# AGRICULTURAL MODERNIZATION & EDUCATIONAL FACILITIES

Core Priority for **2018 GO Bond D** — **$25 million**


NM STATE UNIVERSITY

**College of Agricultural, Consumer and Environmental Sciences**

# DRIVING NEW MEXICO'S FUTURE

If approved by voters in November, GO Bond D provides $25 million for improvements at NMSU that will add important dimensions to ongoing research, including food safety and security. Renovation and modernization are planned for the Food Science, Security, and Safety Facility; the Biomedical Research Center; and the Animal Nutrition and Feed Manufacturing Facility.


Rendering courtesy of Parkhill, Smith & Cooper

1. **Food Science, Security, and Safety Facility**
2. **Biomedical Research Center**
3. **Animal Nutrition and Feed Manufacturing Facility**

# GO Bond D 2018

## AGRICULTURAL MODERNIZATION & EDUCATIONAL FACILITIES

By supporting GO Bond D in November's election, voters will be increasing educational opportunities and contributing to economic growth, thus improving the lives of New Mexicans. These modern facilities will lift NMSU and New Mexico's agricultural and related industries to higher levels by providing students and faculty with better tools and technology.



# College of **Agricultural**, **Consumer** and **Environmental Sciences**

## Food Science, Security, and Safety Facility

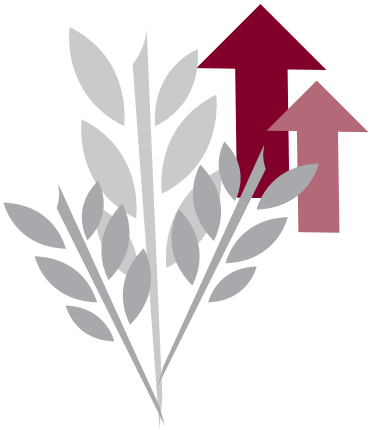
The new Food Science, Security, and Safety Facility will allow the College of ACES to serve the needs of the state and region in areas such as food processing, dairy science, and beer- and wine-making. The design features the following state-of-the-art laboratories:

- Food Safety Laboratory
- Food Chemistry/Quality Assurance/Quality Control Laboratory
- Value-Added Foods Laboratory
- Fermentation Technology Laboratory
- Meat and Food Science Laboratory
- Dairy Laboratory

It will also allow:

- Increased capability to work in the area of value-added foods.
- Enhanced partnerships with industry, including those through Arrowhead Center.
- Creation of an additional revenue stream through services provided.
- Greater capacity to provide training in federal, state, and other food regulations.


Rendering courtesy of Parkhill, Smith & Cooper

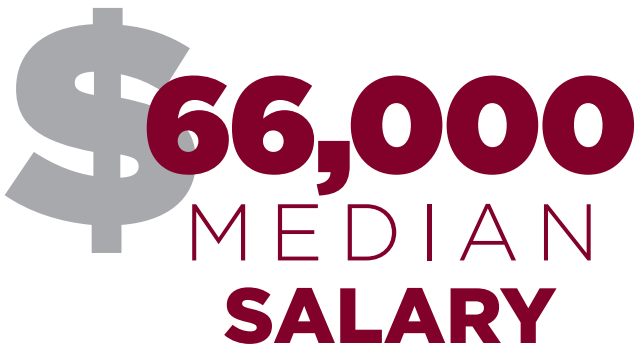


By providing an in-state option to process **New Mexico** agricultural products, this facility can help **grow our economy**.

---


An estimated **600 students** every year would use the facility, along with **hundreds of people** who will be there participating in outreach — such as 4-H, FFA, and industry workshops.

---




Median salary, according to the Bureau of Labor Statistics, in the food science and technology field. **The new facility allows NMSU to better prepare students for this path.**

---

The new Food Science, Security, and Safety Facility will **foster international collaboration** with Mexico in the biosafety and food contaminant fields.

# FOOD SCIENCE, SECURITY, AND SAFETY FACILITY

This facility will become an international food safety and security hub in the border region. Laboratories will support emerging research areas key to New Mexico's future, including functional foods, nutraceuticals, and minimizing water usage in food production, among others. The facility will also provide food testing as well as other services needed by the food industry via a pilot plant for scale-up of technological developments, such as extraction, extrusion, microencapsulation technology for active food ingredients, spray-drying, milling technology, pasteurization, and high-pressure technology. The combined food science laboratories could represent a significant new revenue stream for the university while also fueling economic development in the state.

## USES:

- The facility will support the teaching, research, and Extension mission of NMSU across multiple departments and colleges.
- The food industry at the regional, national, and international levels will use the services provided through the center.

## IMPACTS:

- Increase capability to work in the areas of value-added foods, ingredients, and by-products.
- Strengthen partnerships with industry, including those through the Arrowhead Center.
- Fuel economic development in the state by generating more applied research.
- Expand capacity to provide training in federal, state, and other regulations related to the Food Safety Modernization Act, positioning NMSU as a leader in the training of food producers in the border region.
- Create an additional revenue stream through services provided.
- Enhance opportunities for interdisciplinary and innovative research, teaching, and outreach activities.
- Increase competitiveness of graduates through hands-on experiences.
- Boost student enrollment and graduation rates at the graduate and undergraduate levels.
- Encourage research collaboration and student mobility with other domestic and international institutions.


NM STATE
Extension Plant Sciences

# College of **Agricultural**, **Consumer** and **Environmental Sciences**

## Biomedical Research Center

A new Biomedical Research Center will strengthen the ability of NMSU to be a leader in biomedical research areas such as cancer treatment, epidemiology, and border health. The design features:

- Accommodations for students and researchers in diverse fields across campus — the facility will support programs in half of NMSU's colleges, and allow students more active involvement with research and teaching.
- The ability to test cancer-fighting molecules by improving research productivity.
- Facilities that support research of West Nile virus, dengue fever, and Zika virus, which are public health concerns in New Mexico and beyond.


Rendering courtesy of Parkhill, Smith & Cooper

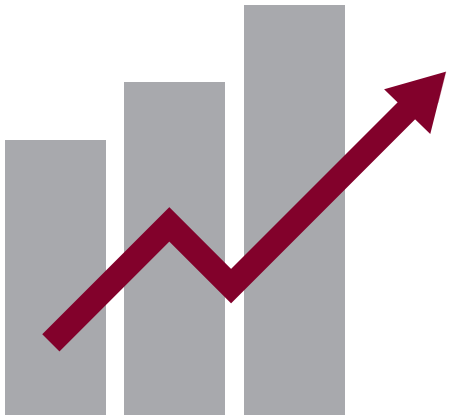
## 3 COLLEGES & 7 DEPARTMENTS

NMSU researchers in **three colleges** and **seven departments** will be served by the new Biomedical Research Center.

---

NMSU is ideally situated to address key border population health problems, such as **mosquito-borne viruses**, **cancer**, and **obesity**.

---



Increased capacity to conduct biomedical research will lead to a **greater number of grants** from the National Institutes of Health (NIH), U.S. Department of Agriculture (USDA), and National Science Foundation (NSF).

# BIOMEDICAL RESEARCH CENTER

State-of-the-art research facilities are essential to develop the biomedical research enterprise at NMSU. Biomedical research at NMSU is currently valued at $2.9 million in grants and contracts and is well-known nationally and internationally. This facility is critical for NMSU's ability to enhance its biomedical research programs.

The research center is envisioned to be a multi-user facility that will also benefit many of the research activities that occur across several departments and colleges at NMSU. The research conducted here will work to offer solutions to epidemiological issues such as West Nile virus, dengue fever, and Zika virus. Additionally, cancer-fighting molecules could be tested in animal models; currently, such compounds can only be tested in invertebrate models, and partnering institutions are needed to thoroughly evaluate these compounds, which slows research productivity. This center will also be used for teaching and training undergraduate and graduate students in biomedical research.

## USES:

The facility is interdisciplinary in nature and would serve researchers in three colleges — ACES, Arts and Sciences (A&S), and Health and Social Services (HSS) — and seven different departments. In addition to grant principal investigators (PIs) using the facility, graduate and undergraduate students will be an integral component, thus increasing their active involvement in research and teaching.

## IMPACTS:

According to a recent report, America is on track to produce about 1 million fewer STEM graduates than the economy will demand by 2022. Further, minorities remain underrepresented in STEM fields. As a leading Hispanic-serving institution, NMSU works to bridge that gap. A Biomedical Research Center will create more opportunities for student research and help develop more of the qualified STEM professionals that will power our economy.

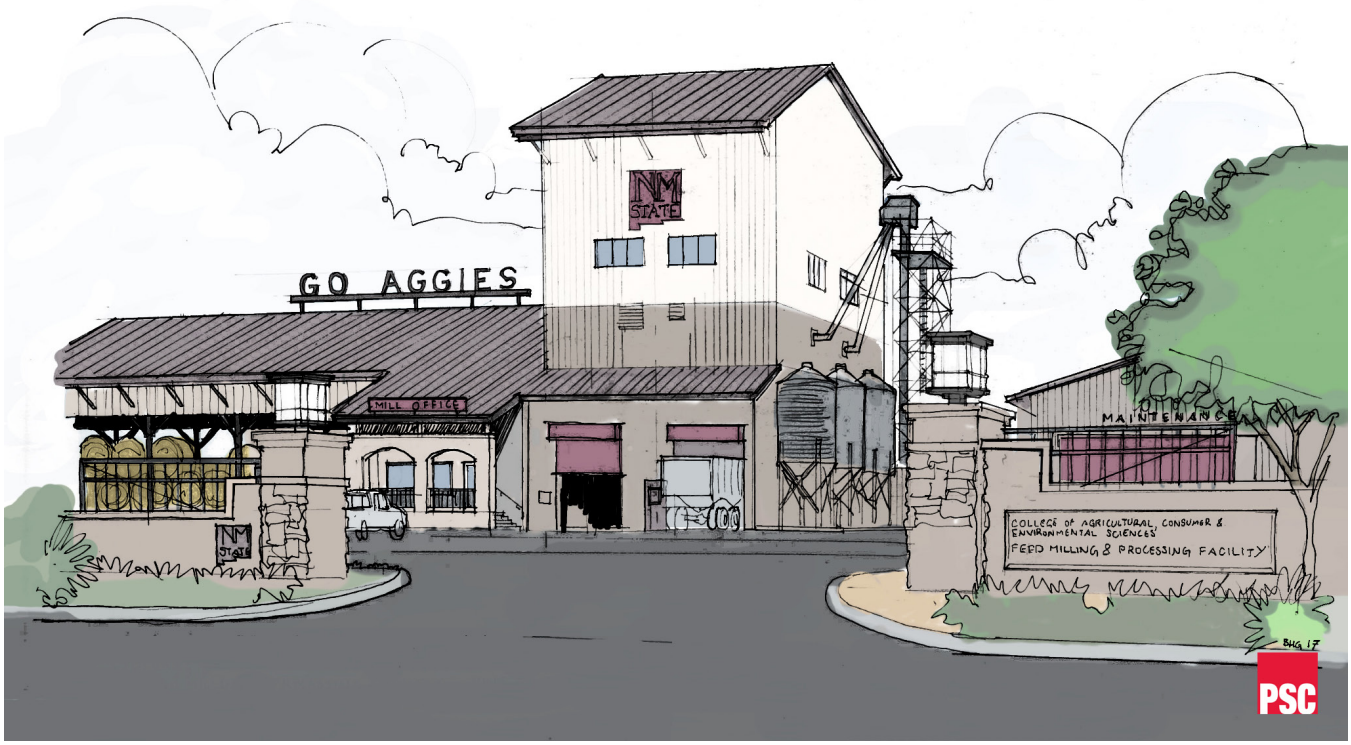
This facility will strengthen and complement the extramural grants submitted by NMSU PIs as well as increase the number of proposals submitted. The increased capacity to conduct biomedical research will lead to a greater number of NIH, USDA, and NSF grants awarded.

NMSU is ideally situated to address health problems that affect border populations, such as mosquito-borne viruses, cancer, and obesity. The increased collaborations will aid our college and university in conducting research that addresses health disparities affecting New Mexico's population. In addition, the number of graduate students trained in NMSU's Colleges of ACES, A&S, and HSS will increase.

## Animal Nutrition and Feed Manufacturing Facility

A new Animal Nutrition and Feed Manufacturing Facility will enhance the ability of the College of Agricultural, Consumer and Environmental Sciences (ACES) to strengthen New Mexico's agricultural and livestock industries. The design features:

- Space to investigate new feed processes and blends.
- Safety and efficiency improvements for all users through consolidation and technology upgrades.
- Improved technology to reduce dust emission on campus to create a safer environment.




Rendering courtesy of Parkhill, Smith & Cooper

**$11 billion**

**&**

**51,000 jobs**

Agricultural and food processing industries generated nearly **$11 billion** and **51,000 jobs** for the New Mexico economy, according to a recent study.

---

**6,000**

**4-H and FFA**

STUDENTS

**6,000** 4-H and FFA students and families visit the **Animal and Range Sciences Campus Livestock Center** each year.

---

MORE THAN

**80%**

OF COURSES

**BENEFIT**

More than **80 percent** of courses in Animal and Range Sciences will benefit from a new facility.

---


Every week, the current facility mixes **25 tons** of feed to support the research and teaching mission as well as 4-H and FFA programs. With upgraded capacity and safety, the facility's stakeholders will be better served.

# ANIMAL NUTRITION AND FEED MANUFACTURING FACILITY

Feed processing and storage at NMSU's Campus Livestock Education and Research Center is currently spread across multiple locations on campus, making feed manufacturing inefficient, time-consuming, and expensive. A modern, well-thought-out feed mill will provide students, researchers, and stakeholders with a facility to investigate the use of novel feedstuffs and processing methods to improve livestock health and productivity.

## USES:

- This facility will benefit the mission of ACES by providing opportunities to increase education, research, and outreach programs.
- Students will be given the opportunity to work in the mill so they have a hands-on experience in feed milling, which will prepare them for jobs in the feedlot and feed manufacturing industries.
- Researchers will use this facility to formulate unique supplements and rations for livestock experiments to improve health, reproduction, and meat quality.
- Extension personnel will use this facility to increase producer understanding of feed manufacturing and assist entrepreneurs looking to develop unique products.

## IMPACTS:

- The Department of Animal and Range Sciences (ANRS) is home to 495 undergraduate students, 37 graduate students, and 27 faculty who will all be able to use this facility for teaching, research, and outreach.
- It is estimated that more than 80 percent of the courses offered in ANRS will benefit from access to this type of facility.
- Every week, the current facility mixes 25 tons of feed to support the research and teaching mission as well as 4-H and FFA programs. With upgraded capacity and safety, the facility's stakeholders will be better served.


NEW MEXICO STATE


14103
NEW MEXICO
5108

“The 2018 GO Bond D will support NMSU’s commitment to providing students with hands-on learning opportunities and better training facilities. The proposed buildings and spaces will increase student involvement in research and also enhance training in the day-to-day operation of livestock facilities. This will help student placement upon graduation.”

— Rolando A. Flores, Dean of the College of ACES

## ACES Pillars for Economic and Community Development


NM STATE UNIVERSITY

**College of Agricultural, Consumer and Environmental Sciences**
**aces.nmsu.edu**

08-01-18
DV/08-18/23070