

NEW MEXICO STATE UNIVERSITY COLLEGE OF ENGINEERING

# THOMAS & BROWN HALL:

## Rebuilding the Past to Create a Better Future



It is a time to welcome changes that will nurture cross-disciplinary, collaborative and distance learning to promote student success, not only to engineering students, but to all NMSU students.



FOUNDATION

**BE BOLD.** Shape the future.

Rebuilding the Past to Create a

# BETTER FUTURE



The opportunity for replacing the nearly 50-year-old Thomas and Brown Hall opens up possibilities to reconfigure the College of Engineering complex. The new building will continue to be home to the Department of Electrical and Computer Engineering. At the same time, it will provide welcomed changes to nurture cross-disciplinary, collaborative and distance learning that promote student success to engineering students and all NMSU students.

The guiding principles for the need and design of this facility is to support and expand the student-centric culture in the College of Engineering that is as old as the college itself. It all began in the early 20th century with Ralph Willis Goddard, pioneer of radio transmission.

The student-centric DNA of this college has persisted for over a century now, with the same underlying themes and challenges. This new facility has been planned to be a beacon for those values across the NMSU campus.

# LEARNING COMMUNITIES

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The path to becoming successful in the twenty-first century workforce involves more than solving calculus or chemistry problems. Students need to be creative, innovative, good communicators, and the Eloy Torrez Family Learning Communities in Engineering is providing assistance to students beyond the basics. The initiative offers tutoring and mentoring by junior- and senior-level peer learning facilitators.

“The learning communities will offer help to students outside classrooms through tutoring and mentoring. It will also offer avenues for students to develop interpersonal, entrepreneurial and other skills needed in their careers. This initiative greatly enhances our student retention, especially for women and first-generation students.”

- College of Engineering Dean Lakshmi N. Reddi





Keeping Pace with Industry through

# STATE-OF-THE ART INNOVATION SPACE

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Since its official opening in 2014, the Aggie Innovation Space has been an avenue for students to not only have access to state-of-the-art resources but also to cultivate innovation and entrepreneurship. Aggie Innovation Space, which is housed in the College of Engineering but open to all majors and the community, provides access to experienced mentors, new technologies, design software and tools. A gift of \$250,000 from NMSU Chancellor Dan Arvizu and his wife Sheryl and a grant of \$800,000 from the state of New Mexico have led to the addition of state-of-the art machinery to replace '60s-era machines.

“The Aggie Innovation Space is incredibly inspiring. It gives students from all of our colleges the chance to be entrepreneurs. Sheryl and I both have a heart for those students who are near the end of their education but run into financial challenges. Hopefully, this gift will perpetuate continued trajectory for this innovative space for the long-term.” - NMSU Chancellor Dan Arvizu



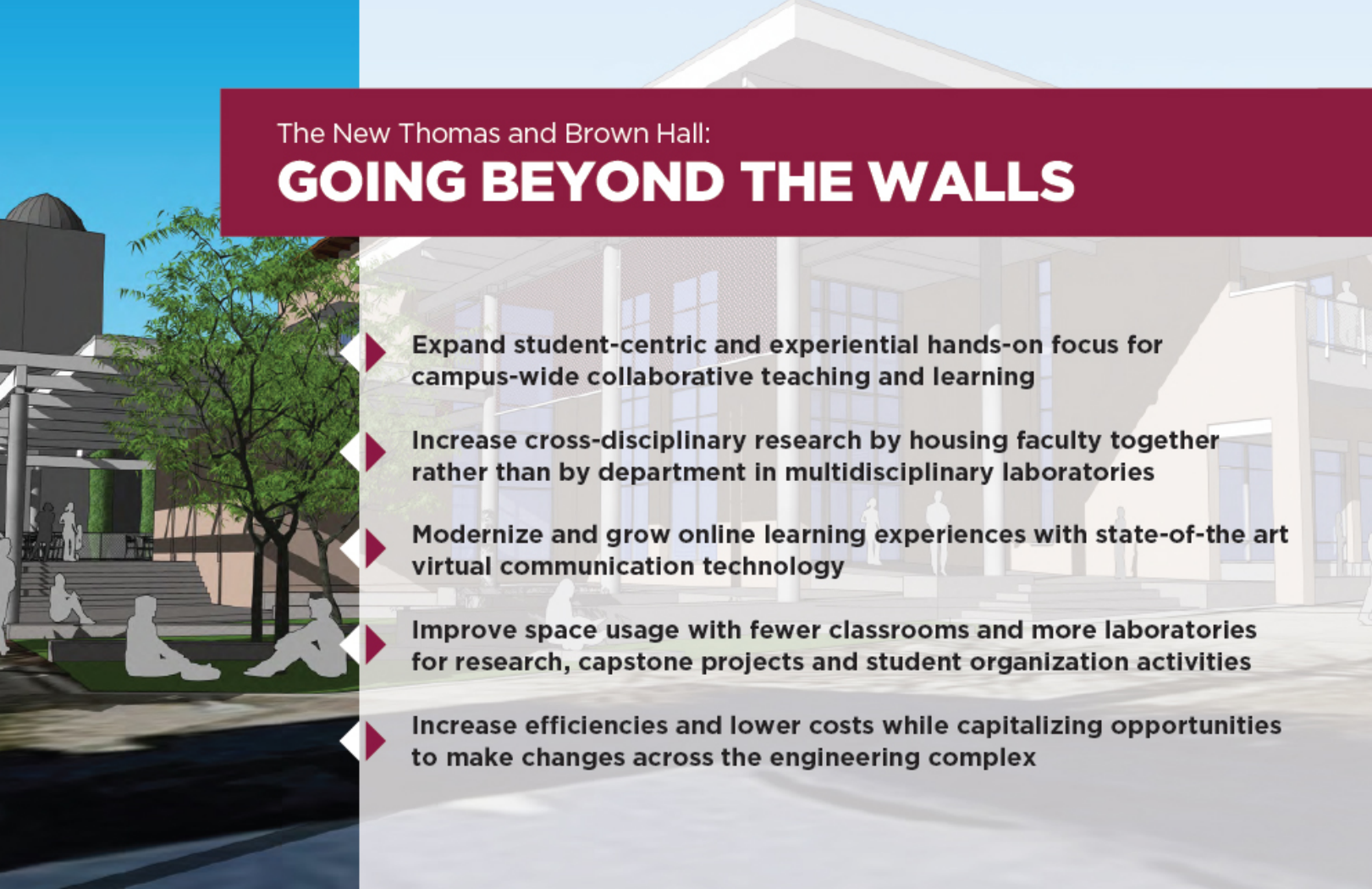


Student Capstones Provide

# REAL-WORLD EXPERIENCE

Capstone projects are the culminating experience of all engineering undergraduates' academic life, giving them an opportunity to apply the knowledge gained through coursework to solve a real-world problem through engineering design. Teams of seniors collaborate on projects in the fall and spring semesters of their final year. They design, build and test their innovations under the supervision of professors researching cutting-edge technology and professional engineers with engineering problems to solve.

"The new Aggie Engineering Capstone Design Program is an initiative to provide students with capstone projects that are more attuned to real-life experience. They are exposed to projects defined by industry that are interdisciplinary in nature, and overseen by professional mentors with a background in project management." ~ Assistant Dean of Experiential Learning and Student Success Gabe Garcia



The New Thomas and Brown Hall:

# GOING BEYOND THE WALLS

▶ **Expand student-centric and experiential hands-on focus for campus-wide collaborative teaching and learning**

▶ **Increase cross-disciplinary research by housing faculty together rather than by department in multidisciplinary laboratories**

▶ **Modernize and grow online learning experiences with state-of-the art virtual communication technology**

▶ **Improve space usage with fewer classrooms and more laboratories for research, capstone projects and student organization activities**

▶ **Increase efficiencies and lower costs while capitalizing opportunities to make changes across the engineering complex**



Modernize facilities to

# FUEL THE 21ST CENTURY

Over the past fiscal year, engineering research expenditures have more than doubled and space for research is at a premium. And the Department of Electrical and Computer Engineering has enjoyed triple-digit gains in research expenditures over the past three years. The building will house classrooms, research groups and laboratories, enabling expansion for this growing department.

- ▶ The SmartGrid Lab explores ways to enhance the integration of renewables with the existing power grid.
- ▶ The Autonomous Control and Robotics Lab advances human-machine interactions.
- ▶ The Electromagnetics Lab investigates uses and issues related to fields of energy emitted by natural and human-made sources.
- ▶ The Optics Lab promotes the study of the fundamental properties of light and harnessing them in practical applications.

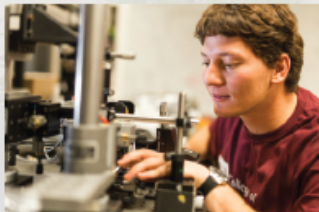


A changing world requires

# INNOVATIVE LEADERS

The key to New Mexico's economic long-term stability is to attract high-tech industry. The space industry and the energy-water-food nexus are top priorities and NMSU an essential part of the labor equation. Economic expansion depends on a highly trained and available workforce that includes a wide variety of disciplines working in concert to solve critical issues and support workforce development.

**Our world is changing and our graduates will be prepared to be leaders in it.**





# FUNDING SOURCES

- ◆ **General Obligation Bond:**  
**\$20 million to be on the 2021 ballot**
- ◆ **Collaborative Learning Spaces and Classroom Revisions:**  
**\$5 million - Already Approved**
- ◆ **Private Gifts: \$5 million - to be raised**

# PROJECT TIMELINE & FUNDING GOALS

It is expected that the GO Bond will pass in the November 2021 election. The goal is to raise \$5 million in capital from generous college supporters which will be very important to support a successful result of the GO Bond effort.

Architectural plans and building costs have been developed and based on successful funds, it is anticipated that groundbreaking for the facility will begin in winter of 2022.





# RECOGNIZING SUPPORTERS

**There will be numerous naming opportunities to recognize our supporters:**

- ▶ Student capstone design and work spaces
- ▶ Student organization spaces for groups to meet and conduct activities
- ▶ The building atrium where all visitors will be greeted
- ▶ The SmartGrid Lab which will be used to explore ways to enhance the integration of renewables with the existing power grid
- ▶ The Autonomous Control and Robotics Lab where researchers will work on advances human-machine interactions
- ▶ The Electromagnetics Lab in which uses and issues related to fields of energy emitted by natural and human-made sources will be investigated
- ▶ The Optics Lab where the study of the fundamental properties of light and harnessing them in practical applications will be promoted



### **A MESSAGE FROM THE DEAN**

Replacing the nearly 50-year-old Thomas and Brown Hall opens up possibilities to promote student success with space designed to nurture cross-disciplinary, collaborative, and distance learning. The plan calls for more active learning space. There will be fewer classrooms and more laboratories for cross-disciplinary research, capstone projects and student organizations. Virtual communication technology will be incorporated to improve online learning experiences.

I welcome the opportunity to share our vision and discuss this renovation in greater detail.

**LAKSHMI REDDI, PHD, P.E.**

College of Engineering Dean

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**BE BOLD.** Shape the future.

**FOR MORE INFORMATION**



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