Texas Higher Education Coordinating Board

OVERVIEW

Research Funding in Texas

Why is research important at the higher education level?

Scientific research conducted at higher education institutions is vital for identifying and developing new knowledge that leads to ground-breaking innovations that drive the state's economy and improve quality of life. High-quality, effective, and efficient research efforts require the appropriate level of funding, particularly from the federal government – the major source of research funds. Strong programs at all levels – basic research, applied research, and technology transfer – build on one another, so all are paramount to a strong economy. They also provide state-of-the-art educational opportunities for college students and attract the best faculty for our institutions of higher education.

What are the research goals of *Closing the Gaps by 2015*?

Obtaining more federal funds is the expressed research goal in *Closing the Gaps by 2015.* It states:

> *By 2015, increase the level of federal science and engineering research and development obligations to Texas institutions to 6.5 percent of obligations to higher education institutions across the nation.*
>
> - *Increase federal science and engineering obligations to Texas universities and health-related institutions from 5.5 percent of the obligations in 2000 (or $1.1 billion in 1998 constant dollars) to 6.2 percent in 2010, and to 6.5 percent of obligations to higher education by 2015.*
> - *Increase research expenditures by Texas public universities and health-related institutions from $1.45 billion to $3 billion by 2015 (approximate 5 percent increase per year).*

How is Texas currently doing in the research field?

In 2006, Texas institutions of higher education ranked sixth in federal obligations for science and engineering research and development. Texas ranked fourth in federal research expenditures for 2007. The National Institutes of Health provided Texas higher education institutions with 64 percent of the federal research support for science and engineering received in 2006. Other sources include the Department of Defense, the National Science Foundation, and the National Aeronautics and Space Administration (NASA).

Federal Obligations for Research (FY06)*	
California	$3.46 billion
New York	$2.07 billion
Maryland	$1.68 billion
Pennsylvania	$1.54 billion
Massachusetts	$1.48 billion
Texas	**$1.40 billion**

Federal Research Expenditures (FY07)*	
California	$4.04 billion
New York	$2.45 billion
Maryland	$1.90 billion
Texas	**$1.84 billion**
Pennsylvania	$1.69 billion
Massachusetts	$1.67 billion

*Funds obligated in any given year may be expended over a number of years. Expenditures occur in one or more years after funds are obligated.

The growth rate for federal research expenditures in Texas increased by only 1.5 percent from **2006 to 2007**. None of the top five states saw double-digit increases: Maryland had the highest with 2.1 percent; California saw a modest increase of 1.2 percent.

Bringing more federal research dollars to Texas remains a critical priority to keep Texas competitive with other large states and to develop an appropriate leadership role in research projects in the United States.

All figures in this section from National Science Foundation, WebCASPAR Database System.

What is retention of the overhead portion of research grants?

Prior to the 79th Texas Legislature, Texas public universities were permitted to retain only 50 percent of the amounts they received for "overhead" – primarily administrative costs – in research grants from external sources. However, since 2003, the Legislature has allowed institutions to retain all of their overhead funds as recommended in *Closing the Gaps by 2015*. This allows institutions to increases their ability to engage in research projects. Since FY 2004, this change has resulted in an estimated $290 – $350 million of additional research investment.

Which research programs does the state of Texas employ?

Texas employs multiple programs and strategies to increase research activity, including the Norman Hackerman Advanced Research Program/Advanced Technology Program, retention of overhead portion of research grants, the Research Development Fund, the Texas Emerging Technology Fund, the Competitive Knowledge Fund, the Cancer Prevention and Research Institute of Texas, and the Academy of Medicine, Engineering and Science of Texas.

What is the Norman Hackerman Advanced Research Program/Advanced Technology Program?

In 1987, the Texas Legislature established the Advanced Research Program, renamed in October 2007 to the Norman Hackerman Advanced Research Program (NHARP), and Advanced Technology Programs (ATP). The NHARP focuses on basic research and the ATP focuses on applied research. The programs have provided competitive, peer-reviewed grants to researchers and were designed to enhance research activities in Texas. Benefits of these programs include state-of-the-art educational opportunities for college students, seed money for efforts to raise more research funds from external sources, and the programs' attraction to the best faculty that the state must recruit and retain. The NHARP, for example, has provided research opportunities to more than 4,100 undergraduate students, more than 6,700 graduate students, and more than 90 high school science and math teachers, and has generated more than 5,000 refereed (peer-reviewed evaluation) papers.

How are the NHARP and ATP funded?

For several biennium after they were established, state appropriations funded these programs at approximately $60 million per biennium – $40 million for the ATP and $20 million for the NHARP. The 2004-2005 biennium was the last year ATP was funded – at $19.5 million. The funding level for NHARP for the 2004-2005, 2006-2007, 2008-2009, and 2010-2011 biennia was $9.5 million, $8.4 million, $16.7 million, and $16.7 million, respectfully.

What is the Research Development Fund?

In 2001, the Texas Legislature created the Texas Excellence Fund and the University Research Fund to enhance research. In 2003, the Texas Legislature combined the two funds to establish the Research Development Fund (RDF), effective September 1, 2005, for FY 2006. The RDF supports increased research capacity at eligible public universities (all public institutions, except UT- Austin, Texas A&M University, and Prairie View A&M), distributing funds by a set allocation formula to faculty for individual projects, such as laboratory and equipment upgrades and graduate student tuition. For the 2006-2007 biennium, $42.8 million was appropriated, and funding was increased to $80.9 million for the 2008-2009 biennium. In the 2010-2011 biennium, $42.8 million was appropriated.

What is the Texas Emerging Technology Fund?

In 2005, the Texas Legislature appropriated $200 million to establish the Texas Emerging Technology Fund. Additional appropriations for the 2008-2009 and 2010-2011 biennia were $117.3 million and $109 million, respectfully. This fund supports emerging technology activities that create high quality new jobs or have the potential to result in medical or scientific breakthroughs. There are three major areas of investment: 1) increasing research and commercialization collaboration between public and private sector entities and to developing new products marketed by new firms, 2) matching research grants provided by federal and private sponsors to help innovators acquire the capital they need to develop their ideas, and 3) attracting more top research teams from other universities throughout the nation to help put Texas universities on the cutting edge of technology research and development. As of June 2009, over $241 million in contracts has been awarded to Texas companies to attract high-tech scientists and jobs.

What is the Competitive Knowledge Fund?

In 2007, the Competitive Knowledge Fund (restricted to UT- Austin, Texas A&M University, the University of Houston, and Texas Tech University) was established to enhance the support of faculty for the purpose of instructional excellence and research. Eligibility is reserved for institutions with total research expenditures of more than $50 million and is appropriated based on a ratio of $1 million for each $10 million in research expenditures between 2003 and 2005. The Texas Legislature appropriated $93.2 million for the 2008-2009 biennium and $126.2 million for the 2010-2011 biennium.

What is the Cancer Prevention and Research Institute of Texas?

In November 2007 Texas voters passed an amendment to the Texas State Constitution creating the Cancer Prevention and Research Institute of Texas. The amendment sets the total bond amount at $3 billion dollars with a $300 million limitation each year for 10 years. The institute is tasked with implementing the Texas Cancer Plan, aimed towards finding a cure for cancer. Grants will be distributed to learning institutions and advanced medical research facilities to research the causes of and cures for cancer, provide cancer research facilities, research therapies, protocols, and treatments for the cure or substantial mitigation of cancer, and develop cancer prevention and control programs. Recipients of those bond proceeds must already have funds equal to one-half of the amount of the grant dedicated to research that is the subject of the requested grant. The first grants will become available in 2010, and funding is eligible to continue until August 31, 2020.

What role do special item appropriations play in funding research?

Texas uses a formula funding system to allocate resources to public colleges and universities. The Texas Legislature may also authorize additional direct appropriations to a specific institution for special items, which are funds to support a specific program or activity. For the 2010-11 biennium, appropriations for special items related to research activities totaled approximately $312.8 million. Examples of such items are the McDonald Observatory at UT- Austin and the Superconductivity Center at the University of Houston.

What is the Academy of Medicine, Engineering and Science of Texas?

The Academy was created to improve the state's position as a research leader, to develop the next generation of scientists, and to increase awareness and communication among the state's scientific researchers. The Academy is made up of the 10 Nobel Laureates who work in Texas and more than 200 members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

For more information:

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