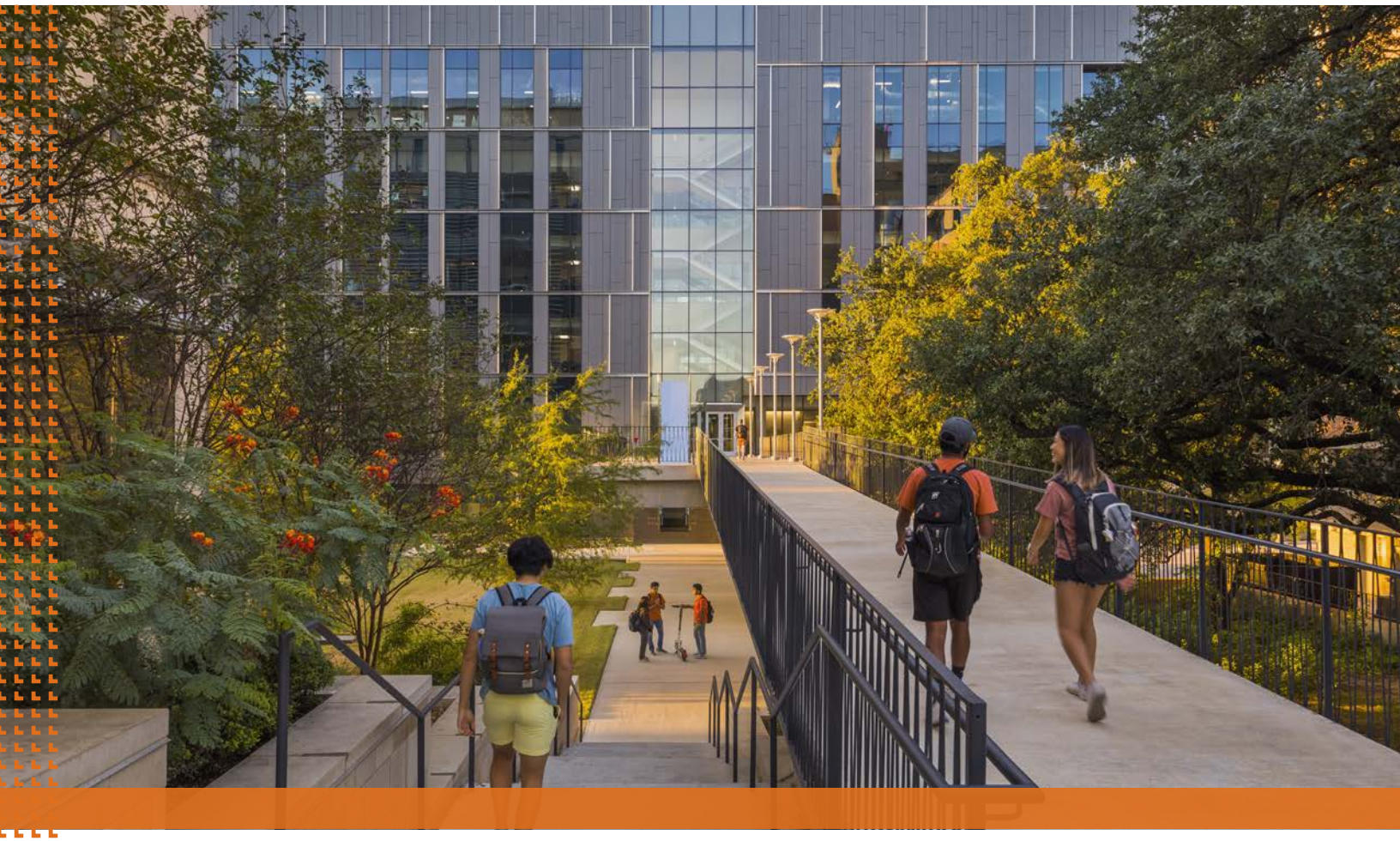
The University of Texas at Austin
Cockrell School of Engineering

Cockrell Strategic Plan



A five-year roadmap toward becoming the highest impact public engineering school

We have a unique opportunity to become the highest impact public engineering school.

An opportunity to be the destination for the world's best and brightest to join together and tackle important problems facing our society.

And an opportunity to educate and develop a new type of engineer – the ***courageous engineer***. They are:

- **Big thinkers** that identify impactful problems
- Unafraid to take risks in pursuit of **creating change**
- Dedicated to strengthening our communities **and improving lives of future generations**

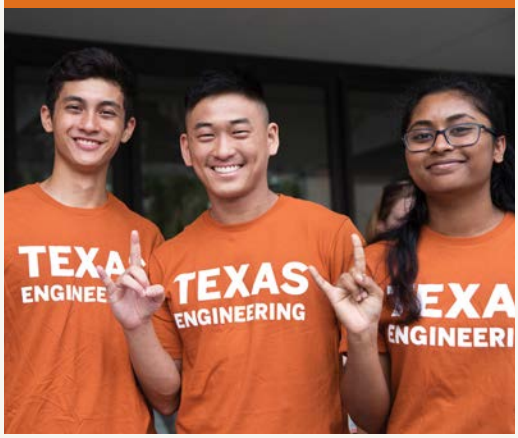
All the pieces are in place: a convergence of student, faculty and staff talent in the Cockrell School, supportive university leadership, industry flocking to Austin and UT, investors ready to commercialize our breakthroughs, passionate and competitive donors, and a state legislature willing to fund innovative work.

It is up to us to seize these opportunities now and reach our potential.

This five-year plan lays out the strategies we will pursue to meet this critical moment. We will consider this plan a success if we are able to shape those who will shape tomorrow by providing a world-class, hands-on education; a deep commitment to innovation; and a welcoming community of collaboration.

These goals rest on five strategic and interconnected pillars that are core to not just the Cockrell School but The University of Texas at Austin as a whole: **People**, **Place**, and our **Pursuits of Experiences, Education, and Research**.

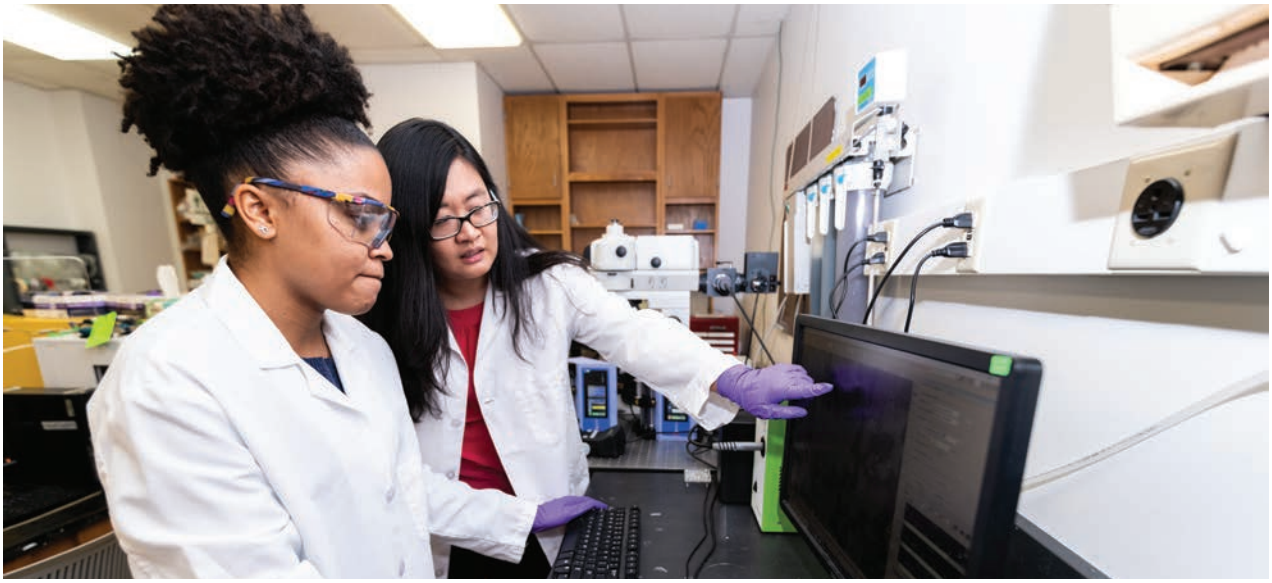
PEOPLE

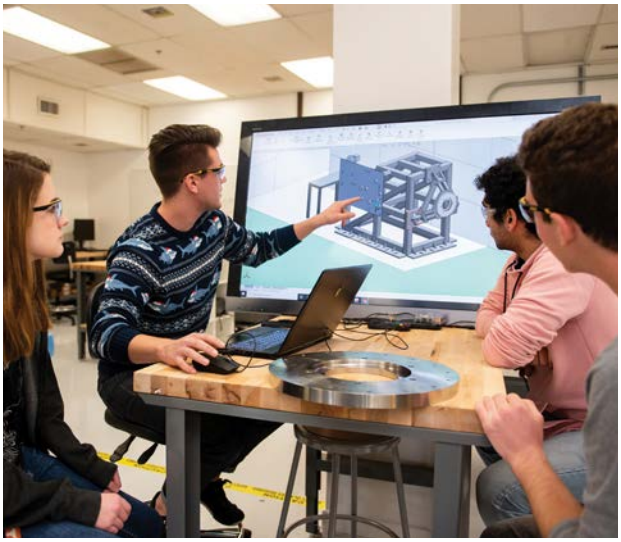


PLACE

PURSUITS

EXPERIENCES | EDUCATION | RESEARCH





KICKOFF: Fall 2023

People

Our people — faculty, staff, students and alumni — represent the key to becoming the highest impact public engineering school. They build and maintain the communities we rely on.

PATHWAYS TO IMPACT:

- Instill a culture of creativity, calculated risk taking and impactful work
- Outperform peer institutions in recruiting and retaining top talent
- Invest in our people through increased options for professional development
- Create direct lines of feedback to leadership that empower people to help steer the future of the Cockrell School
- Foster lifelong community at all levels – from student groups for first-years, to professional organizations for staff and faculty, to tight-knit alumni associations for graduates

RETAIN TALENT

ESTABLISH STAFF COUNCIL

A Cockrell School Staff Council will strengthen communication between staff and leadership on pressing issues and long-term initiatives. The council will recommend new and expanded options for professional development for staff across the Cockrell School. At regular meetings, leadership will also ask for the council's feedback on specific issues and charge them with solving important challenges. Together, the council and leadership will find new ways to improve an already strong Cockrell School culture to attract and retain the best staff talent academia has to offer.

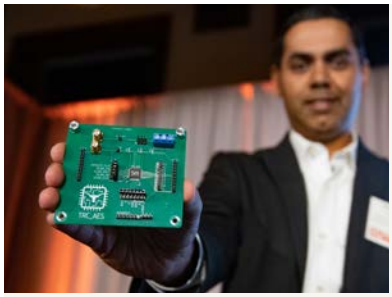
KICKOFF: Fall 2023

Place

Within the emerging tech hub of Austin, the Cockrell School will be the place where companies develop new technology, governments solve the biggest problems and the worldwide research community converges. We are committed to improving our engineering campus, making it welcoming to all communities and partners who want to be involved in world-changing innovation.

PATHWAYS TO IMPACT:

- Build a series of destination facilities with cutting-edge equipment that serve our faculty and students and also attract industry and government partners
- Create community around core research that fosters commercialization efforts
- Simplify processes for external partnerships and incentivize community-based work
- Redevelop our engineering campus and operations to eliminate barriers to collaboration and encourage cooperation and conversation
- Host the world's leading researchers to expand our collective perspective

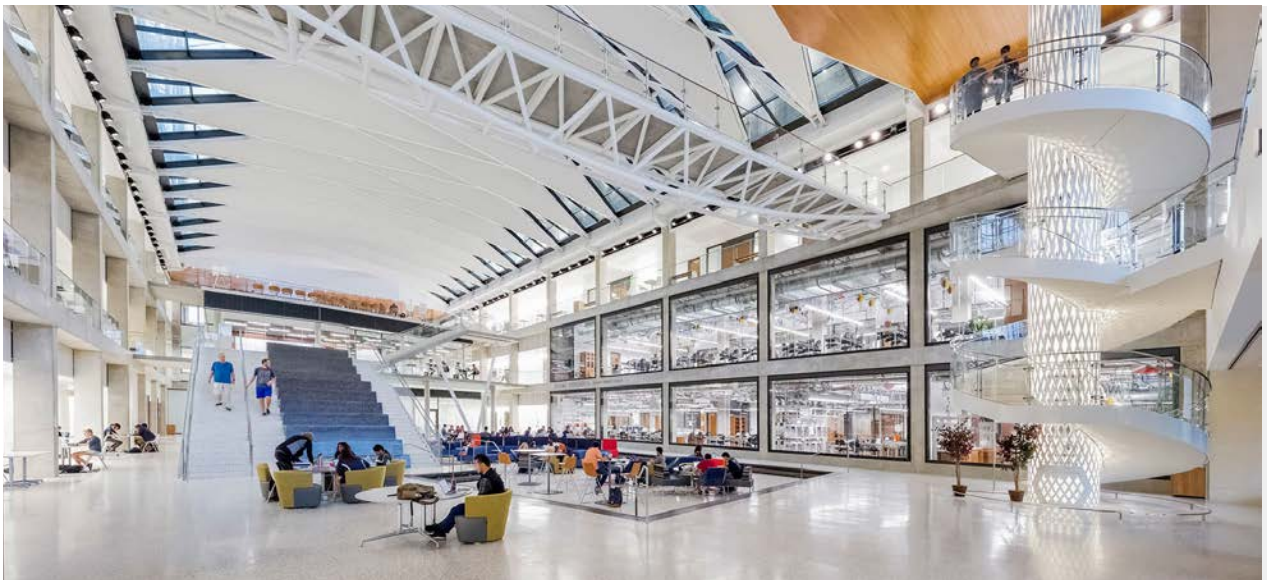


DESTINATION FACILITIES

TEXAS INSTITUTE FOR ELECTRONICS

The Cockrell School will play an important role in the Texas Institute for Electronics (TIE): a public-private partnership between UT Austin, the State of Texas, preeminent semiconductor systems and defense electronics companies, national labs, and 13 academic institutions across the state. TIE aims to restore leading-edge semiconductor manufacturing back to American soil, secure the supply chain, ensure national security, and educate the next generation of industry innovators in Texas. As part of the initiative, TIE will build out fabrication plants (fabs) for research and development focused on visionary technologies: a secure fab for the defense electronics sector; and an innovation fab to support industry needs, maintain U.S. technological and economic advantages, and ensure supply chain security.

KICKOFF: Fall 2023



KICKOFF: Fall 2023

KICKOFF: Fall 2023

Pursuits

Our Pursuits are the interconnected efforts of Experiences, Education and Research that will propel us to achieve our goals as a school and develop courageous engineers.

Experiences:

As the top engineering school in Texas, we are committed to providing enriching experiences for students, faculty, and staff. These initiatives will help forge lasting personal relationships and connections with the university, augment knowledge and teaching experiences with learning outside of the classroom and lab.

PATHWAYS TO IMPACT:

- Support a variety of extracurricular programs that offer students opportunities to collectively grow their teamwork, leadership, and entrepreneurial skills
- Establish a culture of service that encourages us to confront and solve societal challenges
- Convene the world's brightest minds across disciplines who will spark collaboration and unlock tomorrow's brilliant engineering solutions with us
- Build industry and alumni relationships to offer meaningful internship experiences, mentorship and support for innovation
- Increase support for study abroad programs that create an appreciation of other cultures and global engineering

Education:

A modernized, hands-on program, firmly rooted in engineering fundamentals that includes opportunities to complete projects that cross disciplines and help people.

EXTRACURRICULAR PROGRAMS

TREL BLASTS OFF

The Texas Rocket Engineering Lab (TREL) has a big goal: to be the first student-led university team to launch a single-stage, bipropellant rocket to the edge of space. Started in 2018 to compete for a $1 million student rocket launch challenge, TREL has grown to more than 250 students across more than 20 majors and eight schools. The interdisciplinary, hands-on experience students receive through TREL embodies many of the Cockrell School's goals. TREL works closely with industry as well, having developed partnerships with companies like NI and Lockheed Martin in recent years. It may not be long before TREL accomplishes its goals. The team is progressing in the development of its 28-foot rocket named Halcyon, in preparation for a planned launch in the spring of 2024.

KICKOFF: Fall 2023

We will seek out new ways to get students involved in projects earlier in their academic careers, so they can find their engineering passion.

PATHWAYS TO IMPACT:

- Offer multiple design experiences and research opportunities throughout degree programs
- Break down barriers between departments to encourage multidisciplinary study
- Re-imagine our curriculum to focus on big, interdisciplinary problems
- Infuse data proficiency throughout the school, emphasize modern teaching approaches, and technology and build on successful established methods
- Provide a holistic graduate education that sets students up to succeed in their careers in research, teaching, industry and beyond

Research

Our research embraces pressing challenges and drives transformative solutions that benefit society. We transcend traditional boundaries and bridge theory to practice in bringing our discoveries to the world.

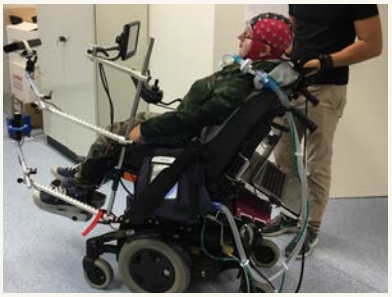
PATHWAYS TO IMPACT:

- Lead in core research areas including the future of energy and sustainability; reinvention of human health; the next generation of manufacturing; and intelligent systems and human-machine symbiosis
- Create and support seed funds to help launch new projects and initiatives
- Form and expand interdisciplinary research centers that cross boundaries and engage a variety of partners
- Develop new ways to encourage faculty and students to commercialize discoveries
- Anticipate and prepare for future research opportunities in emerging areas

DATA-DRIVEN EDUCATION

ENERGY AI HACKATHON

The Hildebrand Department of Petroleum and Geosystems Engineering's annual Energy AI Hackathon challenges students across UT Austin to solve difficult energy problems using technologies like artificial intelligence and machine learning. It gives students invaluable experience confronting big problems with data.



CORE RESEARCH

BRAINS + MACHINES

A mind-controlled wheelchair for people with motor disabilities developed by Cockrell School engineers is an important step forward for brain-machine interfaces — computer systems that turn thoughts into action. In recent studies, three individuals with tetraplegia, the inability to move their arms and legs due to spinal injuries, operated the wheelchair in a cluttered, natural environment.

KICKOFF: Fall 2023

KICKOFF: Fall 2023

Pathways to Impact

The 25 strategic initiatives introduced here will serve as the guiding post toward becoming the highest impact public engineering school.

People	Place
▶ Instill a culture of creativity, calculated risk taking and impactful work ▶ Outperform peer institutions in recruiting and retaining top talent ▶ Invest in our people through increased options for professional development ▶ Create direct lines of feedback to leadership that empower people to help steer the future of the Cockrell School ▶ Foster lifelong community at all levels – from student groups for first-years, to professional organizations for staff and faculty to tight-knit alumni associations for graduates	▶ Build a series of destination facilities with cutting-edge equipment that serve our faculty and students and also attract industry and government partners ▶ Develop community around core research that fosters commercialization efforts ▶ Simplify processes for external partnerships and incentivize community-based work ▶ Redevelop our engineering campus and operations to eliminate barriers to collaboration and encourage cooperation and conversation ▶ Host the world's leading researchers to expand our collective perspective

Pursuits		
Experiences	**Education**	**Research**
▶ Support a variety of extracurricular programs that offer students opportunities to collectively grow their teamwork, leadership, and entrepreneurial skills ▶ Establish a culture of service that encourages us to confront and solve societal challenges ▶ Convene the world's brightest minds across disciplines who will spark collaboration and unlock tomorrow's brilliant engineering solutions with us ▶ Build industry and alumni relationships to offer meaningful internship experiences, mentorship and support for innovation ▶ Increase support for study abroad programs that create an appreciation of other cultures and global engineering	▶ Offer multiple design experiences and research opportunities throughout the degree programs ▶ Break down barriers between departments to encourage multidisciplinary study ▶ Re-imagine our curriculum to focus on big interdisciplinary problems ▶ Infuse data proficiency throughout the school, emphasize modern teaching approaches and technology and build on successful established methods ▶ Provide a holistic graduate education that sets students up to succeed in their careers in research, teaching, industry and beyond	▶ Lead in core research areas including the future of energy and sustainability; reinvention of human health; the next generation of manufacturing; and intelligent systems and human-machine symbiosis ▶ Create and support seed funds to help launch new projects and initiatives ▶ Form and expand interdisciplinary research centers that cross boundaries and engage a variety of partners ▶ Develop new ways to encourage faculty and students to commercialize discoveries ▶ Anticipate and prepare for future research opportunities in emerging areas

WE ARE TEXAS ENGINEERING

THE VISION:

We strive to improve people's lives through care for our planet and the creation of engineering solutions.

MISSION:

We develop engineering leaders who identify and solve challenging problems through engineering education, research, and service.

OUR VALUES:

Education: We enable all students to become impactful, responsible leaders in engineering through creative, hands-on education, practice, and lifelong learning of the highest quality.

Research: We target real-world problems and develop creative, holistic, ethical and impactful solutions that save and improve lives.

Innovation: We are bold, swift, thoughtful risk takers, unafraid to push boundaries in creating new methods in teaching, research, and operations.

Community: We create a culture of support, inclusion and collaboration for the success of our diverse stakeholders of students, staff, faculty, alumni, industry, governmental and non-governmental organizations.

Excellence: We educate the engineering leaders of tomorrow, and through their scholarship, collaboration and hands-on learning, they will bring a new level of excellence to the study and practice of engineering.