

Research Funding in Texas Overview



Fiscal Year 2018

Importance of Research at Higher Education Institutions

Scientific research conducted at higher education institutions is vital for identifying and developing new knowledge that leads to groundbreaking innovations. These innovations drive the state's economy and improve the quality of life for Texans. Strong programs in basic and applied research, and technology transfer, which puts research into action, build on one another. Strong research programs provide state-of-the-art educational opportunities for students and attract high-quality faculty. State and federal governments are two principle sources for research funding.

Research Expenditures

Total research expenditures at Texas higher education institutions was \$5.2 billion for Fiscal Year (FY) 2017, based on the institutions' annual financial reports. The share of funding by source was 43 percent federal, 21 percent private, 19 percent state and local, and 18 percent internal institutional sources.

At public universities and health-related institutions, research expenditures reached \$4.37 billion in FY 2017, an increase of 4.5 percent over FY 2016. Research expenditures at independent universities and health-related institutions was \$0.81 billion in FY 2017, an increase of 5.9 percent over FY 2016.

Texas' Share of National Research¹

Comparisons of states are based on data collected by the National Science Foundation's (NSF) Higher Education Research and Development Survey. FY 2015 is the most recent year data are available. Texas ranked third among the states, with \$5.0 billion in total research expenditures, behind California (\$8.7 billion) and New York (\$5.7 billion). Texas ranked sixth in federal research expenditures for FY 2015 (Table 1).

While expenditures occur in one or more years after funds are obligated for research, obligated funds are another measure of research activity. Texas institutions of higher education ranked sixth in federal obligations in Science and Engineering for FY 2015 (Table 1). The total of federal obligations for FY 2015 was \$27.0 billion, a decrease of 2.0 percent from 2014. Despite this, federal obligations for Texas increased by 2.4 percent over the same period. The National Institutes of Health (NIH) provided Texas higher education institutions with 60 percent of their federal obligations in FY 2015. The National Science Foundation (NSF) provided 19 percent, and the Department of Defense (DoD) provided 7.7 percent.

Table 1. Federal obligations for research, science, and engineering & Federal research expenditures, FY 15.

Federal Obligations for Research, Science and Engineering (FY15)		Federal Research Expenditures (FY15)	
California	\$3.84 billion	California	\$4.71 billion
New York	\$2.20 billion	New York	\$3.03 billion
Maryland	\$1.74 billion	Maryland	\$2.94 billion
Pennsylvania	\$1.64 billion	Pennsylvania	\$2.18 billion
Massachusetts	\$1.51 billion	Massachusetts	\$2.14 billion
Texas	\$1.39 billion	Texas	\$2.02 billion

¹ All data in this section are from the National Science Foundation WebCASPARD Database System, 2017.

Texas Research Programs

In 2015, the 84th Texas Legislature restructured the state’s research programs to align with the types of Texas institutions, as defined by the Texas Higher Education Accountability System. Table 2 lists state appropriations for research funds for the 2018 to 2019 biennium, 85th Texas Legislature, 2017. Other state funding for research is distributed to the institutions through special item funding.

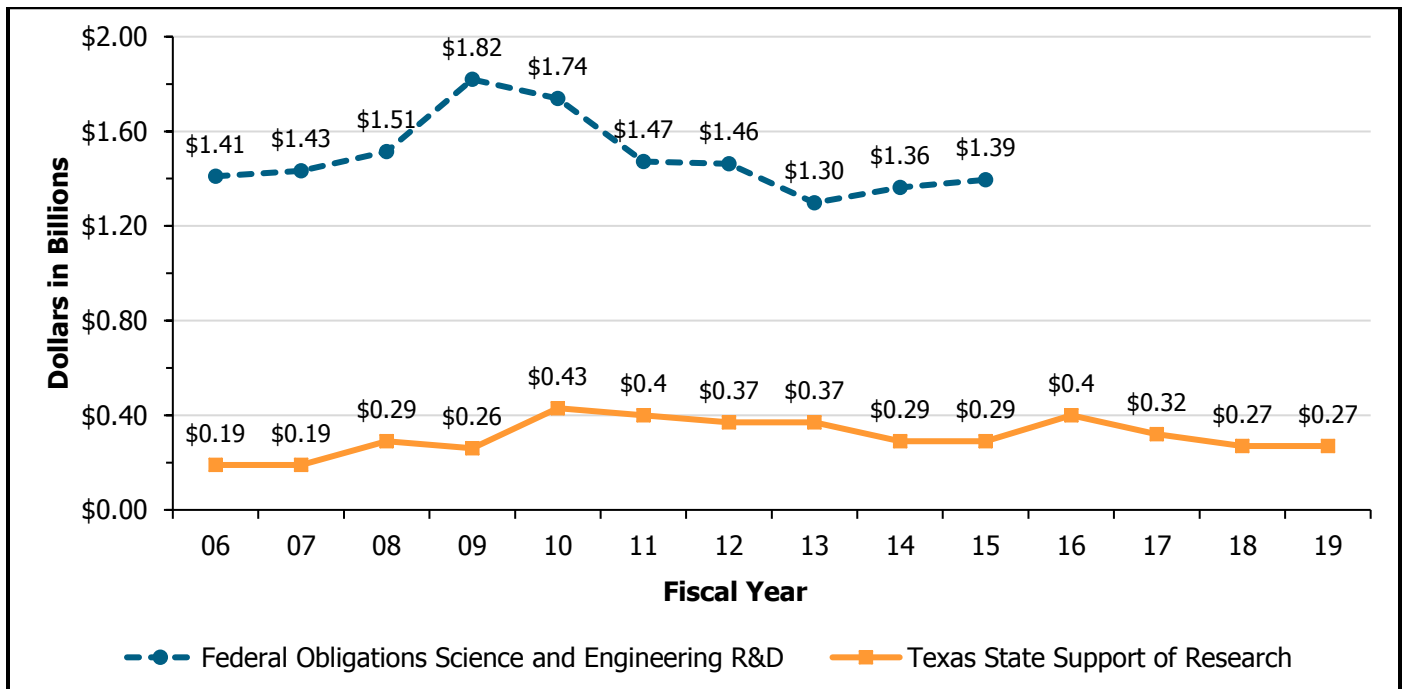
Table 2. Texas state research funding, 85th Texas Legislature, 2017.

Research Funding	Recipients	Biennium	
		FY 2018	FY 2019
Texas Research University Fund	Research Institutions	\$62,584,107	\$62,584,107
Core Research Support Fund	Emerging Research Institutions	\$52,700,134	\$52,700,134
Texas Comprehensive Research Fund	Other non-Research & non-Emerging Research Institutions	\$6,422,568	\$6,422,568
National Research University Fund	Eligible Emerging Research Institutions	\$23,016,948	\$23,309,713
Texas Research Incentive Program	Emerging Research Institutions	\$17,500,000	\$17,500,000
Research Enhancement Fund	Health-Related Institutions	\$40,314,189	\$40,314,189
Autism Research Centers	Eligible Public and Private Institutions	\$3,900,000	\$3,900,000
Cancer Prevention and Research Institute of Texas	Public and private entities located in Texas	\$300,055,000	\$300,055,000
Governor’s University Research Initiative	Support for Distinguished Faculty Recruitment	\$5,585,875	UB ²

Source: Texas General Appropriations Act 2018-2019.

Figure 1 shows federal obligations to Texas for research and development (R&D) in science and engineering and Texas state research funding. Data are shown in billions of dollars from the last seven biennia. State funding includes research funds, research grants, special item funding, health-related institution research enhancement funds, and the Governor’s University Research Initiative. Research funding based on bond proceeds for the Cancer Prevention and Research Institute of Texas (CPRIT), \$1.74 billion since FY 2010, is not included.

Figure 1. Federal obligations for science and engineering research and development and Texas state support of research, FY 2006-FY 2019.



Source: The National Science Foundation WebCASPASR Database System, 2017, for federal obligations. The Texas General Appropriations Act, 2018-2019 for state support.

² UB means an unexpended balance from the first year of the biennium may be carried forward and expended during the second year of the biennium.

Texas Research University Fund (TRUF)

In 2015, the Texas Legislature created the TRUF to provide funds to Texas research universities with total research expenditures greater than \$450 million (Texas Education Code, Section 62, Subchapter C). TRUF supports faculty to ensure excellence in instruction and research. The distribution of funds is based on a three-year average of total research expenditures. The average annual funding, over four years, is \$30.7 million for The University of Texas at Austin and is \$37.3 million for Texas A&M University.

Historical note: TRUF replaced the Texas Competitive Knowledge Fund (TCKF), established in 2007 and in place from 2008 through 2015. TCKF supported the two research universities and also up to six emerging research universities, when their average total research expenditures were in excess of \$50 million.

Core Research Support Fund (CRSF)

CRSF, created in 2015, provides funds to Texas emerging research institutions in Texas (Texas Education Code, Chapter 62, Subchapter F-1). CRSF funding is a set formula allocation for the support and maintenance of educational and general activities, including research and student services, that promote increased research capacity. The allocation is based equally on total and restricted research expenditures. The Texas Higher Education Coordinating Board (THECB) *Standards and Accounting Methods* (SAMs) guides the reporting of restricted research expenditures. THECB convenes the Restricted Research Committee annually for a transparency review of restricted research awards. Additionally the institutions report annually how they use the funds. The CRSF provided a combined annual average of \$55.6 million to eight institutions over the last two biennia (FY 2016-19).

Texas Comprehensive Research Fund (TCRF)

TCRF, created in 2015, provides funds to Texas public universities that are neither research, nor emerging research institutions (Texas Education Code, Chapter 62, Subchapter E). TCRF funding is a set formula allocation for the support and maintenance of educational and general activities, including research and student services, that promote increased research capacity. The allocation is based on restricted research expenditures. Institutions report annually how they use the funds. The TCRF provided a combined annual average of \$6.8 million to 25 institutions over the last two biennia (FY 2016-19).

Historical note: The CRSF and TCRF replaced the Research Development Fund (RDF), established in 2003 and first funded in FY 2006. The RDF originally replaced the University Research Fund and the Texas Excellence Fund, both established in 2001. Using a formula based on restricted research expenditures, the RDF supported all public universities, except The University of Texas at Austin and Texas A&M University.

National Research University Fund (NRUF)

NRUF, created in 2009, provides funds to Texas emerging research institutions (Texas Education Code, Chapter 62, Subchapter G). NRUF provides a dedicated funding source (endowment) to enable emerging research universities to achieve national prominence as major research universities. An institution must meet legislatively specified benchmarks to become eligible for funds. Eligibility is limited to the institutions designated as emerging research universities that have more than \$45 million in restricted research expenditures. Texas Tech University and the University of Houston achieved eligibility in FY 2012. The University of Texas at Dallas, achieved NRUF eligibility in FY 2018. The average funding per institution, per year was \$8.5 million for the three biennia from FY 2012 to FY 2017.

Texas Research Incentive Program (TRIP)

TRIP, created in 2009, provides matching funds to assist emerging research institutions in leveraging private gifts for the enhancement of research productivity and faculty recruitment (Texas Education Code, Chapter 62, Subchapter F). Matching funds are awarded based on private gifts and endowments to enhance research activities. From FY 2010 through FY 2019, TRIP provided a total of \$326 million in matching funds.

Research Enhancement Fund

The health-related institutions receive Research Enhancement Funds of \$1,412,500 plus 1.16 percent in FY 2018 and FY 2019 of its research expenditures as reported to the THECB (General Appropriations Act

2017, Article III, Special Provisions Relating Only to State Agencies of Higher Education, Section 3.) The Research Enhancement Fund provided annual funding of \$40 million to twelve health related institutions in FY 2018 and 2019.

Autism Research Centers

In 2015, the Texas Legislature established funding through the THECB to provide grant support for autism research centers at institutions of higher education that provide evidence-based behavioral services and training (General Appropriations Act 2017, Article III, Higher Education Coordinating Board, Strategy I.1.2, Section 50). THECB annually reports to the Legislature on the effectiveness of each funded program.

Cancer Prevention and Research Institute of Texas (CPRIT)

In November 2007, Texas voters passed an amendment to the Texas State Constitution creating CPRIT (Texas Health and Safety Code Chapter 102). The bond was set at \$3 billion, with a \$300 million funding limit per year, until FY 2020. CPRIT must implement the Texas Cancer Plan, aimed at finding a cure for cancer. Grants are distributed to institutions and medical research facilities for cancer research, research therapies, protocols, and treatments. Grant funding is also used to develop cancer prevention and control programs. CPRIT grant recipients must have funds in place on the subject of the grant of at least one-half of the grant amount. The first grants were awarded in FY 2010, and since then a total of \$1.74 billion has been spent on research.

Governor's University Research Initiative (GURI)

GURI, created in 2015, awards matching grants to public universities and health-related institutions to assist in recruiting distinguished researchers, such as Nobel Laureates and National Academy members, from institutions outside of Texas (Texas Education Code, Chapter 62, Subchapter H). The purpose is to enhance Texas national and global economic competitiveness. The Texas Economic Development and Tourism Office, within the Office of the Governor, administers the fund. During the first biennium, FY 2016-17, Texas A&M University received \$28.7 million for seven awards, the University of Houston received \$8.5 million for three awards, and The University of Texas at Austin received \$1.8 million for one award.

Historical note: The 84th Texas Legislature abolished the Texas Emerging Technology Fund and replaced it with the GURI.

Special Item Appropriations

The Texas Legislature may authorize direct appropriations to Texas public higher education institutions for special items to support specific programs or activities, centers, or institutes. For the 2018 to 2019 biennium, appropriations for special items related to research activities totaled \$124 million for general academic research institutions and health-related institutions (excluding research funds or research enhancement for health-related institutions). The University of Texas at Austin's McDonald Observatory and the Energy Research Cluster at the University of Houston are examples of such items.

The Academy of Medicine, Engineering & Science of Texas (TAMEST)

TAMEST connects Texas top scientists and researchers, promotes cross-industry and cross-disciplinary forums, convenes conferences, sponsors task forces to report on science informing important state and national political issues, and sponsors protégés with funding. TAMEST includes 10 Texas Nobel Laureates and about 300 Texas members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. TAMEST was co-founded in 2004 by the Honorable Kay Bailey Hutchison and Nobel Laureates Michael S. Brown, and Richard E. Smalley.

Commercialization

Commercialization of higher education institutions' research may be measured by the number of patent applications filed and issued. For the 2016 to 2017 biennium, 18 Texas institutions of higher education reported 554 patents issued and 1,534 patents filed. About 75 percent of patents and patent applications reported were U.S. patents, while the remainder were foreign patents.