

Keeping up with the College

Dean's Message

Greetings, Aggies!

We are back in full swing for the semester!

Last week we had our first football game, and we have other activities planned to welcome back students and faculty. We are fully engaged in research and teaching in our college, building on activities of faculty and staff during the summer. Activities and articles presented in this newsletter include work on water in agriculture, digital agriculture, and regenerative agriculture. Each issue of the newsletter highlights different concepts with examples of various activities that faculty and students are conducting in the college.



On August 29th, we had the first meeting with the search committee for an NMSU provost which I have the honor of leading. The 23 members of the committee, along with the search company, have met and looked at all the activities that are ahead of us in the timeline. We are looking forward to exploring the opportunities that different individuals could present to NMSU. We encourage readers to provide suggestions of potential provosts who could come to NMSU.

This coming month will be our last month with Department Head & Professor of Plant & Environmental Sciences Dr. Rolston St. Hilaire, who will be retiring from the university and become emeritus faculty. He will be reengaging his career in a new activity as [Dean of the Jordan College of Agricultural Sciences and Technology at Fresno State in California](#). We wish him the best and success in all his activities.

Please let us know if you have any questions, concerns, or feedback on how we are doing and what can be improved. It is a constant effort, and we always try to improve ourselves to fulfill the mission of the College, which is to be an engine for the economic and community development of New Mexico.

Rolando A Flores Galarza
Dean & Chief Administrative Officer



WATER FOR AGRICULTURE

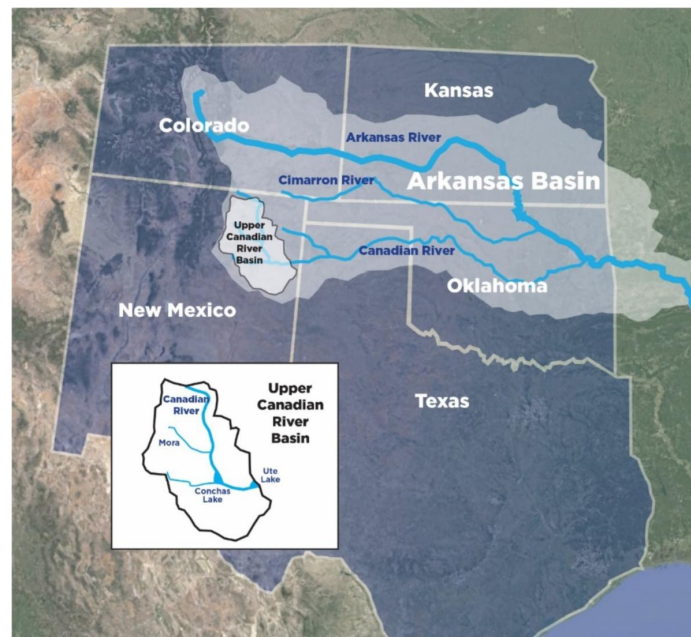
Economics of lining irrigation water delivery systems

New Mexico's farmers continue looking for measures to use irrigation water more efficiently. A common problem in New Mexico where water is delivered with earthen canals is delivery

inefficiency. Until recently, little research grade work had presented an economic analysis of irrigation delivery efficiency improvements in regions faced by drought and climate water stress. This work's unique contribution is to investigate the economic performance of water conservation infrastructure combined with economically optimized use of saved water.

Results from the upper watershed region region of the Canadian Basin in New Mexico show that canal and delivery system lining can raise the sustained economic value of water for crop irrigation. Findings of this work light a path for farmers, water managers, and other stakeholders who bear the responsibility of finding economically responsible measures to improve irrigation water productivity in the world's dry regions.

Former NMSU Water Science and Management PhD student Befekadu Habteyes and ACES Professor Frank A Ward published their findings in the *Journal of Environmental Management*. A link is at <https://www.sciencedirect.com/science/article/pii/S030147971931758X>



Map illustrates the hydrology and boundaries of the Canadian Basin.

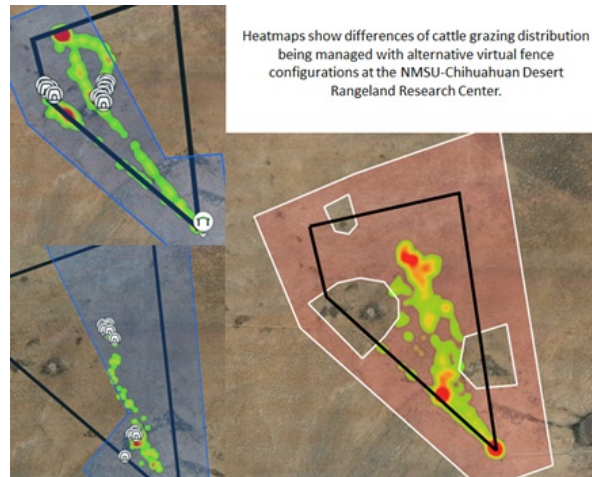
DIGITAL AGRICULTURE

Digital Ranching Research at NMSU

The Sustainable Southwest Beef Coordinated project, funded under the Initiative for Sustainable Agricultural Systems (USDA – National Institute of Food and Agriculture, Grant #2019–69012–29853), is developing Digital Ranching tools that can improve ranch operational efficiencies and rangeland resilience in the Southwestern United States. Information from high throughput sensors, including multi-sensor platforms mounted on herds of Heritage Criollo, Angus, Brahman, and Brangus cattle, field rain gauges, cattle drinking troughs, and water storage tanks, is being monitored over 300 sq. miles of desert rangelands using Long Range Wide Area Network communication technology. By using a communication infrastructure consisting of several portable and permanently installed receiving base stations, near real-time information on cow grazing behavior, precipitation events and water levels in tanks can be immediately extracted, processed and visualized using a customizable dashboard ranching software being developed at NMSU.

Virtual fencing, a novel multi-sensor platform for livestock herding and tracking, has been incorporated recently to help ranchers and managers meet livestock grazing distribution needs or achieve land conservation management goals in desert rangelands. Virtual herding is a relatively recent livestock management concept that ranchers could implement to prescribe precision grazing interventions on heterogeneous rangeland while relying on real-time information of animal behavior to monitor cattle performance and rangeland utilization.

For more information contact Santiago Utsumi at sutsumi@nmsu.edu



New NSF grant to Support Graduate Student Interdisciplinary Training in Artificial Intelligence and Agriculture

The economic and environmental challenges that agriculture is facing in the Southwestern US are growing. To increase the resiliency of these agricultural systems, innovative interdisciplinary approaches will be needed. A new National Science Foundation Research Traineeship grant (NSF-NRT; PI Pontelli) led by Enrico Pontelli, Dean of the College of Arts and Sciences, was awarded to researchers in the colleges of ACES and Arts and Sciences to address these challenges by building research capacity in graduate students at the intersection between Artificial Intelligence (AI) and agriculture. In the AIALA program (AI for Arid Land Agriculture), students will move through their graduate degree program in their home department while concurrently receiving training, professional development and research support in AI and agriculture through seminars, coursework, workshops, and practical experience.

Students and faculty from ACES who will be working with big data, machine learning, and artificial intelligence, and would benefit from a program such as AIALA, can contact the College of ACES program leads for more information: Lara Prihodko (prihodko@nmsu.edu), Hatim Geli (geli@nmsu.edu), Derek Bailey (dwbailey@nmsu.edu) and Jennifer Randall (jrandall@nmsu.edu).

REGENERATIVE AGRICULTURE

A New Approach to Sustainability

A new paradigm for sustainability has emerged since the 1960s. This reflects a growing understanding that high productivity technologies based on high levels of inputs without regards to their effects have had adverse environmental and social impacts, including water pollution, groundwater contamination, soil erosion and degradation, loss of biodiversity, narrowing of the genetic base of crop and livestock species, pest resistance, agrochemicals residues in food, and effects on human health. The new approach to sustainability acknowledges these effects and incorporates principles of ecology by emphasizing interactions among and within components (physical, biological, and socio-economic) of agroecosystems. The term *sustainability* refers to the ability of land to maintain productivity in the long run. Responsible agricultural systems should be stable, resilient, ecologically sound, environmentally acceptable, economically viable, and socially compatible.

The Regenerative Agriculture (RA) concept was coined early in the 1980s as a holistic approach to farming that encourages continuous innovation and improvement of environmental, social, and economic measures. There are many definitions and descriptions of RA based on processes and outcomes, considering principles and practices in harmony with nature, to ensure resiliency and flexibility within ecosystems to respond to stress. The priorities are to improve and revitalize soil health, contribute to carbon management, and protect the quality of water resources, and may include use of cover crops, minimum or no-tillage, integrated crop-animal production, increased biodiversity, native species restoration, agroforestry and silvopasture systems, advances in plant and animal breeding, integrated pest management, enhancement of

ecosystem services, and strengthening the social-economic wellbeing of communities. Regenerative Agriculture contributes to more sustainable agriculture and food systems, as well as to the mitigation of climate change, through building resilience of agro-ecosystems, reducing Greenhouse Gas (GHG) emissions, carbon sequestration, and adapting to new conditions via plant and animal resources.

The term RA has been used increasingly frequently, particularly after 2015, in the scholarly literature, such as in research articles and academic peer-reviewed publications, as well as in books and news. It is strongly promoted by civil society, NGOs, and multinational food corporations, as well as by producers, retailers, researchers, consumers, policymakers, and the mainstream media.

Regenerative Agriculture is viable in New Mexico: some farmers and ranchers are applying it with success. Most of the programs in ACES are in tune with the RA approach. Hence, there are opportunities for the College of ACES, through its strong faculty team, to formulate proposals to support the transitions of New Mexico farmers and ranchers to RA.

The challenge is to make a wise compromise by applying principles of agroecology and sustainable intensification, increasing agricultural productive capacity while protecting and conserving natural resources, and taking advantage of specialized markets with better prices for natural products, following consumer preferences.

ACES-NMSU has all the components to get RA going successfully. The human capital and the work related to this theme are progressing; there are projects being carried out currently as well as proposals submitted for implementation in the near future supporting the principles and practices involved. Digital technologies have an increasingly major role to play to establish methodologies of measurement and support research into processes, including integrated environmental footprints.

Another way RA is being used in several countries is to market food products. With the new facilities, ACES-NMSU will be strengthening its capacity to work and support farmers and ranchers in New Mexico to convert their products from commodities to niche products with an attractive value added, as in the case of beef cattle.

ACES-NMSU contributes to these efforts with solid and unbiased scientific information and background, supporting the development, marketing, and promotion of a New Mexico food supply chain, including processing and commercializing, adding value and creativity to support food products' credibility and build trust in sustainable production systems.

For more information contact Dr. Mario Allegri-Conde, Gerald Thomas Chair at mallegr@nmsu.edu

4-H YOUTH DEVELOPMENT



Aggie Next Step ACES Camp

The 4-H Youth Development's Aggie Next Step Program hosted its first ACES Camp on Monday, August 22nd. ACES Camp was developed to provide 8th-12th grade students with greater awareness and understanding of various degree paths in the College of ACES. Forty-seven youth from across the state traveled to the NMSU campus and rotated through six experiential activities in Plant and Environmental

Sciences, Hotel, Restaurant and Tourism Management, Ag Business and Economics, Family and Consumer Sciences, Animal and Range Sciences, and Innovative Media. Students enjoyed a taste of college life by having lunch at the Taos Cafeteria. A youth participant wrote, "I really liked this experience! It was fun and interesting to learn about different careers. I would definitely

come again and learn more stuff. It was great to know how college feels.”

Aggie Next Step will be hosting a Career Academy on Thursday, September 29, on the NMSU Campus for 8th–12th grade students.

Collegiate 4-H Welcome BBQ

New Mexico State University Collegiate 4-H recently welcomed back NMSU students to campus by hosting a barbecue cookout. Joining the over 50 students in attendance were special guests Regent Dina Chacón-Reitzel, Regent Arsenio Romero, and Regent Neal Bitsie. New Mexico Beef Council demonstrated their support of NMSU students by donating hamburgers and hotdogs.

NMSU Collegiate 4-H had a busy day, also having a booth at the Aggie Carnival. Collegiate 4-H is a student-centered organization focused on service, professional development and citizenship while strengthening leadership, career, and life skills.

For more information on participating in NMSU Collegiate 4-H, please contact the State 4-H Department, [4-H Home \(nmsu.edu\)](https://nmsu.edu)



Regents Arsenio Romero, Dina Chacón-Reitzel and Neal Bitsie join former State 4-H Leadership team members, now NMSU students, Cassidy Jimenez, Christopher Turner, and Alex Singer during the NMSU Collegiate 4-H welcome back barbecue.



NMSU Collegiate 4-H members preparing for the back to school barbecue.

ACADEMICS

Welcome Home, Aggies! Street Festival

Join us for our Welcome Home, Aggies! Street Festival that will take place on August 31st from 5:00pm–8:00pm on College Drive between Gerald Thomas and Skeen Hall.

This ACES street festival with live music and student clubs/organizations will welcome all students to home to Aggieland! All students are invited to attend; come join us for good food, good music, and a good time!

For more information contact Sr. Program Coordinator Shelby Herrera at dancin4h@nmsu.edu

WELCOME HOME AGGIES!

AUGUST 31ST
5-8PM



Admission: \$1 per person
Proceeds will be donated to the ACES
Freshman Scholarship

GAMES, LIVE MUSIC, FREEBIES & LOTS OF FUN!

NM STATE BE BOLD. Shape the Future.
College of Agricultural, Consumer
and Environmental Sciences

Introducing Our New ACES Ambassadors

We are excited to announce our new cohort of ACES Ambassadors that will serve our College during this academic year! These students are selected through a nomination, application, and interview process. The goal for the students that are selected into this program is to provide them with the opportunities to grow as leaders, make connections with students from other departments, and develop teamwork skills that they can carry with them long into the future.

To develop these skills and assist NMSU in accomplishing our goals, these students are tasked with visiting high schools across the state, attending conferences and career fairs to visit with high schoolers, and assisting with events on campus.



Our 2022-2023 ACES Ambassadors

From left to right (top row) Associate Dean/Director Dr. Donald Conner, Tori Diaz, Mckaela Hamrick, Khale Lucero, Brandon Larranaga, Kolby Taylor, Madeleine Gardner, Mackenzie Lightfoot, Emily Johnson

From left to right (bottom row) Alexis Munoz, Rebekah Roybal, Anahi Almanza, Emily Gossett, Sofia Uvina, Sydney Turner, Shaylee Owen, Eva Cortes-Monroy

AGRICULTURAL EXPERIMENT STATION

Sweet Corn Stover Study

Small landholders growing sweet corn often also have cattle with little access to winter forage. Corn stover is often grazed in winter by livestock, but the forage quality is low. Grazing cover crops planted into sweet corn might increase the available forage quality.



New Mexico State University researchers compared sweet corn stover relay intercropped with oat or turnip for autumn grazing and cereal rye or hairy vetch relay intercropped into sweet corn stover for spring grazing in a 3-year study at NMSU's Alcalde Sustainable Agriculture Science Center. Results showed that, while intercropping with turnip improved sweet corn stover digestibility, both cover crops intercropped with sweet corn increased animal gains compared to sweet corn alone. Additionally, no difference existed in animal gains between rye and vetch intercropped with sweet corn for spring grazing. Consequently, intercropping sweet corn with any of these cover crops can result in greater animal performance.

For more information contact Claire Montoya, AES program manager at ccortner@nmsu.edu

FISH, WILDLIFE & CONSERVATION ECOLOGY

US Senator Heinrich Visits Fish Wildlife & Conservation Ecology

Providing students with the opportunity to hear directly from prominent politicians can be a formative experience. In mid-August, Fish Wildlife & Conservation Ecology hosted US Senator Martin Heinrich for a meeting with faculty, a tour of FWCE facilities in Knox Hall, and an intimate meeting with FWCE students. Senator Heinrich viewed the Department's Wildlife Museum to get a better sense of the collection and its value for teaching and research, toured the fisheries lab to see the Rio Grande cutthroat trout that were rescued by New Mexico Department of Game and Fish from at-risk (due to post-fire siltation and ash flow) waterways in northern New Mexico, and then met with approximately 40 graduate and undergraduate students who returned to campus early for the opportunity. The senator discussed his background and interests in wildlife management and conservation, and then had a lengthy Q&A session with students regarding the bipartisan Recovering America's Wildlife Act for which Senator Heinrich is a co-sponsor.

Senator Heinrich's meeting is the first of several that FWCE students will have with prominent politicians from both parties over the coming semester. Such meetings let students learn more about the process of legislative and policy formation while simultaneously informing political leaders of the quality of FWCE and its influence across the state and the nation.

For more information, contact FWCE's Dr. Matthew Gompper (gompper@nmsu.edu).



INNOVATIVE MEDIA RESEARCH & EXTENSION



MyPlateMyDay.org

USDA's MyPlate is used to help learners think about their own diet and eat well. A new interactive tool has been published to help learners in New Mexico and Puerto Rico plan their days with MyPlate using foods from their own cultures.

The NMSU ICAN (Ideas for Cooking and Nutrition) program and the Department of Innovative Media, Research & Extension collaborated with other educators in New Mexico and Puerto Rico to identify foods and make the tool usable for kids and adults. Users learn how their favorite foods fit into a MyPlate guide, learn how to split combination foods into the MyPlate categories (including culturally relevant foods such as enchiladas, mutton stew or Indian tacos), and find easy ways to eat more of what they need. Users can use foods that are specific to New Mexico and our region, histories, and communities.

Currently available in English and Spanish, the team is seeking funding to add a Navajo version, as well as other foods and languages for different regions or cultures.

If you would like to develop a [MyPlateMyDay](http://MyPlateMyDay.org) version to include foods and languages for your region or community, please contact Barbara Chamberlin, PhD at bchamber@nmsu.edu 575.646.2840

INDIAN RESOURCES DEVELOPMENT (IRD)

Agricultural Day for Jicarilla Apache Nation Youth

On August 1st, a group of Jicarilla Apache high school summer interns attended half a day of presentations at the Jicarilla Department of Agriculture to learn about food selection and cattle management. Jicarilla tribal extension agent Jesse Lefevre spoke with the youth about USDA meat grades and how to go about selecting quality beef. Lefevre also went over selecting and handling pork, chicken, eggs as well as fruits and vegetables.

Lena Sanchez with Indian Resources Development (IRD) spoke with youth about opportunities and resources available to them for discovering their path to higher education in New Mexico. Sanchez shared financial aid and internship opportunities from IRD with the youth. Ms. Sanchez took youth to cattle pens for a crash course in cattle management relating to health, handling and nutrition before youth enjoyed lunch made by staff at the Jicarilla Department of Agriculture.

For more information contact Director Claudia Trueblood at cmt@nmsu.edu



Picture of sky and forest landscape on the Jicarilla Apache Nation

SCHOOL OF HOTEL, RESTAURANT & TOURISM MANAGEMENT (HRTM)

American Culinary Federation Convention



Dr. Keith Mandabach attended the American Culinary Federation's (ACF) Convention in Las Vegas, Nevada at the Caesar's Forum Conference Center in July with support from the New Mexico Beef Council.

Dr. Mandabach is a Certified Executive Chef as well as a member of the prestigious American Academy of Chefs (AAC). He attended presentations focused on a wide variety of approaches to revitalizing the culinary profession and moving forward from the pandemic. Sessions discussed improving the sustainability, culture and reputation of the industry, mental health for chefs and ways to support diversity and inclusion in the industry.

Dr. Mandabach shared information about the New Mexico Beef Industry including the Criollo Beef Project at NMSU, and utilizing pecans and green chiles, in new recipes discussed including chocolate chip green chile cookies, and brownies. Highlights of the trade show included "Beef Is What's for Dinner" and the Beef Loving Chefs demonstrations sponsored by the Beef Council.

For more information click on the following link:

<https://www.acfchefs.org/ACF/Events/Convention/ACF/Events/Convention/> or visit the HRTM homepage : <https://hrtm.nmsu.edu/>



"THESE HOLIDAYS CAN BRING A GIFT TO YOUR PROGRAM"

Funds were used as an opportunity to purchase a "Bovine Skills Bundle" from Realityworks. NMSU CES purchased and currently utilizes a bovine dystocia model which has been very successful in youth and adult education the past 5 years. The Bovine Skills Bundle builds on that success to offer new training opportunities for animal husbandry practices like proper injection sites and methods, proper implant skills, caring for neonatal calves, understanding anatomy of cows, and artificial insemination of cattle. Many of these skills are technically challenging and building foundational knowledge of these practices is important to current and future livestock producers.

The models allow for a humane method to demonstrate and teach these skills to youth, university students, and livestock producers without the need for live animals. They will be used in several Animal and Range Sciences classes as well as Cooperative Extension programs throughout the State.

For more information contact Dr. Craig Gifford at cgifford@nmsu.edu



**LET'S MEET THE AGRICULTURAL EXPERIMENT
STATION MANAGEMENT TEAM**



2022 AES Team: (From left to right) Brooke, Santana, Katie, Rebecca, Leslie, Claire, Lara.

Dr. Leslie Edgar
Associate Dean/Director

Leslie D. Edgar is the Director of the Agricultural Experiment Station (AES) and Associate Dean of Research for the College of ACES. Before beginning her position at NMSU in May 2020, she gained a lot of experience from her previous positions at the University of Georgia and University of Arkansas. Dr. Edgar provides leadership and administrative oversight for New Mexico’s AES (including 12 Agricultural Science Centers/research stations and 8 academic/research departments). She develops collaborative interdisciplinary research teams, provides support of faculty development and pursuit of extramural funding, research program planning and direction, strategic planning, fiscal and personnel management, allocation of resources, regulatory compliance, accountability to stakeholders, and advocacy for New Mexico agriculture, food and natural resources.

Rebecca Martinez
Administrative Assistant – Sr,

Rebecca (Becca) Martinez currently serves as the Operations Manager for AES. She oversees the administrative operations for the 12 agriculture/research science centers across the state and serves as the primary contact for the AES Director’s Office. She began working with the NMSU College of ACES as a student employee and was provided the opportunity to continue as a full-time employee. Rebecca stated, “Over the past 10 years, I have had the opportunity to work with many ACES individuals across the state of NM and within my new role, I have been given the opportunity to build connections outside of NMSU. I am excited for what the future holds and I am blessed to be a part of the College of ACES and AES. GO AGGIES!!”

Brooke Boren
AES Program Operations Director

Brooke Boren has worked with the College of ACES for 24 years. In 1998 she started with the Office of Business and Resource Planning and has held different positions during her time with the ACES. In 2021, she joined the Agricultural Experiment Station (AES).

Claire Montoya
Program Manager

Claire Montoya has worked for New Mexico State University for 8 years, starting with a career in Student Services and transitioning to ACES with the Agricultural Experiment Station (AES) in 2019. Claire is a loyal Aggie and committed to the land-grant system. As a two-time NMSU Aggie graduate with a Bachelor’s in Communication Studies and a Master’s in AXED, she enjoys continuing to serve ACES and the community of New Mexico through her role as the Director of Communications and Reporting for AES.

Dr. Lara Prihodko
Interim Associate Director

Lara has worked at NMSU since 2017 in the Animal and Range Sciences Department where her research focuses on the geospatial measurement and modeling of vegetation, disturbance, and the carbon cycle in arid and semi-arid systems. More recently she joined the Agricultural Experiment Station (AES) as Interim Associate Director. What she enjoys most about working at NMSU are the great people she gets to work and collaborate with every day.

COLLEGE OF ACES FALL CONVOCATION 2022

To view the ACES 2022 FALL Convocation presentation you can click on the link below:
[PowerPoint Presentation \(nmsu.edu\)](#)



OBITUARY



Dr. John Morton Fowler, "Doc," passed away Friday, July 15, 2022, at the age of 71, in the comfort of his own home. Doc worked at NMSU for 39 years and was a strong advocate for natural resources and agriculture. John loved God, land, agriculture, his profession and his family!

Doc was born November 16, 1950 in Kewaunee, Wisconsin, the 3rd of 4 children, to Edith Alexander and Charles Robert Fowler. His father was a Chief Warrant Officer in the US Coast Guard, thus they moved frequently and always lived near the coast in Michigan, Wisconsin, Minnesota, Alaska, et. Because of frequent moves John always reminded his children that family is often all you have, who you can count on most, that you should stick together and always take care of each other.

As a child, John enjoyed the outdoors and loved hunting for lizards and snakes, which once he brought home to his mother inside his pocket! He liked to visit his grandparents on their family farm in Illinois. Doc's first job was mowing lawns in 6th grade, followed by work at a pizza place, Dunkin' Donuts and Keeler's Horseradish Farm. Upon High School graduation John began secondary studies at Iowa State University in chemistry but soon changed his major to forestry. He worked summers fighting fires for the US Forest Service and was a smokejumper! He continued his education, obtaining a MS in agriculture economics at NMSU then returned to Iowa State where he obtained his PhD. He began working as a full-time professor for NMSU in Fall 1979.

COLLEGE OF ACES 2021 ANNUAL REPORT

This report showcases the many achievements and the impacts accomplished throughout the College of ACES and its main areas and programs during 2021.

To view the full annual report click on the link below:
[2021-aces-annual-report_r.pdf \(nmsu.edu\)](https://aces.nmsu.edu/2021-aces-annual-report_r.pdf)



COLLEGE OF ACES MAGAZINE – SPRING 2022 ISSUE



OPEN POSITIONS

For available vacant positions in the College of ACES, please visit,
[New Mexico State University Applicant Portal | Home \(nmsu.edu\)](#)

The College of Agriculture, Consumer and Environmental Sciences is an engine for economic and community development in New Mexico, improving the lives of New Mexicans through academic, research, and Extension programs.



**College of Agricultural, Consumer
and Environmental Sciences**
New Mexico State University

