

# ACES MAGAZINE

COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

VOLUME 8 | FALL 2022

# RISING FROM THE ASHES

NMSU's forestry research center picks up after catastrophic blaze



# DEAN'S LETTER

Greetings, Aggies and friends!

We're glad to bring you our fall edition of *ACES Magazine*. In this issue, we're highlighting our work with the changing climate. Our cover story follows NMSU's John T. Harrington Forestry Research Center as it recovers from the largest wildfire in New Mexico history and resumes critical work to support reforestation across the Southwest. We also look at the ZiaMet Weather Station Network project and our work to install more than 200 weather stations around New Mexico. Once these weather stations are installed and their data integrated, we will have the largest state-owned weather network in the nation. This is an extremely important project that will provide useful information at a local level, helping with irrigation management, timing of crop planting, documenting claims for drought insurance and much more.

Climate change is an immense challenge, and the weather station project is one example of how the College of ACES is working to combat the crisis. Researchers at our agricultural science centers continue to deepen our understanding of carbon sequestration in soil. At the Corona Range and Livestock Research Center, we now have dozens of wind turbines delivering clean energy as part of Pattern Energy's Western Spirit Transmission project. In our efforts to achieve sustainable agriculture across the Americas, we have joined forces with the Inter-American Institute for Cooperation on Agriculture.

Also, in this edition, you can read stories from the Agricultural and Scientific Publications course in our student section, Faces of ACES. We hope you enjoy our new issue. Please stay in touch and contact us with any feedback. Go Aggies!



Rolando A. Flores Galarza  
Dean and Chief Administrative Officer



This issue of *ACES Magazine* is produced by the office of Marketing and Communications, New Mexico State University, 575-646-3221.

Correspondences may be sent to Marketing and Communications, MSC 3K, New Mexico State University, P.O. Box 30001, Las Cruces, NM 88003-3590. *ACES Magazine* is published two times annually.

New Mexico State University is an equal opportunity, affirmative action employer and educator.

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# FALL 2022

## On the cover

Owen Burney of NMSU's John T. Harrington Forestry Research Center in Mora surveys the aftermath of New Mexico's largest wildfire.

Photo by Josh Bachman



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# TOGETHER AGAIN

## ACES welcomes hundreds to first open house since 2019

BY NICOLE E. DRAKE

An estimated 750 people attended the ACES open house in April. The family-friendly event featured more than 65 demonstrations highlighting the college's academic, research, Extension and outreach units.



LEFT: A young visitor pets a sheep outside Gerald Thomas Hall during the ACES open house. RIGHT: Scott Bundy, professor of entomology and director of the NMSU Arthropod Museum, holds a centipede during a demonstration. The next open house will take place April 1, 2023.

After a two-year hiatus, NMSU's College of ACES hosted an open house in April to showcase its expansive range of academic programs and research, Extension and outreach activities, welcoming hundreds of visitors to several of the college's buildings and facilities on the Las Cruces campus.

"It was exciting to welcome the community back to campus, and it provided a nice opportunity for our faculty and staff to catch up with each other and learn more about new developments in the college," said Priscilla Bloomquist, who coordinated the event as part of her work in the ACES Academic Programs office.

The family-friendly event was free to attend. With more than 65 demonstrations and activities, faculty and staff provided something of interest to virtually everyone in ways that were both educational and entertaining.

"The open house allowed us to showcase the breadth of our programs," Bloomquist said. "It's rewarding to have the

college, as a whole, come together to put on this major event."

Guests participated in a multitude of activities. They were given access to a variety of labs and were able to learn about and handle exotic bugs; charge their phones using a bicycle; learn about and assist in using a cow birther simulator; learn about hydroponics; create textile art; interact with animals; walk through a giant inflatable colon to learn about colon cancer; test their emotional quotient and their nutritional IQ; partake in wine tasting; and much more. The Chile Pepper Institute and the student-run Sam Steele Café were also open for business.

The Cooperative Extension Service promoted its research-based programs and educational resources offered through its 33 county offices, while representatives from all 12 Agricultural Experiment Station science centers from around the state, as well as those based on the Las Cruces campus, shared information about ongoing projects that seek to address real-world problems.

"Opening our doors to the public provides people with the opportunity to meet our outstanding faculty and staff in person in order to understand the work we do," Bloomquist said. "Visitors had fun while learning about the great work ACES is doing in teaching, research, outreach and Extension to enhance the lives of New Mexicans and others."

Undergraduate and graduate students also had an opportunity to compete for cash prizes through a poster competition. Students presented their research and honed their communication skills in this interactive setting.

Based on positive feedback from the estimated 750 guests who showed up to this year's open house, the College of ACES expects attendance at the annual event to grow over the coming years. The open house will be held annually on the first Saturday in April. The 2023 event will take place from 9 a.m. to noon April 1.



# NMSU joins effort to increase diversity in natural resources

BY CARLOS ANDRES LÓPEZ

The United States Fish and Wildlife Service has launched a new initiative to recruit more students from diverse backgrounds into conservation careers by partnering with NMSU and other minority-serving universities across the country.

The federal agency signed a memorandum of understanding earlier this year with NMSU and the University of Texas at San Antonio to create a national consortium that aims to increase workplace diversity in the natural resources and environmental sciences.

“This is the first time anyone has entered into a national agreement with one of the federal agencies, specifically aimed at workforce diversity,” said Martha Desmond, NMSU Regents professor in the College of ACES, who spent a year working with the Fish and Wildlife Service and UTSA to develop the agreement framework.

Desmond said NMSU and UTSA will serve as ambassadors for the consortium and take the lead in developing programs and initiatives to meet the project’s goals and mission.

The consortium aims to create a one-stop recruitment source for underrepresented students to excel within the Fish and Wildlife Service. Specific efforts will prepare students for competitive professional careers within the agency and build lasting partnerships between research-focused Hispanic-serving institutions,



NMSU student and U.S. Fish and Wildlife Service intern Thomas Serrano, right, works with Bureau of Reclamation biologist Dmitri Videgar, left, and fellow intern Hallie Morris, center, on a trap and haul for bull trout at the Bureau of Reclamation at Arrow Rock Reservoir in Idaho. Serrano, who is majoring in fish, wildlife and conservation ecology, participated in a Pathways Internship Program with the Fish and Wildlife Service. NMSU has signed an agreement with the agency to create a national consortium to help recruit underrepresented students into conservation careers.

historically Black colleges and universities, tribal colleges and universities, and the Fish and Wildlife Service.

NMSU and UTSA will also create peer-to-peer mentoring and experiential networks to support students, faculty and early career professionals at the Fish and Wildlife Service.

Desmond said the consortium will start at UTSA and NMSU but will grow to include

other institutions. She added that she expects to see positive outcomes in three to five years.

The top priorities include increasing student exposure to research and career opportunities at the Fish and Wildlife Service; mentoring and training students for career-track placement with the agency; and developing programming to support the placement of students in positions with the potential to become research and policy leaders.



## Students stage sustainable runway show featuring upcycled designs

After a two-year delay, the Aggie Fashion Club successfully got the show on the road this spring and hosted the 2022 Sustainable Met Gala Fashion Show.

Students presented 35 upcycled and recycled designs in a live runway show at Aggie Lounge in Corbett Center Student Union before an audience of Aggies and community members.

“We chose to have it at Aggie Lounge because we felt like it needed to be a bigger production. We needed to have more room for our audience, and we wanted that presence with the staircase, which added drama and excitement,” said Kelley Coffeen, ACES faculty member and co-adviser of the club. “It was super special, and I think our seniors really enjoyed it.”

Coffeen said more students participated in the comeback show than in previous years, including majors outside the Fashion Merchandising and Design program.

“There were just so many different little surprises. You saw one dress made from newspaper, another dress made from repurposed prom gowns, and another one created with denim and Spanx,” Coffeen said. “The creativity that came through on design was amazing this year, thanks to the direction of my co-adviser, Dr. Insook Ahn.”

## USDA-funded project uses genetics to improve NM chile



NMSU’s Chile Pepper Breeding and Genetics Program has received a \$477,074 grant from the United States Department of Agriculture’s National Institute of Food and Agriculture to fund a four-year research project to help increase chile pepper yield and nutritional quality.

“The long-term goal is to develop chile pepper varieties with improved nutritional quality and yield through a deeper understanding of the genetic basis underlying these traits,” said Dennis Nicuh Lozada, NMSU’s chile pepper breeder and director of the Chile Breeding and Genetics Program. “We hope to understand the genetics of these traits, and this knowledge can help drive our breeding and selection decisions.”

Lozada said his research team will use two novel genomic approaches – genome-wide association studies and genomic prediction – to accelerate the selection, breeding and development of chile pepper varieties with improved nutritional content and yield.

Lozada said that higher-yielding and more nutritious varieties of New Mexican chile will help improve overall production in New Mexico.





Hemp plants grown this fall by students in Geno Picchioni's greenhouse management course. Picchioni, a professor of plant and environmental sciences, introduced a greenhouse hydroponic hemp cultivation module to his course in 2020.

# THUMBS-UP FOR HEMP

NMSU students get hands-on experience with one of Earth's fastest-growing plants

BY TIFFANY ACOSTA

With the legalization of hemp production nationwide in 2018, NMSU students in the greenhouse management course now have the chance to gain hands-on experience with the plant.

Two years ago, Geno Picchioni, a professor of plant and environmental sciences in the College of ACES, added a greenhouse hydroponic hemp cultivation module to his course, and students in his fall 2022 class delved into the topic.

The four-hour course focuses on the principles and practices involved in greenhouse structures and construction, site considerations, heating and cooling systems, greenhouse crop production techniques and sustainability practices.



TOP: Students in Picchioni's class snap pictures of their hemp plants. BOTTOM: Picchioni, center, works with students in his class at the Fabián García Science Center. Picchioni's course focuses on the principles and practices involved in greenhouse structures and construction, site considerations, heating and cooling systems, greenhouse crop production techniques and sustainability practices.

"They were interested in seeing hemp in their own greenhouse as most didn't have any hemp-growing experience," Picchioni said.

"It's great to have the opportunity to learn about it in an instructional environment meant for learning and education," said Sarah Granio, an agriculture and extension education senior. "It's something we can learn about and be upfront about how it grows, how fast it grows, what to avoid – different things like that. I think that's the coolest thing for me – being able to do it where it's safe."

Horticulture senior Tyra Murrill was interested to discover the deviations of growing hemp in hydroponics.

"I think it's really awesome that I can do it at home legally but also come to school and learn from a different sense – from soil to hydroponics," Murrill said.

Even with its legality, hemp still poses challenges. Producers have to apply for a growing license through the New Mexico Department of Agriculture, and Picchioni added that taxonomy is another obstacle.

"For the most part, it's one species and simpler than what the world seems to make it sometimes, i.e. *Cannabis sativa*," Picchioni said. "If you say 'cannabis,' then in most cases, you are technically covering all of the cultivars, strains and end-uses, including medical and recreational."

Students believe hemp's reputation is improving.

"I think it's cool that it's not such a taboo thing anymore, and we get to learn about it in school because it is a plant and it's a science," said Rhiannon Rodriguez, a horticulture senior. "It's a very versatile plant. I'm excited to see what we grow and learn about all the things we can do with it."

While hemp and marijuana come from the same cannabis plant, hemp doesn't have the psychoactive effects associated with tetrahydrocannabinol, also known as THC. Hemp must contain less than 0.3% THC levels, while marijuana can contain more than 15%.

For centuries, hemp has been used in textile production. Modern uses of hemp span from fuels to plastics, but the majority of the hemp market is based on the production of cannabidiol, also known as CBD.

"The cannabis stigma made it difficult for some of the population to accept it, which historically tended to overshadow CBD biochemistry and the associated human health benefits. It has its own unique place in the medical world," Picchioni said.

Getting the opportunity to learn about hemp in a classroom and greenhouse environment isn't something Murrill takes for granted.

"I feel privileged to have the chance to work with hemp when older generations didn't," Murrill said. "We have an opportunity that others weren't given. It's really amazing."

Gerald Thomas Hall

# LEARNING *in the* METAVERSE

*Simulated hospital room  
delves into virtual reality  
to train future dietitians*

BY NICOLE E. DRAKE

Gaby Phillips, the director of the Dietetic Internship program in the College of ACES, demonstrates the program's new virtual hospital room in Gerald Thomas Hall. The space allows dietetic students to gain hands-on clinical practice through simulated case studies that mimic real-world scenarios.





Whether using the artificial intelligence mannequin in person or attending to a holographic virtual reality patient, dietetic students at NMSU gain hands-on clinical practice through a simulated hospital room in Gerald Thomas Hall on the Las Cruces campus.

The virtual hospital room is the newest component of the Dietetic Internship program in the College of ACES.

Gaby Phillips, the director of the program, developed simulated case studies

to train students on the skills they'll need in real-world settings, giving them a competitive advantage over students from other universities when seeking dietetic internships in hospitals. Phillips used a grant from the Paso del Norte Health Foundation to hire registered dietitians to write scripts for the simulations that mimic real-world scenarios.

"We struggle, as any other clinical program, to place interns in settings for real experiences because of the shortage of health care professionals," Phillips said.

"They don't have the time to take someone under their supervision and give them experience. That was something I encountered, and I felt like it was important for my students to gain experience."

Phillips worked with Boost Human, an El Paso startup, to create two components of the simulation lab. As the pandemic got underway in 2020, Phillips accelerated the process to prepare virtual case studies for her students and used grant funding to purchase a mannequin and hospital bed.

"As the pandemic hit, we were already prepared," she said. "This was used to keep the program going."

The first simulation uses an AI mannequin programmed with a variety of studies, each featuring different names and diagnoses. The AI patient has many realistic features; it can breathe and speak when prompted. It's connected to the cloud, where it uploads questions asked by students, and the cloud interacts with the mannequin. Phillips can access the cloud through her phone or laptop, allowing her to see the patient's vitals, control which case study is being worked on and much more.

The second simulation makes use of virtual reality. Students wear a virtual reality headset and work with case studies in different settings, interacting with a holographic patient and a registered dietitian. A script with bullet points appears above the patient, allowing students to follow guidelines and ask necessary questions.

"It's closing the gap between the classroom and the real experience," Phillips said. "The more they practice

and go over a script, the more it becomes beneficial as they gain confidence. But it also makes it more natural as they step into a real hospital. They'll feel more at ease as they know what to say and remember many things they saw through the hologram. They can interact a little more naturally with a patient instead of freezing up and not knowing what to do."

Completing the Dietetic Internship program is one of the final steps before students can become registered dietitians. They must also complete a master's degree in family and consumer sciences.

Amanda Apodaca, a 2022 graduate of the Dietetic Internship program, said the simulation provided extensive practice and built up her confidence to interact with patients before her clinical rotations at William Beaumont Army Medical Center at Fort Bliss.

"The mannequin really pushed us to have difficult patient interactions and work through them with our directors in a safe setting," Apodaca said. "The simulation lab is as close to the real thing as you can get. I didn't learn that until I got into my clinical rotation, but it was a great experience to see how similar the interactions are – mannequin versus patient. I realized that I had this experience and that I was capable of handling interactions with confidence. I was able to speak with patients and provide optimal care."

Phillips believes the simulation lab represents the future of health care education.

"I'm proud to say that New Mexico State University is pioneering in the dietetics virtual reality curriculum," she said.



Phillips worked with Boost Human, an El Paso startup, to create two components of the simulation lab. The first simulation uses an artificial intelligence mannequin that can breathe and speak when prompted. In the second simulation, students use a virtual reality headset to interact with a holographic patient and a registered dietitian.



Phillips, a college assistant professor of family and consumer sciences, believes the simulation lab represents the future of health care education.



# STEEPED IN SUSTAINABILITY

ACES student leads soil project that may help preserve farmland in Costa Rica

BY ADRIANA M. CHÁVEZ



**A** last-minute decision to join a group of fellow Aggies on a trip to Costa Rica this spring has led to a research project that may eventually help farmers become more sustainable.

Kaitlin Marry, an environmental science major in the College of ACES, learned about the Aggies Go Global trip to Costa Rica in March 2022 and decided to apply on the day applications were due.

“I applied at 5 p.m. the day it was due. I got very lucky,” Marry said. “I had never

Marry’s research involves the application of next-generation DNA-based techniques. Data from the project will identify beneficial soil microbes that support sustainable plant growth, which could help agricultural growers in Costa Rica improve soil and plant health.

been abroad, and the trip cost \$500, and I figured I would never be able to go abroad for that cheap.”

While taking an environmental anthropology class, Marry became interested in learning about Indigenous knowledge of the Amazon rainforest and how important environmentalism is to Indigenous people.

“Costa Rica is one of the most sustainable countries in the world,” Marry said. “They rely 100% on renewable energy sources. It’s a very unique country.”

During her trip, she met the owners of the Life Monteverde coffee farm, who described the microbial fertilizers used in their soil. They had one question: What specific microbes exist in the fertilizer?

“In a lot of ways, the world is dying, but they are very hopeful and involved in preservation and conservation of the land,” Marry said. “They serve their community, too, but when they explain things, it’s always about respecting the forest.”

Marry felt up to the challenge of identifying the contents of the fertilizer.

“It is a biofertilizer trying to simulate the natural nutrients and microbes found in the forest,” she said. “The forest has cared for the Indigenous people for centuries, so the farm is trying to simulate that relationship with their coffee fields. Knowing exactly what microbes are in it requires scientific technology. It could actually be a solution to a lot of fertilizer issues in that fertilizer is expensive.”

With guidance and mentoring from ACES professors Ivette Guzman, April Ulery and Nicole Pietrasiak, Marry said she

ACES student Kaitlin Marry is leading a research project to unravel the secrets of the soil at the Life Monteverde coffee farm in Costa Rica.







Marry hopes her research helps the Life Monteverde coffee farm and its sustainable practices. ACES professors Ivette Guzman, April Ulery and Nicole Pietrasiak are serving as Marry's mentors.

hopes her research will benefit the farm and its sustainable practices.

"I know Kaitlin as a passionate, enthusiastic and sustainability-minded young STEM scholar," said Pietrasiak, an associate professor of environmental soil microbiology in the Department of Plant and Environmental Sciences. "She has worked on multiple small research projects with Dr. Ulery and me over the past couple of years, and she is always eager to absorb any knowledge and skills related to saving the planet. However, it was the visit to the Life Monteverde coffee farm in Costa Rica and learning about how people utilize traditional ecological knowledge of nature to practice sustainable agriculture that really seems to have captured Kaitlin's heart and soul."

Marry's research involves the application of next-generation DNA-based techniques to unravel the secrets of the biofertilizer microbiome, which could help other growers in a country known for its main exports of bananas, pineapples, coffee, sugar, rice, corn, potatoes and palm oil. Nearly 10% of Costa Rica's land is used for agriculture.

"This data will establish baseline information for identifying the beneficial microbes that support the sustainable plant growth she observed, which could help growers in improving soil and plant health in Costa Rica," Pietrasiak said.

Marry grew up in central Illinois, surrounded by cornfields. It wasn't until she visited NMSU before starting her freshman year that she realized how severe drought is in the southwestern United States. However, she also wasn't prepared for how serene New Mexico felt to her.

"I had never seen the desert before I came here. I walked onto campus, and it was so hot. I was not prepared for how hot it was going to be," she said. "But looking at it, I realized this place feels calm. This is a place where people who genuinely want to learn come. I decided this was for me."

Marry launched her research project after meeting the owners of the Life Monteverde coffee farm during the Aggies Go Global trip to Costa Rica in March 2022.





NMSU's Corona Range and Livestock Research Center joined Pattern Energy's Western Spirit Transmission project in September 2017 to build a wind farm in the Corona area through a public-private partnership. The center now has 39 turbines installed on ranch property and five additional ones on state trust land leased for grazing.

# POWERED BY WIND

*NMSU joins turbine project to capture clean energy and create educational opportunities*

BY ADRIANA M. CHÁVEZ

Josh Bachman





Construction on the wind farm began in November 2020 and was finished by late 2021. Pattern Energy's Western Spirit Transmission project consists of 377 turbines, or a total of 1,050 megawatts.

A wind farm outside Corona, New Mexico, is not only helping the state's goal of developing a green energy economy, it's also creating research and educational opportunities for NMSU students and youth in 4-H and FFA.

In September 2017, NMSU's Corona Range and Livestock Research Center, or CRLRC, joined Pattern Energy's Western Spirit Transmission project to build a wind farm in the Corona area through a public-private partnership. The farm began to take shape in November 2020, and major construction on the CRLRC started in spring 2021. The project was completed later that year.

The CRLRC, which is part of the NMSU Agricultural Experiment Station in the College of ACES, now has 39 turbines installed on ranch property and five additional ones on state trust land leased for grazing. The Pattern Energy project consists of 377 turbines, or a total of 1,050 megawatts.

"The incorporation of clean energy into our science center with the largest land mass marks a new route we are implementing at the college level. This effort includes diversification of resources to fund cutting-edge research and multidisciplinary use of our science centers with other colleges at NMSU," ACES Dean Rolando A. Flores Galarza said. "The new teaching and research opportunities this approach presents are of paramount importance for NMSU in terms of our goals in the ACES and NMSU LEADS 2025 strategic plans, and benefit New Mexico's agriculture industry and New Mexicans in general."

Earlier this year, Flores Galarza joined faculty from the College of ACES at a grand opening celebration for the project host-

ed by Pattern Energy. Attendees included members of New Mexico's congressional delegation and dignitaries and officials from other states.

"This partnership highlights some of the excellent work occurring at our research and science stations throughout the state," said Leslie Edgar, ACES associate dean of research and director of the Agricultural Experiment Station. "Finding ways to leverage research discovery and creativity while enhancing demonstrations and revenues is important to the vitality of the Agricultural Experiment Station, the research arm of the College of ACES."

Shad Cox, CRLRC superintendent, said the wind farm will generate income for the center, which will help bolster its mission to provide research and outreach to New Mexico residents.

"Demonstration of diversified enterprise opportunities for landowners and ranchers, and providing insight into implementation, will assist our clientele in the future development of a green energy economy for New Mexico," Cox said. "The partnership with Pattern Energy will enhance outreach efforts in clean, renewable energy for income diversification for New Mexico ranchers and citizens."

Cox said the center will use funds from the farm to address deferred maintenance projects and complete work on the Southwest Center for Rangeland Sustainability, which provides outreach and experiential educational opportunities to FFA and 4-H youth as well as adults and international students studying arid-land livestock, rangeland management and other disciplines. The funds will also allow the center to hire addi-



A group tours the wind farm in November 2021 during a field day event hosted by the Corona Range and Livestock Research Center. The farm will generate income for the center, which will help bolster its mission to provide research and outreach to New Mexico residents.

tional employees and increase its activities to meet clients' needs.

The ultimate goal of the wind farm, Cox said, is to offer opportunities to NMSU students to experience integrated enterprise

systems on New Mexico rangelands by providing a hands-on learning environment for those studying agriculture, engineering and other associated majors systemwide.



# A CALL TO ACTION

## ACES joins mission to spread sustainable agriculture across the Americas

BY CARLOS ANDRES LÓPEZ

A report released this year by the United Nation’s Intergovernmental Panel on Climate Change paints a bleak picture. It calls for significant cuts to global greenhouse gas emissions by 2030 in order to limit Earth’s warming to 1.5 degrees Celsius above pre-industrial levels and stave off severe climate disruptions.

Failing to meet the 1.5-degree target set during the 2015 Paris climate negotiations would likely result in widespread risks to ecosystems, health systems, and water and food supplies, according to the panel. In North America alone, climate-induced declines in agricultural production would endanger food and nutritional security and pose other threats for millions of people.

For that reason, the College of ACES is working to combat climate change by using science-based knowledge to further the understanding of human impacts on the environment and support environmentally-sound agricultural and natural resource practices.

One initiative involves an ongoing partnership with the Inter-American Institute for Cooperation on Agriculture, a specialized agriculture agency for the Inter-American System that supports efforts to achieve agricultural development and rural well-being in the Americas.

In 2019, NMSU signed a memorandum of understanding with IICA to collaborate on research, education and agricultural extension initiatives focused on digital agriculture, bioeconomy, carbon management, rural socio-economic development – and climate change.

“Reducing greenhouse gas emissions, specifically carbon, and stabilizing the climate for agricultural production across the Americas is at the center of our work with IICA,” said Mario Allegri, who holds the Gerald W. Thomas Chair in Food Production and Natural Resources.

Allegri, an ACES alumnus, has been instrumental in forging the college’s

relationship with IICA and shaping the initiatives the two entities tackle.

Earlier this year, Allegri was part of a delegation from NMSU that visited IICA’s headquarters in Costa Rica. The group included NMSU Chancellor Dan Arvizu and College of ACES Dean Rolando A. Flores Galarza, who signed a second agreement with IICA to bolster NMSU’s commitment to developing sustainable agriculture across the Americas.

In the latest agreement, NMSU and IICA pledged to strengthen joint measures to curb climate change. Allegri said work is underway to develop cutting-edge projects to improve soil, crop, nutrient and water management practices in various agri-food systems.

“We are also identifying different natural resource management practices on carbon sequestration and ecosystem services,” he said. “Our goal is to share our knowledge on carbon estimation techniques, carbon monitoring and trading, digital agriculture,



NMSU and the College of ACES are working with the Inter-American Institute for Cooperation on Agriculture to create sustainable agriculture practices across the Americas and curb climate change by developing projects that improve soil, crop, nutrient and water management practices.

and emerging technologies in soil and crop management to improve food production without increasing its carbon footprint.”

In October, IICA Director Manuel Otero will lead a delegation from IICA to NMSU’s Las Cruces campus for a multi-day tour. During the fall visit, NMSU and IICA representatives plan to share progress on their “roadmaps” for joint projects and activities, and they will continue to organize an international summit that will take place next spring at NMSU.

Manoj Shukla, an ACES faculty member and director of Aggies Go Global, said one of the highlights of the meeting in Octo-

ber will include a formal signing of a separate agreement between IICA and the Universidad Autónoma de Chihuahua. Shukla said the agreement will bring new opportunities for collaboration between NMSU and the Universidad Autónoma de Chihuahua.

“The two universities have much in common and have experts working in different areas to help communities facing climate threats, such as improving soil and water practices for more sustainable agricultural production,” Shukla said. “We can learn a lot from one another – and help the environment along the way – by sharing our expertise and working together.”



# RISING FROM THE ASHES

NMSU's John T. Harrington Forestry Research Center picks up after brush with New Mexico's largest wildfire

BY CARLOS ANDRES LÓPEZ



**O**n a damp summer morning in July, Owen Burney walked around the grounds surrounding NMSU's John T. Harrington Forestry Research Center in Mora, surveying the aftermath of the largest wildfire in New Mexico history. He saw devastation in all directions.

Burney, a forest regeneration scientist and director of the center since 2012, stood surrounded by charred ponderosa pines that permeated the air.

After a moment's pause, Burney broke the forest's silence. "There was fire everywhere you see black," he said in disbelief. "It touched everything here."

The stillness of that day stood in stark contrast to the events of that spring.

In early May, the Hermits Peak/Calf Canyon Fire breached the center's densely forested property, imperiling the only facility in the Southwest dedicated to reforesting lands burned by catastrophic wildfires. By

then, the fast-growing blaze had torched more than 200,000 acres in northern New Mexico and appeared on a path to destroy the center, plunging Burney and his staff into a nightmare scenario.

Faced with evacuation orders and the threat of losing critical research, Burney led his staff into action. Their top priority was saving the center's bank of more than 3 million tree seeds. They first relocated the sprawling collection with seeds dating back 50 years to Las Vegas, but had to move it more than 150 miles south to Los Lunas after the fire shifted toward San Miguel County. Next, they retrieved about 75,000 tree seedlings from the center's nursery in a rescue operation carried out over two days with help from outside groups and a state police escort.

Good fortune – and hundreds of firefighters – ultimately spared the center from destruction.

Five weeks later, Burney and his staff returned to Mora to resume operations, bringing back the seed bank and seedling farm. But now they're making up for the lost time in a race to prepare for the next fires.

"We're back to what I would say is normalcy," Burney said, "but the reality is we're still far behind schedule with so many things."

In August, Burney and his staff relaunched several research projects placed on hiatus, including one on the Luna Fire burn scar near Chacon, New Mexico, which involves planting some of the rescued tree seedlings that survived a nearly 200-mile round trip from Mora to Santa Fe.

Tammy Parsons, the center's nursery manager, was part of the team that braved dangerous conditions to transport the seed-



Tammy Parsons, the nursery manager at the John T. Harrington Forestry Research Center, helped save and transport 75,000 tree seedlings from the center to Santa Fe over two days in May.



Owen Burney, a forest regeneration scientist and director of the John T. Harrington Forestry Research Center, led an evacuation of the center in early May after the Hermits Peak/Calf Canyon Fire breached the center's property.



lings to the New Mexico Energy, Minerals and Natural Resources Department for temporary keeping.

“The fire hadn’t come over the hill, but it was very smoky, and there were warnings to turn back, and that made for a stressful situation,” Parsons said in July as she tended

to the baby trees. “But we were able to save as many seedlings as we could.”

After returning to the center, Parsons spent the much summer preparing the seedlings for the Luna Fire project. Burney explained the project is looking at different planting strategies

and nursery techniques to improve planting success.

“For one portion of a study, we are limiting irrigation in order to stress seedlings in the nursery so that those trees are better adapted to the actual planting environment, which will be warm and dry,” he said. “Our

The Hermits Peak/Calf Canyon Fire scorched 341,735 acres across northern New Mexico by the time it was 100% contained in late August, leaving behind a trail of decimated land and forests. Roughly 60,000 to 80,000 acres of the fire footprint will need to be reforested, a mammoth task requiring 9 million to 20 million seedlings.

Burney points to a charred tree near the research center in Mora. For years, he has advocated for creating a regional reforestation center that could meet the needs of forests throughout the Southwest.

goal is to better prepare seedlings in the nursery for planting in harsh environments.”

Burney said the research will help inform future management strategies for areas decimated by the Hermits Peak/Calf Canyon Fire, which had charred 341,735 acres by the time it was 100% contained in late August. Burney roughly estimates that 60,000 to 80,000 acres of the fire footprint will need to be replanted, a mammoth task requiring 9 million to 20 million seedlings.

Across the country, more than 200,000 square miles of land need to be reforested, according to the 2021 study co-authored by Burney and 17 other scientists. To meet that need, the study found that tree nurseries in the U.S. need to increase seedling production by an additional 1.7 billion each year.

In New Mexico, reforestation needs are estimated to be between 1 million to 2.6 million acres, which would require

150 million to 390 million seedlings, Burney said.

As the only major producer of seedlings for the Southwest region, the John T. Harrington Forestry Research Center can grow about 300,000 seedlings annually.

Burney knows the center cannot address the challenges of reforestation on its own, but he sees a solution.

For several years, he and a team of researchers from the University of New Mexico, New Mexico Highlands University and EMNRD’s Forestry Division have coalesced around a proposal to create a regional reforestation center that could meet the needs of forests throughout the Southwest. The center would operate on a vision to bring forest management into the 21st century by significantly increasing reforestation capacity across the critical areas of seed collection, nursery production and planting.

“This would bring us up to 5 million seedlings per year and allow us to really address our backlog of reforestation needs,” Burney said. “We know we’re going to get more fires like this, and we need to have a nursery that allows us to restore those forests.”

Burney said the partnering entities signed an agreement earlier this year, cementing their commitment to work together to develop the reforestation center. Modeled after a similar facility housed at the University of Idaho, the center would feature labs, offices, classrooms, living quarters and 40 greenhouses to accommodate large-scale nursery production.

Burney said increasing nursery output would help curb climate change, create jobs and recover land scarred by severe wildfires.

But he admitted one of the biggest obstacles in getting the center off the ground is convincing others to invest in the “entire reforestation pipeline.” He contends this approach would simultaneously address the climate crisis and support water resources, forest products, wildlife habitat, recreation and many other forest resources.

Burney hopes the devastation caused by the Hermits Peak/Calf Canyon Fire serves as a wake-up call and reminder of the consequences of inaction.

“It took a fire in our backyard for many to see the importance of what we need to do, and I still don’t think we’re 100% there yet,” he said. “If this doesn’t do it, what’s going to do it? I think that we can make the change, but there’s also a concern for me that we’re getting to a turning point, and if we don’t make the change soon, then we never will.”



# CARBON CATCHER

Rajan Ghimire, a cropping systems agronomist at the Agricultural Science Center at Clovis, is working to develop techniques for carbon sequestration and soil health management in New Mexico. His long-term objective is to help underdeveloped countries through his research and production technologies.



Josh Bachman

## *Rajan Ghimire aims to improve climate resiliency by capturing and trapping CO<sub>2</sub>*

BY TATIANA FAVELA

**W**ith climate change impacting communities across the globe, a researcher from the College of ACES is working to develop techniques to relieve agricultural production stresses via carbon sequestration.

Rajan Ghimire, a cropping systems agronomist at the Agricultural Science Center at Clovis, has focused his research on understanding soil, plant and environmental interactions to better manage cropping systems and improve soil health.

“My whole focus is capturing carbon dioxide from the atmosphere and storing it in the soil,” Ghimire said. “In agricultural ecology, we use plants as a CO<sub>2</sub> pump because plants, during the photosynthesis process, capture and store carbon in above- and below-ground biomass. When the plant material and residues are added to the soil, the carbon gets into the soil.”

Ghimire’s research goals include finding mechanisms of carbon storage in soils under diverse agricultural management and permanently storing carbon underground so that it doesn’t go back out to the atmosphere as carbon dioxide. Most scientists agree that rising carbon dioxide emissions and other greenhouse gases are causing climate change, fueling more extreme heat and weather and harming the agricultural sector.

“If we can reduce the concentration of greenhouse gases in the atmosphere, then we can improve our environment,” Ghimire said.

Since joining NMSU in 2015, Ghimire has expanded his studies to understand soil health and carbon sequestration in arid and semi-arid areas.

“If we look at New Mexico, cropland and rangeland make up almost 60% of the land area, and soil carbon sequestration in these areas could substantially benefit the state,” he said. “Developing techniques that work for this area can go beyond New Mexico. I have been promoting a ‘more carbon per drop’ approach, which involves using water more efficiently for maximizing crop production and carbon sequestration in dry environments. If we can implement that, we can have a global impact.”

Having grown up in the mountains of Nepal and lived in the western United States for more than a decade, Ghimire has experienced many different crop production issues. But his top priority has been improving soil for better crop production.

“Water is the lifeline of agriculture in the western U.S.,” he said. “Improved water management increases crop production and sequesters more carbon in the soil, leading to improved climate resilience and agricultural sustainability.”

Ghimire is currently working to develop multiple techniques for carbon sequestration and soil health management in New Mexico and has several ongoing projects.

“Overall, the goal on all these projects is connecting dots of improving agricultural production, water-use efficiency, increasing carbon sequestration and mitigating greenhouse gas emissions,” he said.

Ghimire said his long-term objective is to help underdeveloped countries through his research and production technologies. He believes developing reliable carbon sequestration strategies in New Mexico could benefit nearly 40% of the world and touch the livelihood of almost 20% of the global population residing in arid and semi-arid regions.

“There are many underdeveloped countries in arid and semi-arid regions. New Mexico is the ideal test bed for carbon and water management research for dry environments,” he said. “Climate change and food security are two major threats to humanity, and I’m working on technologies and practices that tackle both at the same time. Improved soil health and increased carbon sequestration could serve a dual goal, and that’s why I focus on both in my research.”



As part of the ZiaMet Weather Station Network, each science center operated by the NMSU Agricultural Experiment Station will house new weather stations. The data collected by the stations will lead to more accurate forecasts and more well-informed decision-making during critical weather situations.

# PREDICTING MOTHER NATURE

Weather stations at AES sites to aid agriculture and emergency response BY ADRIANA M. CHÁVEZ

**N**ew Mexico will soon become home to the highest number of weather stations in the United States, thanks to federal and state funding to expand the state's existing network.

The ZiaMet Weather Station Network will consist of weather stations at each science center operated by the NMSU Agricultural Experiment Station, part of the College of ACES, along with other areas throughout the state. As of June 30, 2022, there were 97 weather stations in New Mexico, with 66 installed during the project's first phase that began in summer 2021.

"The weather station network is critical to our ability to inform producers, scientists and citizens with real-time data regarding weather," said Leslie Edgar, ACES associate dean of research and director of the Agricultural Experiment Station. "This expansion will allow us to provide greater support to New Mexico by elevat-

ing research in an area that impacts our daily lives and will allow our agricultural producers to make more effective decisions regarding production."

Several counties and rural areas in New Mexico still lack weather stations, which help provide information on surface weather conditions and sub-surface soil conditions. Information from the ZiaMet project is available for public viewing at [weather.nmsu.edu](http://weather.nmsu.edu).

"More high-quality data leads to more accurate forecasts and more well-informed decision-making during critical weather situations," said David DuBois, New Mexico state climatologist and director of the New Mexico Climate Center. "This data, in turn, allows the National Weather Service to improve the performance of their mission of providing accurate and timely forecasts and warnings for the projection of life and property, and the enhancement of the national economy."

During this year's highly active wildfire season, officials used the weather station at NMSU's John T. Harrington Forestry Research Center in Mora to monitor conditions in real time.

"With the expansion of the ZiaMet Weather Station Network, NMSU will have a greater capacity to work with our agency partners to explore additional areas of support, such as early monitoring for emergencies and greater capacity with climate change monitoring and mitigation," Edgar said.

Brooke Boren, director of land and assets for the Agriculture Experiment Station, called the expansion project a team effort organized with support from NMSU Chancellor Dan Arvizu's office, the College of ACES, NMSU Procurement Services, the NMSU Real Estate Office and Facilities and Services.

"It was a group effort with a lot of collaboration across the university to make this happen," Boren said.



David DuBois, New Mexico state climatologist and director of the New Mexico Climate Center, discusses a weather station installed at NMSU's Fabián García Science Center.



For the second phase of the ZiaMet expansion, the Agriculture Experiment Station received one-time state funds totaling \$1 million and one-time federal funds totaling \$1.821 million, procured with help from U.S. Sen. Martin Heinrich, for the fiscal year 2023. The second phase will result in 118 new stations, for a total of 215 stations, by June 30, 2023.

In 2022, recurring state funds totaling \$925,000 were allocated to the Agriculture Experiment Station for the continued operation, maintenance and staffing of the ZiaMet weather network. The project also received \$922,600 in one-time state funds for the fiscal year 2022.

“The expansion of the ZiaMet network helps fill both temporal and spatial gaps that federally-owned programs do not sufficiently cover,” DuBois said. Those programs

include the airport Automated Surface Observing System stations, the National Oceanic and Atmospheric Administration Cooperative Observer Program and the weather radar.

Monitoring the weather is especially important to New Mexico’s agricultural industry as the state, like the rest of the world, sees steadily increasing temperatures and severe weather-related events fueled by climate change.

“Our network expands our knowledge of how drought and precipitation events are linked through soil moisture,” DuBois said. “It also provides an instrumental-based estimation of evapotranspiration that forms the basis for water conservation efforts and precision agricultural efforts.”

DuBois said a project has started to help flood irrigators, such as pecan orchard

farmers, use a tool to time irrigation and help conserve water.

Weather information is also critical to emergency responders who must be ready for extreme weather events. Since the data collected by the weather network is available to the public and goes to the National Mesonet Program, it can be accessed by emergency planning organizations, including fire management officials, in near real time.

“For example, during the Hermits Peak/Calf Canyon Fire, our weather station at the forestry research center in Mora provided critical dew point temperatures and temperature data during the hours that the fire was cresting in the mountains above the valley,” DuBois said.

He added that the weather network may also play a role in long-term monitoring and decision-making during wildfire season.

# Two-time ACES alumnus advocates for underrepresented students

BY TATIANA FAVELA

**L**ike other students from Latino communities, Ricardo Ramirez believed it was important to stay close to home while going to college. Attending NMSU allowed Ramirez to do just that and led him on a career path that has taken him far beyond the limits of his hometown of El Paso.

“For me, NMSU made me feel comfortable and at home,” said Ramirez, a two-time ACES alumnus who earned a bachelor’s degree in agricultural biology in 2001 and a master’s degree in entomology in 2004.

Ramirez initially enrolled in the ACES pre-vet program as an undergraduate, but became intrigued with entomology after meeting the head of the Entomology, Plant Pathology and Weed Science Department. He ended up switching his major and joining an entomology lab on campus.

Ramirez said persistence was key as a first-generation college student.

“I didn’t have family members who had gone on



Two-time ACES alumnus Ricardo Ramirez works as an extension entomology specialist and faculty member at Utah State University.

to get advanced degrees, so I thought, ‘What does this mean? What does this look like?’” said Ramirez, who later earned a Ph.D. in entomology from Washington State University in 2008. “Having a good foundation at NMSU and mentorship helped with that framework of moving toward those next steps.”

For the past 12 years, Ramirez has been working at Utah State University as an extension entomology specialist and faculty member. He was recently promoted to a full professor. At USU, he was instrumental in reestablishing the university’s chapter of the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science, which works to help underrepresented students advance their education and become leaders.

“We need more leaders who are Native Americans, Chicanos and Latinos,” he said, “and who come with diverse backgrounds and are not that well-represented yet.”



# HRTM alumnus turns love of languages into a career

BY CARLOS ANDRES LÓPEZ

**M**itchell McMillan arrived at NMSU in the late 1990s, eager to become an Aggie.

The Silver City native spent much of his first year carefully choosing a major, but eventually committed to the undergraduate

program in the School of Hotel, Restaurant and Tourism Management. A team of dedicated professors, including Patrick Moreo, Priscilla Bloomquist, Greg Blanch and Deborah Breiter, ultimately convinced Mitchell to join HRTM.

“From the first day I went into the HRTM program, I just loved those teachers,” McMillan said. “They always seemed to have time for students after class. This kindness, along with their real-world teaching approach, made the program a perfect fit for me.”

McMillan said NMSU helped lead him on a path to his career as an educator in Japan, where he has lived for more than 20 years. As a sophomore at NMSU, he challenged himself to learn Japanese, and he later completed a study abroad program in Japan during his junior year. After earning a bachelor’s degree in 2000, he relocated to his former host country to teach English.

Now fluent in Japanese with a career spanning 22 years, McMillan teaches at the Nagoya College of Foreign Languages in Nagoya, Japan. He said he still values the many real-world experiences provided by the HRTM program, most of which have proved helpful in his career. As a teacher, he said he most enjoys helping his students improve their English skills and advance in their careers.

“I see my students now, and I see myself within them,” he said, “and I want to help them.”



Mitchell McMillan, who graduated from the HRTM program in 2000, teaches English in Japan, where he has lived for 22 years.

# FACES OF

# ACES

Written, designed and captured by students in the Agricultural and Scientific Publications course



# Meet the student staff

Howdy, Aggies!

In the past four years, the stories in *ACES Magazine* have showcased talent and determination found in various programs throughout the College of ACES.

The College of ACES embodies legacy. And, despite challenges from the previous two years, the college has continued to expand its impact.

To highlight student work in ACES, five students in the Agricultural and Scientific Publications course wrote, designed and captured the following Faces of ACES section.

Several individuals made this possible. Dean Rolando A. Flores Galarza, thank you for allowing us to represent the College of ACES in this magazine. NMSU Marketing and Communications staff, thank you for allowing a student perspective into this magazine. Shannon Norris-Parish, Ph.D., thank you for your never-ending patience. Without your leadership and dedication, our stories might still be sitting in Google Drive.

Here it is – the legacy of the College of ACES from the student perspective. To students, faculty, alumni and friends, we hope you enjoy!

Faithfully,

*Sarah Roderick*

Sarah Roderick, Editor  
Faces of ACES



Students in the spring 2022 Agricultural and Scientific Publications class discuss a previous issue of *ACES Magazine* with instructor Shannon Norris-Parish.

## Editorial Team



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# Spice and space

## Alumnus' research enables chile production in space

BY FALLON VELASQUEZ



Jacob Torres, an NMSU alumnus and NASA horticulturalist and technician, is a member of the research team that successfully grew NMSU-hybrid chile in space.

This project brought high visibility to space efforts by the United States and NASA, as it showcased the ability to produce food 227 nautical miles above Earth.

Torres is originally from Española, New Mexico, and he started his college career at Northern New Mexico College in automotive technology.

He said he first started college so he could save money working on his car in the school's auto garage. He earned an associate degree in renewable energy and automotive technology.

Torres enjoyed the hands-on learning of his college years and thought he was done after NNMCC.



But soon after he graduated, NMSU recruiters offered him a scholarship to pursue a degree in engineering. He visited many programs before he settled on mechanical engineering technology.

Torres said he felt at home in the program and believed he found a sense of purpose.

"The big thing about NMSU's technology engineering program was their ability to teach you theory as well as give you hands-on practice," Torres said.

These experiences helped him connect what he learned in school to real-world problems.

Torres started on the PH-04 experiment, also known as Plant Habitat-04, as an intern and later became a full-time engineer and plant scientist.

PH-04 uses the NuMex "Española Improved" chile pepper, which is a hybrid developed by NMSU.



Chile seeds began growing in June 2021, and the first harvest came approximately three months later.

The International Space Station currently has two plant growth systems – vegetable and advanced plant habitats.

"Before my time with the project, researchers narrowed the target plants to tomatoes and peppers," Torres said.

While the original goal of the project was not to grow chile specifically, New Mexico's favorite fruit quickly gained attention because of its vitamin C health benefit and flavor.

Torres said he credits the network he gained at NMSU for his chance to work in space.

Spice and space – an unlikely pair with an out-of-this-world impact.



# Legacy and wine

## Tribute to the 'Southwest Wine Guy'

BY JAIDYN SWARTZ

Nestled into the hallways of Gerald Thomas Hall lies the Bobby Lee Lawrence Academy of Wine. A large wooden door leads the way into a room that resembles a wine cellar. Upon stepping foot into the room, visitors are transported from the desert of Las Cruces to the vineyards of Europe.

"Many people might not know this exists, so it is always a surprise," said Jean Hertzman, Ph.D., director of NMSU's School of Hotel, Restaurant and Tourism Management. "Many have likely been through the building a few times and wondered why the hallway looked different."

Not only does the room's architecture stand out, but so does the impact of its namesake.

Lawrence was a journalist for print and television media when he and his wife moved to Las Cruces. After moving, he became more involved with the wine industry, rightfully dubbing himself the "Southwest Wine Guy" through his blog.

Upon his passing, Marion Lawrence, Bobby Lee's widow, donated to HRTM in his memory, which established the Bobby Lee Lawrence Academy of Wine.

Today, the wine academy honors his legacy through teaching wine education and professionalism.

The design is meant to have the look and feel of a European wine cellar or tasting room. The facility has a curved bar, tables, wine chillers and space for students to learn and study.

"It is unique in architecture and style, and we use it for wine education for our students and for the general public," Hertzman said.

The wine academy is not limited to HRTM students as most classes have students from various majors, such as engineering and business.

Through these courses, students learn about various aspects of winemaking, including how wine grapes are grown, harvested and processed.

Students also travel to area wineries, such as Rio Grande Winery, to witness how wine is made and stored at a local business. Aside from this, they are taught how to choose wines based on taste and how to properly pair them.

The Lawrences' impact doesn't stop with the Bobby Lee Lawrence Academy of Wine.

Sadly, Marion Lawrence passed in 2021. Following her passing, she left HRTM with two additional endowments in her name through the NMSU Foundation.

One endowment will be used to support a new faculty member or increase current faculty salaries. These funds will enable HRTM to add classes with a robust and diverse learning environment.

The funds from the second endowment will be used for operational costs for the Bobby Lee Lawrence Academy of Wine.

The wine academy is one of many hidden gems found at NMSU. If you find yourself wandering through the halls of Gerald Thomas, it's a sight worth visiting.

Beyond the many amazing things in HRTM, the Bobby Lee Lawrence Academy of Wine creates a unique and exciting experience that showcases hospitality one sip at a time.

Walk through the doors, grab a glass and step into the European countryside.

*"It is unique in architecture and style."*

*Jean Hertzman, HRTM director*



HRTM's Bobby Lee Lawrence Academy of Wine.



# Winning communication

## AXED welcomes new faculty member Lacey Roberts-Hill

BY FALLON VELASQUEZ AND ELLIE ANDERSON



Lacey Roberts-Hill joined the College of ACES in fall 2021.

Lacey Roberts-Hill, Ph.D., came to NMSU last fall and has not looked back. Roberts-Hill grew up on a ranch in Gail, Texas, and developed a love for agriculture at an early age. She continued her education after high school at West Texas A&M University, studying agricultural communications. Upon graduation, she traveled on a study abroad that changed her life plans in a global way.

Roberts-Hill received her master's degree in international agriculture at Oklahoma State University and lived in Uganda, where she worked on a sustainable agriculture project.

Through that experience, she made connections that motivated her to pursue her Ph.D. Her doctoral dissertation focused on effective visual communication efforts in international agriculture.

After her globe-trotting adventures, her heart called her back to the classroom.

Roberts-Hill started her career as an educator teaching leadership at Mississippi State University. However, when the opportunity came to join NMSU, she packed everything and moved her life in a matter of months.

### Welcome to Aggie country

Roberts-Hill said she felt at home in Aggie country on her first day.

"I made a great choice coming here because the students are outstanding and want to learn," she said.

Roberts-Hill uses her life experiences to build her agricultural communication courses.

"It is an amazing opportunity to design a new program using experiences that align with (industry) needs," Roberts-Hill said. "NMSU students are competent, capable and just fun to interact with."

Roberts-Hill is encouraged by student interest in pursuing an agricultural communications degree.

She said faculty and staff strive to prepare students with the skills needed to be successful in the agricultural industry.

"There is a lot of misconceptions out there, and people want to know where their food comes from," Roberts-Hill said. "It is our job as agricultural communicators to teach them."

Roberts-Hill also enjoys learning about agricultural science and other agricultural disciplines.

"As agricultural communicators, it is not only our job to know the science, but it is also our job to know the scientists," she said.

To clearly communicate science, Roberts-Hill is working to help students understand visual communication, which is one of her favorite parts of the job.

"If I could have a camera in my hand all day, I would love that," she said.

### Award-winning student club

Roberts-Hill also serves as a co-adviser of the newly rechartered Agricultural Communicators of Tomorrow chapter with Shannon Norris-Parish, Ph.D.

During her time at West Texas A&M, Roberts-Hill served as the ACT chapter president and is working to help students in NMSU's chapter expand their visual communication skills.

ACT is an NMSU student organization with a mission to "create a community that cultivates, connects and creates opportunities for agricultural communicators."

Dakota Belcher, the 2021-2022 ACT president, said the organization provides students with valuable networking opportunities.

"ACT provides students a toolkit for communicating in the agricultural industry," Belcher said. "With Roberts-Hill's and Norris-Parish's guidance, we worked to establish a legacy that we would like to uphold."

In 2021, several NMSU students placed in the National ACT Critique and Contest.

Kyler Bowerman, a spring 2022 graduate in general agriculture, placed first in the people photography category and third in the black-and-white category. Sofia Uvina, a double-major in agricultural and extension education and Spanish, placed second in the people photo category. Annalisa Miller, an agricultural and extension education alumna, placed second in logo design.

ACT provides opportunities for students to master communication techniques beyond oral communication, and Roberts-Hill plays a vital role in supporting student development.

### Showcasing alumni success

ACT also hosts the Sam Steel Seminar Series every semester, which is a webinar designed to expand current and prospective students' networks by learning from accomplished ACES alumni and supporters.

In spring 2022, Chad Smith, the former New Mexico Farm Bureau CEO, Dina Chacón-Reitzel, the executive director of the New Mexico Beef Council, and Jeanne Gleason, Ph.D., an ACES professor emeritus, led panel discussions regarding communication strategies.

Roberts-Hill said activating alumni networks is the secret to building winning programs. Through ACT and robust coursework, she is working to create valuable experiences for any Aggie who has a desire to share a message.





Katelyn Detweiler, an animal science major, heads a steer for Kenneth Atwood, also an animal science major, at the Aggie Rodeo Arena.

Countless people have helped maintain the Aggie Rodeo Arena throughout the years. However, the unsung heroes of NMSU rodeo are Tommy and Pam Simpson. They served as the stall and arena caretakers for 34 years, and when the team did not have a coach during the 2020-2021 season, Tommy stepped in to help the team work toward its dream.

The Simpsons announced their retirement in spring 2022 and will soon move to their next adventure in Grants, New Mexico.

Without them, NMSU rodeo would not be what it is today.

“Tommy and Pam are some of the best people I have ever met,” said Tanna Webster, a member of the NMSU rodeo team and an agricultural

economics and agricultural business major. “They have gone out of their way to make all of us feel at home.”

*“I don’t see any slowing down in myself or my team.”*

*Brice Baggarley,  
NMSU rodeo head coach*

The Simpsons have been the glue holding NMSU rodeo together, and many in Las Cruces will miss them.

“NMSU rodeo would like to thank the Simpsons for their hard work, dedication and guidance,” Baggarley said. “They have impacted every student who steps foot in the Aggie Rodeo Arena, and we appreciate all that has been done for us to follow our dreams.”

In August, the team revealed a new look and feel to the Aggie Rodeo Arena, but the team’s legacy of impact and tradition remains the same.

“I don’t see any slowing down in myself or my team,” Baggarley said.

# Out with the old...

## NMSU rodeo welcomes new coach and exciting updates

By ELLIE ANDERSON

The Harrelson Memorial Rodeo Arena, known as the Aggie Rodeo Arena, underwent a much-needed remodel this year. Here, NMSU rodeo members practice and board livestock.

Motivated by completing his first year coaching NMSU rodeo, Brice Baggarley began renovating the arena by tearing down outdated

structures, rotating the flow 180 degrees and constructing a new practice pen.

The updated arena now runs from south to north, making for a more productive facility for future rodeo champions.

Baggarley’s primary focus in 2022 included revamping the rodeo program and building new and improved facilities.

The original arena was built in the 1940s, and was later named to honor a member of the rodeo team, Lester Harrelson.

Harrelson was a bull rider in the Aggie Rodeo Club who was killed in a vehicle accident in 1974 near Amarillo, Texas. He left behind his wife and two boys. In 1975, the Aggie Rodeo Arena was named the Harrelson Memorial Rodeo Arena.



Sherrick Sanborn, an agricultural economics and agricultural business major, practices in the Aggie Rodeo Arena.

*in with the new*



# Pete's perspective

## Mascot leaves lasting impact on the College of ACES

BY SARAH RODERICK

**P**istol Pete is more than a mascot. He is a collegiate icon with strong ties to the College of ACES.

As a bright and welcoming face of NMSU, his presence sets an example of school pride and legacy that past, present and future Aggies can look up to.

From basketball games to recruitment events, Pistol Pete is ready to get crowds hyped and full of Aggie pride.

“My favorite part about being Pistol Pete is representing NMSU,” said Trevor Rawdon, an agricultural and extension education major. “It is the honor of a lifetime, and I love my job more and more every day.”

Rawdon said the Aggie spirit at NMSU is the reason he suits up.

“The crowds, the people and the energy led me to this position,” he said.

For many seasons, Pistol Pete has also been a student from the College of ACES.

In addition to Rawdon, Pete has been portrayed by several ACES students over the past five years, including Kaden Eisenbraun, a general agriculture graduate in 2018; Caleb Gustin, an agricultural and community development and mechanical engineering graduate in 2020; Dillen Martinez, a wildlife science graduate in 2019 and agricultural economics and agricultural business master's graduate in 2021; and Lyle Logemann, an agricultural and extension education graduate student set to graduate in fall 2022.

“Every event I went to, I tried to be as electric as possible as it was my job to get

the crowd going,” Logemann said.

Pistol Pete is not only known as the face of students and alumni, but he is also a member of NMSU's cheerleading team.

During Aggie games and events, Pete can sometimes be seen doing flips and jumps with the cheer squad.

“I feel like being part of the cheer team helps build more Aggie spirit,” Rawdon said. “Not only is it a lot of fun, but I think it energizes the room when the crowd sees us run in.”

**“Regardless where you are from or what college you are in, NMSU is a family.”**

*David De La Cruz,  
NMSU student*

David De La Cruz, a computer science and Spanish double-major, has observed four Pistol Pete seasons throughout his time at NMSU and is known for his loyal attendance at all Aggie functions.

“Pete has always been a key reason why we get so loud at games and events,” De La Cruz said. “Seeing Pete on the cheerleading team shows how close we are as a campus.”

Experiencing the Aggie spirit was the highlight of being the school mascot, Logemann said.

“I will never forget the feeling of the Pan Am vibrating from the chanting of the crowd during the basketball game against the University of New Mexico,” Logemann said. “It was an addictive feeling to be able to lead and cheer with the crowd.”

Pistol Pete appears at many events to spread Aggie pride and represent NMSU.

“Pistol Pete earned the title of being an icon on campus by showing up and being involved,” Rawdon said. “I want to build the Aggie spirit wherever I go.”

Pistol Pete also participates in events in Las Cruces. He is often called to help support youth through events like preparing for state testing, pep rallies and sporting activities.

“Getting to be with little kids is another really cool part of my job,” Rawdon said. “Making appearances at elementary schools is a special honor, and there is nothing better than the energy that comes from children wanting to see Pete suited up.”

Wearing NMSU-branded leather chaps, a vest and a cowboy hat, Pete represents Southwestern heritage and culture. While his uniform represents a key element of tradition, his spirit will continue to make a lasting impact in the future.

Pistol Pete is more than a mascot – he is a legacy at NMSU – and anyone can request a Pete appearance through the NMSU cheerleading team.

“Regardless of where you are from or what college you are in, NMSU is a family,” De La Cruz said.



NMSU's mascot, Pistol Pete, outside Gerald Thomas Hall.



# ACES MAGAZINE

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