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**2021 Handbook**

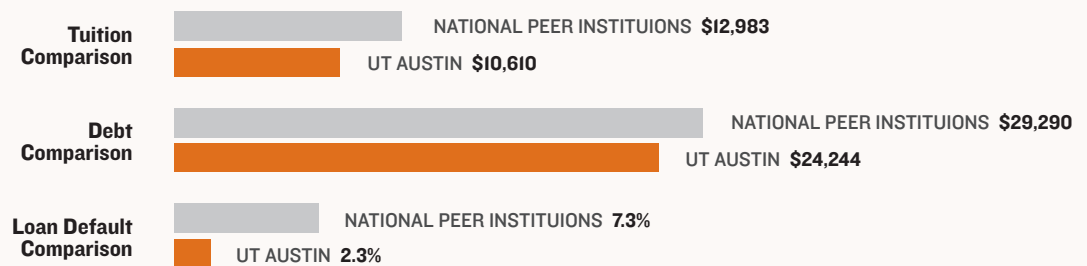
# Higher Education Priorities

## 1. Enhance appropriations for university research in federal agencies and projects of critical national importance.

- ▶ Research at UT Austin creates breakthrough and important developments in medical research and other technologies that enhance overall quality of life in our state and nation.
- ▶ Cutting-edge UT Austin research has provided real-time solutions to the COVID-19 pandemic.
- ▶ UT Austin’s infrastructure and research capabilities in microelectronics and semiconductors can help address the country’s commercial and defense needs in these fields.
- ▶ The McDonald Observatory and the Giant Magellan Telescope are poised to lead major advancements in astrophysics.
- ▶ UT Austin’s research brings in more than \$724 million to the Texas economy—the equivalent of almost 12,000 jobs.

## 2. Continue to advance student financial aid programs and double Pell Grant support.

- ▶ UT Austin is working hard with bold strategies to expand accessibility for students across Texas, educating and powering the Texas economy.
- ▶ Unemployment and the need for re-skilling to better fit a modern workforce remain a major concern for Americans. Families need a commitment for federal student aid investment to ensure continuity of higher education in a time of crisis.
- ▶ 60% of undergraduate UT Austin students graduate and enter the workforce with no debt.



**Texas Advance Commitment**  
Expanding Financial Aid to Make UT More Affordable for Texans

<p><b>Tuition Covered</b> UP TO \$65,000 ADJUSTED GROSS INCOME</p>	→	9,000 Students	}	<p style="font-size: 2em; color: orange;"><b>32%</b></p> <p>of Enrolled Fall 2020 Undergraduate Students</p>
<p><b>Tuition Support</b> UP TO \$125,000 ADJUSTED GROSS INCOME</p>	→	4,000 Students		

**Texas Advance Commitment**  
Through state funding and the Texas Advance Commitment, UT Austin is able to cover tuition for Pell-eligible students.

Priority 1

## Research Funding

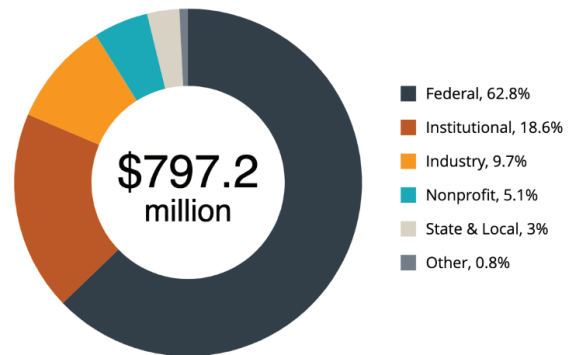
Research conducted at UT Austin makes significant contributions in areas of economic security and national defense, including in the fields of medicine and public health, technological innovation, and space exploration.

From fighting COVID-19, to developing critical R&D initiatives to address the global shortage in microchip production, to building a Magellan telescope that can see farther into the universe than any other on Earth, UT Austin research is impacting lives across Texas and the nation and changing the world. It also brings in more than \$724 million to the Texas economy—the equivalent of almost 12,000 jobs.

### FY20 RESEARCH EXPENDITURES BY SOURCE

#### Cutting Edge Research

By retaining top-tier faculty and state-of-the-art facilities, UT's research helps to provide solutions on the frontlines of global issues.



A significant portion of the extraordinary research conducted at UT Austin is federally sponsored by agencies like the National Science Foundation, the National Institute of Health, the Department of Defense, the Department of Energy, and others.

### UT AUSTIN COVID-19 PANDEMIC SOLUTIONS

- ▶ UT Austin researchers created the first 3D atomic level map of the virus's spike protein which was instrumental in creating vaccine for millions of people in record time.
- ▶ UT Austin researchers aided in the development of a process for treating critically ill patients by transfusing blood plasma from recovered patients.
- ▶ UT Austin established the COVID-19 Modeling Consortium and became the leading authority for pandemic surveillance, forecasting, and mitigation.
- ▶ UT Austin was designated a COVID-19 vaccination hub.

*These projects have received funding from UT Austin and other funding sources.*

Priority 1  
**Research  
Funding**

**SEMICONDUCTOR RESEARCH AND DEVELOPMENT**

- ▶ Semiconductors—commonly known as “microchips” or “chips”—are essential components of everyday electronic devices like smartphones, computers, home appliances, and cars. Semiconductor systems and devices are also critical elements of diagnostic medical equipment, airplanes and space vehicles, and the military systems that protect us.
- ▶ With semiconductor devices and systems now impacting all aspects of daily life, demand for such technologies is growing exponentially.
- ▶ A global shortage in semiconductor manufacturing has put microchips in short supply, compromising America’s economic security and defense capabilities—a problem that UT Austin researchers are addressing head-on.
- ▶ UT Austin has significant engagements across the semiconductor industry value chain, including silicon devices and systems, semiconductor fabs, manufacturing equipment, electronic materials, and circuit design software.
- ▶ UT Austin research and innovation infrastructure supports spin-outs and start-ups that create thousands of high-paying jobs in the region.

*Key centers for semiconductor technologies supported by National Science Foundation grants include the Microelectronics Research Center (MRC), the NASCENT Center and the Texas Advanced Computing Center (TACC).*

**Multiplier effects of investing in semiconductor R&D**

- ▶ Create jobs
- ▶ Promote start-ups
- ▶ Protect national security
- ▶ Expand industry and business opportunities
- ▶ Meet consumer needs
- ▶ Drive innovations in other sectors
- ▶ Advance and improve technology
- ▶ Prepare for future demands

**SPOTLIGHT**

**Supercomputer Power**

Located at UT Austin, Frontera is the fastest university supercomputer in the world. The supercomputer supports dozens of research teams aiming to solve the most massive computational problems in their fields, ranging from tracking hurricanes to medical innovations.

Frontera enabled researchers to develop a 3D atomic computer model of the coronavirus to provide insight into how COVID-19 infects in the body.

The supercomputer system has been utilized to run crisis simulations to best predict and respond to virus spread patterns.

*This funding was made possible by the National Science Foundation (NSF).*

Priority 1  
**Research  
Funding**

**SPOTLIGHT**

**Texas Institute for Electronics**

To respond to the nation's challenges in this area, UT Austin is proposing to build the Texas Institute for Electronics (TIE), a public/private partnership to address the needs of both industry and government by enabling seamless integration of "front-end" and "back-end" manufacturing and device technologies:

**Secure-fab:** a semiconductor system fab with security clearance to support technology development and supply-chain needs of the defense electronics sector.

**Future-fab:** An innovation-oriented fab that will focus on forward looking technologies with a 5-10 year horizon for adoption to maintain the US technological advantage in national defense and economic security. This fab will help recruit, educate and train the next generation of high-skilled industry innovators.

With state and federal support, the initiative will leverage and expand existing infrastructure, research capabilities, world-class degree programs at UT Austin and diversify the country's expertise and capacity in this critical field.

**DID YOU KNOW?**

UT Austin houses several internationally recognized centers of excellence necessary to facilitate this type of collaboration:

- ▶ Nanomanufacturing Systems Center (NASCENT) — takes nano-science discoveries from the lab to the market
- ▶ Microelectronics Research Center (MRC) — also the headquarters of the NSF funded National Nanotechnology Coordinated Infrastructure
- ▶ Texas Advanced Computing Center (TACC) — which hosts the world's fastest academic supercomputer
- ▶ Applied Research Labs (ARL:UT) — a University Affiliated Research Center (UARC) with oversight by the Naval Sea Systems Command
- ▶ Army Futures Command Partnerships — Army Research Laboratory South (ARL South) and the Robotics Center of Excellence (RCOE)

**QUICK FACTS**

Texas has all the elements necessary to address the country's commercial and defense needs in this field. Ten percent of U.S. engineers are educated in Texas. Texas is the #2 state in the U.S. for economic productivity in the semiconductor industry.

Priority 1  
**Research  
Funding**

**ASTROPHYSICS: MCDONALD OBSERVATORY**

- ▶ McDonald Observatory is one of the world’s leading centers for astronomical research, teaching, and public education and outreach. Established in 1933, Observatory facilities are located in the Davis Mountains of West Texas, offering some of the darkest night skies in the U.S.
- ▶ The Observatory works with the Department of Astronomy on both research and teaching and welcomes more than 80,000 visitors each year.
- ▶ McDonald Observatory has four primary research telescopes, including the 10 m (400 inch) Hobby-Eberly Telescope on Mt. Fowlkes: among the world’s top three largest telescopes.

**RESEARCH SPOTLIGHT**

**Giant Magellan Telescope (GMT)**

UT Austin is a founding partner of the consortium that is building and will operate the Giant Magellan Telescope (GMT), a next-generation, ground-based telescope that will revolutionize our understanding and view of the universe.

Once completed and in operation in Chile’s Atacama Desert, the GMT will have a profound impact on areas spanning observational astrophysics—from the study of cosmology, black holes, dark matter, dark energy, to the search for life beyond our solar system.

The GMT will be the largest telescope in the world, with 10 times the resolution of the

Hubble Space Telescope. Its mirrors will collect more light than any telescope ever built, which will help answer some of the most pressing questions in modern astronomy, like how the galaxies first formed and how stellar matter from the Big Bang turned into what we see today.

The GMT is in the construction phase. In 2020, UT Austin received a grant from NSF for \$17.5 Million to help continue construction of the telescope.

The construction costs for the GMT are not fully funded—continued federal investment in this project will ensure that US researchers can benefit from access to the instruments.

Priority 1  
**Research  
Funding**

## **The Bottom Line**

- ▶ UT Austin research is advancing human understanding across many fields, from medical science and technology to astrophysics, and providing real-time solutions to real-world problems, from the COVID-19 crisis to the global microchip shortage.
- ▶ Investment in semiconductor R&D is critical to helping ensure U.S. military and intelligence communities achieve a competitive advantage over China in both semiconductor infrastructure and technology, and to reducing U.S. reliance on foreign manufacturers like Taiwan for semiconductor fabrication.
- ▶ Supporting funding bold initiatives like the Giant Magellan Telescope will ensure that the U.S. maintains its competitive place at the forefront of cosmic exploration and continues to surpass the world in scientific discovery.
- ▶ Quick breakthroughs to fight back against the COVID-19 pandemic would not have been possible without prior long-term, sustained investment in higher education research initiatives.
- ▶ Upgrading our science infrastructure supports good paying design, construction, and development jobs.
- ▶ Continued investment in basic research is critical to UT Austin's role in fueling American innovation.

## **We Ask Congress to...**

- ▶ Enhance appropriations to federal agencies such as NIH, NSF, DOD, NASA, DOE, NIST, NEA, and NEH, to fund basic research at universities.
- ▶ Fully fund the CHIPS for America Act to facilitate federal support for critical semiconductor research and development efforts, and public-private partnerships, like the Texas Institute for Electronics (TIE) initiative.
- ▶ Protect the \$3.43 Billion included in the House version of the Budget Reconciliation bill for NSF infrastructure needs.
- ▶ Retaining this funding and securing a strong funding level for NSF's Major Equipment and Facilities Construction account in the pending FY 2022 appropriations bill is essential to enable the U.S. to build the next generation of large-scale research instruments.

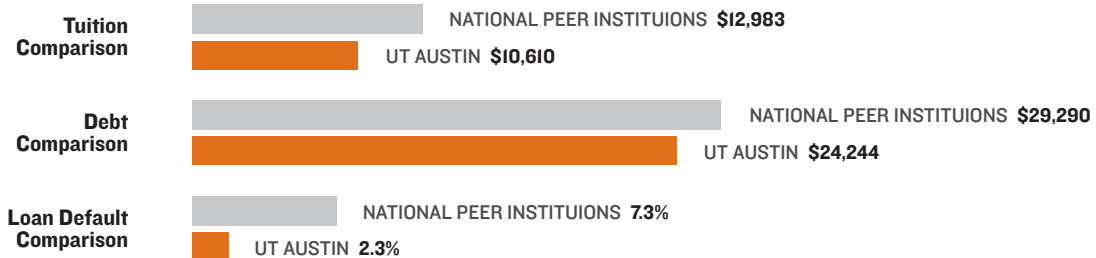
# The Rising Cost of College

## DID YOU KNOW?

- ▶ Average cost of tuition at 14 national peer institutions: \$12,983
- ▶ Average cost of tuition at UT Austin: \$10,610
- ▶ 60% of UT Austin undergraduate students graduate into the workforce with no debt.
- ▶ Among the top Texas and national public institutions, UT Austin maintains one of the lowest tuition rates, ensuring access to affordable education for Texas students.
- ▶ The Pell Grant once covered more than three-fourths of the full cost of attendance. Today, the Pell Grant provides less than half the cost of tuition.

## HOW DOES UT AUSTIN'S DEBT STACK UP NATIONALLY?

As evidenced by the student loan default rate of 2.3% at UT Austin, and the addition of an endowment-supported financial-aid Texas Advance Commitment program, the university is dedicated to enhancing its ability to provide an accessible, quality education for generations of Texans.



## PELL GRANTS

The pandemic has led to a decline in Pell Grant eligible student enrollment across American universities, raising concerns over disproportionate effects on access to higher education and the life-changing opportunities it provides.

These national trends have not held at UT Austin, where enrollment of Pell-eligible freshmen increased last year by 30%, with those students making up a quarter of the incoming class. UT Austin is expected to see Pell Grant awards increase again this year, allowing the university to better serve our talented Texas students.

At its peak in 1975-76, the Pell Grant covered more than three-fourths of the full cost of attendance. Today at UT, the Pell Grant provides less than half of the cost of tuition alone.

Through state funding and the Texas Advance Commitment, UT Austin is able to ensure tuition is covered for Pell eligible students. Nevertheless, costs related to housing, food, textbooks and other expenses are still not met.

Doubling the Pell Grant would put money directly in the pockets of low and moderate-income students as they seek to cover basic needs without going too far into debt. This would significantly help expand access to UT Austin for the state's best and brightest students, regardless of their incomes, racial or social backgrounds.



Priority 2

## The Rising Cost of College

### The Bottom Line

- ▶ Families need a commitment for federal student aid investment to ensure continuity of higher education, especially during a crisis of the magnitude of COVID-19.
- ▶ Doubling the maximum Pell Grant will allow students to cover costs related to housing, food, textbooks and other expenses.
- ▶ UT Austin is well positioned to expand access to higher education with continued investment in Pell Grants and Federal Supplementary Educational Opportunity Grants.
- ▶ Pell-eligible students make up one quarter of UT Austin's incoming freshman class, and while the Texas Advance Commitment and other funding covers tuition, costs for housing, food, textbooks and other expenses are still not met.

### We Ask Congress to...

- ▶ Double the maximum Pell Grant award to \$13,000. Currently, the House Education & Labor Committee is proposing a \$500 increase in the maximum award amount. Because the Pell Grant continues to open doors for the next generation of college-aged Americans, we urge lawmakers to seize this opportunity and double the maximum grant award to \$13,000.
- ▶ Adequately fund and protect student financial aid programs like the Federal Supplementary Educational Opportunity Grants and the Federal Work Study programs, which help ensure that higher education remains accessible for families during the COVID-19 pandemic and beyond.

### TEXAS PUBLIC UNIVERSITY COMPARISON

#### TUITION AND FEES PER SEMESTER, FALL 2017

SOURCE: THECB TUITION AND FEES DATA FROM INTEGRATED FISCAL REPORTING SYSTEM

