

# **Development of Additional Tier-One Universities in Texas**



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The University of Texas at El Paso  
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### **Introduction**

**UT Dallas President David Daniel has presented a compelling case for why Texas must support the development of additional Tier-One universities and he proposed a set of characteristics of such universities. Reasonable people may disagree on specific details of his presentation, but there should be little or no disagreement that Texas' future global competitiveness will depend on increasing the number of Tier- One universities in this state.**

**There is also considerable consensus that the development of Tier-One universities in 21<sup>st</sup> century Texas is likely to be most successful in large urban centers where the State's population is increasingly concentrated (more than two-thirds of the state's residents now live in Austin, Dallas, El Paso, Ft. Worth, Houston and San Antonio) and where there is greatest potential for research collaborations, synergistic investments, technology transfer and commercialization.**

### **Strategic Tier-One Planning**

**Developing additional Tier-One universities requires long-term and systematic planning and investment. Recognizing the important responsibility that it bears in building Texas' future competitiveness, The University of Texas System initiated just such a planning process in 2004 when it engaged the Washington Advisory Group (WAG) to assess the capacity of UT System institutions to attain Tier One status and make recommendations about how best to accelerate progress toward achieving this Tier-One goal at the four largest academic institutions in the**

**UT System after UT Austin, all of which are located in major metropolitan areas of the state: Arlington, Dallas, El Paso, and San Antonio.**

**Tier-One universities are often defined in terms of sponsored research expenditures, particularly federal research awards, because these funds are usually allocated based on rigorous competitive merit review. \$100 million in total annual research expenditures is often cited as the benchmark for institutions to be included in the Tier-One category. Although there may be disagreement about whether \$100 million is exactly the right benchmark, it nonetheless serves as a useful and objective measure for national comparisons. Approximately 100 universities in the United States qualified for Tier-One status under this criterion at the time of the WAG study.**

**Consistent with this definition, the WAG report focused on the four UT System institutions' total annual externally funded research at the time of the assessment and benchmarked them against this \$100 million annual research expenditures criterion. Thus, the institutions were provided a clear picture of where they stood against the national benchmark at the time of the assessment, as well as a clear understanding of the progress—and investments—that would be required to attain Tier-One status.**

**Each of the four UT institutions was then responsible for developing its own roadmap to move toward achieving the Tier-One goal. At UTEP, this involved an extensive planning process, which included input from a broad range of UTEP faculty and staff as well as potential regional partners, and focused on such factors as: existing research strengths; strategic opportunities for research development and synergies with organizations and institutions in the El Paso region; perceived or real constraints on future research development; and required investments.**

### **Strategic Tier-One Investments**

**The WAG report also made clear that with the then current level of UT System and State investment in them, progress of the four institutions toward achieving the Tier-One goal would be very slow. Responding quickly to this WAG challenge, the UT System set in motion several strategies to add its support to the institutions' efforts. Permanent University Fund (PUF) allocation criteria were steered toward upgrading and constructing facilities that**

were likely to increase competitiveness for federal science and engineering research, and efforts were made to align PUF support with legislatively appropriated Tuition Revenue Bonds (TRB) to coordinate and leverage the impact of UT System and State investments in research capacity-building.

At UTEP for example, the UT System has committed more than \$100 million in PUF bonds for facilities upgrades and new construction in science and engineering since the WAG report. In addition, UTEP has received more than \$89 million in TRB funding from the Texas Legislature for new and renovated facilities during the same period, all of which has been directed toward enhancing education and research capacity in a broad range of sciences and engineering.

Moving beyond physical infrastructure, the UT System also sought to enhance research capacity at UTEP and its sister institutions by providing funds for research-active faculty recruitment and retention, thereby ensuring that the human resources essential for national research competitiveness are in place. For example, the UT System's STARS program has invested more than \$10 million in faculty recruitment and retention at UTEP since 2004, greatly reinforcing institutional efforts to recruit and retain faculty who have demonstrated high potential for generating external research funding.

### **Return on Tier-One Investments**

This intentional and systematic investment in human and physical research infrastructure clearly works. The yield on investments at UTEP has already been significant in terms of national research competitiveness and funding. UTEP's total annual research expenditures increased by 26%—from \$36.9 million to \$46.4 million—between 2004 and 2007. Federal research expenditures grew 14% during the same period, and UTEP now ranks 4<sup>th</sup> among all public universities in Texas in total federal research funding and 3<sup>rd</sup> in the ratio of total federal research expenditures to total state revenues (29.5%). There is every reason to expect that this return-on-investment (ROI) growth will accelerate in the years ahead as newly recruited faculty and newly established research centers prepare

**increasingly competitive proposals; a record 505 proposals for grant funding were submitted by UTEP faculty and staff during the past year.**

**Return on investment can also be measured in terms of the impact of UTEP’s research on the human and economic development of the Paso del Norte region. UTEP has worked closely with business and civic leaders to identify areas of research investment that are strategically aligned with economic development in the region. As a result, UTEP has enhanced its capacity in biomedical and health science research to complement and support the development of Texas Tech’s new Paul Foster School of Medicine in El Paso. Two new centers of excellence—in border security and defense systems research—have been established and already received federal funding to respond to major developments along the U.S-Mexico border and at Ft. Bliss, El Paso’s fast-growing military base. A third center of excellence—in desalination systems research—has been planned to leverage the major investment by El Paso Water Utilities in the largest inland desalination plant in the U.S., and respond to the increasingly critical need for cost-effective and environmentally compatible desalination technologies in El Paso and across the entire southwestern region of the U.S.**

**This investment in UTEP’s human and physical research infrastructure has also already resulted in several successful commercialization initiatives, as well as funding from the State’s Emerging Technology Fund (ETF). UTEP faculty and students form the backbone of most of the start-up companies in this region, and the pace of such technology transfer is accelerating with the growth in UTEP’s research activity and increased emphasis on and support for commercialization of intellectual property developed on the UTEP campus. Commercialized UTEP technologies range from health information and brain mapping software to paints synthesized from original Mayan pigments.**

**UTEP’s capacity to foster economic development is increasingly recognized by regional business and civic leaders as a key to the Paso del Norte region’s future, and this recognition in turn generates increased private sector support for the university. UTEP’s first-ever capital/endowment campaign set a goal of \$50 million and successfully raised \$66 million. Preparation for another major campaign has begun in conjunction with UTEP’s Centennial celebration in 2014. It is anticipated that this campaign will generate more than \$200 million, as a consequence of UTEP’s**

acknowledged value as a catalyst for regional economic development and its growing national visibility as a competitive research university on its way to Tier One with a 21<sup>st</sup> century student demographic.

### **Texas' 21st Century Student Demographic and Tier-One Universities**

Finally, UTEP's accelerating development as a Tier-One institution has created unparalleled opportunities for its graduate and undergraduate students, a majority of whom are from the El Paso region, Hispanic, low-income, and the first in their families to attend college. UTEP has made a strong commitment to create access for this regional population that has been historically underserved, and, because Hispanics represent the fastest growing segment of the state's population, UTEP is at the forefront of the demographic changes that are occurring in Texas higher education today. The state's commitment to "Closing the Gaps" goals will be successfully achieved only through the efforts of institutions, like UTEP, that are taking the lead in responding to this new Texas demographic.

But access alone is not sufficient. UTEP students have every right to expect access to the highest quality educational programs delivered by faculty who compete successfully with their peers at research universities across the United States. UTEP students should expect to be held to the highest academic standards by these nationally competitive faculty, so that upon completing their degrees, they will be well prepared to compete successfully with graduates of the most prestigious universities anywhere in the world.

Research-active faculty create exciting opportunities for undergraduate students. They integrate their research into their teaching. Their research grants create jobs in their laboratories, jobs that not only help low-income students pay for their education, but also engage them in work that may lead to new and unforeseen graduate school and career opportunities. There is considerable evidence that undergraduate research experiences stabilize the enrollment of "at risk" students and increase their probability and efficiency of degree completion. At UTEP, nearly 50% of graduating seniors report having participated in faculty research activity as undergraduates, and 74% of them express an interest in pursuing post-graduate or professional study. These are the characteristics of a research university culture.

**The investment that has been made at UTEP in recruiting and retaining research-active faculty has also greatly increased graduate education opportunities, particularly at the doctoral level, and most of these graduate students are engaged in externally funded research activity. UTEP currently offers 14 doctoral programs (up from only one in 1988) with several others in the pipeline. The demographics of UTEP’s FY2008 doctoral enrollment (38% Hispanic) also reflect the “Closing the Gaps” commitment that UTEP has made to increase the number of Hispanic students in Texas and nationally who earn doctoral degrees. By comparison, according to the National Science Foundation, only 5% of all doctoral degrees in science and engineering earned nationally from 2003 to 2005 were awarded to Hispanics.**

### **Conclusion**

**Current levels of State and UT System investment will allow UTEP and sister institutions in Arlington, Dallas and San Antonio to continue to make steady progress toward Tier-One status in the years ahead. That progress will be far too slow, however, if Texas hopes to be able to compete successfully with other U.S. states such as California and New York, with 12 and 9 Tier-One universities respectively, as well as with countries across the globe. Moreover, Texans deserve the human and economic development benefits of a larger number of comprehensive, world-class research universities; two Tier One institutions in this large and fast-growing state is simply inadequate.**

**It is therefore imperative that the State make a strategic investment at this time to accelerate the progress of its emerging research universities to Tier-One status. As has been amply demonstrated by UTEP’s example during the past several years, the return on such a State investment will be enormous: in leveraging federal research funding; promoting regional and statewide economic growth; and fostering the educational achievement of this state’s fast-growing and increasingly Hispanic population.**

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**\*Testimony presented on July 23, 2008 to the Senate Education Subcommittee on Higher Education and the Senate Finance Subcommittee on Higher Education.**



# The University of Texas at El Paso **A University on the Move**

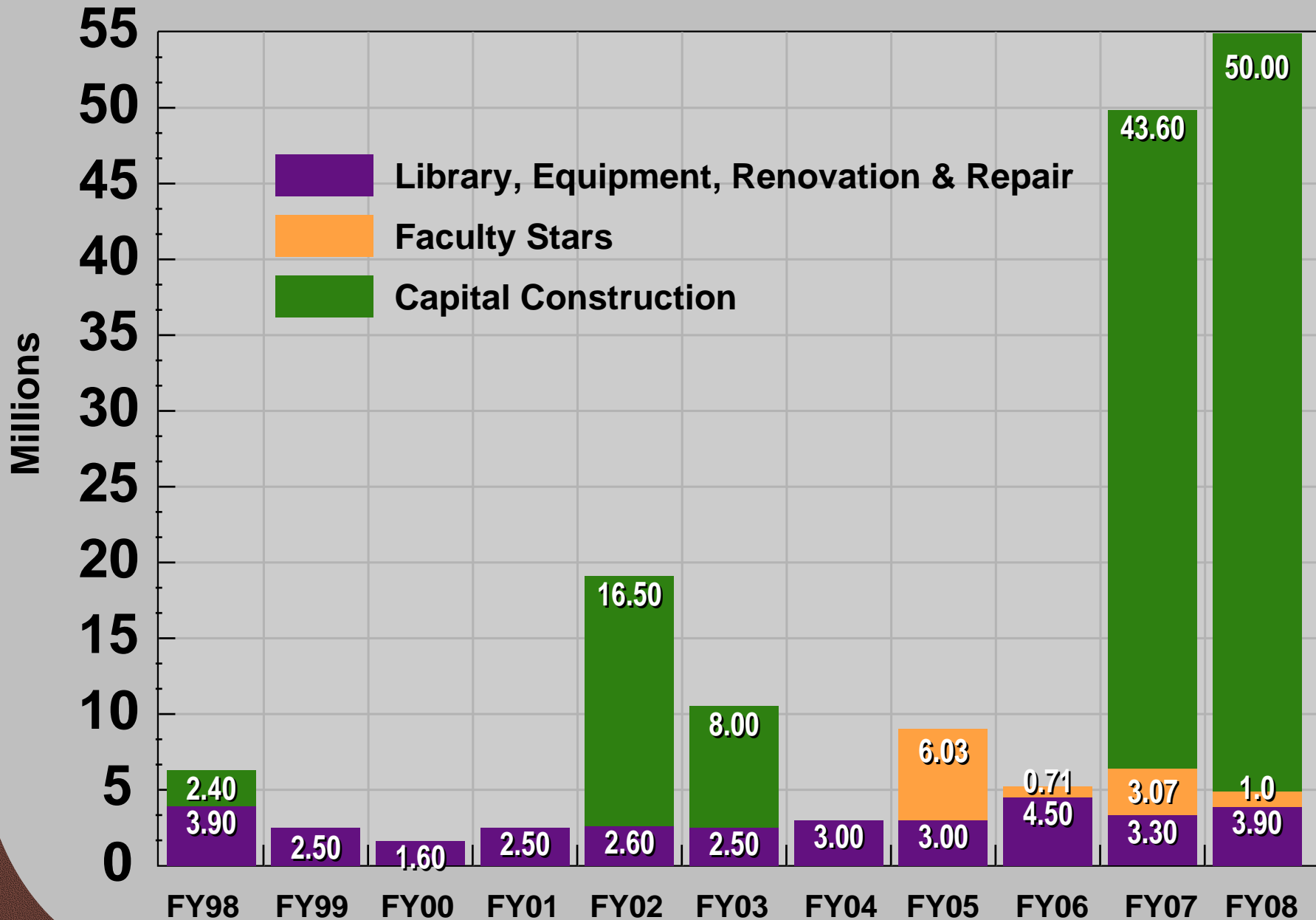
Building a National Reputation  
By Successfully Serving its Region





# UTEP PUF Allocations—FY 1998-2008

Total 11 year allocations = \$164,701,839



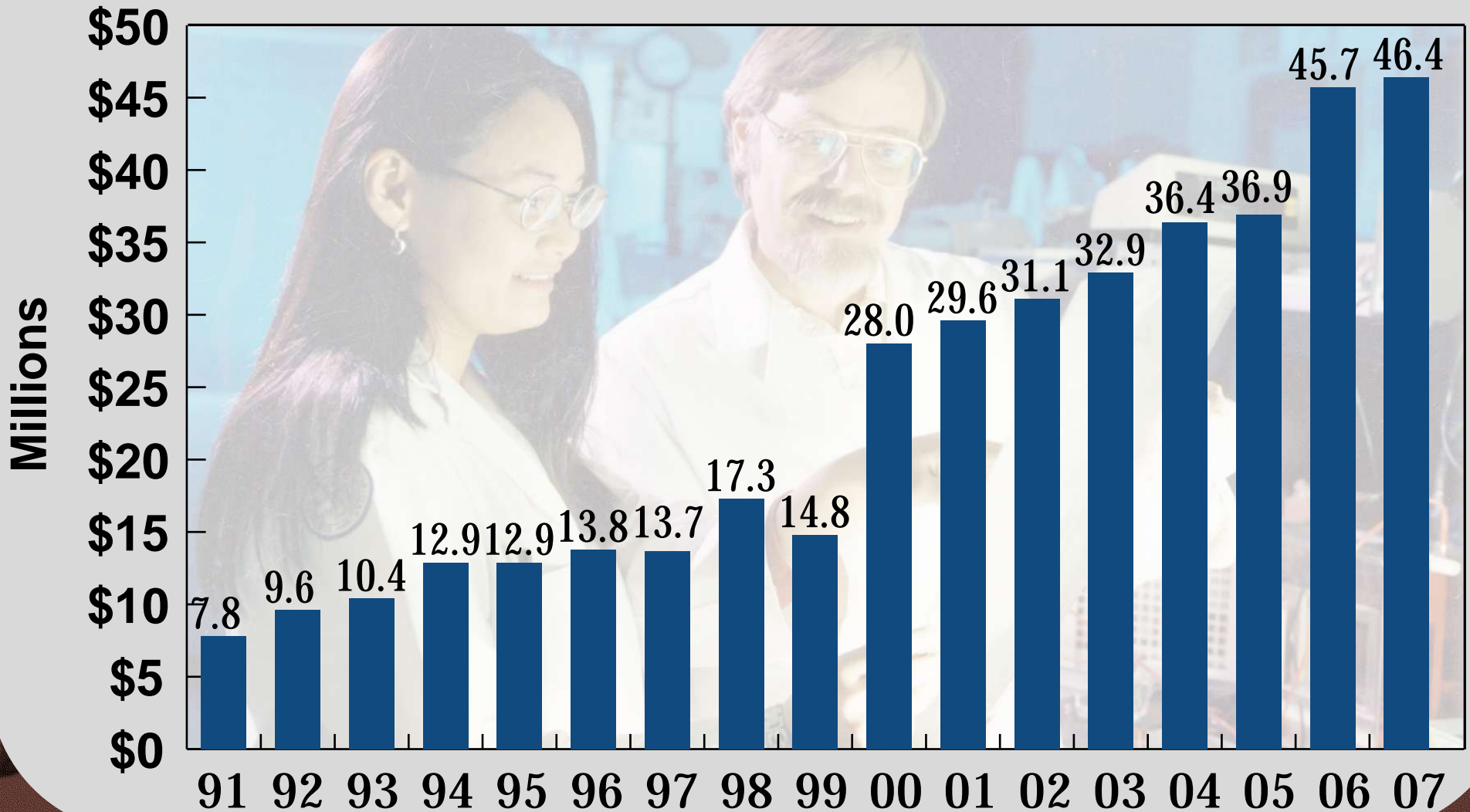
# PUF Funded Construction/Renovation Projects Historical Analysis

	Fiscal Year	PUF	Tuition Revenue TRB	RFS	Gift/Grant	Total
Biosciences Facility	2001-2002	6,500,000	12,750,000	5,750,000		25,000,000
Engineering Annex	2002-2003	6,000,000		1,000,000		7,000,000
Biosciences Facility	2002-2003	2,000,000				2,000,000
Biosciences Facility	2004-2005				3,500,000	3,500,000
Biosciences Facility	2006-2007	11,000,000				11,000,000
Science and Engineering Core Facilities Upgrade	2006-2007	24,100,000		3,900,000		28,000,000
Physical Sciences/Engineering Building	2006-2007	8,500,000	76,500,000			85,000,000
College of Health Sciences	2007-2008	50,000,000			10,000,000	60,000,000
		<b>\$108,100,000</b>	<b>\$89,250,000</b>	<b>\$10,650,000</b>	<b>\$13,500,000</b>	<b>\$221,500,000</b>



# Growth in Total Research Expenditures

Fiscal Years 1991-2007



Source: Office of Research and Sponsored Projects, Jan. 2008

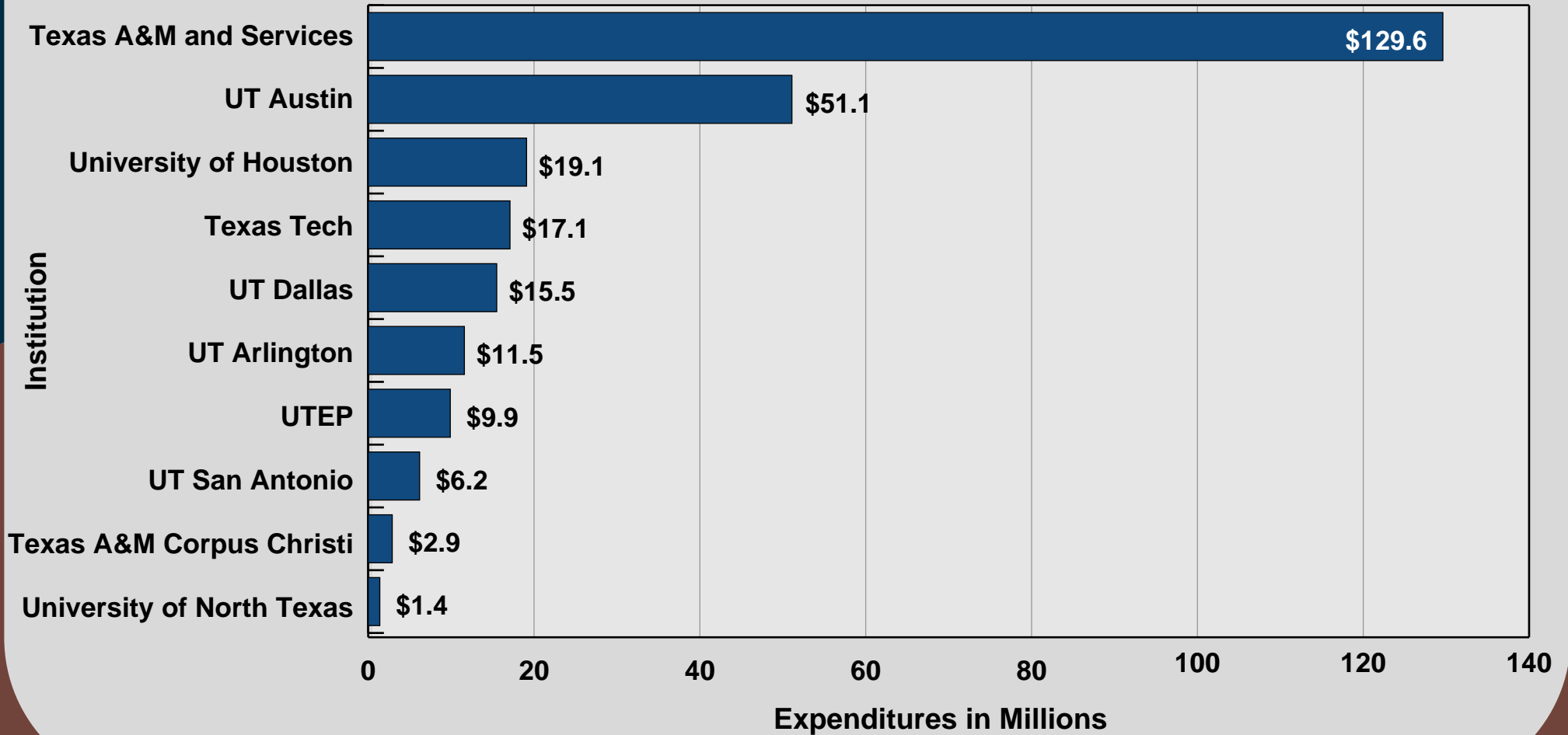
# Total Federal Funds Expenditures for Research and Other Research-Related Sponsored Programs

Top 10 Public Institutions of Higher Education: FY 2006

	Total Expenditures in Millions	State Rank
UT – Austin	\$294.8	1
Texas A & M and Services	\$201.0	2
University of Houston	\$40.4	3
<b>UT – El Paso</b>	<b>\$26.8</b>	<b>4</b>
Texas Tech	\$23.3	5
UT – San Antonio	\$21.5	6
UT – Dallas	\$20.0	7
UT – Arlington	\$19.1	8
University of North Texas	\$9.0	9
Texas A & M – Corpus Christi	\$8.0	10



# Total State-Funded Research Expenditures - Texas Public Universities FY2006



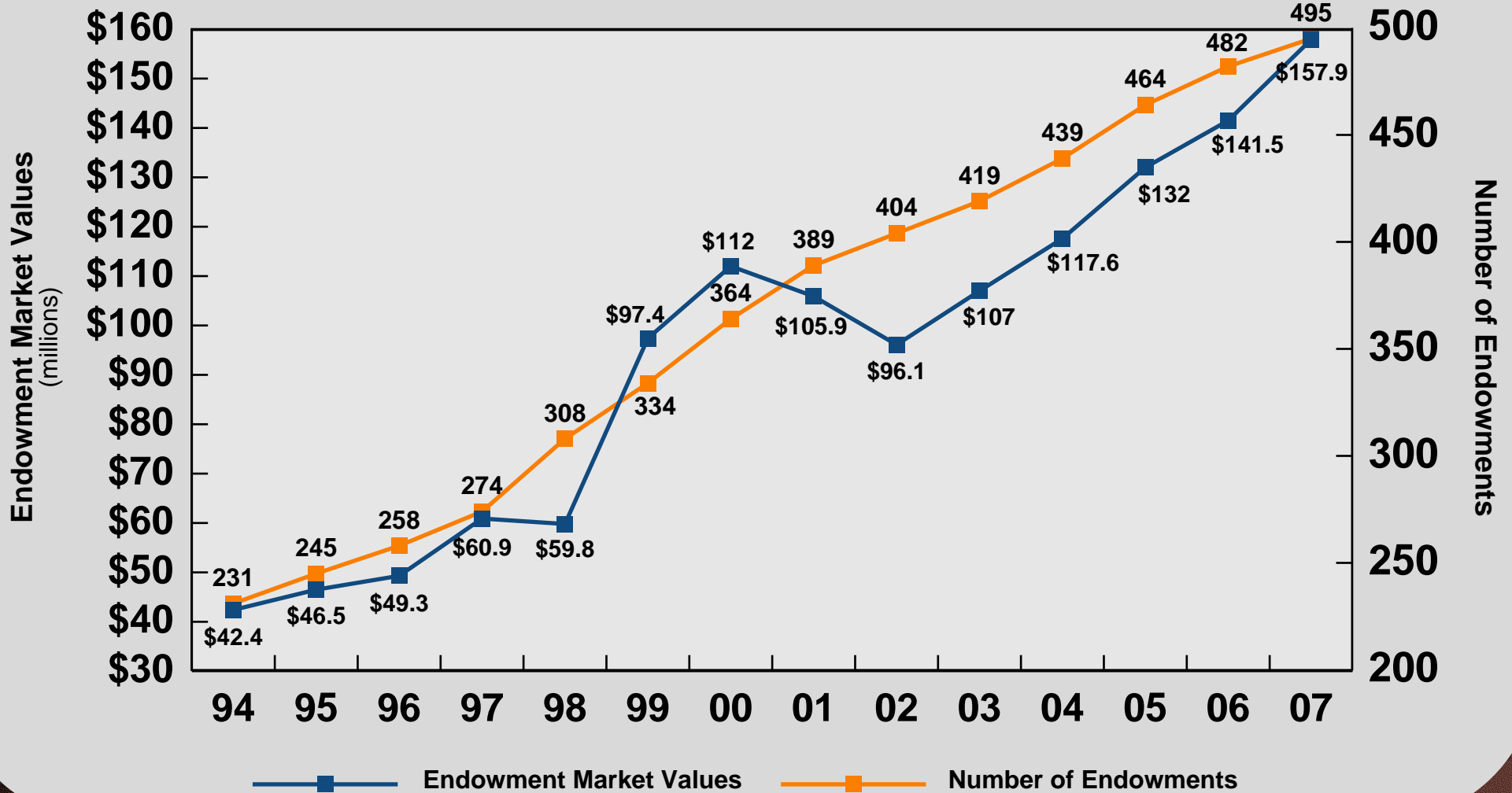
# Ratio of Total Federal Research Expenditures/ Total State Revenue FY 2006

Institution	Percent	Rank
The University of Texas at Austin	84.89%	1
Texas A&M University	65.95%	2
<b>The University of Texas at El Paso</b> 	<b>29.50%</b>	<b>3</b>
The University of Texas at Dallas	22.55%	4
University of Houston	21.51%	5
Texas A&M University at Galveston	20.71%	6
The University of Texas at San Antonio	19.86%	7
The University of Texas at Arlington	17.55%	8
The University of Texas at Brownsville	16.82%	9
Texas Tech University	14.33%	10

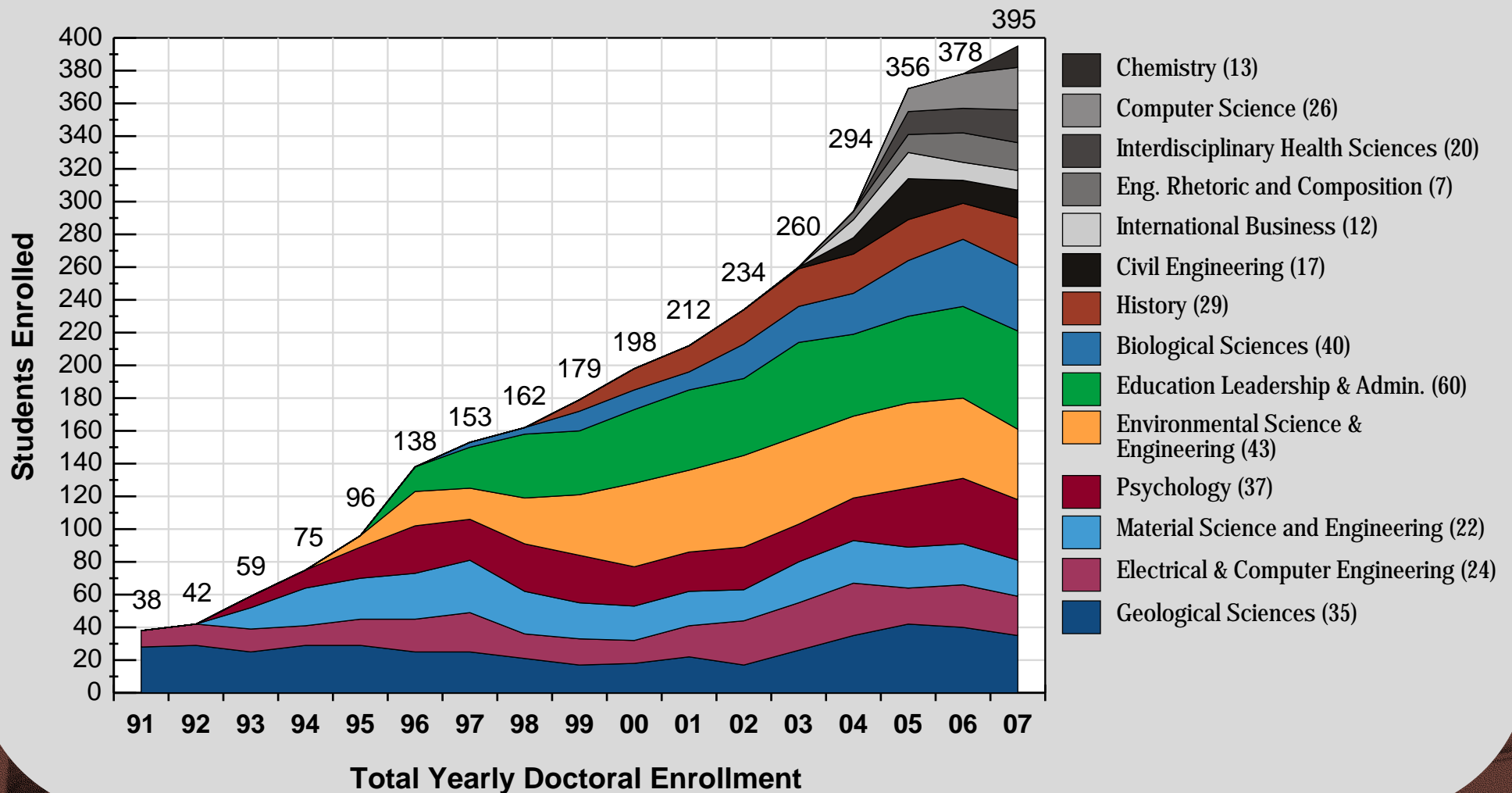


Source: Texas Higher Education Coordinating Board

# UTEP Endowments



# UTEP Doctoral Enrollment Growth



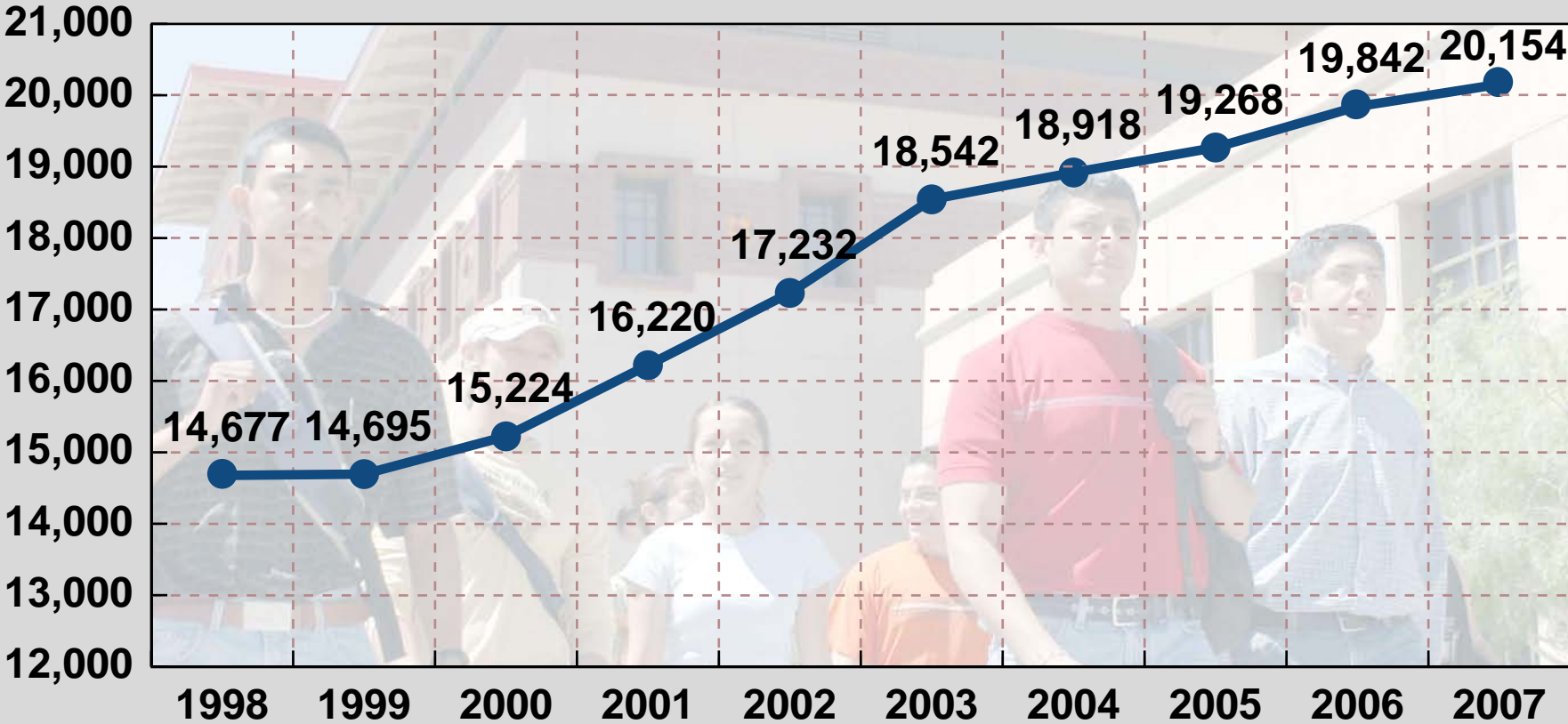


# U.S. Baccalaureate-origin Institutions Having the Largest Number U.S. Citizen Hispanic Doctorate Recipients, 2001-2005

Baccalaureate Institution	Rank	No. of Hispanic Doctorate Recipients
University of Puerto Rico at Rio Piedras	1	428
University of Puerto Rico at Mayaguez	2	175
University of California at Berkeley	3	159
University of California at Los Angeles	4	119
University of California at Austin	5	115
University of Texas at El Paso 	6	92
Florida International University	7	87
University of Florida	8	77
University of New Mexico, all campuses	9	73
University of Arizona	10	71



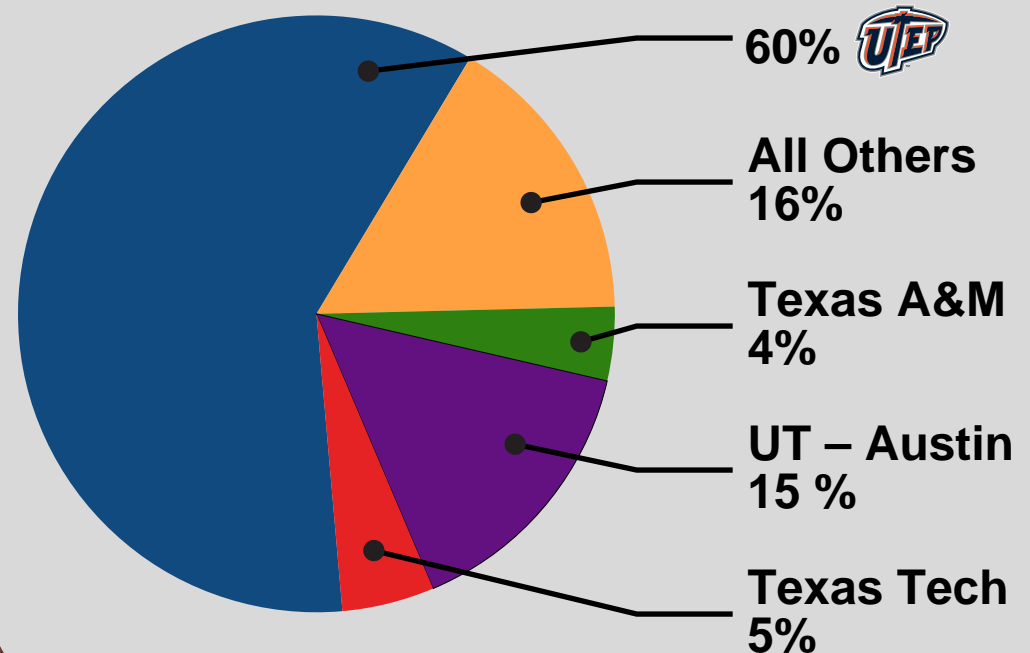
# UTEP Enrollment Trends



# Top 10% Enrollment at UTEP



## Texas Public University Enrollment Top 10% High School Graduates from El Paso County, Fall 2006



Source: Texas Higher Education Coordinating Board  
Query of all top 10% in Fall 2006 from El Paso County that enrolled in any  
Texas Public University or 4-year college

# Total Degrees Awarded

1985-2007

