overall university experience.

SKYHAWKS BASKETBALL 2024-2025

Our student athletes are dedicated and committed to compete at the collegiate year level and live an active lifestyle. The Collegiate program at NTU strives to provide students a positive platform to play college basketball while receiving a strong education to meet the country's workforce demands. Each year, the team plans to compete in the USCAA National Tourney in Richmond, Virginia.



2024-25 Men's Team Roster:

Coach: Michael McMillan

- Antwain Bahe #3
- Troy King #15
- Joshua Kee #30
- DeVaughn Sylvester #5
- Ira Mayweather #44
- Ethan Billy #50
- Tyrell Archie #24
- Oraias Begay #32
- Adakai Yazzie #11
- Davin Salt #0
- Jaden Redhouse #2



2024-25 Women's Team Roster:

Coach: Aanor Louis

- Sarah Dennison #10
- Malorie Mckerry #12
- Aldondrea Jodie #4
- Rhea Francisco #22
- Jocee Henderson #11
- Tyra Bitsie #25
- Daliyah Morris #1
- Raven Tso #5
- Alfrearosa Reid #3
- Asia Kee #32
- Shanoah Platero #23
- Myabelle Begay #44
- Kalise Steven #13
- Jazlin Abe (not pictured)

SKYHAWKS RODEO 2024-2025

NTU's rodeo program is a member of the National Intercollegiate Rodeo Association (NIRA). The rodeo sports program provides students with the opportunity to embrace New Mexico's rugged landscape and compete in various rodeo competitions. Student athletes learn to work as one team with their livestock and team members to represent Navajo Technical University with their dedication and horsemanship skills.



The team is ready to embrace the new season, and Coach Nicole Pino is optimistic about their outstanding performance. Let's extend a warm welcome to the incredible NTU Rodeo 2024-2025 team roster:

2024-25 Men's Team Roster:

Isaiah Tom - bareback & bull riding
Drekell Johnson - bullriding
Tydon Tsosie - steer wrestling
Wyatt James - bullriding
Cimarron Curley - bullriding
Bailey Keesie - team roping
Andre Foster - bullriding
Trevor Yazzie - bareback
Malacai Shorty - bareback
Alvaro Begay - bareback

2024-25 Women's Team Roster:

Ashley Yazzie - breakaway roping
Adoncia James - breakaway roping
Francesca Noble - breakaway & barrels
Taylor Pino - breakaway roping
Cajaun Cleveland - barrel racing
LaBelle Lafrance - breakaway roping
Autumn Sells - breakaway and team roping
Alexis Slowtalker - barrel racing

Other Athletics Programs

Archery
Cross Country
Cycling
Volleyball

For more information of the Athletics Department:

Visit: https://athletics.navajotech.edu/

SCAN QR CODE

Student Competitions

Part of both the learning and student support design are student competitions. The TCU movement focuses on helping students build confidence in themselves. Competitions and opportunities to share their classroom and research achievements give students a chance to highlight their personal successes while also showcasing the accomplishments of NTU. The 2023-24 school year student accomplishments illustrate the strength and important of this aspect of the NTU model.

NTU's 11th Annual Research Competition





On February 29, 2024, the University held its Eleventh Annual Research Day competition for students from various disciplines of study to showcase their research projects. The event awarded cash prizes to the top three research projects submitted and displayed for visitors and the following students received awards:

- **1st Place:** Merrill Benally – Environmental Science - *Using Atmospheric Pressure and Relative Humidity to Produce Water.*
- **2nd Place:** Milton James - Energy System - *Using Typical Meteorological /Yearly Data to Design a 700W, 24V Electrical Bike Charging Station.*
- **3rd Place:** Makeiyla Begay - Chemistry - *Bending Dielectric Elastomer Actuators.*
- **3rd Place:** Layla James - Biology - *Assays for Rapid Detection of SARS-COV2 Infection in a Broad Spectrum of Animals.*

2024 AIHEC Student Conference





On March 9 - 12, the American Indian Higher Education Consortium (AIHEC) Student Conference was held in Minneapolis. NTU students won or placed in the following competitions. They competed with students from other tribal college and university in the United States:



AICF Student of the Year:

Layla James of Navajo Technical University

Coca-Cola Scholar

Rebecca Yazzie of Navajo Technical University

Archery

3rd place, Men's Team
1st place, Men's Singles
2nd place, Women's Team
2nd place, Women's Singles
2nd place, Non-Binary

Art Exhibition

2nd place, Painting

Basketball

3rd place, Women's Team

Business Bowl

3rd place, Business Bowl

Cybersecurity

3rd place, Cybersecurity

One-Act Play

3rd place, One-Act Play

Scientific Oral

2nd place, Scientific Oral

Scientific Poster

2nd place, Scientific Poster

Tribal College Student Writing

Creative Writing:
"First Man" by Anthony Ryan Edaakie of Navajo Technical University

5k Run

5th place in a 5K run, Men's Team
2nd place in the 5K run, Men's Team

American Indian Higher Education Consortium (AIHEC)

Dr. Elmer J. Guy, president of Navajo Technical University, was elected as the chairman of the AIHEC Board of Directors. Also, Dr. Guy co-chairs the Education Sub-Committee for the National Congress of American Indians.





2024 SkillsUSA New Mexico State Leadership and Skills Conference (SLSC)

The 2024 SkillsUSA New Mexico State Leadership and Skills Conference (SLSC) was held on April 11-13, 2024, in Albuquerque. NTU students earned four (4) gold medals in electrical construction, restaurant service, digital cinema production, baking and pastry; one (1) silver medal in electrical construction wiring; and four (4) bronze medals in carpentry, electrical construction wiring, customer service, job interview, and welded sculpture.

Gold Medalists:

- Angelena Shepherd for Baking Baking and Pastry
- Dylan Dale and Royan Begay for Digital Cinema Production
- Jeremy Hosteen for Electrical Construction
- Angel Joe for Restaurant Service

Silver Medalists:

- Tyler Sundown for Electrical Construction Wiring

Bronze Medalists:

- Chaslyn Evans for Carpentry
- Ricknell Delgarito for Customer Service
- Malcolm Boyd for Electrical Construction Wiring
- MiRyan Phillips for Job Interview/Welding Sculpture



Navajo Technical University is proud to acknowledge Angel Joe's accomplishment of winning the Bronze Medal in Restaurant Service at this year's SkillsUSA competition in Atlanta, Georgia!

E-Learning at NTU

The university boasts a strong E-Learning capability. Currently students can earn fifteen degrees, ranging from baccalaureate to master's to PhD, by enrolling online. The infrastructure for online education at NTU is world class, and the university is recognized for its distance education by several organizations:

Online Learning Consortium (OLC)

Navajo Technical University has become institutional members of the Online Learning Consortium (OLC) formerly Sloan-C. The Online Learning Consortium is the leading professional organization devoted to advancing quality online learning providing professional development, instruction, best practice publications and guidance to educators, online learning professionals and organizations around the world.

State Authorization Reciprocity Agreement (SARA)

Navajo Technical University (NTU) is pleased to share as of June 7, 2017, we've been approved by New Mexico Higher Education Department (NMHED) to participate in the National Council for State Authorization Reciprocity Agreements (NC-SARA). We are the first Tribal University/College to become members of SARA. As a participating institution, NTU Online Courses/Programs will need to follow the Interregional Guidelines for the Evaluation of Distance Education programs. SARA Guidelines.

Higher Learning Commission (HLC)

Guidelines for the Evaluation of Distance Education (Online Learning): The Guidelines for the Evaluation of Distance Education (On-line Learning) have been developed by the Council of Regional Accrediting Commissions (C-RAC) to assist institutions in planning distance education and to provide an assessment framework for institutions already involved in distance education and for evaluation teams.



Technology Infrastructure



When President Guy was first appointed as President of NTU, CIT, like the rest of the Navajo Nation, was part of the digital divide. The connectivity that existed was based on modems and telephone lines. Through a series of innovative efforts by IT staff and faculty, this challenge was tackled by building, first, the Internet to the Hogan Project that brought the first high speed connectivity through wireless connectivity that was sent over 120 miles from the University of New Mexico giga pop in Albuquerque to the Crownpoint campus. Then a classroom was established that linked 25 minicomputers together to create a high-performance computer that also was used by IT students in their studies. Then projects like building a data visualization wall were undertaken by IT staff and students, creating the foundations for one of the more advanced technology infrastructures for an institution of higher education.

Today Navajo Technical University (NTU) operates a robust and scalable network infrastructure designed to meet the needs of its users with a focus on reliability, security, and futureproofing. Below is an overview of NTU's IT technology and services:





Network Infrastructure

- High-Speed Fiber Optic Connection: NTU is connected to a 100 Gbps fiber optic backbone that links to Albuquerque, New Mexico, ensuring high-speed and reliable internet access.
- Core Routers: The network's backbone is powered by two Cisco deep packet buffer routers, providing the scalability and redundancy needed for seamless connectivity.
- Border Security: Palo Alto Networks' solutions secure the university's network perimeter, ensuring data security and protecting against external threats.
- Building Connectivity: NTU provides a standard 10 Gbps backbone to every building on campus. More populated facilities will be upgraded to a 100 Gbps backbone shortly, eliminating bottlenecks and supporting increased local LAN and research demands.

Internal Network Design

- Enterprise Network: NTU employs an enterprise-level internal network where departments and programs are isolated unless specific access is necessary. This segmentation enhances security and resource management.
- Science DMZ: The University maintains a dedicated, unfiltered network for scientific research. This Science DMZ allows researchers to securely transmit large datasets to research partners worldwide without filters that might hinder performance.
- Wi-Fi Services: NTU provides campus-wide Wi-Fi with the following features:
    - Transitioning to Wi-Fi 6E and testing Wi-Fi 7 for improved speed and capacity.
    - Multiple redundant wireless frequencies ensure uninterrupted connectivity.

Community Broadband Services

- NTU extends broadband wireless services to surrounding communities, ensuring broader access to reliable internet.
- Future plans include expanding these services to additional neighboring communities.

Student Housing Connectivity

- On-Campus Housing: The University upgrades Wi-Fi services in student dormitories and efficient apartments to ensure seamless connectivity.
- Family Housing: Dedicated fiber optic networks are installed for student-family housing, prioritizing robust and reliable access.

IT Systems and Operating Platforms

- NTU actively upgrades its systems to the latest versions of Windows, macOS, and Linux operating systems, providing users with up-to-date technology and tools.
- Efforts are underway to adopt artificial intelligence (AI) solutions to improve departmental efficiency and enhance user experience from the moment they connect to the network.

Data Center Redevelopment

- NTU is currently redeveloping its data center to accommodate data-intensive and research-driven needs. This includes:
    - Enhanced cooling systems to manage high-performance equipment.
    - Backup power generation to ensure uninterrupted operation.
    - improved security measures to protect sensitive data and systems.

IT Department Goals and Tools

- NTU continuously explores tools and technologies to enable its small IT team to operate more effectively and efficiently.
- Investments in scalable and modular solutions ensure the network remains adaptable to future demands.

Strategic Vision

- NTU's overarching goal is to become the cornerstone of IT development, research, and standardization for the Navajo Nation and underserved communities worldwide. NTU aims to make a lasting global impact by prioritizing innovation and inclusivity.

In addition to all this, at 505 Marquette where the gigapop is in Albuquerque, NTU is directly interconnected at the source of connectivity in New Mexico, providing unparalleled access to education and commercial peering networks and Internet2 resources. Our strong ties to these networks allow us to deliver substantially low-cost Internet services—pennies on the dollar—while maintaining exceptional performance and reliability. As our own Internet Service Provider (ISP), we leverage access to a /22 IPv4 address space, ensuring robust, scalable connectivity. We also collaborate with leading education networks, including Front Range GigaPop, CENIC, Sun Corridor, and New Mexico state resources, empowering research, education, and innovation at every level.

Projects Supporting the Navajo Nation



There are several projects NTU is currently working on that are being done in concert with the Navajo Nation's administration.

Murdered and Missing Indigenous Women Database Project

The Murdered and Missing Indigenous Women (MMIW) database project aligns with the Nygren-Montoya Administration's priorities in education, public safety, and health/social services by serving as a critical tool for addressing challenges faced by the Navajo Nation. The database NTU is putting into place supports educational priorities by leveraging data to improve outcomes and address systemic MMIW issues, addresses public safety, prosecution, and accountability priorities, provides insights to improve health and social services and address systemic social issues like substance abuse, mental health, domestic violence, homelessness, and your support, and health care access.

Building a Community Wireless System for Academic Use in the Navajo Nation

As part of its old Internet to the Hogan initiative, NTU is in the process of planning and implementing community wireless systems for academic use in the Navajo Nation. The project will deploy a tower, cellular on wheels (COWs), mono or wall mounted towers to provide interconnect between NTU and other higher education external network services for backhaul to Albuquerque, NM. The project will deploy connectivity (100 down/20 up) in alignment with NTU's science and research needs in a community.

The intent is to enhance academic access by deploying wireless services (CBRS, EBS [in cooperation with CommNet/Sacred Wind Communications in Crownpoint, or 5.8 GHz unlicensed spectrum) where current resources are lacking, in collaboration with higher education institutions utilizing research education network resources to adapt to evolving educational requirements.

Partnership to Address Lack of Remote Access in Extremely Rural Areas

NTU is also working with Diné College and other higher education institutions to address the lack of remote access to academic programs in service area communities like Crownpoint, Littlewater, Casamero Lake, Borrego Pass, Red Mesa (Community/Crownpoint Public Safety), and the NTU Campus at Chinle. NTU intends to collaborate with Navajo ETCs to demonstrate cooperative services, where possible.

The Hole in Economic Development Efforts by Universities in the United States

All of this does not fully cover all the educational model developed at NTU, though. A lot of work is done by the various academic departments with different divisions within the Navajo Nation to explore where the Nation wants to drive progress. One of the most important goals of the Nation has long been to develop economic development for the benefit of the Navajo people.

One of the biggest holes in economic development efforts in the United States, especially when work in laboratories is transferred into the private sector. Through the NSF, NASA, the Department of Energy, the Nuclear Regulatory Commission and Department of Defense Research Labs, and other agencies, universities can apply for and receive funding for research projects. Then, in the usual economic development model, venture capital firms fund start-ups. A hole in economic development in poor communities occurs when the volume of production and sales required for venture capital funding is not possible for universities like NTU to access. Either the infrastructure to develop a business is not available in tribal communities to achieve the volumes of production necessary to achieve funding, or the university does not have the number of personnel to ramp up to that production level, or there is difficulty in proving the project in a way attractive to venture capital firms.

Most of the new jobs created in the United States are created by small businesses, so there is a hole that exists in economic development in this country. There is a serious need for funding that allows the development of proof-of-concept and pilot projects designed to generate income based upon research that does not demand the volume demand required by venture capitalists.

The Development of Iiná LLC

This year, the Board of Regents set up Iiná LLC, a holding company that NTU owns, as a profit-making company. Any excess profits will be used to either forward economic development efforts by NTU for the Navajo people or to support the university's mission. The first major initiative of Iiná, put into place, uses the work of the Center for Advanced Manufacturing and a range of partnership initiatives with Sandia National Laboratories, Arizona State University, federal agencies, the State of New Mexico, and private sector firms that have resulted in the creation of products that can fill significant holes in the national marketplace as well as unlocking untapped creativity from around the Navajo Nation. Navajo Advanced Manufacturing Enterprise is the first development of Iiná, although other enterprise developments are anticipated in the future.

This effort ties into other efforts at the Center of Advance Manufacturing in workforce education, research in processes, and even into the use of Artificial Intelligence (AI), in products and materials created by AM machining. Partnerships with New Mexico State University and Purdue University where Navajo graduate degree students are using a combination of online education and the tools and equipment located in the Center in Crownpoint to earn their graduate degrees, and, of course, NTU's extensive engineering, Advanced Manufacturing, and business degree programs, are part of the economic development effort that is intended to form the intellectual backbone of cutting edge business development for the Navajo people. At its heart, Iiná is designed to provide a working model that addresses the hole in U.S. economic development created by the lack of funding for projects that fall between venture capitalists and university research labs. At the same time, high-wage, high-skill jobs filled by graduated NTU students will help Navajo families and the Navajo Nation's overall economic development efforts.

liná is an extension of the capstone courses NTU encourages faculty to develop with small teams of students that partner with either the university's economic development effort or private sector businesses to create products that are useful to the business involved but are not being pursued by the business. These teams are often multi-disciplinary in nature and can involve students working toward different degrees. An early example of this effort was when Culinary Arts students partnered with students from the Alternative Energy program to create solar ovens useful to Navajo living in areas with limited power resources and little money. These projects can come from any education department in the university, but they are especially from the ABET-accredited programs.

This effort is designed to fill the hole in economic development that makes it so difficult for American Indian companies to achieve significant economic progress.

Summary of the NTU Higher Education Model



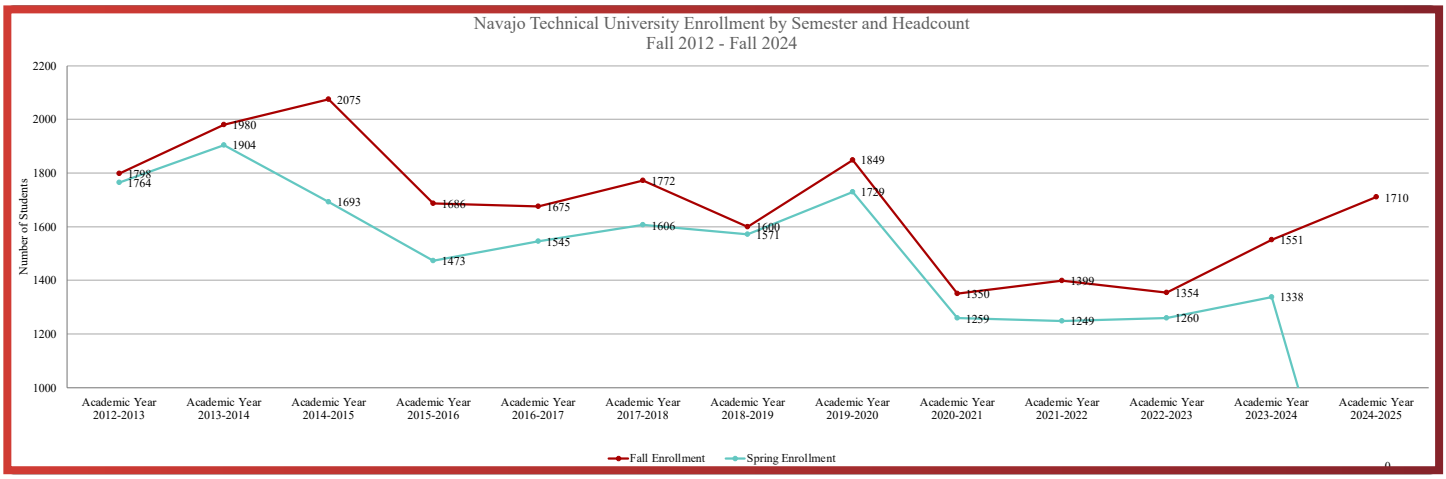
Navajo Technical University is breaking new ground with its extraordinary higher education model. The model starts out with a career ladder approach that emphasizes vocational/technical trades areas of study and runs through the various degree levels to PhD programs. Throughout all these ladders that have been created, there is an emphasis upon Diné culture and language, experiential models of education, creativity as a strong Navajo attribute, and cutting-edge research conducted by students and faculty. There is also an emphasis upon cross-disciplinary projects and projects that serve communities and work toward achieving goals and objectives set by the Navajo Nation. Often, as was the case with the development of the Bachelor of Applied Science degree in Hotel and Restaurant Management, entire degree or certificate programs are created at the request of a division of the Navajo Nation.

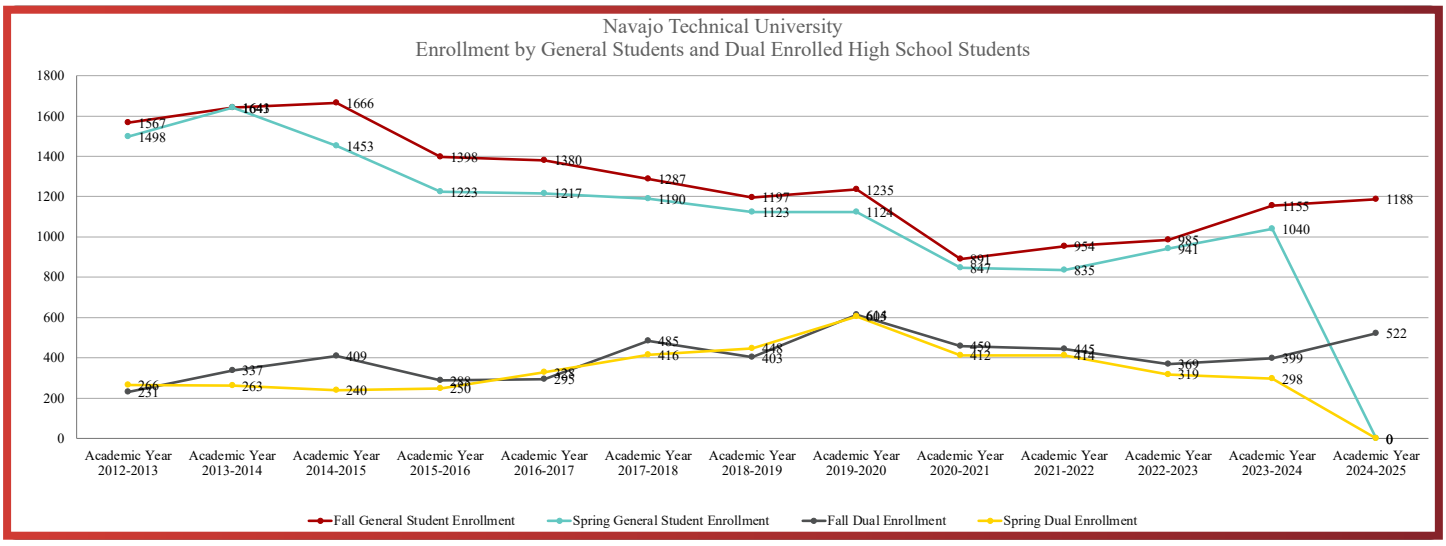
The entire curriculum and projects are aimed at serving the Diné people and creating economic development. This has led to many partnerships with other colleges and universities, federal agencies, the state governments in New Mexico and Arizona, federal agencies, and both large and small businesses and corporations in the private sector.

From its beginning as part of the tribal colleges and universities movement to its melding of trades and academic education through designed career ladders emphasizing experiential teaching models leading to research and community service projects designed to create intellectual property or benefits for the Navajo people, NTU has been creating a creative engine designed to help one of the poorest areas in the United States to excel during the 21st century. There is no other educational model like NTU in the United States, and the truth is that its extraordinary accomplishments are only the beginning. What is in store for the future is even more exciting.

Enrollment Data 2024

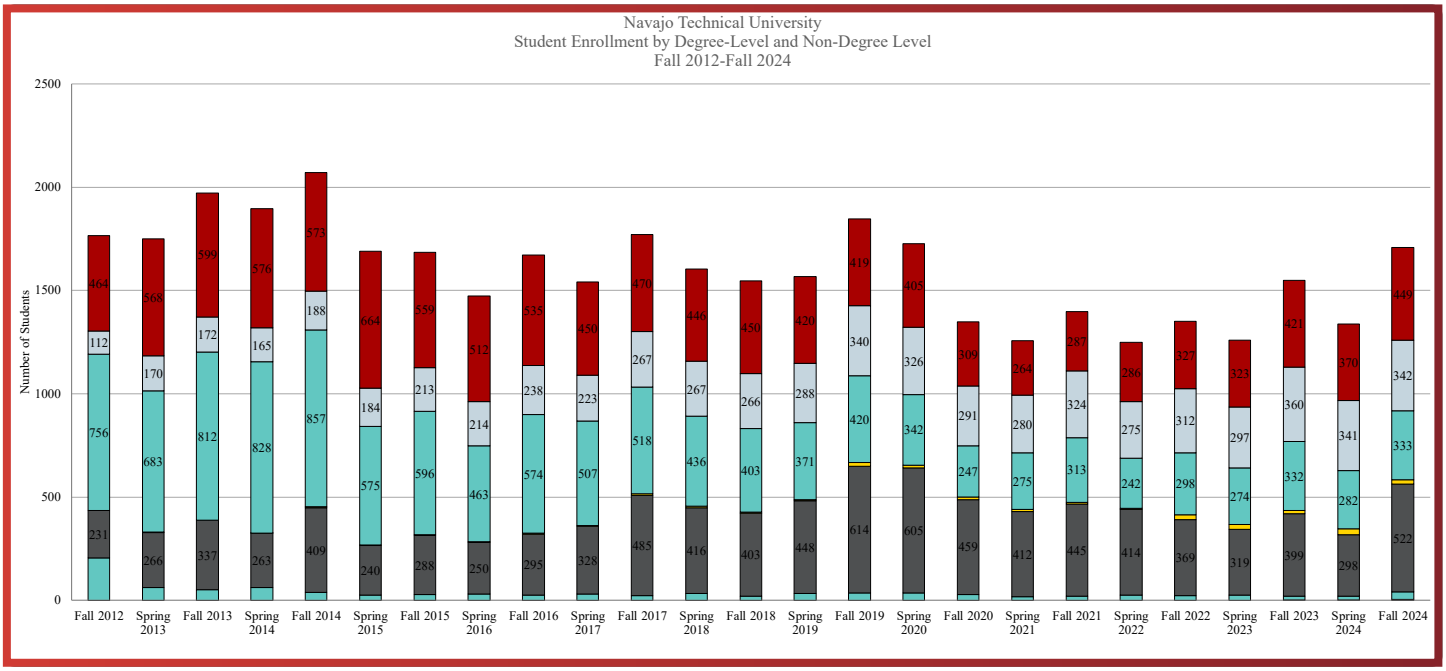
After the pandemic, the enrollment has been slowly recovering. This trend is expected to continue. The Navajo population is a young population, there are large numbers of people who dropped out of either high school or an institution of higher education, and the Navajo economy is improving at a slow but steady rate over historical norms. These factors feed into potential enrollment

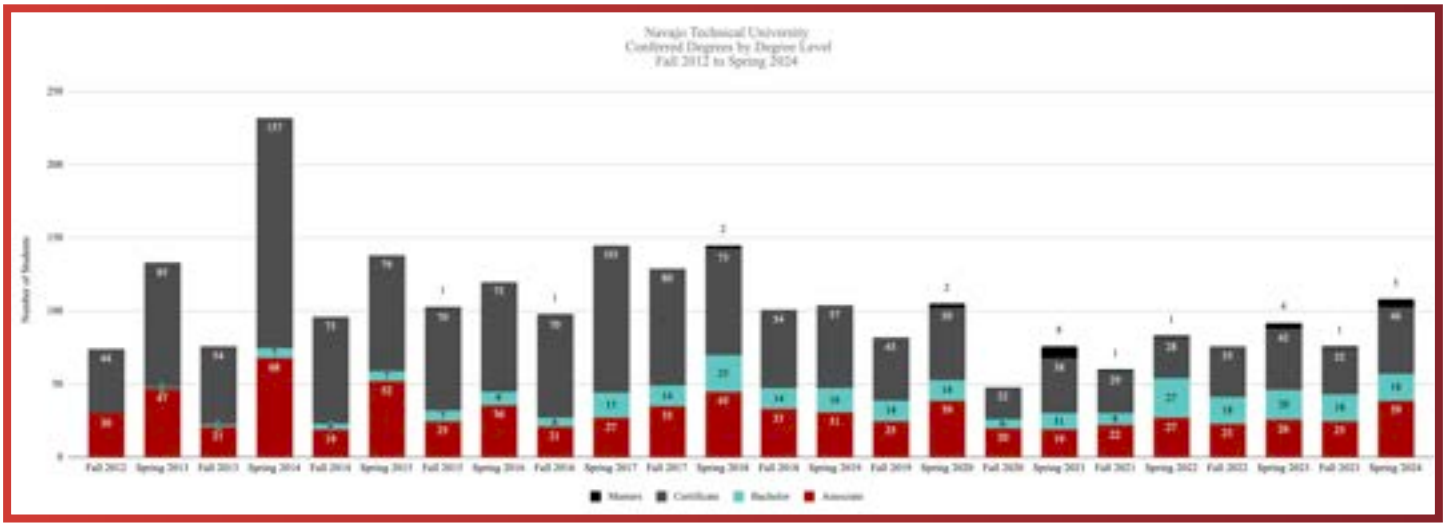


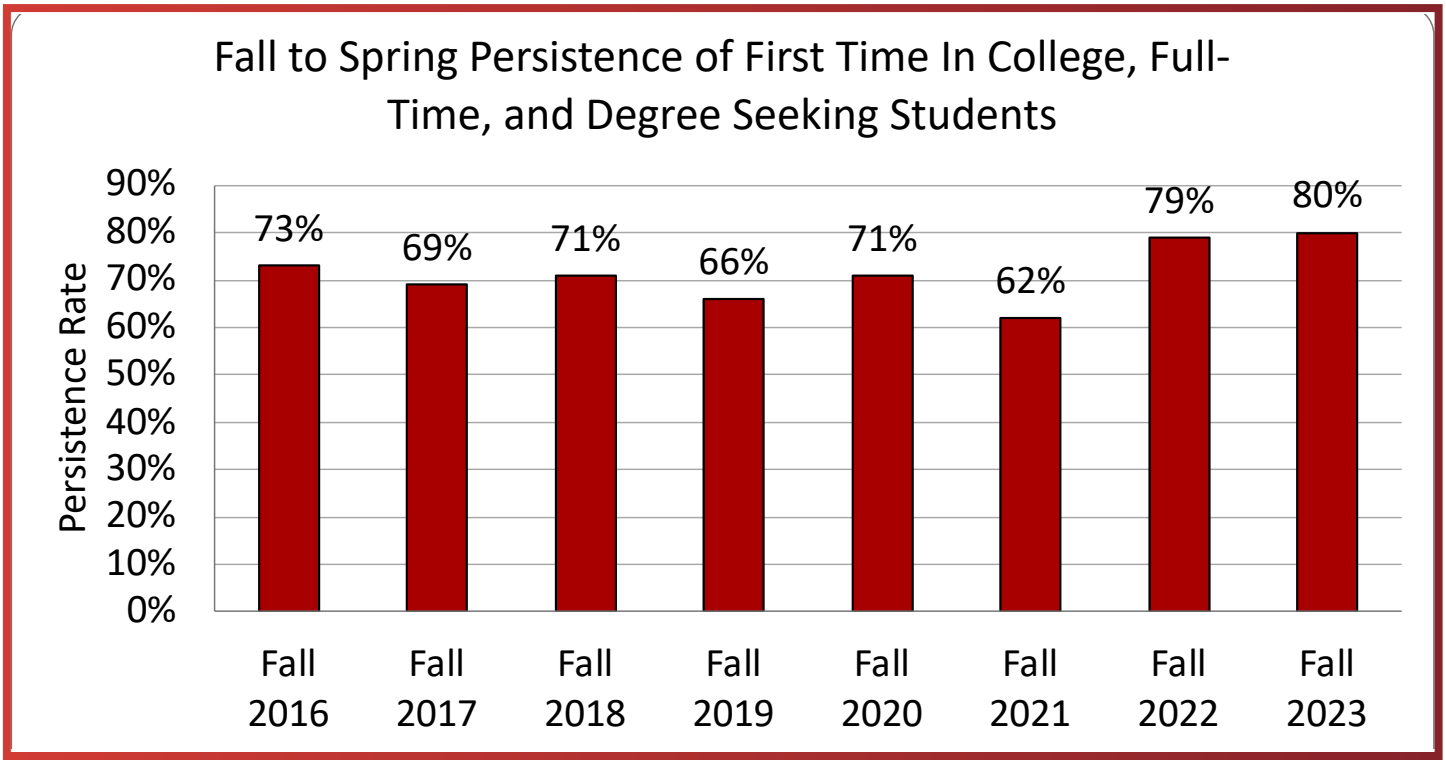


The dual enrollment program provides NTU credit to qualified high school students throughout the Navajo Nation in New Mexico, Arizona, and Utah. NTU is dedicated to building the Navajo community and reducing the education gap between the Navajo Nation and surrounding communities in the three states where the Nation is located. Some of these students choose to continue their higher education at NTU, but others enroll in other colleges and universities throughout the United States.

NTU anticipates dual credit enrollment to grow over time, albeit slowly. NTU is also working with high school faculty to strengthen standards so that fewer students enter colleges and universities with basic skill deficiencies at the rates experienced in the past. The overall plan is to eliminate the differential in educational attainment between the Navajo Nation's population and the populations in the surrounding states.

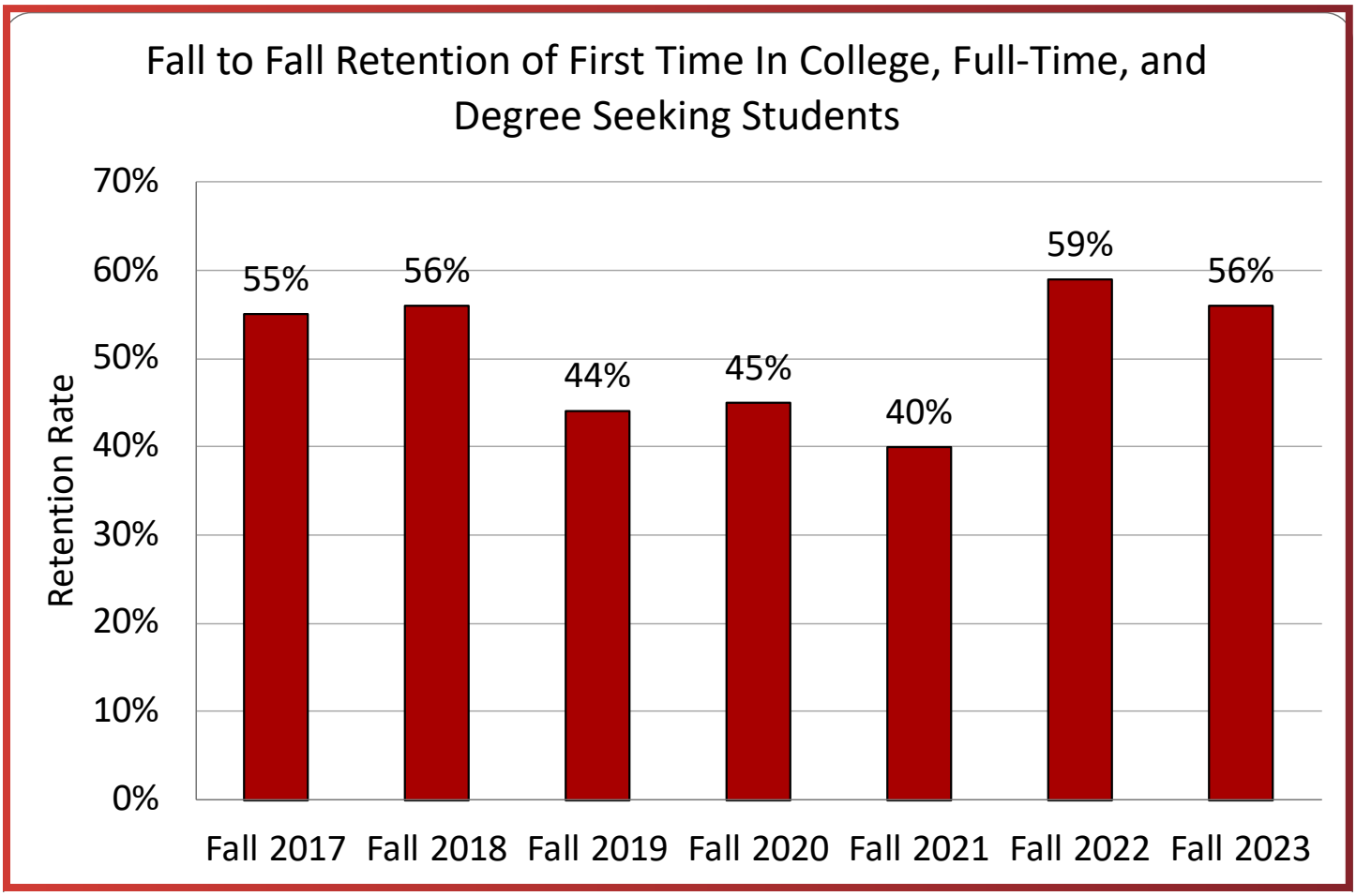

Navajo Technical University
Student Enrollment by Degree-Level and Non-Degree Level
Fall 2012-Fall 2024
Number of Students
2500
2000
1500
1000
500
0
Fall 2012
Spring 2013
Fall 2013
Spring 2014
Fall 2014
Spring 2015
Fall 2015
Spring 2016
Fall 2016
Spring 2017
Fall 2017
Spring 2018
Fall 2018
Spring 2019
Fall 2019
Spring 2020
Fall 2020
Spring 2021
Fall 2021
Spring 2022
Fall 2022
Spring 2023
Spring 2024
Fall 2024


Navajo Technical University
Conferred Degrees by Degree Level
Fall 2012 to Spring 2024

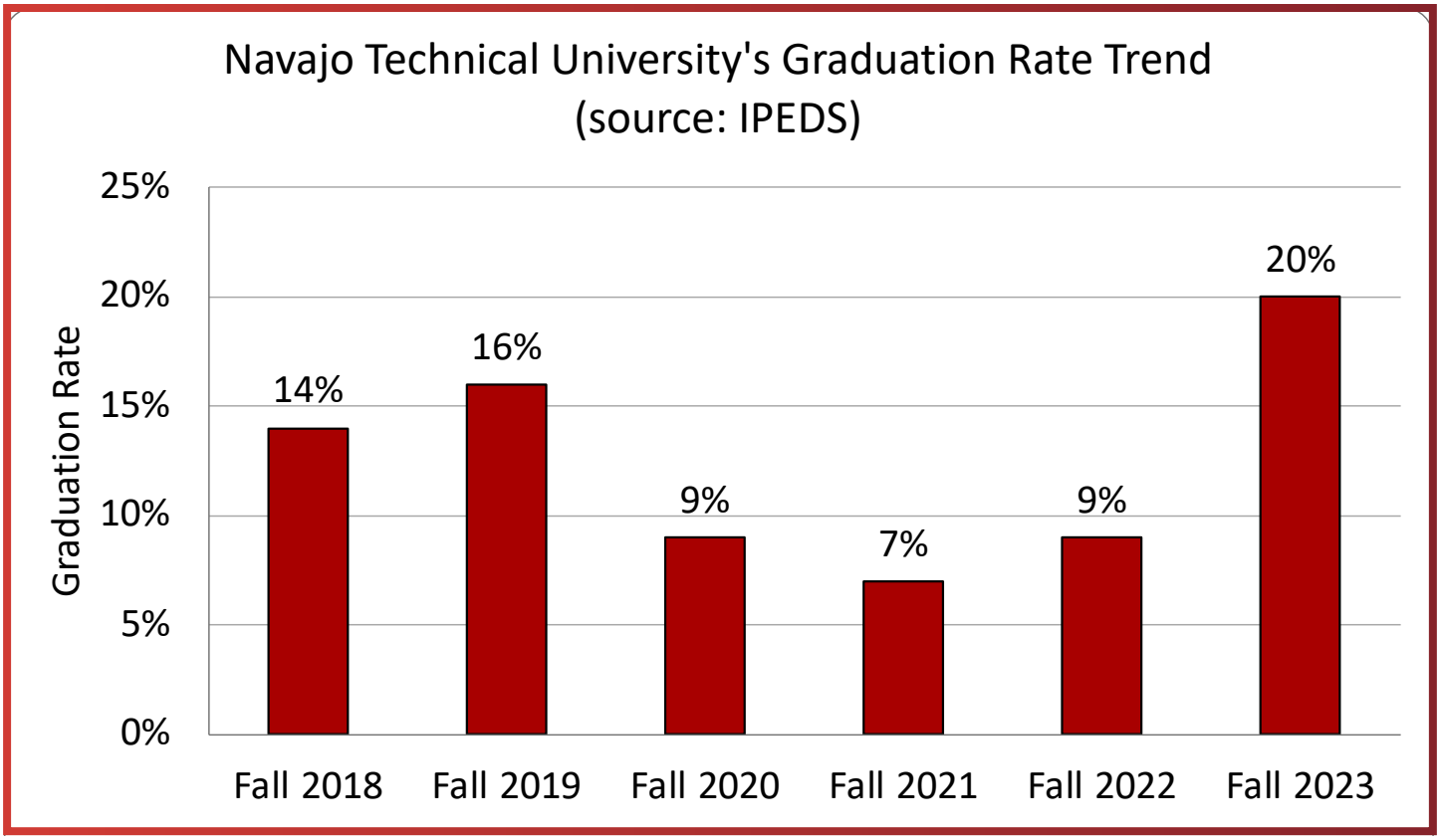

Fall to Spring Persistence of First Time In College, Full-Time, and Degree Seeking Students
Persistence Rate
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
73%
69%
71%
66%
71%
62%
79%
80%
Fall 2016
Fall 2017
Fall 2018
Fall 2019
Fall 2020
Fall 2021
Fall 2022
Fall 2023







One of the most intensive efforts at NTU during the last few years has been the effort to improve student persistence and retention rates. If we are going to meet the goal of graduating an increasing number of Navajo students, the first essential step in that process is to increase persistence and retention rates. Both in-year persistence and retention rates, from fall into spring, have been improved. The pandemic severely hurt retention between fall to fall. The effort to improve those rates is still a work in progress, but significant progress has been made.



Tribal college and university graduation rates have historically not matched those of most mainstream universities. There are several factors that have led to this challenge. They are not unique to TCUs. If the rates for students from poverty-level and minority communities are analyzed separately from overall rates in mainstream colleges and universities, TCU rates are not unusual. At NTU, Student Services has been working extremely hard to improve graduation rates, and we are beginning to see some significant results from that work.



FY 2024 Financial Highlights

	AUDITED - 05/31	UNAUDITED - 05/31
REVENUES	**2023**	**2024**
Tuition and Fees, Net	778,047	3,469,047
Auxiliary Enterprises	271,445	2,785,712
Other Revenue	178,302	98,946
Total Revenue	1,227,794	6,354,704
EXPENSES		
Instructional	11,785,975	14,017,483
Student Services	2,250,403	3,585,427
Academic Support	1,788,536	2,172,407
Public Services	667,998	755,517
Student Assistance	4,762,707	10,293,094
Institutional	13,302,000	14,928,128
Auxiliary Services	2,490,514	3,739,557
Depreciation	5,708,515	6,110,024
Total Expenses	**42,756,648**	**55,601,638**
Net Operating Results	(41,528,854)	(49,247,933)
Non-Operating Activities Revenue		
Instructional	32,038,240	46,283,715
Student Services	4,689,255	5,564,055
Academic Support	9,057,514	4,807,372
Public Services	1,064,305	2,306,277
Student Assistance	(316,762)	10,689
Institutional	366,034	2,845,815
Total Non-Operating Activities	**46,898,586**	**61,817,923**
CHANGE IN NET ASSETS	**5,369,732**	**12,569,990**



ABET Accreditation

During the 2023-2024 university year, intense efforts to improve the operations and overall success of NTU have continued. One of the big accomplishments of the year was the effort to expand ABET accreditation. ABET accreditation is recognized internationally as the gold standard for those programs that achieve the quality assurance necessary to earn this status

The Accreditations Board for Engineering and Technology (ABET) approved an initial accreditation for the following NTU programs retroactively from 2021 to 2030:

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

Additionally, the B.S. in Electrical Engineering and B.S. in Electrical Engineering were reaccredited from 2024 through 2030





ABET approved the initial accreditation for the B.A.S. degree in Information Technology retroactively from 2021 to 2026 because of some shortcomings, especially inadequate number of faculty and the heavy teaching load for the I.T. faculty.



Additional Accomplishment 2023-2024 by the University

1. Enrollment Data

Collaboration among all departments to create the Strategic Enrollment Management (SEM) plan for the university is ongoing. The plan is data-informed and supported by funding from the American College Fund and other agencies. The expectation is to have all NTU employees understand their role in increasing student enrollment and student retention. Success in both these areas will be judged based on the number of graduates who persist and improve because of these efforts. Increased enrollment and retention are major goals of the university important to continuing the effort to build an extraordinary institution of higher learning.

2. Revival of Microcredential Effort

In response to the Navajo Nation's call to fill workforce needs immediately through skilled workforce development programs in the areas of Trades, Allied Health, and Information Technology/Cyber Security, NTU has worked hard at laying the groundwork for micro credentials that promise to lead to jobs for unemployed or underemployed tribal members in these areas.

In its partnership of this effort with NTU, the Nation has provided fiscal support to help develop micro credentials along with funding to secure partnership funding for Aspire Ability, and the Competency Based Education Network (C-BEN).

Aspire Ability developed electronic jobs board focused specifically on available jobs on and near the Navajo Nation. This is a tool utilized by NTU Career Services to help students and graduates secure employment opportunities quickly. Additionally, Aspire Ability is maintaining labor market data that is useful in the effort to expand employment opportunities for the Navajo People.

C-BEN is collaborating with NTU to focus on microcredentials in the identified areas based on what is currently offered for certificate and degree programs. These shortened programs are designed to provide students with the skills, knowledge and abilities to secure employment with the option of returning to NTU to pursue a more advanced certificate or degree in the aligned field of study. The goal is to get Navajo people into the job market quickly while affording them with academic opportunities in the future. Finally, C-BEN ensures the microcredentials offered by NTU meet HLC standards.

The microcredentials effort is designed to expand to include cybersecurity, advanced manufacturing, microelectronics, water testing, and other labor-market driven needs. Many programs and departments have already secured program development through outside grants to support the microcredentials.

Part of the effort with the microcredential project is a collaboration with the Navajo Nation Workforce Development Office where Workforce Development designates these credentials so that they meet the funding eligibility requirements for funding so that students can have their tuition and fees fully covered. If possible, another financial assistance pathway will be requested through Navajo Nation Scholarship funding.

3. Organizational Chart

The Board of Regents reviewed and approved an updated organization chart that placed support departments directly under the President. All future additions to the organization will be taken before the Regents for consideration.

4. Expansion of Infrastructure

Many projects are currently in line for completion throughout the organization.

The projects requested are critical to the academic future of the university with respect to faculty and student recruitment. Without faculty housing, we are unable to bring faculty to the main campus and Chinle campus. Other instructional sites have accessible housing within reasonable commuting distance from the site location. Without student residential facilities, we cannot increase enrollment. Our current student housing fills up quickly each semester resulting in having to refer students to online programs. Laboratories are also a critical need as the Biology, Chemistry and Environmental Sciences labs have outgrown the learning space to address increasing student enrollment. Trades programs, specifically, construction trades and welding are in need of expanded learning spaces to address increasing student enrollment. Each of these infrastructure needs impact the quality of academic services. Programs that have proven efforts to increase enrollment are faced with challenges in opening up more sections and limiting student time in the labs to accommodate all students.

5. Instructional Site Development

One of NTU's goals that has been worked on during this university year, is the effort to open an additional instructional site in Ft. Defiance focused on allied health fields. The Tsehootsoi Medical Facility is located less than two miles from land donated to NTU by the Window Rock School District that is adjacent to Window Rock High School on the New Mexico side of the New Mexico/Arizona border. Official transfer of the site from the school district to the university from the Navajo Nation is still needed. However, preliminary planning for the infrastructure needed before higher education programs can be located at the site have been started. Development of a partnership with the hospital will also be needed to support quality development of allied health programs. Microcredentials in allied health are being developed and can be easily offered out of the new site once completed.

Another discussion is to possibly combine the Teec Nos Pos, AZ and Kirtland, NM instructional sites and to place them in Shiprock, NM. Discussion is pending based on a family who is interested in donating land to NTU. Site coordinators will remain focused on their service areas but will have a facility designed to meet their respective growing student populations. Funding to create a "North Navajo Instructional Site" will need to be secured to make this a reality.

Zuni Instructional Site. When NTU agreed to open an instructional site with the Zuni Nation after the University of New Mexico decided to close their operations on Zuni, the University also agreed to assist Zuni with the creation of their own tribal college under the Tribal Colleges and Universities federal legislation under which most of the TCUs operate. As part of our support to the formation of Ashiwi College, NTU has been exploring how to strengthen our relationship with Zuni, especially through the construction of career ladders in partnership with Ashiwi College, while ensuring the new TCU gains acceptance as an institution of higher learning.

Endowed Scholarship Funds

On March 26, 2024, Dr. James Peery, the Labs Director for Sandia National Laboratories, donated $50,010.60 to NTU endowed scholarship funds. The name of the endowment is “Sandia náásgóó bee iiná endowed scholarship,” meaning “moving forward positively with life using the Sandia scholarship.” This is the first endowed scholarship fund donated to NTU. The proceeds from the capital gains will be used annually to award scholarships to students.

The Sandia náásgóó bee iiná endowed scholarship has been added to a list of options that Sandia employees can contribute to during its Sandia Gives Campaign. Sandia Gives donations go through United Way of North Central New Mexico (UWNCNM). Through this interface a Sandian can specify any 501(c)(3) to send his or her donation to. Ninety percent of the donation goes to the 501(c)(3) and 10% goes to the UWNCNM general fund.

Opening Registered Nursing Program

NTU employed five nursing faculty and one health sciences faculty member to prepare for opening of the registered nursing (RN) program in the spring semester of 2025.

Symposia and Workshops



On November 7, 2024, The Biology Program successfully hosted the fourth Annual Biology Symposium Over Thirty 30 students from Crownpoint and Chinle campuses, including seven past Biology graduates (Kyra who gave the keynote speech, Zabari - now lab technician at NTU, Michael and Robison from Harvard, Kathleen, Tionna and Chelsea - now a Lab Technician in Chinle Campus), as well as their families, participated. Five partner institutions also took part in the program, namely Harvard, Yale, University of Illinois Urbana Champaign, the University of California Santa Cruz (UCSC), NARI of the University of Utah.

On November 21-22, 2024, the Biology Program successfully hosted the second technical workshop series at the NTU main campus on Hydroponics in collaboration with Santa Fe Community College (SFCC). Fifty (50) people consisting of Mariano Lake Chapter House Representatives, NTU students, faculty and staff attended the event. The training was conducted by Charlie Richard, the hydroponics/aquaponics expert from SFCC, the institution providing technical support for this project.

In fall 2024, the Chemistry program conducted a Chemistry Workshop and Seminar Series and Teachers workshop. Students and other collaborators from USC and McKinley School district teachers attended.

2nd Shił Nahólne' (Literary Arts & Oral Stories Symposium)



Navajo Technical University hosted the 2nd Literary Arts and Oral Stories Symposium at Isleta Resort and Casino. Guests enjoyed talks, poetry, and storytelling from speakers like Dr. Laura Tohe and Sherwin Bitsui, who shared their journeys as writers. Attendees learned about Navajo traditions, bilingual storytelling, and cultural topics like the solar eclipse. The event ended with closing remarks from Dr. Casmir Agbaraji, praising everyone's hard work and looking forward to next year's symposium.







NTU Press

Work to establish a press for the University has been ongoing for the last two years. This year, Eugene Hult, Assistant Professor of English at the Chinle site, succeeded at creating the first book issued by NTU Press, a student anthology of creative writing, Turquoise. The publication includes nonfiction essays, fiction stories, poetry, scripts, recipes, humor, song lyrics, paintings, drawings, or any other original creative or academic work.

International Internships in Japan and Switzerland

Tonya Tolino, a chemistry major from NTU, embarked on an exciting research project at the Kyoto Institute of Technology. From June 1 to August 7, 2024. Tolino participated in a prestigious NSF IRES collaboration with ASU at Kyoto Institute of Technology Kyoto, Japan, to host innovative research on scaffold mechanics.

Under the guidance of her mentor, Professor Xu at Kyoto Institute of Technology and with support from her NTU mentor, Dr. Thiagarajan Soundappan. Tolino explored the mechanics of multimodal and multiphasic scaffolds using melt electro-writing techniques. Her work focuses on understanding how different conditions affect the stability of these intricate structures.

In July and August 2024, Chaslyn Evans, an associate degree student in information technology, took a couple of summer classes at the European Organization for Nuclear Research (CERN), Geneva, Switzerland, where professors taught her about the basics of particle physics and the magnets in a particle accelerator. She was sponsored by Los Alamos National Laboratory under the guidance of his NTU mentor, Dr. Abraham Meles.

Partnerships

Three Chinle biology students (Danielle Ayze, Drealle Estrada, and Bianca Todacheenie) have been accepted into the Yale University Program to Advance Training in Health & Sciences (PATHS), beginning August 1, 2024. The PATHS is a free 10-month transformative virtual learning experience offering monthly seminars to provide undergraduates with programs that provide undergraduate students or recent graduates with a transformative learning experience to support their goals of applying for and earning an M.D. or a Ph.D. in the biomedical sciences.

NTU Publications in 2024

Chatue, I. A.D., Nyegue1, M.A. Kamdem, S.D., Maloba, F., Junaid, T.I., Malhotra, P., Netongo, P.M. (2024). Association between Epstein-Barr virus reactivation and severe malaria in pregnant women living in a malaria-endemic region of Cameroon. PLOS Global Public Health | https://doi.org/10.1371/journal.pgph.0003556

Davis, Thomas. Juniper's Dragon. 2/29/2024. Novel: Four Windows Press.

Ehsan Dehghan-Niri, Nihar Masurkar, Hamidreza Nemati, Zachary Goode, Harold Scott Halliday and Juergen Liebig. Overcoming Challenges in the Biomimetic Study of Termite Drumming Behavior.

Fogang, B., Schoenhals, M. Franklin M. Maloba, F., Biabi, A.F., Essangui, E., Donkeu, C., Cheteug, G., Kapen, M., Keumoe, R., Kemleu, S., Nsango, S.N., Cornwall, D.H., Eboumbou, C., Perraut, R., Megnekou, R., Lamb, T.J., Ayong L.S. (2024). Asymptomatic carriage of Plasmodium falciparum in children living in a hyperendemic area occurs independently of IgG responses but is associated with a balanced inflammatory cytokine ratio. Malaria Journal (2024) 23:268. https://doi.org/10.1186/s12936-024-05086-8

Gowdaman, R., Deepa, A., Singla, Y.K. (2024). Recent Advances in PVDF/Carbon-Based Nanocomposite Fibers for Piezoelectric Energy Harvesting Applications. J. Electron. Mater. 54, 24–50. https://doi.org/10.1007/s11664-024-11589-6

Halder, S., RoyChowdhury, A., Kar, S., Ray, D., Bhandari, G. (2024). Critical Watershed Prioritization through Multi-Criteria Decision-Making Techniques and Geographical Information System Integration for Watershed Management. Sustainability. 2024, 16, 3467. https://doi.org/10.3390/su16083467

Hussen, A., Illafe, M., Zeyani, A., Fekete-Szegö (2024). Second Hankel Determinant for a Certain Subclass of Bi-Univalent Functions associated with Lucas-Balancing Polynomials, International Journal of Neutrosophic Science 25 (3), 417-434. https://doi.org/10.54216/IJNS.250336.

Hussen, A., Madi, M. S. A., Abominjil, A. M. M. (2024). Bounds on Coefficients for a Subclass of Bi-Univalent Functions with Lucas-Balancing Polynomials and Ruscheweyh Derivative Operator. Computer Science 19, no. 4: 1237-1249

Hussen, A., Alamari, M. M. (2024). 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.

Hussen, A. (2024). An application of the Mittag-Leffler-type Borel distribution and Gegenbauer polynomials on a certain subclass of bi-univalent functions. Heliyon 10, no. 10.

Illafe, M., Mohd, M. H., Yousef, F., Supramaniam, S. (2024). Bounds for the second Hankel determinant of a general subclass of bi-univalent functions, International Journal of Mathematics Engineering and Management Science, 9(5), 1226-1239. https://doi.org/10.33889/IJMEMS.2024.9.5.065

Illafe M., Mohd, M. H., Yousef, F., Supramaniam, S. (2024). A Subclass of bi-univalent functions defined by a Symmetric q-derivative operator and Gegenbauer polynomials, European Journal of Pure and Applied Mathematics, 17(4), 2467-2480. https://doi.org/10.29020/nybg.ejpam.v17i4.5408

Illafe, M., Yousef, F., Haji Mohd, M., Supramaniam, S. (2024). Fundamental properties of a class of analytic functions defined by a generalized multiplier transformation operator, International Journal of Mathematics and Computer Science, 19(4) (2024), 1203-1211. https://doi.org/10.1007/s13324-021-00491-7

Illafe, M., Mohd, M. H., Yousef, F., Supramaniam, S. (2024). Investigating Inclusion, Neighborhood, and Partial Sums Properties for a General Subclass of Analytic Functions, International Journal of Neutrosophic Science 25 (3), 501-510, https://doi.org/10.54216/IJNS.250341

Joshi, M., Razaur Rahman Shaon, M., Rezwana, S., Wang, K., Zhao, S., Ivan, J., Jackson, E. (2024). Developing a Comprehensive Vulnerable Road User Safety Screening Method Using Multi-Level Data. Transportation Research Record, 03611981241254386

Kar, S., Chowdhury, S., Gupta, T., Hati, D., De, A., Ghatak, Z., Tinab, T., Rahman, I.T., Chatterjee, S., RoyChowdhury, A. (2024). A Study on the Impact of Air Pollution on Health Status of Traffic Police Personnel in Kolkata, In dia. Air. 2024, 2(1), 1-23. https://doi.org/10.3390/air2010001

Kaustubh Deshmukh, Alex Riensche, Ben Bevans, Ryan J. Lane, Kyle Snyder, Harold (Scott) Halliday, Christopher B. Williams, Reza Mirzaeifar, Prahalada Rao (2024). Effect of processing parameters and thermal history on microstructure evolution and functional properties in laser powder bed fusion of 316. Materials & Design 244 (2024) 113136

Kogularasu S., Sriram Balasubramanian, S., Chang-Chien, G.P., Ahammad, S.U. W., Billey, W., Platero, J., Soundappan T., Sekhar P. (2024. Advances in Electrochemical Sensors: Improving Food Safety, Quality, and Traceability ECS Sensors Plus, Volume 3, Number 2. DOI 10.1149/2754-2726/ad5455

Lin, Q., Lin, Z., Lin, S., Fatmi, Z., Rizvi, N.A., Hussain, M.M., Siddique, A., Moyebi, O.D., Carpenter, D.O., Khwaja, H.A. (2024). Impact of fine particulate pollution exposures on respiratory health in a megacity of Pakistan. Atmospheric Pollution Research, 5(12). doi: 10.1016/j.apr.2024.102277

Martinez, C.J., Das, D., Bloomfield, E.F., Abraham, J.D., Knox, J.A., Simmonds, R., Hilderbrand, D.C., Giovannettone, J., Gouw, A.M., RoyChowdhury, A. (2024). Bridging the COSMOS: How the inclusion of and collaboration with Faith-based Understandings and Indigenous Knowledges can transform the Weather, Water, and Climate Enterprise. Bulletin of the American Meteorological Society, 105, E1734–E1754. https://doi.org/10.1175/BAMS-D-23-0047.1

Mishra, S., Chhibber, R., Singla, Y. K. (2024). Effects of CaO–ZrO2–SiO2–CaF2–TiO2-based electrode coating components on weld chemistry and microhardness. Journal of Materials Research and Technology, 33, 8918–8928. https://doi.org/10.1016/j.jmrt.2024.11.179

Moyebi, O.D., Lebbie, T., Carpenter, D.O. (2024). Standards for levels of lead in soil and dust around the world. Reviews on Environmental Health. doi: 10.1515/reveh-2024-0030.

Rezwana, S., Lownes, N. (2024). Interactions and Behaviors of Pedestrians with Autonomous Vehicles: A Synthesis. Future Transportation, 4(3), 722-745

Moyebi, O.D., Lebbie, T., Carpenter, D.O. (2024). Standards for levels of lead in soil and dust around the world. Reviews on Environmental Health. doi: 10.1515/reveh-2024-0030.

Rezwana, S., Lownes, N. (2024). Interactions and Behaviors of Pedestrians with Autonomous Vehicles: A Synthesis. Future Transportation, 4(3), 722-745

Conference Proceedings 2024

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

***Bebo, C., Tibbits, D., Chang, C., *Carver, M., Dimaio, M., RoyChowdhury, A., Olsen, P., Basu, A., Kinney, S.** Rapid Quantification of Uranium in Bedrock: A New Framework for Parameterizing Geogenic Contribution to Groundwater Contamination. Geological Society of America 2024 annual meeting. Anaheim, CA (September 22-25, 2024).

Ehsan Dehghan-Niri, Nihar Masurkar, Hamidreza Nemati, Zachary Goode, Harold Scott Halliday and Juergen Liebig. Overcoming Challenges in the Biomimetic Study of Termite Drumming Behavior. IEEE ROBIO 2024 conference, Presented by Dr. Niri, https://ieee-robio.org/2024

Khan, M. T. H., Rezwana, S. Assessing the Sustainability Impacts of Additive Manufacturing: A Review. In International Manufacturing Science and Engineering Conference (Vol. 88100, p. V001T04A011). American Society of Mechanical Engineers. (June 2024).

Khan, M. T. H., Rezwana, S. Bridging worlds: The role of indigenous knowledge in engineering education: A literature-based study. FIE Conference Proceedings of presentation. Washington, DC. (2024, October).

Martinez, C.J., Das, D., Bloomfield, E.F., Abraham, J.D., Knox, J.A., Simmonds, R., Hilderbrand, D.C., Giovannettone, J., Gouw, A.M., RoyChowdhury, A. Bridging the Cosmos: Initiatives from the AMS Committee on Spirituality, Multifaith Outreach, and Science to promote Faith-based Understandings and Indigenous Knowledges in the Geoscience Enterprise. American Geophysical Union (AGU) Fall 2024 Meeting. Washington, D.C. (December 9-13, 2024).

***Shekhar, P., Khan, M. T. H., Gajjar, S.** Work in Progress: Utilizing Decision Tree Analysis for Engineering Students' GPA Prediction. In 2024 IEEE World Engineering Education Conference (EDUNINE) (pp. 1-4). IEEE. (March 2024).

***Tome, M., RoyChowdhury, A., *Wilson, D. Yazzie, T., Frey, B., Yu, J., Sturgis, L., Tsosie, R.**, Development of an Advanced Membrane Desalination Technology to Address Groundwater Contamination in The Navajo Nation. Geological Society of America 2024 annual meeting. Anaheim, CA (September 22-25, 2024).

Tibbits, D., *Bebo, C., Chang, C., Witkowski, R., Prabhakar, L., Danyi, C., Pinnella, M., Olsen, P., RoyChowdhury, A., Kinney, S. An ICP-MS Calibrated XRF Geochemical Inventory of The Colorado Plateau Coring Project. Geological Society of America 2024 annual meeting. Anaheim, CA (September 22-25, 2024).

***Yazzie, T., Frey, B., Cadol, D., Tsosie, R., Sturgis, L., Woolsey, E., RoyChowdhury, A.** Determining Key Factors in Well Selection Criteria for Navajo Technical University-New Mexico Tech-Navajo Nation Water Purification Project (N4WPP). New Mexico Geological Society (NMGS) Annual Spring Meeting, Socorro, NM (April 19, 2024).

***Yazzie, T., Frey, B., Tsosie, R., Cadol, D., Sturgis, L., RoyChowdhury, A., *Wilson, D., Prush, V., Bowman, C.** Developing a Selection Criteria to Install Water Filtration Units on the Navajo Reservation to Increase Water Supply. 2024 American Indian Science and Engineering Society (AISES) National Conference. San Antonio, TX (October 3-5, 2024).

Book Chapters 2024

Biswas, P.K., Maughan, M.R., Kumar, A., Singla, Y.K. (2024). Analyzing Fractures in Nanomaterial-Enhanced Carbon Fiber-Reinforced Polymer (CFRP) Composites. In: Kumar, A., Kumar Singla, Y., Maughan, M.R. (eds) Fracture Behavior of Nanocomposites and Reinforced Laminate Structures. Springer, Cham. https://doi.org/10.1007/978-3-031-68694-8_12

Heidari, M., Khashehchi, M., Thangavel, S., Rahmanivahid, P., Kumar, A., Singla, Y.K. 2024). Laminated Structures and Fracture Mechanics: A Comprehensive Study of Mode 1, Mode II, and Mixed Mode III Behavior. In: Kumar, A., Kumar Singla, Y., Maughan, M.R. (eds) Fracture Behavior of Nanocomposites and Reinforced Laminate Structures. Springer, Cham. https://doi.org/10.1007/978-3-031-68694-8_18

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[i] Drawn from Wikipedia/

[ii] Holzien, Wafa. June 23, 2023. "Building a Sustainable Water Infrastructure," Native Science Report, accessed at https://nativesciencereport.org/2023/06/building-a-sustainable-water-infrastructure, 12/12/24

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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 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 2020-2025 STRATEGIC PLAN INCLUDES SIX PRIORITIES:

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



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