

New Mexico State University Agricultural Experiment Station

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Interim Associate Dean and Director

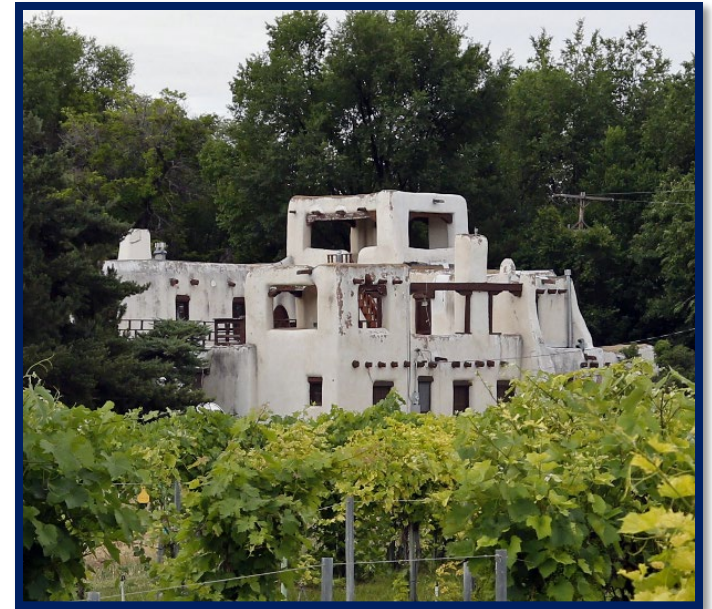
Current Base \$13,865,900
FY 20 Expansion Request \$449,000
Total Request \$14,314,862

Legislative Finance Committee
October 25, 2018



Agricultural Experiment Station FY20 Expansion Request \$449,000

- NMSU's Agricultural Research Facilities are in need of critical repairs
- **\$449,000 increase** for maintenance and repairs at off-campus centers
- A 2012 study by NMSU's Facilities and Services estimated repair needs of over \$12 million at six of the off-campus facilities (estimated needs of the remaining facilities is similar)



Office Building at the Sustainable
Agricultural Science Center at Alcalde

Agricultural Experiment Station FY20 Expansion Request \$449,000



Office and shop at the
Agricultural Science Center at
Tucumcari

Agricultural Experiment Station FY20 Expansion Request \$449,000



Office and shop ceilings at the John T. Harrington Forestry Research Center at Mora

Priority List of Repair Needs

Est. Cost > \$4 million



Feedmill at the Clayton Livestock Research Center

NMSU Off-Campus Agricultural Science Center Priority List of Repair Needs

Center	Repair Needed	Est. Cost
Alcalde	<ul style="list-style-type: none"> exterior stucco work on main office building, including vigia and window repairs 	\$750,000.00
Artesia	<ul style="list-style-type: none"> roof replacement for office building 	\$18,000.00
Clayton	<ul style="list-style-type: none"> processing barn plumbing and insulation repairs paint feedmill to protect elevators and sheeting asbestos abatement in office building and residence bathroom, plus new flooring commodity barn new equipment storage shed renovate processing barn for neonatal calf research 	\$20,000.00 \$20,000.00 \$75,000.00 \$25,000.00 \$25,000.00 \$35,000.00
Clavis	<ul style="list-style-type: none"> Need one large capacity Forage Dryer - replacement Need two incubators for research 3 Bedroom Mobile Home to accommodate Graduate Students 	\$15,000.00 \$14,000.00 unknown
Corona	<ul style="list-style-type: none"> North Camp residence - kitchen remodel (cabinets, floor, counters) North Camp residence - roof replacement North Camp residence - stucco exterior HQ residence - kitchen remodel HQ residence - roof replacement HQ residence - stucco exterior HQ Scale House replacement and scale repair HQ South Barn replacement 	\$33,000.00 \$17,000.00 \$5,700.00 \$26,000.00 \$19,000.00 \$6,000.00 \$50,000.00 \$75,000.00
Farmington	<ul style="list-style-type: none"> greenhouse - complete replacement greenhouse - partial replace (option B) caretaker's house maintenance shop office/bathroom and insulation 	\$250,000.00 \$60,000.00 \$3,000.00 \$10,000.00
Los Lunas	<ul style="list-style-type: none"> Renovate greenhouse-headhouse - Lab to be able to provide office/desk and lab space for Research Faculty renovate/repair teaching lab building for wet lab usage new A/C-heating units for main office building 	\$253,600.00 \$15,000.00 \$10,000.00
Mora	<ul style="list-style-type: none"> Main Building (MB) - re-roofing Greenhouse - Update electrical service to greenhouse Greenhouse - re-roof headhouse Greenhouse - New Wadsworth climate control system Greenhouse - Generator for GH - power outages (common in rural area) Upgrade Chemical storage area 	\$49,000.00 \$12,000.00 \$9,750.00 \$21,000.00 \$25,000.00 \$6,000.00
Tucumcari	<ul style="list-style-type: none"> stabilization of foundation; including chimney removal (a contributing factor) and interior wall repair renovate residence roof renovation of kitchen and addition of second restroom at residence conference building bathroom renovation connect to city water system; replace deteriorating or non-functional domestic water and lawn irrigation systems new greenhouse facility replace shop facilities to also accommodate large functions, such as field days replace office and laboratory facilities repair and paint exteriors of office and conference buildings and residence 	\$15,000.00 \$61,000.00 \$28,000.00 \$10,000.00 \$40,000.00 \$250,000.00 \$1,000,000.00 \$1,000,000.00 \$45,000.00
	Total	\$4,402,965.00

New Mexico State University

New Mexico's Land-Grant University

- **Teaching** agricultural sciences (*Morrill Act*, 1862)
- Conducting applied **research** through the formation of the Agricultural Experiment Station (*Hatch Act*, 1887)
- Disseminating research-based knowledge to end users (stakeholders) through the Cooperative **Extension** Service (*Smith-Lever Act*, 1914)



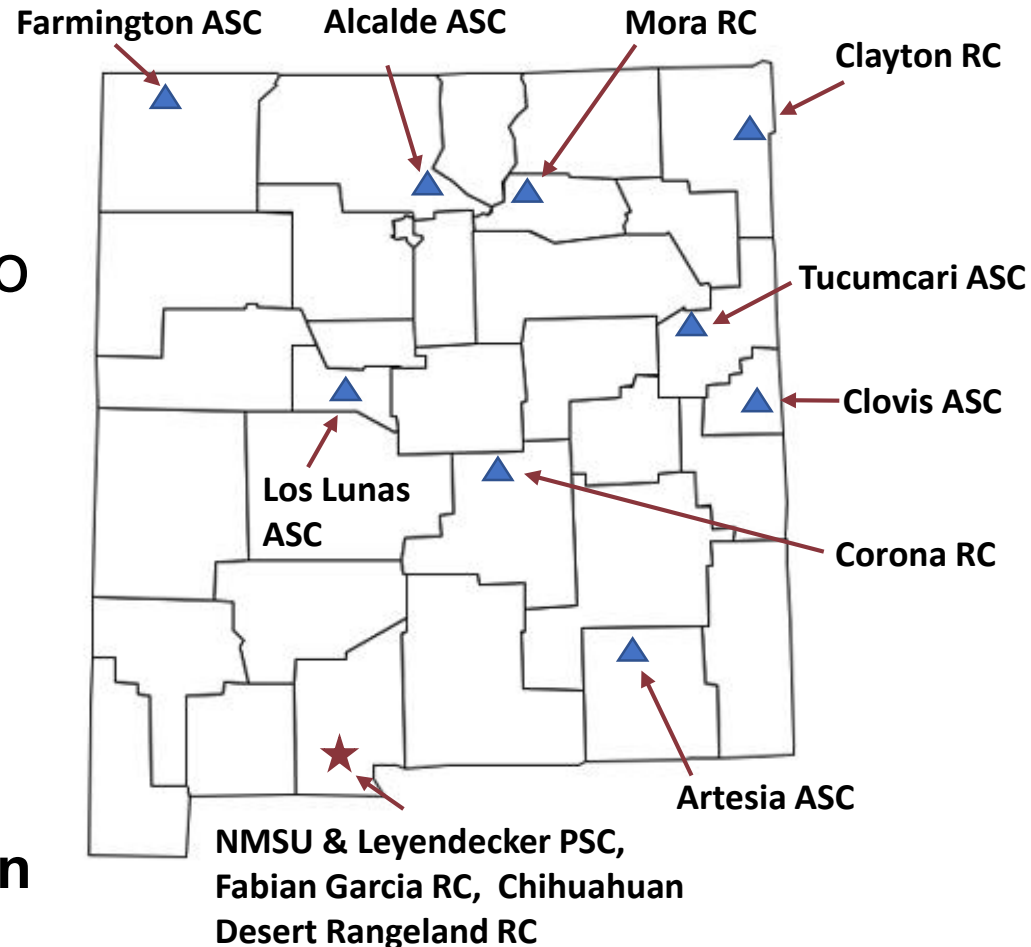
Agricultural Experiment Station Mission

- The Agricultural Experiment Station (AES) is the principal **research** unit of the College of Agricultural, Consumer and Environmental Sciences (ACES)
- The AES System supports fundamental and applied science and technology research to benefit New Mexico's citizens in economic, social, and cultural aspects of agriculture, natural resource management, and family issues
- AES was created by the federal Hatch Act of 1887 and was constitutionally mandated in New Mexico in 1915



Agricultural Experiment Station System Overview

- Agricultural Science Centers (ASCs) strategically located throughout New Mexico and the Las Cruces campus research facilities conduct research based on the needs of local stakeholders
- **Statewide impact:**
 - Research outcomes impact stakeholders in all counties



ASCs Address Diverse Agricultural Needs Statewide

- New Mexico is the 5th largest state in the country by area
- Land varies greatly in geography, climate, water resources, vegetation, soils, pests, land ownership, and land use
 - NM has 11 of the USDA's plant hardiness zones
 - NM has 3 crop production regions (only CA has as many)
 - NM has 5 USGS-defined watersheds (no other state has as many)
 - NM has 126 distinct soil types
- The challenges presented by this diversity are met through NMSU's research facilities that are strategically located throughout the state

Agricultural Experiment Station “Training Tomorrow’s Scientists”

AES faculty train the next generation of agricultural professionals, providing hands-on learning and research opportunities for both undergraduates and graduate students



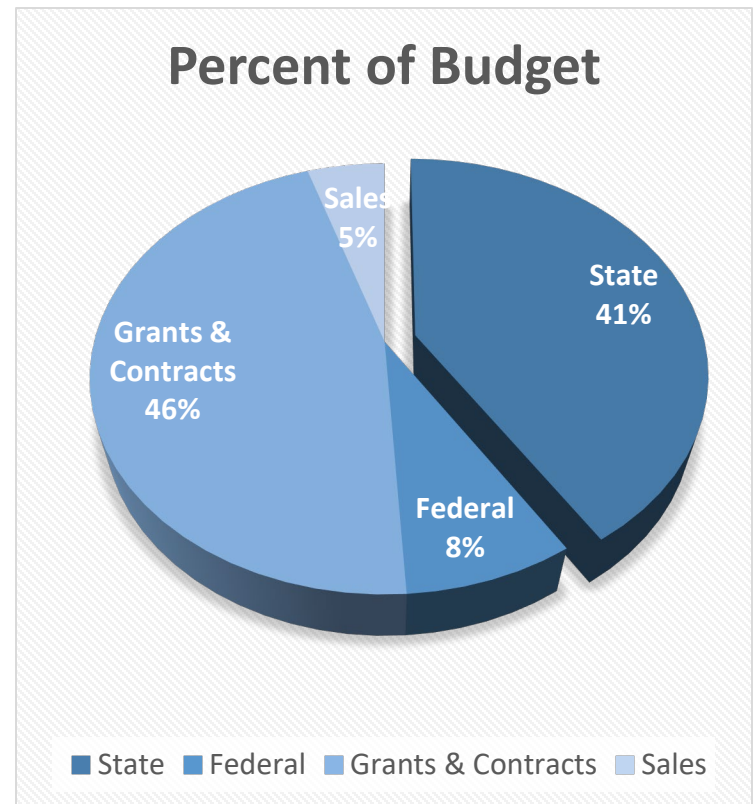
AES Research Efforts

- Approx. 9,500 acres of research sites; 1,300 irrigated acres
- Allows diverse research efforts:
 - Water conservation
 - Cropping systems
 - Dryland farming
 - Forestry
 - Feedlot studies
 - Rangeland management
 - Conservation ecology
 - Pest management
 - Food Science, safety and value-added products
- Conducts, short-, medium- and long-range research projects addressing immediate needs and providing solutions for agriculture's greatest challenges



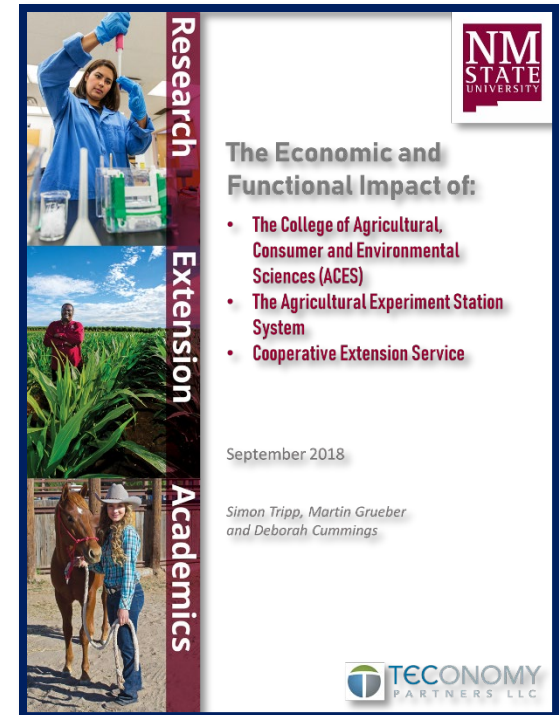
Agricultural Experiment Station Budget

- Total FY19 AES budget = \$33.7 million
- State appropriations constitute approximately 41% of the overall budget
- State's investment in AES is matched more than 1:1 through Federal appropriations, grants and contracts, and sales



Economic Impact of the Agricultural Experiment Station*

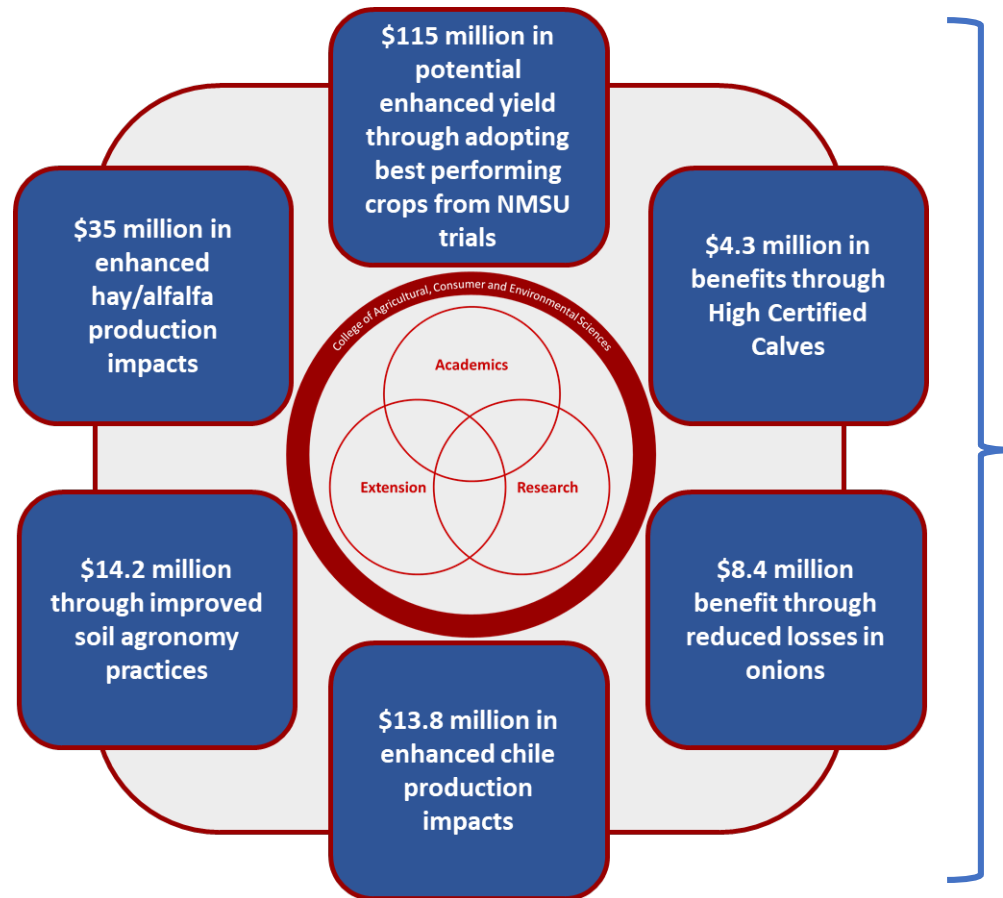
- Together, ACES Academic Programs, the Experiment Station, and Extension had FY2016/17 expenditures totaling \$70.6 million and employed 741.6 full-time equivalent (FTE) personnel.
- This generated a total expenditure impact (output) in New Mexico of \$132.3 million, and supported 1,204 jobs with a labor income of \$65.36 million
- **AES expenditures are responsible for:**
 - ✓ \$62.7 million in combined expenditure-based economic impact
 - ✓ 551 jobs
 - ✓ Labor income totaling \$29.1 million



*Based on a 2018 study by TEconomy Partners, LLC, Columbus, Ohio

Annual Impact from 6 selected Agricultural Programs*

Case Studies in ACES Impacts – Examples of Agricultural Program Impacts in New Mexico



Just six programs result in annual impact benefits estimated at over \$190 million

*Based on a 2018 study by TEconomy Partners, LLC, Columbus, Ohio

Research Impacts Webpages

- Faculty Impact Stories for efforts in the ACES 4 Pillars:
<https://aces.nmsu.edu/impacts/>
- Expanded impacts from long-term projects are being posted in the National Land-Grant University Database:
<https://landgrantimpacts.org/>
- TEconomy Report:
<https://aces.nmsu.edu/economicimpact/documents/teconomy-impact-report-for-nmsu-aces---final-reportr2.pdf>



Selected Agricultural Science Center (ASC) Impacts

Find more ACES Impact stories at aces.nmsu.edu/impacts.

- **Researchers from the Farmington ASC** were part of an NMSU team of first responders evaluating and monitoring the impact of the 2015 Gold King Mine spill in the Animas River. Data from soil and water quality testing are helping local farmers and the Navajo Nation make informed decisions and have confidence in resuming their farming activities.
- **Cropping systems research at the Clovis ASC** has identified alternative crops and management strategies that use 25% less water, increase profitability, and improve environmental quality in dryland and limited irrigation cropping systems.
- **Forage research conducted at the Los Lunas ASC** shows potential savings of \$100/acre by using improved crop management strategies, such as better species and variety selection, proper fertilizer and seed inputs, and improved water use efficiency. Based on annual forage production in New Mexico, the potential impact exceeds \$35 million.
- **Research conducted at the Chihuahuan Desert Rangeland Research Center** is helping to improve cattle genetics with an emphasis on traits that enable cattle to range farther and broaden their food sources. These animals, which are more resilient during periods of drought and forage scarcity, lower the impact of beef production on Southwestern ranches.
- **Research at the John T. Harrington Forestry Research Center at Mora** is investigating planting strategies using drought-tolerant species to aid in post-fire restoration for forests in the arid Southwest. Reforestation success has improved from 20% to over 80% using these strategies.
- **Organic research at the Sustainable Agriculture Science Center at Alcalde** is helping Northern New Mexico's small farms expand their markets and meet demands of the local consumers. Based on work conducted at the center, local producers are growing and selling organic strawberries, grossing the equivalent of \$40,000 per acre.
- **Feed efficiency testing conducted at the Tuomasari ASC** has led to beef herd efficiencies, increasing the value of New Mexico's beef cattle industry by over \$800,000 annually.
- **Manure management strategies and soil test software developed at the Artesia ASC** optimize nutrient rates from various sources to reduce potential nitrogen contamination and avoid extreme remediation expenses for New Mexico's dairy industry.
- **Research conducted at the Clayton Livestock Research Center** is focusing on health and performance of highly stressed calves. This research is identifying ways to reduce bovine respiratory disease, which costs the beef industry \$2-3 billion annually.
- **Collaborative crop variety trials conducted at Leyendecker, Fabian Garcia, and several other ASCs** provide performance results over a wide range of soil types and environmental conditions. Results from these trials allow producers to select the best varieties for their specific farming operations.
- **Research conducted at the Corona Range and Livestock Research Center** identified a seasonal diabetic disorder in cattle grazing on dormant forages and developed a solution to this worldwide problem.

Agricultural Experiment Station • aces.nmsu.edu/aes

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