RESEARCH EXPENDITURES

September 1, 2002 – August 31, 2003

Texas Public Universities and
Health-Related Institutions

Texas Higher Education Coordinating Board
Division of Finance, Campus Planning, and Research
P.O. Box 12788
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April 2004

Texas Higher Education Coordinating Board

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Coordinating Board Mission

The Texas Higher Education Coordinating Board's mission is to work with the Legislature, Governor, governing boards, higher education institutions, and other entities to provide the people of Texas the widest access to higher education of the highest quality in the most efficient manner.

Coordinating Board Philosophy

The Texas Higher Education Coordinating Board will promote access to quality higher education across the state with the conviction that access without quality is mediocrity and that quality without access is unacceptable. The Board will be open, ethical, responsive, and committed to public service. The Board will approach its work with a sense of purpose and responsibility to the people of Texas and is committed to the best use of public monies.

EXECUTIVE SUMMARY

The first six sections of this report are based on data provided by each Texas public university and health-related institution for Fiscal Year 2003 – September 1, 2002 through August 31, 2003. Highlights include:

- Total reported research expenditures increased 6.0 percent over Fiscal Year 2002. Research expenditures in Fiscal Year 2003 were $2,174,191,894. In Fiscal Year 2002, the total was $2,050,239,839. Total research expenditures increased by 91.3 percent since Fiscal Year 1993.

- Scientific discipline categories benefitting from the largest research expenditures include medical sciences – $714,291,065; biological and other life sciences – $503,469,547; engineering – $317,973,563; and physical sciences – $144,636,902. Funding for medical sciences increased by 4.6 percent in Fiscal Year 2003 compared to the previous year.

- The federal government provided 56.1 percent of the research funds expended, an increase from 55.7 percent in Fiscal Year 2002.

The seventh section of this report is based on data provided by the National Science Foundation for Fiscal Year 2001, the most recent year for which data are available. Highlights include:

- Texas institutions of higher education ranked third in federal obligations for science and engineering after California and New York and fourth in federal obligations for research and development in science and engineering after California, New York, and Pennsylvania.

- The National Institutes of Health provides 59 percent of the federal research support for science and engineering to Texas higher education institutions.

- Texas institutions ranked third in total research expenditures for Fiscal Year 2001. Life sciences accounted for 67 percent of the research expenditures, followed by engineering (14 percent) and physical sciences (6 percent).

- Eight institutions – Baylor College of Medicine, The University of Texas at Austin, The University of Texas Southwestern Medical Center, Texas A&M University (including Texas A&M Service agencies), The University of Texas M. D. Anderson Cancer Center, The University of Texas Health Science Center at Houston, The University of Texas Health Science Center at San Antonio, and The University of Texas Medical Branch at Galveston – accounted for 82.6 percent of the federal obligations for science and engineering to Texas higher education institutions in Fiscal Year 2001.

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OVERVIEW

The Texas Higher Education Coordinating Board's annual research expenditures report summarizes data submitted to the Board as required by Section 61.051(h) of the Texas Education Code, which states:

> "Once a year, on dates prescribed by the board, each institution of higher education shall report to the board all research conducted at that institution during the last preceding year."

The Coordinating Board's summary report is based on expenditures rather than awards because expenditures more accurately reflect the level of current research activity. Awards tend to fluctuate from year to year, making them a much less stable indicator for year-to-year comparisons.

The Coordinating Board is only able to verify the accuracy of the research expenditures data by asking institutions to ensure that the data reported are consistent with data in their Annual Financial Reports. According to recent changes adopted by the Government Accounting Standards Board, "expenses" rather than "expenditures" will be reported in institutional annual financial reports prepared for Fiscal Year 2002 and beyond. The major difference for research reporting purposes is that capital outlays for research equipment will be depreciated over the life of the equipment and will not be separately identified as research items in current annual financial reports. To provide research "expenditure" data comparable to that gathered in the past, the institutions were allowed to add capital outlays for research equipment to their research expenses for this report.

In addition, the current annual financial reports no longer have a section "Exhibit C - Current Funds Expenditures, Expenditure Category Research" that was used in previous years as the basis for reconciling data from those reports with data gathered for this report. To facilitate reconciliation, the institutions were asked to submit data using functional classifications that show expenses broken out by instruction, research, public service, and other categories.

A set of definitions is provided in the research expenditures survey to help ensure consistency from institution to institution. Even with these safeguards, institutions have some latitude in determining how they report data.

Data elements and definitions used in this year's report are comparable to similar research expenditure data elements used by the National Science Foundation (NSF). The two sets of elements differ to some degree because the NSF focuses on science and technology alone, while the Coordinating Board's report includes research in all disciplines.

Collection of research expenditure data is a challenging task for institutions. Administrators face many difficulties as they sort out research expenditures at their institutions. For that

reason, information they have submitted and the Coordinating Board's research expenditures report should be considered indicative rather than definitive.

Appendix A includes a copy of the survey form completed by each institution. Appendix B includes a list of the institutional contacts who collected the data on their campuses.

This report also contains a section, beginning on page 32, that compares research funding in Texas with that of other states. These data are drawn from three National Science Foundation reports on research obligations and research expenditures.

MAJOR FINDINGS

Total research expenditures at Texas public institutions of higher education increased by 6 percent during Fiscal Year 2003, continuing a long-term growth trend. Most of the growth occurred at health-related institutions. Total research expenditures increased by $82,329,205 (8.5 percent) for health-related institutions and $41,622,850 (3.9 percent) for universities when compared to Fiscal Year 2002.[1]

As in most states, Texas' higher education research expenditures were concentrated in a relatively small number of institutions. Collectively, the top five institutions in research spending accounted for 68 percent of total research expenditures. The top 10 institutions accounted for 88 percent of the total. Six of the state's health-related institutions ranked among the top 10 Texas public institutions in research expenditures.

In addition, the top seven institutions in Table 1 also appear in the National Science Foundation's list of top 100 institutions in federal research and development expenditures for 2001.

Table 1

Research and Development Expenditures Rankings, FY 2003

Institution	1999	2000	2001	2002	2003
Texas A&M University (including Texas A&M Services)	1	1	1	1	1
The University of Texas at Austin	2	2	2	2	2
The University of Texas M.D. Anderson Cancer Center	4	4	4	4	3
The University of Texas Southwestern Medical Center at Dallas	3	3	3	3	4
The University of Texas Health Science Center at Houston	5	5	5	5	5
The University of Texas Medical Branch at Galveston	6	6	7	7	6
The University of Texas Health Science Center at San Antonio	7	7	6	6	7
University of Houston	8	8	8	8	8
Texas Tech University	9	9	9	9	9
Texas A&M University System Health Science Center*	-	-	10	10	10

*TAMU College of Medicine combined with TAMUS Baylor College of Dentistry to form Texas A&M HSC in FY 2000.

The federal government funded 56.1 percent of all research expenditures by Texas public institutions of higher education, making it the source of most research funds – as it is in other states. At academic institutions[2] nationwide, the National Science Foundation/SRS, *Academic*

[1]The total research expenditures reported for Fiscal Year 2002 were corrected according to errata submitted by a participating institution. The corrected total research expenditures for Fiscal Year 2002 is $2,050,239,839.

[2]For this purpose, academic institutions are generally defined as institutions of higher education that grant bachelor's or doctoratal degrees in science or engineering and spend at least $150,000 for separately budgeted research and development.

Research and Development Expenditures: Fiscal Year 2001, Table B-29 shows that 58.6 percent[3] of the academic research was funded by the federal government. State government in Texas provided 20 percent of the funds for all research expenditures in the state's public higher education institutions. Institutional and private funding accounted for the remaining 24 percent.

The ratio of federal funds to state-appropriated funds for each of the 10 Texas institutions reporting the greatest research expenditures is provided in Table 2.

Table 2

Federal/State Research and Development Expenditures Ratio Rankings, FY 2003

Institution	R&D Rank	Fed/State Ratio	Ratio Rank
The University of Texas Health Science Center at San Antonio	7	14.72	1
The University of Texas Southwestern Medical Center at Dallas	4	11.07	2
The University of Texas Health Science Center at Houston	5	9.37	3
The University of Texas Medical Branch at Galveston	6	6.75	4
The University of Texas at Austin	2	4.75	5
Texas A&M University System Health Science Center	10	2.32	6
The University of Texas M.D. Anderson Cancer Center	3	1.57	7
Texas A&M University (including Texas A&M Services)	1	1.48	8
University of Houston	8	1.10	9
Texas Tech University	9	1.01	10

Medical sciences, accounting for 33 percent of the total, led all other disciplines in expenditures. The top five disciplines – medical sciences, biological and other life sciences, engineering, physical sciences, and environmental sciences – collectively accounted for 83.4 percent of all reported research expenditures.

California ($2.69 billion), New York ($1.58 billion), Pennsylvania ($1.24 billion), Texas ($1.15 billion), Maryland ($1.12 billion), and Massachusetts ($1.07 billion) were the top six states in federal obligations for *research and development* in science and engineering for Fiscal Year 2001.

The National Institutes of Health, the Department of Defense, and the National Science Foundation provided 67.1 percent, 12.9 percent, and 8.4 percent, respectively, of the Fiscal Year 2001 federal obligations for research and development in science and engineering to Texas higher education institutions.

[3]This percentage was reported incorrectly in the FY 1999 and FY 2000 issues of *Research Expenditures* . The correct values are 58.6 percent for FY 1999 and 58.4 percent for FY 2000.

STATEWIDE SUMMARY DATA

Expenditures related to research are divided into two categories: expenditures for the conduct of (1) research and development and (2) other research-related sponsored activities. "Other research-related sponsored activities" refers to support received from external sources to fund activities that cannot be considered strictly research. Examples include grants for equipment or facilities, contracts to perform studies, and training. Definitions for both categories are included in the survey form that is Appendix A.

Table 3 and Figures 1–3 provide information on expenses and sources of funds for research and development and for other sponsored activities related to research at public universities and health-related institutions. Some institutions do not report funds used for other sponsored activities related to research. Expenditures for research and development account for 98.4 percent of all reported expenditures.

Figure 4 shows growth rates in research and development expenditures for public universities and health-related institutions. Expenditures increased by $124 million from Fiscal Year 02 to Fiscal Year 03. The increase was $42 million at public universities and $82 million at public health-related institutions. Seventy-four percent of the increased funding came from federal sources or private industry.

Table 3

Sources of Funds for Research and Other Research-Related Sponsored Programs, FY 2003

	Federal	State		Institution
		Appropriated	Contracts and Grants	
Public Universities				
Research and Development	$581,313,811	$192,545,081	$98,791,981	$102,689,590
Other	$16,345,320	$2,794,982	$2,655,407	$3,074,367
Total	$597,659,131	$195,340,063	$101,447,388	$105,763,957
Public Health-Related Institutions				
Research and Development	$639,417,162	$133,768,430	$10,413,532	$38,962,467
Other	$442,635	$7,073,434	$0	$2,357,702
Total	$639,859,797	$140,841,864	$10,413,532	$41,320,169
All Public Institutions				
Research and Development	$1,220,730,973	$326,313,511	$109,205,513	$141,652,057
Other	$16,787,955	$9,868,416	$2,655,407	$5,432,069
Totals	**$1,237,518,928**	**$336,181,927**	**$111,860,920**	**$147,084,126**

(table continued on next page)

Table 3 - continued

Sources of Funds for Research and Other Research-Related Sponsored Programs, FY 2003			
	Private		Total
	Profit	Non-Profit	
Public Universities			
Research and Development	$61,670,381	$81,401,342	$1,118,412,186
Other	$219,658	$460,680	$25,550,414
Total	$61,890,039	$81,862,022	$1,143,962,600
Public Health-Related Institutions			
Research and Development	$79,164,370	$154,053,747	$1,055,779,708
Other	$0	$28,083	$9,901,854
Total	$79,164,370	$154,081,830	$1,065,681,562
All Public Institutions			
Research and Development	$140,834,751	$235,455,089	$2,174,191,894
Other	$219,658	$488,763	$35,452,268
Totals	**$141,054,409**	**$235,943,852**	**$2,209,644,162**

Figure 1

Sources of Expenditures for Research and Development at Texas Public Institutions of Higher Education, FY 2003

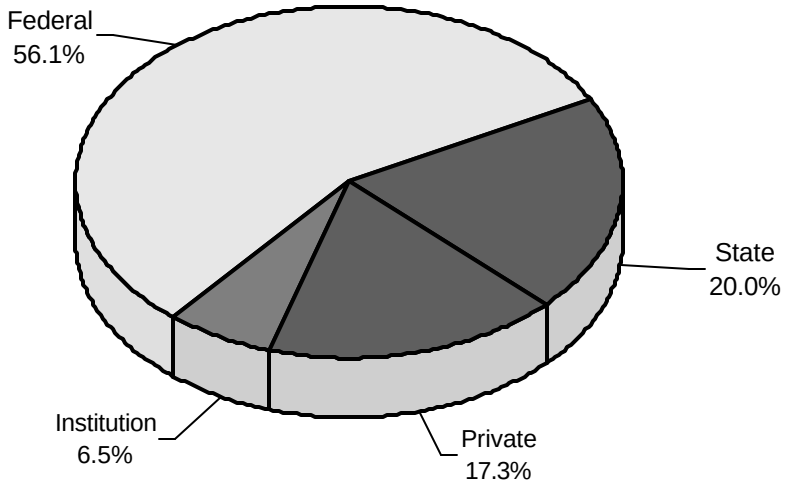


Figure 2

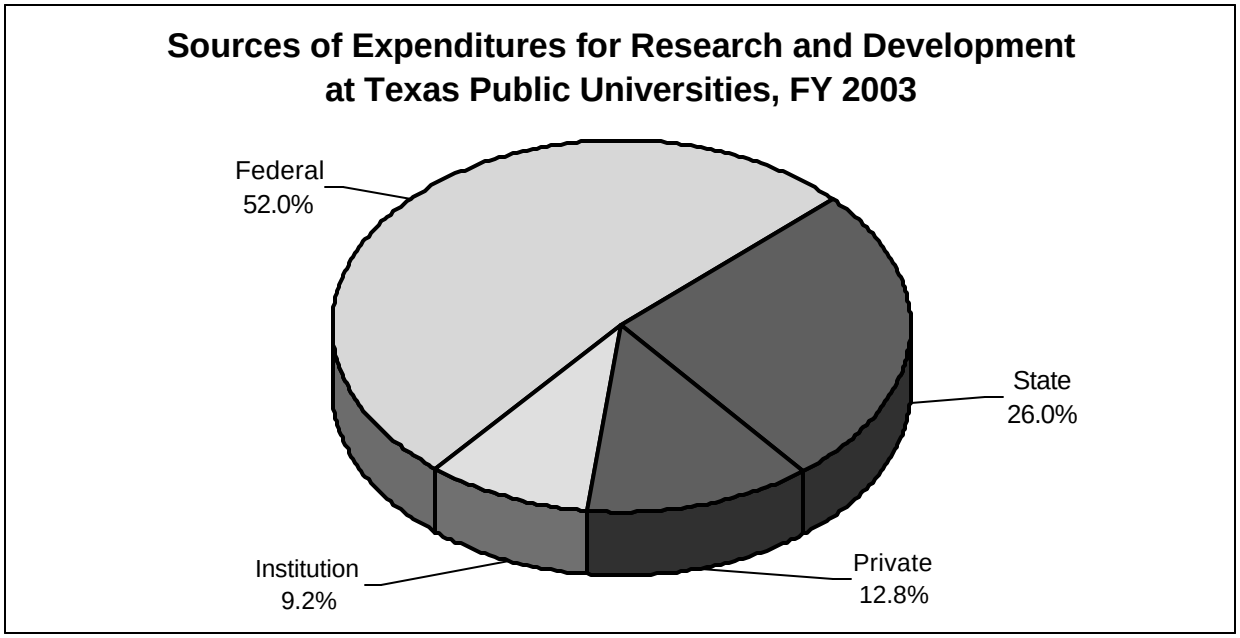


Figure 3

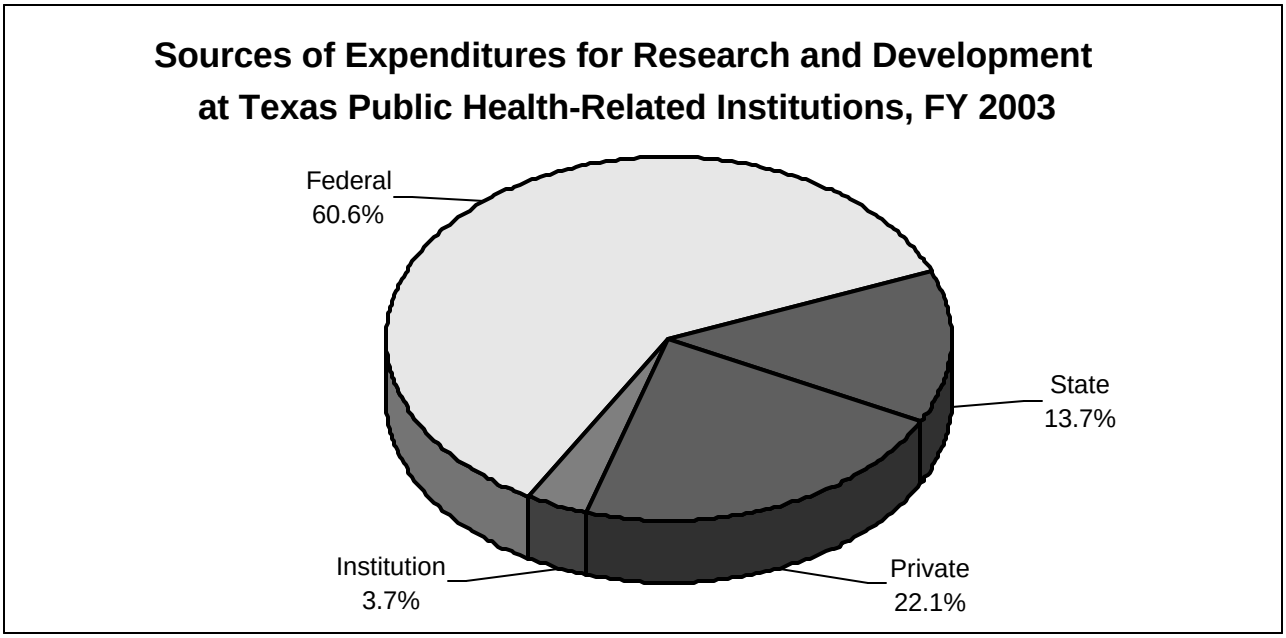


Figure 4

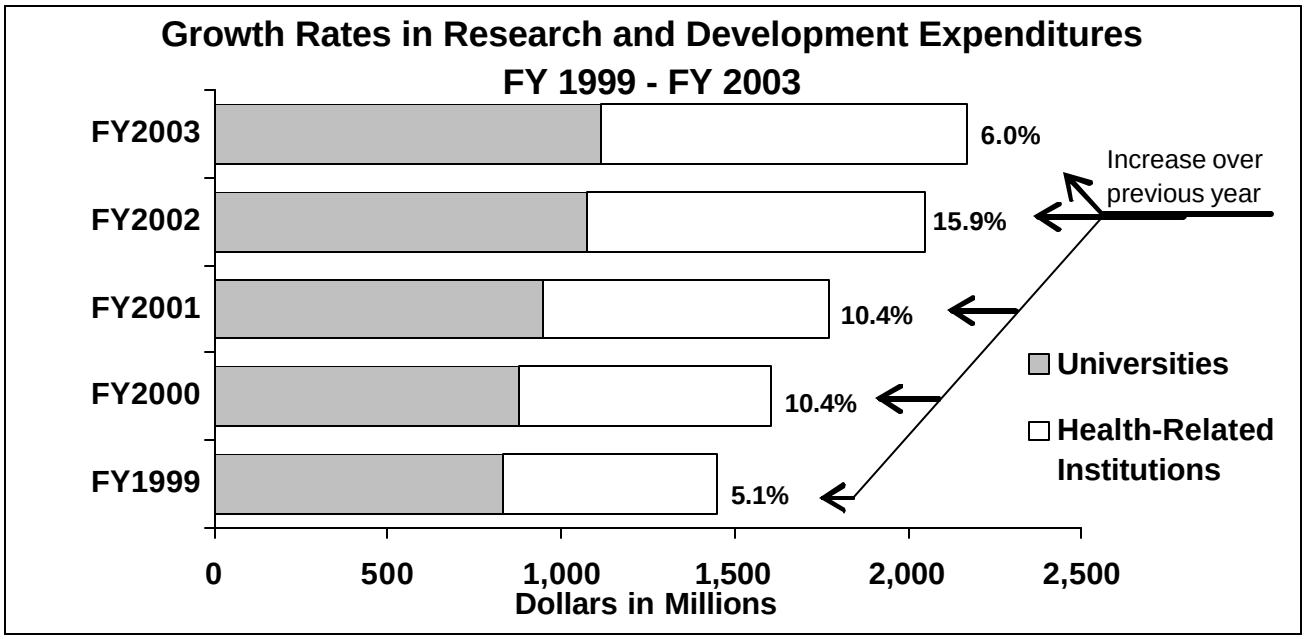

Growth Rates in Research and Development Expenditures
FY 1999 - FY 2003
FY2003
FY2002
FY2001
FY2000
FY1999
6.0%
15.9%
10.4%
10.4%
5.1%
Increase over previous year
Universities
Health-Related Institutions
0
500
1,000
1,500
2,000
2,500
Dollars in Millions

Table 4 indicates expenditures in the 16 different fields defined in Appendix A. The Coordinating Board's instructions directed institutions to assign project expenditures to only one field to avoid duplication.

For the most part, this table reflects expenditures in particular academic disciplines. Some inconsistency may result, however, as institutions strive to categorize a particular research project into only one field. For example, a college of agriculture could perform basic research in biological sciences and report expenses in that field rather than in agricultural sciences.

Proportions of expenses by discipline are shown in Figure 5. Medical and biological sciences account for slightly more than one-half of all research expenditures.

Table 4

Expenditures for Conduct of R&D by Field and Source of Funding, FY 2003
Texas Public Institutions of Higher Education

	Federal	State		Institution
		Appropriated	Contracts and Grants	
Agricultural Sciences	$27,202,509	$26,864,059	$4,386,239	$9,967,868
Biological and Other Life Sciences	$283,763,040	$90,172,481	$6,946,507	$34,425,649
Computer Science	$32,749,420	$10,049,956	$2,419,356	$3,752,635
Engineering	$154,531,991	$44,268,061	$52,824,955	$21,133,968
Environmental Sciences	$93,228,178	$15,992,630	$7,106,955	$5,248,376
Mathematical Sciences	$29,248,227	$9,708,991	$1,861,642	$995,541
Medical Sciences	$440,091,234	$74,093,068	$10,255,574	$27,960,933
Physical Sciences	$86,155,663	$25,451,061	$2,632,635	$8,087,152
Psychology	$21,355,883	$1,100,742	$1,961,318	$2,555,702
Social Sciences	$17,846,438	$9,474,714	$8,006,823	$3,901,395
Other Sciences	$5,158,847	$3,392,441	$1,872,058	$1,501,829
Arts and Humanities	$1,208,462	$946,643	$800,172	$3,017,404
Business Administration	$1,272,822	$2,341,984	$838,041	$1,885,776
Education	$20,077,464	$1,148,115	$3,742,312	$3,256,221
Law and Public Administration	$1,077,506	$1,103,011	$1,305,728	$1,347,163
Other Non-Science Activities	$5,763,289	$10,205,554	$2,245,198	$12,614,445
Totals	**$1,220,730,973**	**$326,313,511**	**$109,205,513**	**$141,652,057**

(table continued on next page)

Table 4 - continued

Expenditures for Conduct of R&D by Field and Source of Funding, FY 2003 Texas Public Institutions of Higher Education			
	Private		Total
	Profit	Non-Profit	
Agricultural Sciences	$3,560,364	$9,469,364	$81,450,403
Biological and Other Life Sciences	$18,316,734	$69,845,136	$503,469,547
Computer Science	$1,503,708	$1,420,728	$51,895,803
Engineering	$30,966,563	$14,248,025	$317,973,563
Environmental Sciences	$7,997,248	$4,079,691	$133,653,078
Mathematical Sciences	$1,447,026	$1,275,849	$44,537,276
Medical Sciences	$65,254,090	$96,636,166	$714,291,065
Physical Sciences	$6,083,657	$16,226,734	$144,636,902
Psychology	$681,124	$1,545,720	$29,200,489
Social Sciences	$1,230,299	$6,088,693	$46,548,362
Other Sciences	$724,351	$1,906,438	$14,555,964
Arts and Humanities	$770,039	$1,026,331	$7,769,051
Business Administration	$630,415	$2,670,781	$9,639,819
Education	$804,955	$7,143,212	$36,172,279
Law and Public Administration	$253,830	$1,198,175	$6,285,413
Other Non-Science Activities	$610,348	$674,046	$32,112,880
Totals	**$140,834,751**	**$235,455,089**	**$2,174,191,894**

Figure 5

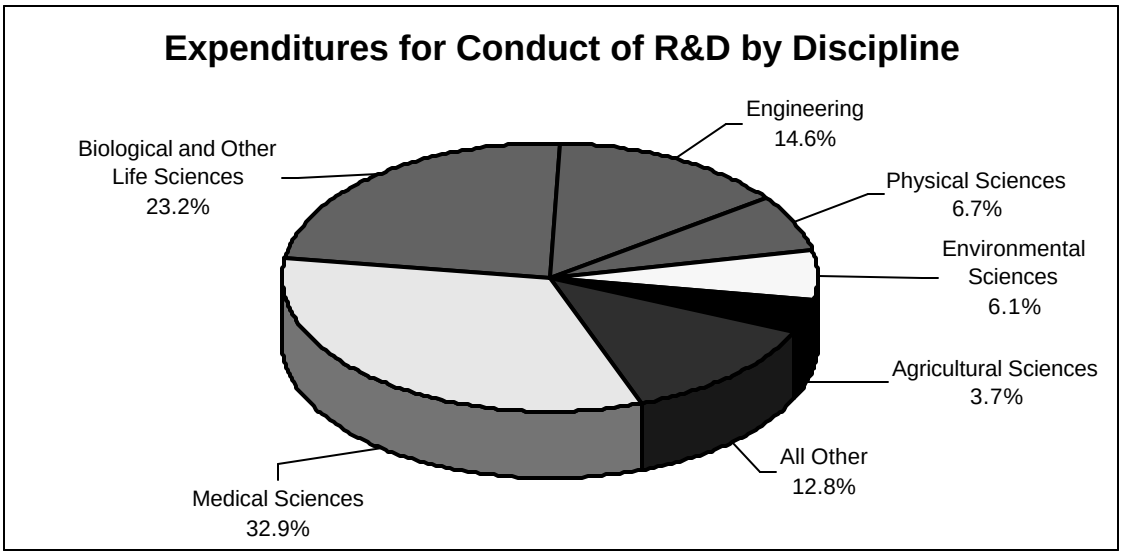


Table 5 shows research in nine different areas of special interest at public universities, and Table 6 shows research in six different areas of special interest at public health-related institutions. Double counting was allowed because many projects are relevant to two or more areas of research.

Table 5

Expenditures for Conduct of R&D in Areas of Special Interest, FY 2003
Texas Public Universities

	Federal	State		Institution
		Appropriated	Contracts and Grants	
Aerospace Technology	$17,476,748	$1,260,900	$124,241	$671,862
Biotechnology	$34,278,724	$22,900,629	$1,473,444	$16,249,597
Energy	$27,290,837	$6,434,509	$1,331,421	$1,036,346
Environmental Science & Engineering	$42,750,264	$13,425,965	$5,583,278	$5,423,332
Food, Fiber, Agricultural Products	$16,999,581	$31,210,563	$2,695,167	$13,295,855
Manufacturing Technology	$6,060,364	$2,285,304	$664,066	$526,223
Materials Science	$25,020,288	$2,737,345	$5,261,986	$1,046,563
Microelectronics & Computer Technology	$43,174,022	$7,308,555	$1,594,373	$2,972,974
Water Resources	$5,903,913	$3,005,841	$1,330,178	$2,170,405
Totals	**$218,954,741**	**$90,569,611**	**$20,058,154**	**$43,393,157**

Table 5 - continued

Expenditures for Conduct of R&D in Areas of Special Interest, FY 2003
Texas Public Universities

	Private		Total
	Profit	Non-Profit	
Aerospace Technology	$293,085	$958,178	$20,785,014
Biotechnology	$5,665,507	$6,526,785	$87,094,686
Energy	$1,317,559	$7,654,896	$45,065,568
Environmental Science & Engineering	$1,647,421	$9,961,260	$78,791,520
Food, Fiber, Agricultural Products	$4,006,288	$9,451,293	$77,658,747
Manufacturing Technology	$807,018	$1,009,051	$11,352,026
Materials Science	$4,506,967	$4,706,252	$43,279,401
Microelectronics & Computer Technology	$2,043,255	$4,034,436	$61,127,615
Water Resources	$615,802	$2,027,316	$15,053,455
Totals	**$20,902,902**	**$46,329,467**	**$440,208,032**

Table 6

Expenditures for Conduct of R&D in Areas of Special Interest, FY 2003 Texas Public Health-Related Institutions				
	Federal	State		Institution
		Appropriated	Contracts and Grants	
Aging	$28,270,393	$2,677,461	$217,957	$357,959
Cancer Research	$166,269,544	$84,938,506	$2,228,530	$14,705,269
Cardiovascular Research	$50,967,887	$6,508,569	$487,823	$1,511,280
Child Health and Human Development	$29,811,042	$417,632	$1,323,412	$1,987,038
Mental Health	$30,716,835	$1,811,477	$435,240	$182,580
Substance Abuse	$21,125,580	$673,376	$113,751	$243,851
Totals	**$327,161,281**	**$97,027,021**	**$4,806,713**	**$18,987,977**

Table 6 - continued

Expenditures for Conduct of R&D in Areas of Special Interest, FY 2003 Texas Public Health-Related Institutions			
	Private		Total
	Profit	Non-Profit	
Aging	$2,545,027	$3,131,907	$37,200,704
Cancer Research	$36,502,223	$46,437,803	$351,081,875
Cardiovascular Research	$3,643,423	$16,958,213	$80,077,195
Child Health and Human Development	$2,371,813	$5,606,428	$41,517,365
Mental Health	$3,391,872	$3,208,340	$39,746,344
Substance Abuse	$472,461	$736,303	$23,365,322
Totals	**$48,926,819**	**$76,078,994**	**$572,988,805**

INSTITUTIONAL DATA – UNIVERSITIES

This section of the report contains detailed information on research expenditures reported by individual institutions. Statements related to data quality and applicability found on page 1 of this report also apply to the data shown in this section of the report.

Figure 6

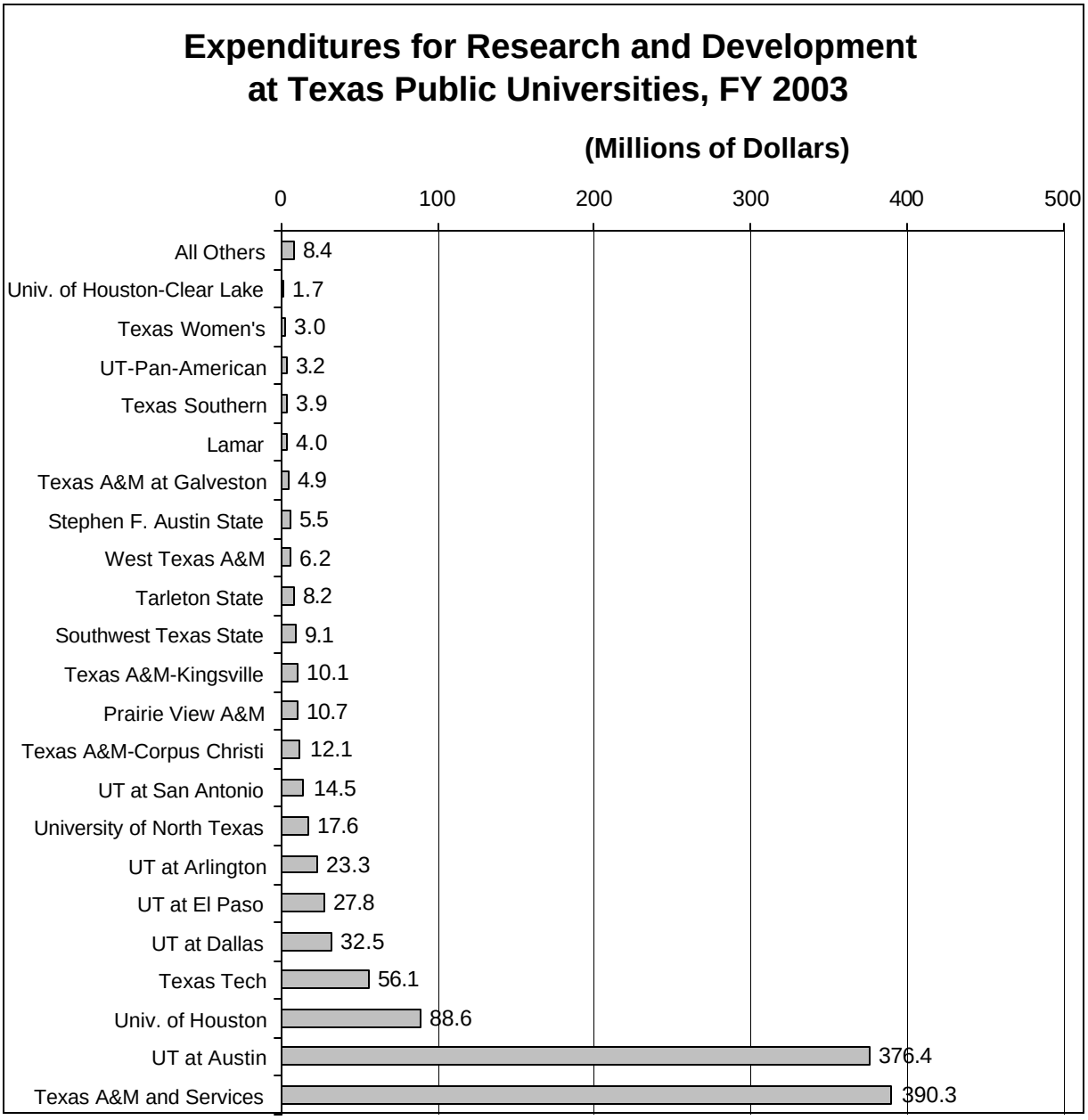


Table 7

Total Expenditures for Research and Other Research-Related Sponsored Programs by Source of Funds, Texas Public Universities, FY 2003

Institution	Federal		State			
			Appropriated		Contracts and Grants	
	R&D	Other	R&D	Other	R&D	Other
Midwestern State	$20,865	$0	$0	$0	$45,935	$0
Stephen F. Austin State	$1,208,382	$0	$0	$0	$83,255	$0
Texas A&M University System*						
Prairie View A&M	$8,106,963	$358,471	$1,816,561	$295,592	$480,485	$3,468
Tarleton State	$5,856,670	$0	$2,003,432	$0	$151,921	$0
Texas A&M and Services	$178,016,320	$1,784	$80,603,640	$202,982	$39,895,711	$610,943
Texas A&M-Commerce	$198,275	$0	$163,104	$0	$5,993	$0
Texas A&M-Corpus Christi	$5,667,854	$0	$1,531,182	$0	$2,925,973	$0
Texas A&M at Galveston	$3,128,730	$0	$693,356	$313,424	$414,963	$0
Texas A&M International	$486,102	$0	$0	$0	$10,447	$0
Texas A&M-Kingsville	$2,766,449	$275,960	$2,845,625	$0	$1,621,503	$0
Texas A&M-Texarkana	$113,290	$0	$0	$9,081	$0	$0
West Texas A&M	$3,190,176	$0	$2,269,959	$1,316,641	$205,079	$0
Texas Southern	$3,247,658	$0	$0	$0	$489,488	$0
Texas State University System						
Angelo State	$131,977	$0	$490,219	$0	$43,088	$0
Lamar	$1,998,033	$28,629	$1,303,267	$198,752	$287,803	$25,384
Sam Houston State	$1,397,106	$11,215,638	$0	$0	$328,195	$2,015,612
Southwest Texas State	$3,975,213	$0	$1,673,471	$0	$1,944,689	$0
Sul Ross State	$95,580	$0	$368,677	$0	$133,173	$0
Sul Ross - Rio Grande	$0	$0	$21,610	$0	$0	$0
Texas Tech	$23,285,324	$0	$17,492,981	$0	$5,674,665	$0
Texas Woman's	$1,493,677	$612	$1,010,909	$458,510	$236,956	$0
University of Texas System						
UT at Arlington	$7,993,576	$0	$11,260,686	$0	$1,296,295	$0
UT at Austin	$240,537,689	$0	$25,223,689	$0	$25,436,356	$0
UT at Brownsville	$1,011,353	$0	$0	$0	$0	$0
UT at Dallas	$14,432,841	$0	$10,493,583	$0	$54,040	$0
UT at El Paso	$17,022,000	$4,464,226	$7,025,124	$0	$832,157	$0
UT-Pan American	$1,895,223	$0	$1,079,408	$0	$14,970	$0
UT of the Permian Basin	$166,777	$0	$651,775	$0	$9,993	$0
UT at San Antonio	$10,049,314	$0	$2,242,377	$0	$815,464	$0
UT at Tyler	$174,362	$0	$0	$0	$141,650	$0
University of Houston System						
Univ. of Houston	$34,242,554	$0	$19,602,008	$0	$11,582,893	$0
Univ. of Houston-Clear Lake	$696,239	$0	$473,308	$0	$54,542	$0
Univ. of Houston-Downtown	$378,339	$0	$205,130	$0	$0	$0
Univ. of Houston-Victoria	$0	$0	$0	$0	$0	$0
University of North Texas	$8,328,900	$0	$0	$0	$3,574,299	$0
Totals	**$581,313,811**	**$16,345,320**	**$192,545,081**	**$2,794,982**	**$98,791,981**	**$2,655,407**

Shading indicates the five highest in each category.

* A&M agency and research foundation expenditures reported by individual affiliated university.

(table continued on next page)

Table 7 - continued

Total Expenditures for Research and Other Research-Related Sponsored Programs by Source of Funds, Texas Public Universities, FY 2003

Institution	Institution		Private, Profit		Private, Non-Profit	
	R&D	Other	R&D	Other	R&D	Other
Midwestern State	$0	$0	$0	$0	$18,960	$0
Stephen F. Austin State	$2,193,407	$0	$82,455	$0	$1,924,067	$0
Texas A&M University System*						
Prairie View A&M	$129,492	$60,358	$14,594	$0	$134,538	$0
Tarleton State	$75,270	$0	$98,685	$0	$43,716	$0
Texas A&M and Services	$49,384,862	$1,148,537	$16,965,280	$60,159	$25,439,245	$89,441
Texas A&M-Commerce	$0	$0	$0	$0	$152,949	$0
Texas A&M-Corpus Christi	$382,293	$0	$96,422	$0	$1,506,894	$0
Texas A&M at Galveston	$168,018	$18,730	$4,971	$0	$539,416	$2,038
Texas A&M International	$40,327	$0	$0	$0	$33,581	$0
Texas A&M-Kingsville	$815,633	$0	$335,257	$67,867	$1,763,710	$0
Texas A&M-Texarkana	$0	$0	$0	$0	$3,623	$0
West Texas A&M	$243,642	$0	$96,962	$0	$215,267	$0
Texas Southern	$15,138	$0	$31,471	$0	$88,873	$0
Texas State University System						
Angelo State	$0	$0	$19,660	$0	$14,892	$0
Lamar	$12,402	$258,866	$172,884	$91,632	$184,308	$724
Sam Houston State	$0	$0	$0	$0	$103,861	$241,610
Southwest Texas State	$373,393	$0	$202,049	$0	$944,116	$0
Sul Ross State	$0	$0	$18,367	$0	$201,120	$0
Sul Ross - Rio Grande	$0	$0	$0	$0	$0	$0
Texas Tech	$1,261,541	$67,711	$4,497,450	$0	$3,935,274	$0
Texas Woman's	$0	$0	$57,100	$0	$199,698	$0
University of Texas System						
UT at Arlington	$118,395	$0	$1,014,004	$0	$1,631,982	$0
UT at Austin	$31,577,530	$0	$31,087,843	$0	$22,540,544	$0
UT at Brownsville	$253,463	$0	$0	$0	$293,490	$0
UT at Dallas	$1,759,769	$1,054,281	$1,871,479	$0	$3,935,429	$0
UT at El Paso	$1,293,664	$465,884	$164,654	$0	$1,509,553	$126,867
UT-Pan American	$28,299	$0	$16,823	$0	$158,696	$0
UT of the Permian Basin	$253,802	$0	$0	$0	$35,837	$0
UT at San Antonio	$462,372	$0	$110,782	$0	$867,423	$0
UT at Tyler	$5,608	$0	$38,401	$0	$51,254	$0
University of Houston System						
Univ. of Houston	$8,330,656	$0	$3,956,603	$0	$10,893,307	$0
Univ. of Houston-Clear Lake	$278,236	$0	$71,253	$0	$133,862	$0
Univ. of Houston-Downtown	$71,849	$0	$4,970	$0	$17,780	$0
Univ. of Houston-Victoria	$0	$0	$0	$0	$0	$0
University of North Texas	$3,160,529	$0	$639,962	$0	$1,884,077	$0
Totals	**$102,689,590**	**$3,074,367**	**$61,670,381**	**$219,658**	**$81,401,342**	**$460,680**

Shading indicates the five highest in each category.

* A&M agency and research foundation expenditures reported by individual affiliated university.

(table continued on next page)

Table 7 - continued

Total Expenditures for Research and Other Research-Related Sponsored Programs by Source of Funds, Texas Public Universities, FY 2003

Institution	Total		
	R&D	Other	R&D and Other
Midwestern State	$85,760	$0	$85,760
Stephen F. Austin State	$5,491,566	$0	$5,491,566
Texas A&M University System*			
Prairie View A&M	$10,682,633	$717,889	$11,400,522
Tarleton State	$8,229,694	$0	$8,229,694
Texas A&M and Services	$390,305,058	$2,113,846	$392,418,904
Texas A&M-Commerce	$520,321	$0	$520,321
Texas A&M-Corpus Christi	$12,110,618	$0	$12,110,618
Texas A&M at Galveston	$4,949,454	$334,192	$5,283,646
Texas A&M International	$570,457	$0	$570,457
Texas A&M-Kingsville	$10,148,177	$343,827	$10,492,004
Texas A&M-Texarkana	$116,913	$9,081	$125,994
West Texas A&M	$6,221,085	$1,316,641	$7,537,726
Texas Southern	$3,872,628	$0	$3,872,628
Texas State University System			
Angelo State	$699,836	$0	$699,836
Lamar	$3,958,697	$603,987	$4,562,684
Sam Houston State	$1,829,162	$13,472,860	$15,302,022
Southwest Texas State	$9,112,931	$0	$9,112,931
Sul Ross State	$816,917	$0	$816,917
Sul Ross - Rio Grande	$21,610	$0	$21,610
Texas Tech	$56,147,235	$67,711	$56,214,946
Texas Woman's	$2,998,340	$459,122	$3,457,462
University of Texas System			
UT at Arlington	$23,314,938	$0	$23,314,938
UT at Austin	$376,403,651	$0	$376,403,651
UT at Brownsville	$1,558,306	$0	$1,558,306
UT at Dallas	$32,547,141	$1,054,281	$33,601,422
UT at El Paso	$27,847,152	$5,056,977	$32,904,129
UT-Pan American	$3,193,419	$0	$3,193,419
UT of the Permian Basin	$1,118,184	$0	$1,118,184
UT at San Antonio	$14,547,732	$0	$14,547,732
UT at Tyler	$411,275	$0	$411,275
University of Houston System			
Univ. of Houston	$88,608,021	$0	$88,608,021
Univ. of Houston-Clear Lake	$1,707,440	$0	$1,707,440
Univ. of Houston-Downtown	$678,068	$0	$678,068
Univ. of Houston-Victoria	$0	$0	$0
University of North Texas	$17,587,767	$0	$17,587,767
Totals	**$1,118,412,186**	**$25,550,414**	**$1,143,962,600**

Shading indicates the five highest in each category.

* A&M agency and research foundation expenditures reported by individual affiliated university.

Table 8

Federal R&D Expenditures/FTE Faculty Ratio, FY 2003 Texas Public Universities			
Institution	Federal R&D Expenditures	FTE Faculty*	Federal R&D Expenditures/FTE
Midwestern State	$20,865	144.50	$144.39
Stephen F. Austin State	$1,208,382	343.70	$3,515.80
Texas A&M University System**			
Prairie View A&M	$8,106,963	204.06	$39,728.33
Tarleton State	$5,856,670	194.02	$30,185.91
Texas A&M and Services***	$178,016,320	1,623.03	$109,681.47
Texas A&M-Commerce	$198,275	186.25	$1,064.56
Texas A&M-Corpus Christi	$5,667,854	189.71	$29,876.41
Texas A&M at Galveston	$3,128,730	36.32	$86,143.45
Texas A&M International	$486,102	114.75	$4,236.18
Texas A&M-Kingsville	$2,766,449	205.98	$13,430.67
Texas A&M-Texarkana	$113,290	40.30	$2,811.17
West Texas A&M	$3,190,176	170.10	$18,754.71
Texas Southern	$3,247,658	191.90	$16,923.70
Texas State University System			
Angelo State	$131,977	166.73	$791.56
Lamar	$1,998,033	250.93	$7,962.51
Sam Houston State	$1,397,106	313.16	$4,461.32
Southwest Texas State	$3,975,213	516.35	$7,698.68
Sul Ross State	$95,580	67.00	$1,426.57
Sul Ross - Rio Grande	$0	20.33	$0.00
Texas Tech	$23,285,324	845.92	$27,526.63
Texas Woman's	$1,493,677	256.50	$5,823.30
University of Texas System			
UT at Arlington	$7,993,576	482.20	$16,577.30
UT at Austin	$240,537,689	1,608.30	$149,560.21
UT at Brownsville	$1,011,353	118.79	$8,513.79
UT at Dallas	$14,432,841	254.00	$56,822.21
UT at El Paso	$17,022,000	403.20	$42,217.26
UT-Pan American	$1,895,223	332.00	$5,708.50
UT of the Permian Basin	$166,777	74.25	$2,246.15
UT at San Antonio	$10,049,314	402.63	$24,959.18
UT at Tyler	$174,362	145.50	$1,198.36
University of Houston System			
Univ. of Houston	$34,242,554	826.36	$41,437.82
Univ. of Houston-Clear Lake	$696,239	160.50	$4,337.94
Univ. of Houston-Downtown	$378,339	187.96	$2,012.87
Univ. of Houston-Victoria	$0	59.60	$0.00
University of North Texas	$8,328,900	673.99	$12,357.60
Totals	**$581,313,811**	**11,810.82**	**$49,218.75**

* FTE Faculty indicates number of full-time equivalents for tenured and tenure-track faculty for fall of 2002.

** A&M agency and research foundation expenditures reported by individual affiliated university.

*** FTE faculty for Texas A&M and Services is based on its Legislative Appropriations Request for FY 2002 and includes 315 FTEs from Texas Agricultural Experiment Station and 23.3 from Texas Engineering Experiment Station.

Table 9

Expenditures for Conduct of R&D by Field, FY 2003
Texas Public Universities

Institution	Agricultural Sciences	Biological and Other Life Sciences	Computer Science	Engineering	Environmental Sciences	Mathematical Sciences
Midwestern State	$0	$19,961	$34,313	$0	$0	$0
Stephen F. Austin State	$3,170,915	$1,083,582	$0	$0	$0	$23,904
Texas A&M University System*						
Prairie View A&M	$4,952,339	$167,853	$1,178,292	$2,195,428	$0	$299,382
Tarleton State	$3,951,130	$90,809	$0	$0	$3,787,140	$43,025
Texas A&M and Services	$49,369,498	$67,715,397	$7,369,185	$117,039,169	$63,657,319	$9,252,309
Texas A&M-Commerce	$120,932	$11,075	$862	$0	$0	$7,555
Texas A&M-Corpus Christi	$55,167	$378,969	$24,575	$1,822,806	$3,466,162	$1,935,692
Texas A&M at Galveston	$0	$904,866	$0	$167,503	$3,636,541	$12,812
Texas A&M International	$0	$840	$0	$75,956	$47,641	$0
Texas A&M-Kingsville	$5,258,224	$1,571,821	$0	$1,567,587	$1,148,845	$0
Texas A&M-Texarkana	$0	$0	$0	$0	$0	$0
West Texas A&M	$1,511,945	$53,403	$46,422	$2,673,690	$334,172	$0
Texas Southern	$0	$2,920,705	$0	$0	$0	$19,386
Texas State University System						
Angelo State	$395,890	$103,644	$0	$0	$0	$3,949
Lamar	$0	$10,132	$0	$1,312,464	$1,965,915	$0
Sam Houston State	$67,445	$419,593	$0	$0	$815,485	$93,824
Southwest Texas State	$39,852	$1,607,690	$285,748	$178,880	$133,810	$610,700
Sul Ross State	$228,881	$64,984	$0	$0	$90,637	$0
Sul Ross - Rio Grande	$0	$0	$0	$0	$0	$0
Texas Tech	$12,028,686	$4,245,582	$1,043,975	$15,491,030	$10,370,841	$775,848
Texas Woman's	$0	$1,450,276	$0	$0	$0	$2,184
University of Texas System						
UT at Arlington	$0	$1,089,582	$2,456,182	$12,396,453	$157,123	$338,479
UT at Austin	$183,832	$34,841,213	$22,338,595	$129,214,919	$33,927,175	$15,795,868
UT at Brownsville	$0	$155,739	$0	$0	$9,065	$0
UT at Dallas	$0	$2,981,571	$4,733,848	$6,518,205	$1,364,390	$591,615
UT at El Paso	$0	$3,571,152	$913,521	$4,316,862	$5,043,375	$146,168
UT-Pan American	$13,192	$81,237	$569,741	$837,577	$60,609	$2,282
UT of the Permian Basin	$0	$73,904	$0	$0	$14,859	$31,201
UT at San Antonio	$0	$7,349,086	$611,471	$999,366	$396,708	$177,063
UT at Tyler	$0	$36,821	$9,545	$85,257	$0	$27,868
University of Houston System						
Univ. of Houston	$0	$7,898,927	$8,797,493	$16,179,843	$2,027,503	$802,975
Univ. of Houston-Clear Lake	$0	$229,123	$308,526	$221,811	$231,403	$75,439
Univ. of Houston-Downtown	$0	$114,151	$226,217	$17,414	$0	$0
Univ. of Houston-Victoria	$0	$0	$0	$0	$0	$0
University of North Texas	$102,475	$2,477,671	$947,292	$435,825	$939,471	$284,892
Totals	**$81,450,403**	**$143,721,359**	**$51,895,803**	**$313,748,045**	**$133,626,189**	**$31,354,420**

Shading indicates the five highest in each category.

* A&M agency and research foundation expenditures reported by individual affiliated university.

(table continued on next page)

Table 9 - continued

Expenditures for Conduct of R&D by Field, FY 2003 Texas Public Universities					
Institution	Medical Sciences	Physical Sciences	Psychology	Social Sciences	Other Sciences
Midwestern State	$1,218	$0	$0	$4,714	$0
Stephen F. Austin State	$0	$108,956	$12,800	$39,712	$39,738
Texas A&M University System*					
Prairie View A&M	$289,721	$995,581	$0	$343,295	$0
Tarleton State	$0	$8,146	$0	$22,284	$0
Texas A&M and Services	$21,394,455	$24,734,524	$2,676,875	$12,956,857	$3,353,197
Texas A&M-Commerce	$0	$39,653	$0	$3,876	$121,527
Texas A&M-Corpus Christi	$159,591	$107,588	$30,000	$91,816	$595,059
Texas A&M at Galveston	$0	$176,502	$0	$10,992	$40,238
Texas A&M International	$0	$0	$0	$0	$10,884
Texas A&M-Kingsville	$0	$111,238	$0	$0	$88,688
Texas A&M-Texarkana	$0	$0	$0	$0	$0
West Texas A&M	$27,743	$55,837	$631	$27,682	$2,351
Texas Southern	$0	$3,944	$0	$0	$144,200
Texas State University System					
Angelo State	$0	$58,089	$47,167	$0	$0
Lamar	$1,393	$185,259	$5,320	$5,778	$0
Sam Houston State	$0	$280,819	$5,814	$9,882	$0
Southwest Texas State	$398,979	$3,730,838	$0	$609,674	$16,399
Sul Ross State	$0	$0	$0	$414,447	$0
Sul Ross - Rio Grande	$0	$0	$0	$0	$0
Texas Tech	$0	$7,326,669	$378,148	$3,818,491	$0
Texas Woman's	$1,340,124	$23,947	$982	$46,531	$104,217
University of Texas System					
UT at Arlington	$56,517	$4,576,498	$217,987	$360,051	$0
UT at Austin	$18,335,076	$57,567,823	$7,185,510	$20,415,615	$2,082,952
UT at Brownsville	$250,111	$662,512	$0	$271,957	$34,378
UT at Dallas	$1,255,876	$9,533,471	$2,194,298	$2,347,096	$0
UT at El Paso	$1,312,675	$2,310,356	$526,837	$213,528	$1,120,562
UT-Pan American	$1,052,171	$172,694	$90,535	$39,889	$0
UT of the Permian Basin	$43	$124,726	$29,322	$8,170	$83,987
UT at San Antonio	$0	$796,418	$150,141	$1,508,337	$1,274,422
UT at Tyler	$101,544	$0	$3,277	$23,694	$45,550
University of Houston System					
Univ. of Houston	$5,563,450	$19,060,209	$7,983,397	$1,178,047	$3,020,869
Univ. of Houston-Clear Lake	$0	$93,829	$10,721	$7,622	$6,127
Univ. of Houston-Downtown	$0	$208,624	$0	$15,752	$78,540
Univ. of Houston-Victoria	$0	$0	$0	$0	$0
University of North Texas	$4,762	$5,226,365	$615,197	$1,585,328	$0
Totals	**$51,545,449**	**$138,281,115**	**$22,164,959**	**$46,381,117**	**$12,263,885**

Shading indicates the five highest in each category.

* A&M agency and research foundation expenditures reported by individual affiliated university.

(table continued on next page)

Table 9 - continued

Expenditures for Conduct of R&D by Field, FY 2003
Texas Public Universities

Institution	Arts and Humanities	Business Administration	Education	Law and Public Administration	Other Non-Sciences	Total
Midwestern State	$4,689	$0	$20,865	$0	$0	$85,760
Stephen F. Austin State	$172,045	$52,088	$474,618	$313,208	$0	$5,491,566
Texas A&M University System*						
Prairie View A&M	$0	$0	$260,742	$0	$0	$10,682,633
Tarleton State	$12,625	$0	$233,548	$0	$80,987	$8,229,694
Texas A&M and Services	$1,025,273	$2,506,178	$5,193,679	$2,012,999	$48,144	$390,305,058
Texas A&M-Commerce	$4,025	$4,443	$157,480	$0	$48,893	$520,321
Texas A&M-Corpus Christi	$15,905	$8,655	$2,731,444	$0	$687,189	$12,110,618
Texas A&M at Galveston	$0	$0	$0	$0	$0	$4,949,454
Texas A&M International	$18,439	$92,265	$322,633	$0	$1,799	$570,457
Texas A&M-Kingsville	$0	$2,221	$41,518	$0	$358,035	$10,148,177
Texas A&M-Texarkana	$0	$0	$116,913	$0	$0	$116,913
West Texas A&M	$118,008	$1,026,175	$339,290	$631	$3,105	$6,221,085
Texas Southern	$0	$0	$0	$0	$784,393	$3,872,628
Texas State University System						
Angelo State	$6,991	$27,262	$50,833	$0	$6,011	$699,836
Lamar	$0	$5,677	$205,439	$0	$261,320	$3,958,697
Sam Houston State	$0	$0	$0	$136,300	$0	$1,829,162
Southwest Texas State	$75,678	$1,444	$1,077,564	$0	$345,675	$9,112,931
Sul Ross State	$0	$0	$17,968	$0	$0	$816,917
Sul Ross - Rio Grande	$0	$0	$21,610	$0	$0	$21,610
Texas Tech	$23,283	$345,574	$278,122	$20,986	$0	$56,147,235
Texas Woman's	$8,482	$872	$20,725	$0	$0	$2,998,340
University of Texas System						
UT at Arlington	$75,034	$60,391	$74,625	$323,820	$1,132,196	$23,314,938
UT at Austin	$3,371,539	$1,672,283	$10,957,024	$1,590,877	$16,923,350	$376,403,651
UT at Brownsville	$0	$0	$174,266	$0	$278	$1,558,306
UT at Dallas	$289,114	$585,554	$152,103	$0	$0	$32,547,141
UT at El Paso	$119,133	$82,621	$2,845,531	$531,830	$4,793,001	$27,847,152
UT-Pan American	$133,105	$24,771	$115,616	$0	$0	$3,193,419
UT of the Permian Basin	$7,379	$466,059	$109,714	$1,596	$167,224	$1,118,184
UT at San Antonio	$141,244	$382,821	$392,583	$368,072	$0	$14,547,732
UT at Tyler	$29,292	$27,934	$5,854	$3,182	$11,457	$411,275
University of Houston System						
Univ. of Houston	$1,392,440	$280,887	$7,576,675	$629,426	$6,215,880	$88,608,021
Univ. of Houston-Clear Lake	$13,670	$213,037	$55,514	$0	$240,618	$1,707,440
Univ. of Houston-Downtown	$0	$3,165	$1,753	$9,127	$3,325	$678,068
Univ. of Houston-Victoria	$0	$0	$0	$0	$0	$0
University of North Texas	$711,658	$1,767,442	$2,146,030	$343,359	$0	$17,587,767
Totals	**$7,769,051**	**$9,639,819**	**$36,172,279**	**$6,285,413**	**$32,112,880**	**$1,118,412,186**

Shading indicates the five highest in each category.

* A&M agency and research foundation expenditures reported by individual affiliated university.

Table 10

Expenditures for Conduct of R&D by Area of Special Interest, FY 2003
Texas Public Universities

Institution	Aerospace Technology	Biotechnology	Energy	Environmental Sciences	Food, Fiber, Agricultural Products
Midwestern State	$0	$0	$0	$0	$0
Stephen F. Austin State	$0	$1,466,859	$0	$3,902,543	$3,597,710
Texas A&M University System*					
Prairie View A&M	$148,683	$0	$43,813	$0	$137,687
Tarleton State	$0	$0	$0	$2,200,040	$0
Texas A&M and Services	$1,163,566	$50,890,849	$1,482,819	$4,405,915	$51,127,656
Texas A&M-Commerce	$0	$0	$0	$46,989	$68,760
Texas A&M-Corpus Christi	$0	$222,351	$0	$3,088,068	$40,157
Texas A&M at Galveston	$0	$0	$0	$464,011	$0
Texas A&M International	$0	$0	$0	$0	$0
Texas A&M-Kingsville	$51,060	$1,494,160	$0	$2,280,762	$4,966,961
Texas A&M-Texarkana	$0	$0	$0	$0	$0
West Texas A&M	$0	$0	$481,036	$207,411	$1,224,428
Texas Southern	$0	$85,089	$2,445	$0	$0
Texas State University System					
Angelo State	$0	$0	$0	$0	$395,890
Lamar	$2,601	$0	$0	$2,667,890	$0
Sam Houston State	$0	$0	$0	$610,582	$0
Southwest Texas State	$47,569	$1,604,808	$0	$133,810	$0
Sul Ross State	$0	$39,963	$0	$0	$0
Sul Ross - Rio Grande	$0	$0	$0	$0	$0
Texas Tech	$2,998,671	$4,452,858	$5,946,123	$13,999,565	$14,851,271
Texas Woman's	$0	$0	$0	$0	$414,246
University of Texas System					
UT at Arlington	$318,214	$1,497,696	$1,300,778	$1,648,949	$0
UT at Austin	$11,104,564	$18,986,384	$30,286,338	$34,488,066	$285,584
UT at Brownsville	$538,091	$250,111	$0	$100,149	$55,590
UT at Dallas	$938,288	$798,683	$0	$1,243,037	$0
UT at El Paso	$260,579	$0	$0	$1,703,479	$0
UT-Pan American	$1,441	$40,830	$0	$60,609	$13,192
UT of the Permian Basin	$0	$0	$112,405	$9,993	$0
UT at San Antonio	$180,540	$0	$0	$303,352	$0
UT at Tyler	$15,704	$0	$0	$0	$0
University of Houston System					
Univ. of Houston	$2,512,535	$4,349,833	$5,130,560	$4,000,492	$268,576
Univ. of Houston-Clear Lake	$425,386	$3,603	$0	$225,268	$0
Univ. of Houston-Downtown	$14,000	$0	$0	$10,149	$0
Univ. of Houston-Victoria	$0	$0	$0	$0	$0
University of North Texas	$63,522	$910,609	$279,251	$990,391	$211,039
Totals	**$20,785,014**	**$87,094,686**	**$45,065,568**	**$78,791,520**	**$77,658,747**

Shading indicates the five highest in each category.

* A&M agency and research foundation expenditures reported by individual affiliated university.

(table continued on next page)

Table 10 - continued

Expenditures for Conduct of R&D by Area of Special Interest, FY 2003 Texas Public Universities					
Institution	Manufacturing Technology	Materials Science	Microelectronics and Computer Technology	Water Resources	Total
Midwestern State	$0	$0	$0	$0	$0
Stephen F. Austin State	$82,455	$0	$80,228	$2,815,584	$11,945,379
Texas A&M University System*					
Prairie View A&M	$0	$22,880	$1,965	$0	$355,028
Tarleton State	$0	$0	$0	$0	$2,200,040
Texas A&M and Services	$2,311,855	$3,912,210	$6,981,394	$4,740,850	$127,017,114
Texas A&M-Commerce	$0	$32,728	$862	$0	$149,339
Texas A&M-Corpus Christi	$0	$6,820	$174,225	$220,349	$3,751,970
Texas A&M at Galveston	$0	$0	$0	$0	$464,011
Texas A&M International	$0	$0	$0	$0	$0
Texas A&M-Kingsville	$0	$126,817	$30,534	$116,365	$9,066,659
Texas A&M-Texarkana	$0	$0	$0	$0	$0
West Texas A&M	$0	$29,510	$0	$13,188	$1,955,573
Texas Southern	$0	$0	$0	$0	$87,534
Texas State University System					
Angelo State	$0	$26,015	$0	$0	$421,905
Lamar	$140,777	$5,407	$26,384	$11,293	$2,854,352
Sam Houston State	$0	$0	$0	$198,059	$808,641
Southwest Texas State	$116,588	$232,881	$0	$90,484	$2,226,140
Sul Ross State	$0	$0	$0	$0	$39,963
Sul Ross - Rio Grande	$0	$0	$0	$0	$0
Texas Tech	$2,522,786	$6,559,815	$4,227,604	$3,789,449	$59,348,142
Texas Woman's	$0	$0	$0	$0	$414,246
University of Texas System					
UT at Arlington	$2,686,856	$4,319,883	$2,947,031	$911,807	$15,631,214
UT at Austin	$1,192,340	$17,271,618	$36,115,868	$1,656,009	$151,386,771
UT at Brownsville	$16,535	$0	$0	$9,065	$969,541
UT at Dallas	$935,515	$849,265	$729,899	$0	$5,494,687
UT at El Paso	$0	$1,345,476	$177,676	$258,861	$3,746,071
UT-Pan American	$545,538	$0	$569,741	$10,866	$1,242,217
UT of the Permian Basin	$0	$0	$0	$0	$122,398
UT at San Antonio	$0	$0	$611,471	$93,356	$1,188,719
UT at Tyler	$8,996	$0	$0	$0	$24,700
University of Houston System					
Univ. of Houston	$361,232	$6,409,819	$6,709,153	$18,186	$29,760,386
Univ. of Houston-Clear Lake	$0	$0	$257,385	$0	$911,642
Univ. of Houston-Downtown	$0	$0	$20,417	$0	$44,566
Univ. of Houston-Victoria	$0	$0	$0	$0	$0
University of North Texas	$430,553	$2,128,257	$1,465,778	$99,684	$6,579,084
Totals	**$11,352,026**	**$43,279,401**	**$61,127,615**	**$15,053,455**	**$440,208,032**

Shading indicates the five highest in each category.

* A&M agency and research foundation expenditures reported by individual affiliated university.

INSTITUTIONAL DATA – HEALTH-RELATED INSTITUTIONS

This section of the report contains detailed information on research expenses reported by individual health-related institutions. Statements related to data quality and applicability found on page 1 of this report also apply to the data shown in this section of the report.

Figure 7

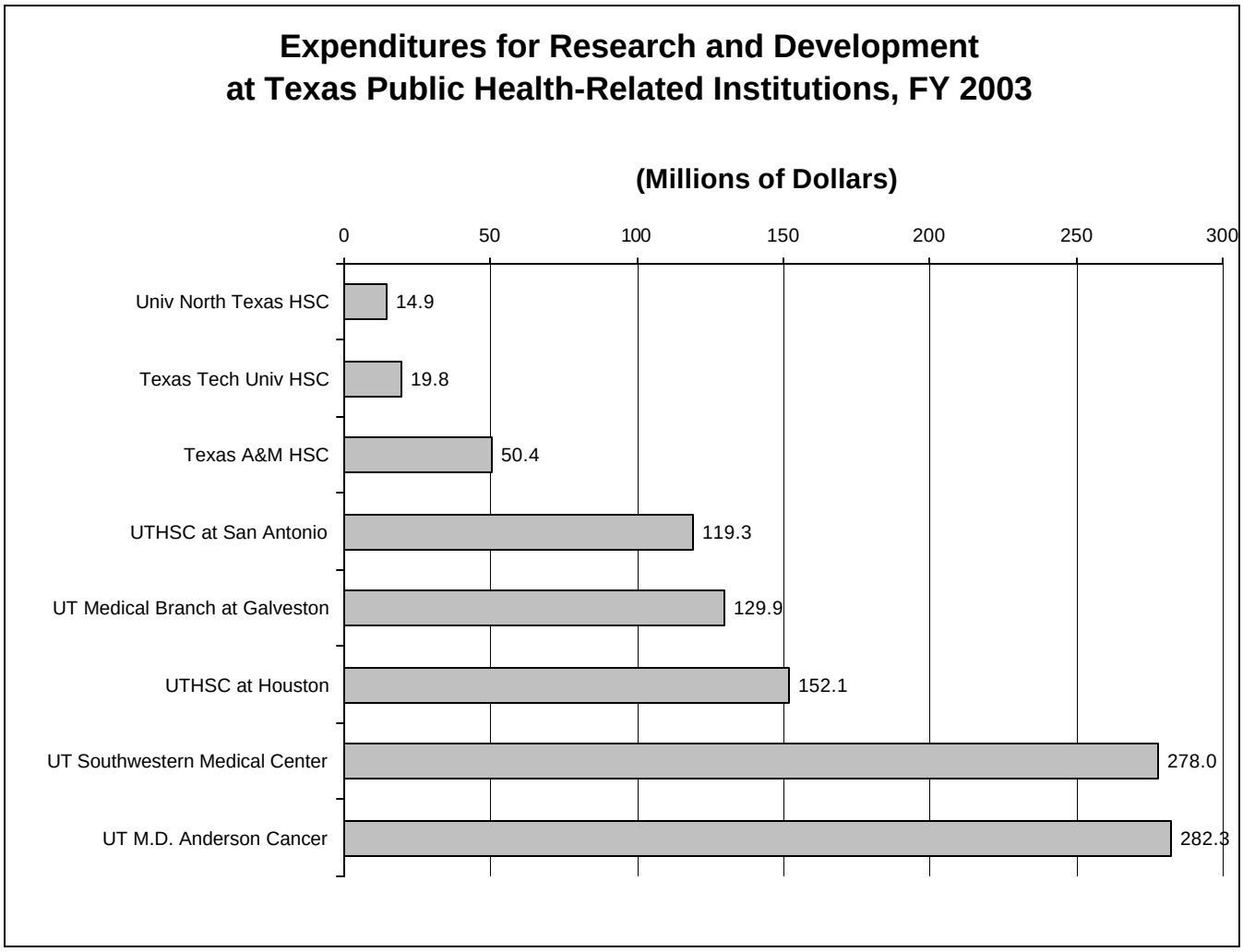


Table 11

Total Expenditures for Research and Other Research-Related Sponsored Programs by Source of Funds, Texas Public Health-Related Institutions, FY 2003

Institution	Federal		State			
			Appropriated		Contracts and Grants	
	R&D	Other	R&D	Other	R&D	Other
Texas A&M HSC	$26,729,107	$0	$10,534,114	$0	$1,003,213	$0
Texas Tech Univ HSC	$8,674,208	$0	$3,398,682	$0	$281,282	$0
Univ North Texas HSC	$9,454,472	$442,635	$26,019	$0	$599,507	$0
UT M.D. Anderson Cancer	$122,868,912	$0	$77,553,063	$0	$825,587	$0
UTMB at Galveston	$93,039,583	$0	$13,032,452	$6,263,811	$751,538	$0
UTHSC at Houston	$111,170,193	$0	$8,621,261	$809,623	$3,248,833	$0
UT Health Center at Tyler	$3,493,251	$0	$2,410,740	$0	$0	$0
UTHSC at San Antonio	$86,854,337	$0	$5,274,025	$0	$625,802	$0
UT Southwestern Medical Center	$177,133,099	$0	$12,918,074	$0	$3,077,770	$0
Totals	**$639,417,162**	**$442,635**	**$133,768,430**	**$7,073,434**	**$10,413,532**	**$0**

Shading indicates the five highest in each category.

Table 11 - continued

Total Expenditures for Research and Other Research-Related Sponsored Programs by Source of Funds, Texas Public Health-Related Institutions, FY 2003

Institution	Institution		Private, Profit		Private, Non-Profit	
	R&D	Other	R&D	Other	R&D	Other
Texas A&M HSC	$1,413,039	$0	$1,884,731	$0	$8,871,043	$0
Texas Tech Univ HSC	$4,105,877	$0	$1,154,955	$0	$2,136,344	$14,653
Univ North Texas HSC	$2,674,175	$0	$584,715	$0	$1,562,903	$13,430
UT M.D. Anderson Cancer	$12,358,562	$0	$31,315,742	$0	$37,338,384	$0
UTMB at Galveston	$1,506,403	$746,846	$7,979,170	$0	$13,551,757	$0
UTHSC at Houston	$2,132,099	$0	$12,112,774	$0	$14,831,904	$0
UT Health Center at Tyler	$2,316,482	$383,024	$348,289	$0	$648,277	$0
UTHSC at San Antonio	$5,487,622	$0	$11,697,192	$0	$9,340,577	$0
UT Southwestern Medical Center	$6,968,208	$1,227,832	$12,086,802	$0	$65,772,558	$0
Totals	**$38,962,467**	**$2,357,702**	**$79,164,370**	**$0**	**$154,053,747**	**$28,083**

Shading indicates the five highest in each category.

Table 11 - continued

Total Expenditures for Research and Other Research-Related Sponsored Programs by Source of Funds, Texas Public Health-Related Institutions, FY 2003

Institution	Total		
	R&D	Other	Total
Texas A&M HSC	$50,435,247	$0	$50,435,247
Texas Tech Univ HSC	$19,751,348	$14,653	$19,766,001
Univ North Texas HSC	$14,901,791	$456,065	$15,357,856
UT M.D. Anderson Cancer	$282,260,250	$0	$282,260,250
UTMB at Galveston	$129,860,903	$7,010,657	$136,871,560
UTHSC at Houston	$152,117,064	$809,623	$152,926,687
UT Health Center at Tyler	$9,217,039	$383,024	$9,600,063
UTHSC at San Antonio	$119,279,555	$0	$119,279,555
UT Southwestern Medical Center	$277,956,511	$1,227,832	$279,184,343
Totals	**$1,055,779,708**	**$9,901,854**	**$1,065,681,562**

Shading indicates the five highest in each category.

Table 12

Expenditures for Conduct of R&D by Field, FY 2003 Texas Public Health-Related Institutions					
Institution	Biological and Other Life Sciences	Engineering	Environmental Sciences	Mathematical Sciences	Medical Sciences
Texas A&M HSC	$0	$0	$0	$0	$50,435,247
Texas Tech Univ HSC	$6,069,311	$0	$0	$0	$13,682,037
Univ North Texas HSC	$11,394,777	$0	$0	$0	$3,507,014
UT M.D. Anderson Cancer	$119,464,989	$1,581,901	$0	$13,182,856	$134,471,942
UTMB at Galveston	$70,544,599	$2,643,617	$0	$0	$56,672,687
UTHSC at Houston	$23,297,879	$0	$0	$0	$128,819,185
UT Health Center at Tyler	$0	$0	$26,889	$0	$9,190,150
UTHSC at San Antonio	$0	$0	$0	$0	$119,279,555
UT Southwestern Medical Center	$128,976,633	$0	$0	$0	$146,687,799
Totals	**$359,748,188**	**$4,225,518**	**$26,889**	**$13,182,856**	**$662,745,616**

Shading indicates the five highest in each category.

Table 12 - continued

Expenditures for Conduct of R&D by Field, FY 2003 Texas Public Health-Related Institutions					
Institution	Physical Sciences	Physical Sciences	Other Sciences	Arts and Humanities	Total
Texas A&M HSC	$0	$0	$0	$0	$50,435,247
Texas Tech Univ HSC	$0	$0	$0	$0	$19,751,348
Univ North Texas HSC	$0	$0	$0	$0	$14,901,791
UT M.D. Anderson Cancer	$6,355,787	$7,035,530	$167,245	$0	$282,260,250
UTMB at Galveston	$0	$0	$0	$0	$129,860,903
UTHSC at Houston	$0	$0	$0	$0	$152,117,064
UT Health Center at Tyler	$0	$0	$0	$0	$9,217,039
UTHSC at San Antonio	$0	$0	$0	$0	$119,279,555
UT Southwestern Medical Center	$0	$0	$0	$2,292,079	$277,956,511
Totals	**$6,355,787**	**$7,035,530**	**$167,245**	**$2,292,079**	**$1,055,779,708**

Shading indicates the five highest in each category.

Table 13

Expenditures for Research and Development by Area of Special Interest, FY 2003 Texas Public Health-Related Institutions				
Institution	Aging	Cancer Research	Cardiovascular Research	Child Health and Human Development
Texas A&M HSC	$832,289	$2,439,228	$6,005,664	$4,282,720
Texas Tech Univ HSC	$1,331,071	$1,885,352	$0	$0
Univ North Texas HSC	$995,604	$772,150	$2,293,914	$0
UT M.D. Anderson Cancer	$0	$282,260,250	$0	$0
UTMB at Galveston	$12,390,317	$13,491,098	$7,989,321	$7,993,649
UTHSC at Houston	$4,573,145	$2,015,673	$13,931,434	$17,455,771
UT Health Center at Tyler	$0	$110,128	$0	$0
UTHSC at San Antonio	$9,820,088	$17,810,578	$9,254,316	$5,832,078
UT Southwestern Medical Center	$7,258,190	$30,297,418	$40,602,546	$5,953,147
Totals	**$37,200,704**	**$351,081,875**	**$80,077,195**	**$41,517,365**

Shading indicates the five highest in each category.

Table 13 - continued

Expenditures for Research and Development by Area of Special Interest, FY 2003 Texas Public Health-Related Institutions			
Institution	Mental Health	Substance Abuse	Total
Texas A&M HSC	$399,582	$1,721,682	$15,681,165
Texas Tech Univ HSC	$1,331,071	$492,174	$5,039,668
Univ North Texas HSC	$0	$241,040	$4,302,708
UT M.D. Anderson Cancer	$0	$0	$282,260,250
UTMB at Galveston	$7,840,454	$2,354,767	$52,059,606
UTHSC at Houston	$5,394,913	$4,531,496	$47,902,432
UT Health Center at Tyler	$0	$0	$110,128
UTHSC at San Antonio	$6,190,135	$10,121,550	$59,028,745
UT Southwestern Medical Center	$18,590,189	$3,902,613	$106,604,103
Totals	**$39,746,344**	**$23,365,322**	**$572,988,805**

Shading indicates the five highest in each category.

HISTORICAL DATA

Much of the data in this report does not allow accurate comparisons with data contained in reports prior to 1990. Since then, many individual data items have been more rigorously defined.

Total research expenditures is the statistic allowing the most accurate long-term comparison. However, because a more precise and more conservative definition of research activity was adopted, research expenditures for Fiscal Years 1990 through 2003 are probably understated when compared to expenditures reported in previous years. Figure 8 graphs total research and development expenditures since 1983.

Figure 8

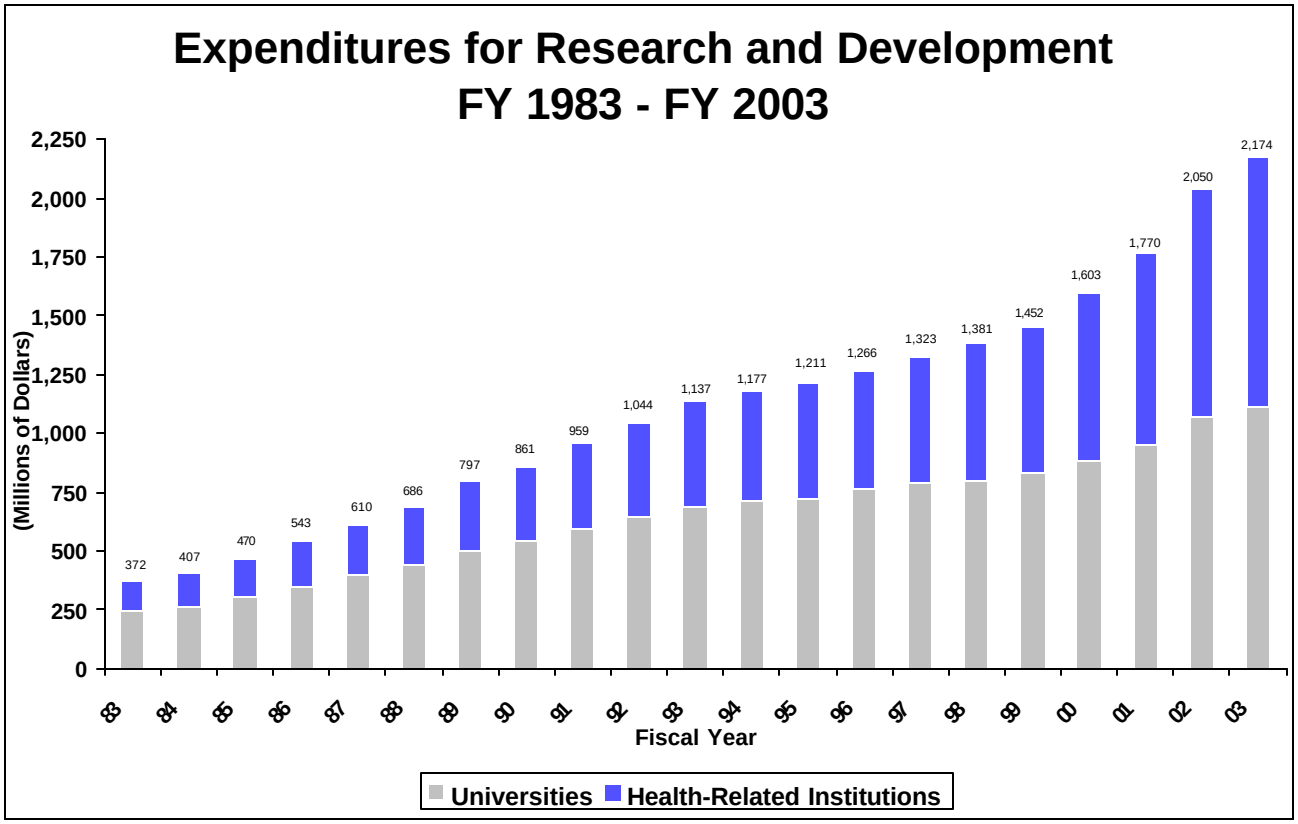


Table 14 on the following page shows total research and development expenditures at Texas public universities over the past four years. Table 15 shows federal research and development expenditures and the ratio of federal-to-state research and development expenditures over the past four years. Tables 16 and 17 show similar data for health-related institutions. One-year and five-year changes in federal expenditures for research and development for the different disciplines are shown in Table 18.

Table 14

Expenditures for Research and Development Texas Public Universities					
Institution	FY 2000	FY 2001	FY 2002	FY 2003	Percent Change*
Midwestern State	$101,935	$93,085	$74,626	$85,760	-15.87%
Stephen F. Austin State **	$5,174,108	$4,840,607	$5,583,051	$5,491,566	6.14%
Texas A&M University System					
Prairie View A&M	$8,795,343	$9,201,307	$10,330,085	$10,682,633	21.46%
Tarleton State	$3,504,054	$6,495,956	$7,909,999	$8,229,694	134.86%
Texas A&M and Services	$331,027,971	$340,660,614	$372,828,854	$390,305,058	17.91%
Texas A&M-Commerce	$414,154	$336,803	$629,496	$520,321	25.63%
Texas A&M-Corpus Christi	$3,517,134	$6,710,930	$10,365,501	$12,110,618	244.33%
Texas A&M at Galveston	$2,948,270	$3,252,082	$4,010,618	$4,949,454	67.88%
Texas A&M International	$396,428	$507,806	$677,346	$570,457	43.90%
Texas A&M-Kingsville	$7,163,871	$7,144,715	$8,591,828	$10,148,177	41.66%
Texas A&M-Texarkana	$0	$0	$212,252	$116,913	NA
West Texas A&M	$1,778,857	$4,744,757	$6,036,713	$6,221,085	249.72%
Texas Southern	$2,595,995	$3,048,521	$4,930,117	$3,872,628	49.18%
Texas State University System					
Angelo State	$524,986	$643,460	$800,044	$699,836	33.31%
Lamar	$3,204,061	$3,441,465	$4,237,915	$3,958,697	23.55%
Sam Houston State	$3,156,084	$2,281,435	$1,931,014	$1,829,162	-42.04%
Southwest Texas State	$9,127,901	$11,652,513	$10,400,827	$9,112,931	-0.16%
Sul Ross State	$796,408	$773,021	$841,426	$816,917	2.58%
Sul Ross - Rio Grande	$0	$6,277	$10,464	$21,610	NA
Texas Tech	$44,110,624	$43,373,437	$51,701,449	$56,147,235	27.29%
Texas Woman's	$3,143,775	$3,023,439	$2,960,015	$2,998,340	-4.63%
University of Texas System					
UT at Arlington	$14,552,315	$19,966,034	$21,072,964	$23,314,938	60.21%
UT at Austin	$295,901,287	$321,580,736	$366,355,359	$376,403,651	27.21%
UT at Brownsville	$299,359	$635,365	$1,286,638	$1,558,306	420.55%
UT at Dallas	$15,923,269	$18,531,582	$27,444,057	$32,547,141	104.40%
UT at El Paso	$27,784,046	$29,003,608	$27,328,772	$27,847,152	0.23%
UT-Pan American	$2,175,562	$2,601,598	$2,605,758	$3,193,419	46.79%
UT of the Permian Basin	$811,973	$737,853	$980,905	$1,118,184	37.71%
UT at San Antonio	$10,613,082	$11,751,323	$12,402,017	$14,547,732	37.07%
UT at Tyler	$210,747	$342,206	$375,821	$411,275	95.15%
University of Houston System					
Univ. of Houston	$58,729,892	$61,332,253	$82,865,307	$88,608,021	50.87%
Univ. of Houston-Clear Lake	$7,597,590	$11,928,221	$8,862,208	$1,707,440	-77.53%
Univ. of Houston-Downtown	$588,328	$1,016,352	$1,270,494	$678,068	15.25%
Univ. of Houston-Victoria	$0	$0	$0	$0	NA
University of North Texas	$14,601,146	$17,441,681	$18,875,396	$17,587,767	20.45%
Totals	**$881,270,555**	**$948,223,316**	**$1,076,789,336**	**$1,118,412,186**	**26.91%**

* Percent change for 2003, relative to 2000; NA indicates not applicable

** Stephen F. Austin State University reported corrections to FY 2001 research expenditures: total research expenditures = $4,840,607; from institutional sources = $877,726; and expenditures for agricultural sciences = $797,344; physical sciences = $162,323; biological sciences = $152,562; and arts and humanities = $117,719.

Table 15

Federal Expenditures for Research and Development
Texas Public Universities

Institution	FY 2000		FY 2001		FY 2002		FY 2003	
	Federal R&D Dollars	Fed/ State Ratio	Federal R&D Dollars	Fed/ State Ratio	Federal R&D Dollars	Fed/ State Ratio	Federal R&D Dollars	Fed/ State Ratio
Midwestern State	$37,293	1.64	$25,500	1.12	$0	NA	$20,865	0.45
Stephen F. Austin State	$521,123	0.93	$959,198	2.65	$1,054,239	11.58	$1,208,382	14.51
Texas A&M University System								
Prairie View A&M	$7,812,509	9.87	$7,247,020	4.09	$7,915,204	3.61	$8,106,963	3.53
Tarleton State	$1,425,780	0.74	$4,321,656	2.22	$5,431,723	2.42	$5,856,670	2.72
Texas A&M and Services	$150,341,703	1.56	$152,196,825	1.46	$166,285,925	1.41	$178,016,320	1.48
Texas A&M-Commerce	$175,163	2.23	$114,497	1.77	$315,173	3.02	$198,275	1.17
Texas A&M-Corpus Christi	$922,819	0.42	$2,805,448	0.88	$4,473,974	1.11	$5,667,854	1.27
Texas A&M at Galveston	$1,340,939	1.56	$1,567,592	1.52	$2,362,832	2.24	$3,128,730	2.82
Texas A&M International	$232,757	4.42	$376,032	8.03	$572,462	32.73	$486,102	46.53
Texas A&M-Kingsville	$2,050,146	0.67	$1,818,310	0.62	$1,950,923	0.45	$2,766,449	0.62
Texas A&M-Texarkana	$0	NA	$0	NA	$182,262	NA	$113,290	NA
West Texas A&M	$147,735	0.10	$2,900,437	1.79	$3,531,219	1.67	$3,190,176	1.29
Texas Southern	$2,002,349	4.71	$2,051,797	2.93	$4,147,663	6.16	$3,247,658	6.63
Texas State University System								
Angelo State	$37,445	0.08	$111,424	0.24	$254,963	0.55	$131,977	0.25
Lamar	$2,329,531	3.25	$2,216,829	2.48	$2,279,805	1.55	$1,998,033	1.26
Sam Houston State	$2,132,294	14.81	$1,802,777	11.97	$1,491,475	4.51	$1,397,106	4.26
Southwest Texas State	$6,460,981	4.54	$4,961,466	1.12	$4,769,709	1.23	$3,975,213	1.10
Sul Ross State	$228,234	0.47	$95,043	0.16	$76,368	0.12	$95,580	0.19
Sul Ross - Rio Grande	$0	NA	$0	0.00	$0	0.00	$0	0.00
Texas Tech	$17,860,045	1.13	$17,394,677	1.08	$20,511,493	0.96	$23,285,324	1.01
Texas Woman's	$1,440,415	1.27	$1,185,256	0.76	$1,321,373	1.04	$1,493,677	1.20
University of Texas System								
UT at Arlington	$5,242,897	0.84	$9,224,210	1.61	$7,923,657	0.83	$7,993,576	0.64
UT at Austin	$185,190,446	3.69	$202,440,085	4.28	$235,436,101	4.46	$240,537,689	4.75
UT at Brownsville	$241,980	4.22	$602,856	18.54	$896,646	430.67	$1,011,353	NA
UT at Dallas	$7,049,617	2.25	$8,781,295	2.14	$11,815,490	1.40	$14,432,841	1.37
UT at El Paso	$22,972,030	7.17	$22,872,682	6.98	$19,796,441	4.65	$17,022,000	2.17
UT-Pan American	$1,149,325	1.38	$1,324,426	1.33	$1,394,780	1.53	$1,895,223	1.73
UT of the Permian Basin	$233,075	0.54	$147,629	0.34	$138,194	0.20	$166,777	0.25
UT at San Antonio	$7,421,650	3.31	$8,032,790	3.11	$7,641,990	2.17	$10,049,314	3.29
UT at Tyler	$63,307	0.67	$66,827	0.32	$67,617	0.31	$174,362	1.23
University of Houston System								
Univ. of Houston	$24,887,466	1.31	$24,227,166	1.08	$33,239,410	1.16	$34,242,554	1.10
Univ. of Houston-Clear Lake	$6,647,437	12.17	$10,843,892	19.72	$7,659,934	10.99	$696,239	1.32
Univ. of Houston-Downtown	$441,926	3.02	$649,135	2.08	$783,394	2.00	$378,339	1.84
Univ. of Houston-Victoria	$0	NA	$0	NA	$0	NA	$0	NA
University of North Texas	$7,301,680	2.98	$8,284,082	1.78	$8,827,974	2.55	$8,328,900	2.33
Totals	**$466,342,097**	**2.15**	**$501,648,859**	**2.14**	**$564,550,413**	**2.03**	**$581,313,811**	**2.00**

NA indicates not applicable (no state research and development funds expended).

Table 16

Expenditures for Research and Development Texas Public Health-Related Institutions					
Institution	FY 2000	FY 2001	FY 2002	FY 2003	Percent Change*
Texas A&M HSC	$24,335,023	$37,328,465	$45,066,569	$50,435,247	107.25%
Texas Tech Univ HSC	$10,868,500	$14,343,187	$19,279,797	$19,751,348	81.73%
Univ North Texas HSC	$10,130,753	$11,034,554	$12,347,141	$14,901,791	47.09%
UT M.D. Anderson Cancer	$182,196,490	$210,236,589	$262,144,960	$282,260,250	54.92%
UTMB at Galveston	$87,146,267	$91,088,019	$109,139,538	$129,860,903	49.01%
UTHSC at Houston	$122,914,171	$128,161,248	$140,827,726	$152,117,064	23.76%
UT Health Center at Tyler	$8,402,408	$9,228,568	$8,453,709	$9,217,039	9.70%
UTHSC at San Antonio	$86,074,434	$97,638,253	$112,232,653	$119,279,555	38.58%
UT Southwestern Medical Center	$189,216,337	$222,378,235	$263,958,410	$277,956,511	46.90%
Totals	**$721,284,383**	**$821,437,118**	**$973,450,503**	**$1,055,779,708**	**46.37%**

NA indicates not applicable

* Percent change for 2003, relative to 2000

Table 17

Federal Expenditures for Research and Development Texas Public Health-Related Institutions								
Institution	FY 2000		FY 2001		FY 2002		FY 2003	
	Federal R&D Dollars	Fed/ State Ratio	Federal R&D Dollars	Fed/ State Ratio	Federal R&D Dollars	Fed/ State Ratio	Federal R&D Dollars	Fed/ State Ratio
Texas A&M HSC	$14,320,534	$2	$18,384,358	2.34	$22,417,418	1.82	$26,729,107	2.32
Texas Tech Univ HSC	$4,178,058	1.47	$6,457,506	2.44	$8,802,283	2.67	$8,674,208	2.36
Univ North Texas HSC	$5,798,287	4.60	$6,562,238	36.53	$7,224,263	15.08	$9,454,472	15.11
UT M.D. Anderson Cancer	$81,871,561	1.62	$91,543,036	1.56	$117,633,074	1.65	$122,868,912	1.57
UTMB at Galveston	$61,356,467	7.14	$63,274,494	5.87	$78,100,188	6.28	$93,039,583	6.75
UTHSC at Houston	$82,991,431	8.49	$91,267,003	8.46	$101,738,767	8.33	$111,170,193	9.37
UT Health Center at Tyler	$2,807,980	1.36	$3,063,099	3.45	$2,783,554	1.81	$3,493,251	1.45
UTHSC at San Antonio	$58,600,224	10.08	$66,852,477	10.38	$83,760,708	13.50	$86,854,337	14.72
UT Southwestern Medical Center	$109,165,343	9.64	$131,820,109	13.85	$155,257,992	9.09	$177,133,099	11.07
Totals	**$421,089,885**	**4.26**	**$479,224,320**	**4.44**	**$577,718,247**	**4.23**	**$639,417,162**	**4.43**

NA indicates not applicable

Table 18

Federal Expenditures for Research and Development by Field Texas Public Universities and Health-Related Institutions					
Field	FY 1998	FY 2002	FY 2003	One-Year Change	Five-Year Change
Agricultural Sciences	$22,052,381	$25,352,992	$27,202,509	7.30%	23.35%
Biological and Other Life Sciences	$92,634,712	$260,564,270	$283,763,040	8.90%	206.32%
Computer Science	$21,511,751	$31,440,414	$32,749,420	4.16%	52.24%
Engineering	$118,015,109	$155,461,426	$154,531,991	-0.60%	30.94%
Environmental Sciences	$67,621,865	$91,715,782	$93,228,178	1.65%	37.87%
Mathematical Sciences	$4,414,108	$26,934,849	$29,248,227	8.59%	562.61%
Medical Sciences	$312,242,150	$401,490,302	$440,091,234	9.61%	40.95%
Physical Sciences	$71,019,361	$79,873,133	$86,155,663	7.87%	21.31%
Psychology	$7,473,966	$15,332,253	$21,355,883	39.29%	185.74%
Social Sciences	$12,280,859	$13,416,477	$17,846,438	33.02%	45.32%
Other Sciences	$2,483,413	$6,835,106	$5,158,847	-24.52%	107.73%
Arts and Humanities	$1,409,914	$948,930	$1,208,462	27.35%	-14.29%
Business Administration	$4,057,713	$2,502,075	$1,272,822	-49.13%	-68.63%
Education	$11,650,784	$24,348,321	$20,077,464	-17.54%	72.33%
Law and Public Administration	$1,608,349	$1,753,585	$1,077,506	-38.55%	-33.01%
Other Non-Science Activities	$1,872,706	$4,309,209	$5,763,289	33.74%	207.75%
Totals	**$752,349,142**	**$1,142,279,124**	**$1,220,730,973**	**6.87%**	**62.26%**

In 2001, the 77th Legislature passed the Centers for Technology Development and Transfer Act, which specifies reporting requirements for intellectual property income and expenses. Intellectual property income is now reported biennially in a new report, *Technology Development and Transfer*.

NATIONAL COMPARISONS

This section of the report is based on data provided by the National Science Foundation. It is not entirely consistent with data provided in earlier sections of the report because it is based on an earlier year, because reporting requirements are somewhat different, and because the federal reports do not differentiate between state-funded and independent institutions.

The National Science Foundation makes three reports available, and each provides somewhat different information:

- *Federal Obligations for Science and Engineering* shows federal obligations for grants and contracts awarded to higher education science and engineering programs by federal agencies during the fiscal year. Funds obligated in any given year may be expended over a number of years, so obligations will be somewhat different from expenditures. This report includes support for a number of programs that are not necessarily research and development programs, such as science education programs and assistantship support for engineering students. The amount of support is reported by the agencies. Data from this report measures progress toward the research goal of *Closing the Gaps by 2015*.

- *Federal Obligations for Research and Development in Science and Engineering* includes only federal funds obligated during the year to support, directly or indirectly, basic and applied research and development in science and engineering disciplines at higher education institutions. The amount of support is again reported by the agencies.

- *Federally Financed Research and Development Expenditures* summarizes federal funds expenditures by higher education institutions to support research and development in any given year. This report is based on data reported by institutions and summarized by the National Science Foundation.

Some of the highlights of the 2001 survey of federal research and development *expenditures* include the following:

- The top five states in federal research and development expenditures were:
  California – $2.53 billion
  New York – $1.57 billion
  Texas – $1.23 billion
  Pennsylvania – $1.20 billion
  Maryland – $1.14 billion

- Texas ranked second (behind California) in state- and local government-funded R&D expenditures.

- Texas ranked third in total R&D expenditures.

- Texas ranked third in R&D expenditures from institutional sources (behind California and New York), second in R&E expenditures from industrial sources (behind California), and second in R&D expenditures from all other sources (behind California).

- Texas was among the top three states for all of the different types of sources.

- In Texas, life sciences accounted for 67 percent of the R&D expenditures, followed by engineering (15 percent) and environmental sciences (7 percent).

Table 19

Top Five States in Federal R&D Expenditures
Selected Science and Engineering Fields, FY 2000

Rank	Life Sciences	$	Engineering	$	Physical Sciences	$	Environmental Sciences	$
1	California	1.4B	California	347M	California	354M	California	165M
2	New York	1.1B	Maryland	324M	Massachusetts	173M	Massachusetts	101M
3	**Texas**	**820M**	Pennsylvania	187M	Maryland	150M	**Texas**	**86M**
4	Pennsylvania	726M	Massachusetts	165M	New York	143M	Washington	70M
5	Massachusetts	577M	**Texas**	**149M**	Pennsylvania	92M	Maryland	67M

Source: National Science Foundation, WebCASPAR Database System, 02/02/2004

Table 20 shows the ranking of all states in federal obligations for science and engineering, federal obligations for research and development in science and engineering, and federally financed R&D expenditures for 2001. Texas ranks third in federal obligations for science and engineering, which includes science education, and ranks fourth in federal obligations for research and development in science and engineering, which excludes science education. Texas ranks third in research and development expenditures from federal sources. Patterns in federal R&D support over time for the top six states are shown in Figures 9 and 10. California and New York are the uncontested leaders in federal research support to the states.

Table 20

State Rank in Federal Obligations and Federally Financed R&D, FY 2001
(Dollars in Thousands)

	Federal Obligations for Science and Engineering to Colleges and Universities		Federal Obligations for R&D in Science and Engineering to Colleges and Universities		Federally Financed R&D Expenditures at Colleges and Universities	
State	FY 2001	Rank	FY 2001	Rank	FY 2001	Rank
California	$3,013,126	1	$2,693,881	1	$2,527,074	1
New York	$1,819,007	2	$1,580,912	2	$1,566,387	2
Texas	$1,364,940	3	$1,147,752	4	$1,231,083	3
Pennsylvania	$1,331,904	4	$1,239,390	3	$1,144,586	5
Maryland	$1,319,192	5	$1,122,508	5	$1,196,085	4
Massachusetts	$1,220,024	6	$1,072,966	6	$1,140,358	6
North Carolina	$871,764	7	$766,285	7	$655,093	8
Illinois	$827,094	8	$713,052	8	$741,522	7
Michigan	$685,093	9	$606,597	9	$621,578	9
Ohio	$621,130	10	$543,795	10	$560,767	10
Colorado	$617,840	11	$476,803	13	$438,664	14
Washington	$608,782	12	$535,764	11	$488,877	11

(table continued on next page)

Table 20 - continued

State Rank in Federal Obligations and Federally Financed R&D, FY 2001
(Dollars in Thousands)

	Federal Obligations for Science and Engineering to Colleges and Universities		Federal Obligations for R&D in Science and Engineering to Colleges and Universities		Federally Financed R&D Expenditures at Colleges and Universities	
State	FY 2001	Rank	FY 2001	Rank	FY 2001	Rank
Florida	$548,591	13	$483,123	12	$468,099	13
Missouri	$507,625	14	$439,070	14	$409,999	15
Georgia	$500,630	15	$398,573	15	$472,593	12
Wisconsin	$448,810	16	$392,093	16	$386,441	16
Virginia	$418,541	17	$356,664	18	$344,849	17
Connecticut	$391,557	18	$360,442	17	$327,983	18
Alabama	$370,085	19	$311,538	19	$312,522	19
Tennessee	$341,926	20	$287,048	21	$264,897	23
New Jersey	$333,912	21	$290,759	20	$270,121	20
Minnesota	$325,252	22	$277,441	22	$267,955	21
Indiana	$303,392	23	$267,126	23	$247,944	25
Oregon	$292,746	24	$251,112	24	$255,324	24
Iowa	$281,689	25	$234,135	25	$219,361	26
Arizona	$264,117	26	$226,765	26	$265,716	22
District of Columbia	$220,365	27	$204,379	27	$192,314	28
Utah	$207,726	28	$189,282	28	$213,163	27
New Mexico	$179,660	29	$136,866	31	$185,733	29
South Carolina	$176,428	30	$144,460	30	$169,257	31
Louisiana	$173,134	31	$144,601	29	$182,794	30
Mississippi	$171,877	32	$127,392	33	$145,505	32
Kentucky	$166,094	33	$136,101	32	$119,648	33
Kansas	$148,759	34	$126,346	34	$114,732	35
New Hampshire	$137,920	35	$118,743	35	$115,067	34
Hawaii	$122,112	36	$101,153	36	$97,716	37
Oklahoma	$109,822	37	$80,105	39	$96,349	38
Nebraska	$108,199	38	$86,662	38	$76,507	39
Rhode Island	$104,458	39	$92,988	37	$101,560	36
Arkansas	$93,522	40	$68,234	42	$64,030	41
Alaska	$92,254	41	$72,694	40	$58,129	42
Montana	$84,592	42	$64,636	43	$56,668	43
Vermont	$76,913	43	$69,034	41	$50,095	44
Nevada	$66,853	44	$57,590	44	$69,085	40
West Virginia	$62,315	45	$41,471	46	$35,526	46
Delaware	$55,632	46	$44,173	45	$44,052	45
North Dakota	$50,258	47	$35,275	47	$30,950	48
Maine	$40,624	48	$27,491	50	$25,124	49
Idaho	$40,459	49	$27,900	49	$34,347	47
Wyoming	$36,879	50	$32,058	48	$20,017	50
South Dakota	$32,833	51	$22,503	51	$16,407	51

SOURCE: National Science Foundation, WebCASPAR Database System, 02/02/2004

Figure 9

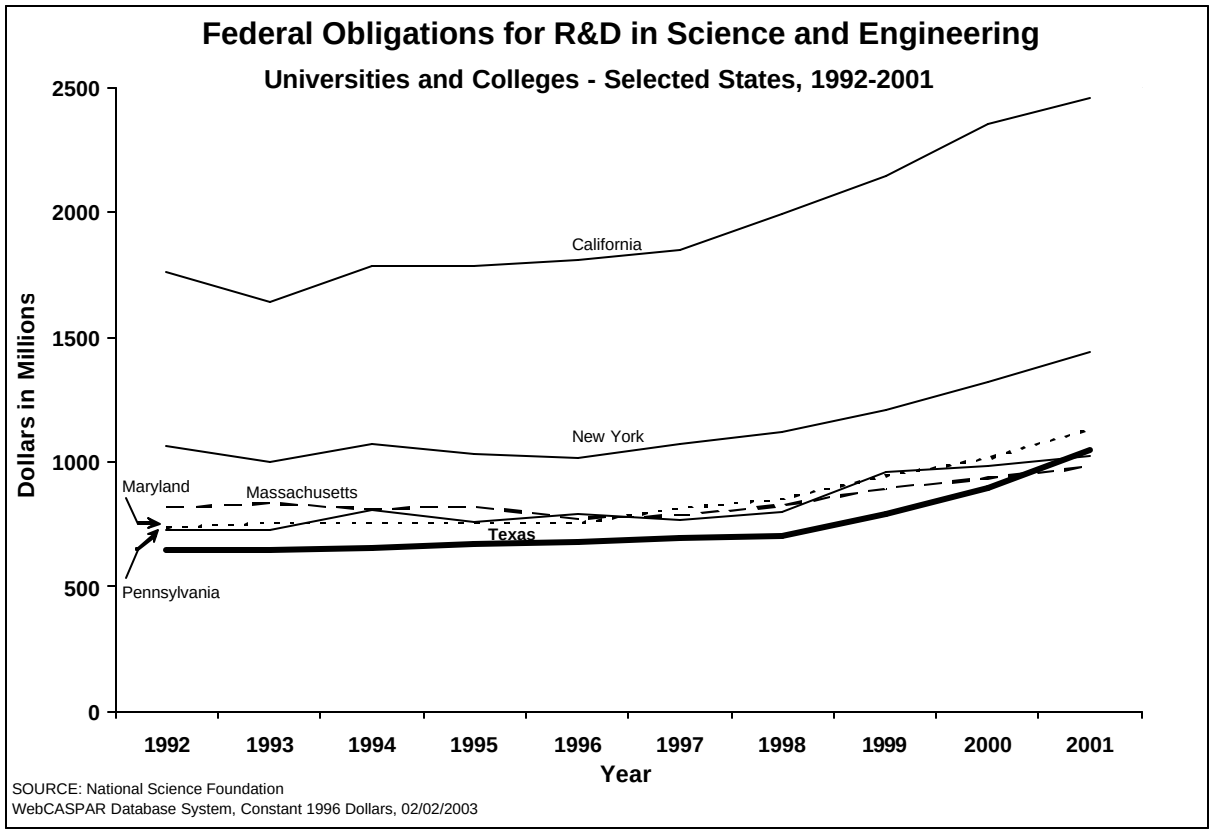


Figure 10

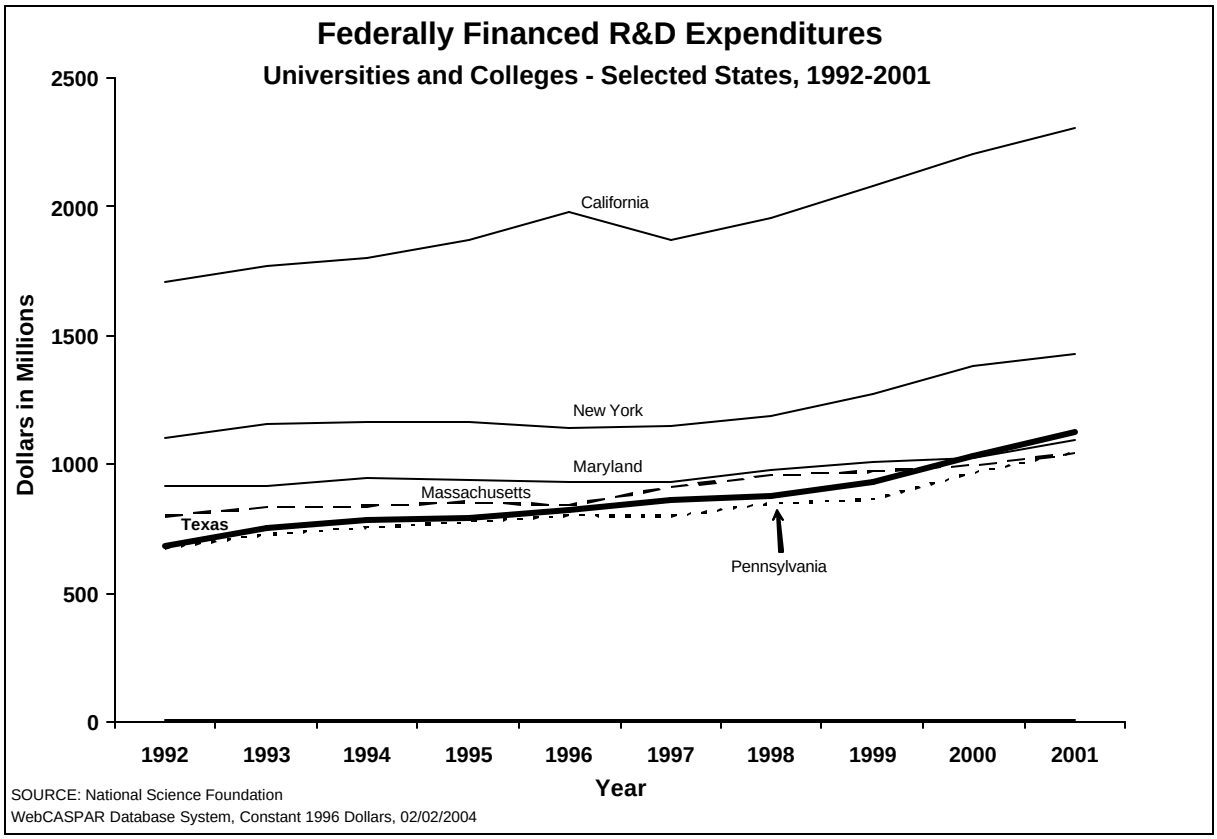


Table 21 shows federal obligations and federally financed R&D expenditures for Texas higher education institutions for FY 2001. The table includes public and independent institutions. In all cases, the top five institutions account for 60-63 percent of the total federal support.

Table 21

Federal Obligations and Federally Financed R&D by Texas Institutions, FY 2001 (Dollars in Thousands)

Institution	Federal Obligations for Science and Engineering	Federal Obligations for R&D in Science and Engineering	Federally Financed R&D Expenditures
Abilene Christian	$130	$130	$162
Alamo Community Coll. Dist.	$274	$274	---
Angelo State	$259	$27	---
Austin Community Coll.	$575	---	---
Austin College	$32	$32	---
Baylor- Coll. of Medicine	$272,941	$231,682	$234,394
Baylor Univ.	$2,322	$2,256	$516
Coll. of the Mainland	$247	---	---
Collin County Community Coll.	$174	---	---
Del Mar Coll.	$220	---	---
El Paso Community Coll.	$721	$451	---
Houston Community Coll.	$424	$149	---
Jarvis Christian Coll.	$875	---	$55
Lamar	$550	---	$2,217
Lamar State Coll. at Port Arthur	$211	---	---
Laredo Community Coll.	$117	$117	---
Le Tourneau Univ.	$181	$16	---
Lubbock Christian Univ.	$8	---	---
Midland Coll.	$900	---	---
North Central Texas Coll.	$178	$178	---
Our Lady of the Lake	$788	$455	---
Prarie View A&M	$12,998	$7,089	$7,094
Rice Univ.	$37,131	$34,062	$35,682
Sam Houston State	$35	---	$1,802
San Jacinto Coll.	$320	---	---
South Texas Community Coll.	$308	$38	---
Southern Methodist	$4,547	$4,547	$5,587
Southwestern Univ.	$97	---	---
St Edwards Univ.	$206	---	---
St Mary's Univ.	$261	$117	$193
Stephen F. Austin State	$439	$439	$959
Sul Ross State	$5	$5	$95

Shading indicates the five highest in each category.

Table 21 - continued

Federal Obligations and Federally Financed R&D by Texas Institutions, FY 2001
(Dollars in Thousands)

Institution	Federal Obligations for Science and Engineering	Federal Obligations for R&D in Science and Engineering	Federally Financed R&D Expenditures
Tarleton State	$1,265	$1,165	$4,094
Texas A&M and Services	$130,043	$77,087	$149,382
Texas A&M HSC	$1,495	$1,320	$18,384
Texas A&M International	$303	$303	---
Texas A&M System Office	$25,315	$23,294	---
Texas A&M-Commerce	---	---	$83
Texas A&M-Corpus Christi	$536	$160	$2,357
Texas A&M-Kingsville	$3,179	$1,314	$1,828
Texas Christian	$1,424	$1,405	$2,824
Texas Southern	$3,187	$2,492	$1,908
Texas State Technical Coll.	$742	---	---
Texas State Univ. - San Marcos	$2,786	$2,210	$3,854
Texas Tech	$17,105	$14,127	$22,967
Texas Wesleyan Univ.	$213	$100	---
Texas Woman's	$1,971	$1,109	$1,185
Trinity Univ.	$823	$667	$746
Univ. North Tx HSC	---	---	$6,562
Univ. of Dallas	$36	$36	$26
Univ. of Houston	$27,379	$22,029	$21,876
Univ. of Houston System Administration	$1,782	$694	---
Univ. of Houston-Clear Lake	$9,453	$2,786	$10,629
Univ. of Houston-Downtown	$742	$473	$660
Univ. of St. Thomas	$217	$25	---
Univ. of the Incarnate Word	$553	---	---
University of North Texas	$11,766	$10,503	$2,915
UT at Arlington	$6,875	$5,139	$9,413
UT at Austin	$195,885	$164,511	$195,184
UT at Brownsville	$979	$260	---
UT at Dallas	$8,082	$8,013	$7,049
UT at El Paso	$17,435	$9,317	$16,167
UT at San Antonio	$13,789	$7,760	$8,012
UT at Tyler	$15	$15	---
UT M.D. Anderson Cancer	$113,381	$107,482	$94,053
UT of the Permian Basin	$267	---	---
UT Southwestern Medical Center	$152,320	$146,908	$131,820
UT System Office	$8,107	$8,097	---
UTHSC at Houston	$104,113	$96,115	$88,545
UTHSC at San Antonio	$84,401	$77,270	$71,153
UTMB at Galveston	$73,306	$69,712	$64,682
UT-Pan American	$4,610	$1,516	$1,288
West Texas A&M	$320	$274	$2,681
Wiley Coll.	$266	---	---
Texas Total	**$1,364,940**	**$1,147,752**	**$1,231,083**

SOURCE: National Science Foundation, WebCASPAR Database System, 02/02/2004

Shading indicates the five highest in each category.

Figure 11 shows federal obligations to Texas higher education institutions for research and development in science and engineering by federal agency. The National Institutes of Health have a long history of providing most of the federal research support to Texas higher education institutions.

Figure 11

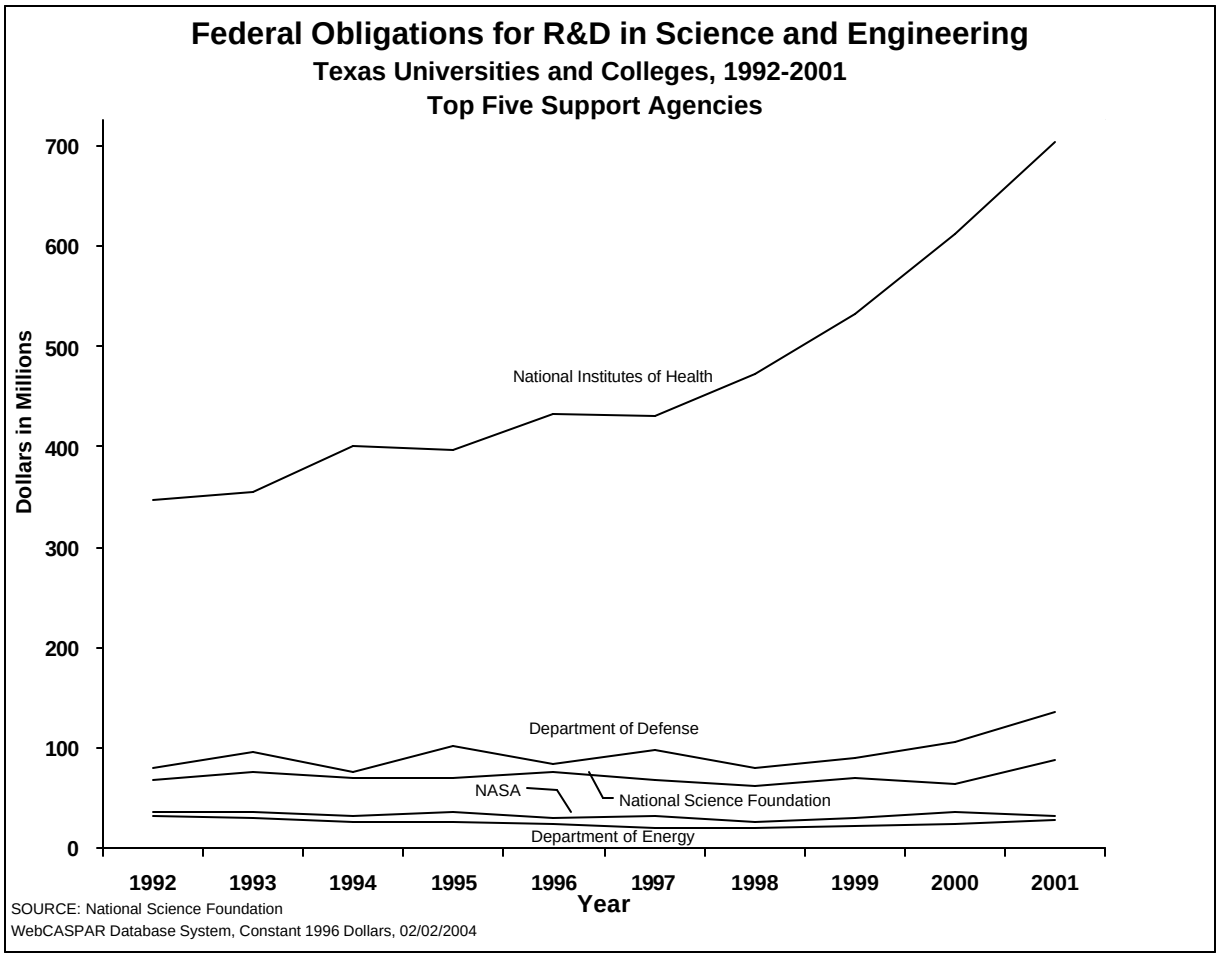


Table 22 shows federal obligations from federal agencies providing the most support to the most federal research-intensive Texas higher education institutions. The National Institutes of Health provide most of the federal support at health-related institutions. The Department of Defense, the National Science Foundation, and the National Institutes of Health provide most of the federal support for The University of Texas at Austin. The National Science Foundation, the Department of Agriculture, and the National Institutes of Health provide most of the support for Texas A&M University. The National Science Foundation, the National Institutes of Health, and the Department of Defense provide most of the federal support for Rice University. The University of Houston receives most of its federal support from the National Institutes of Health and the National Science Foundation. Texas Tech University receives most of its support from the National Institutes of Health and NASA.

Table 22

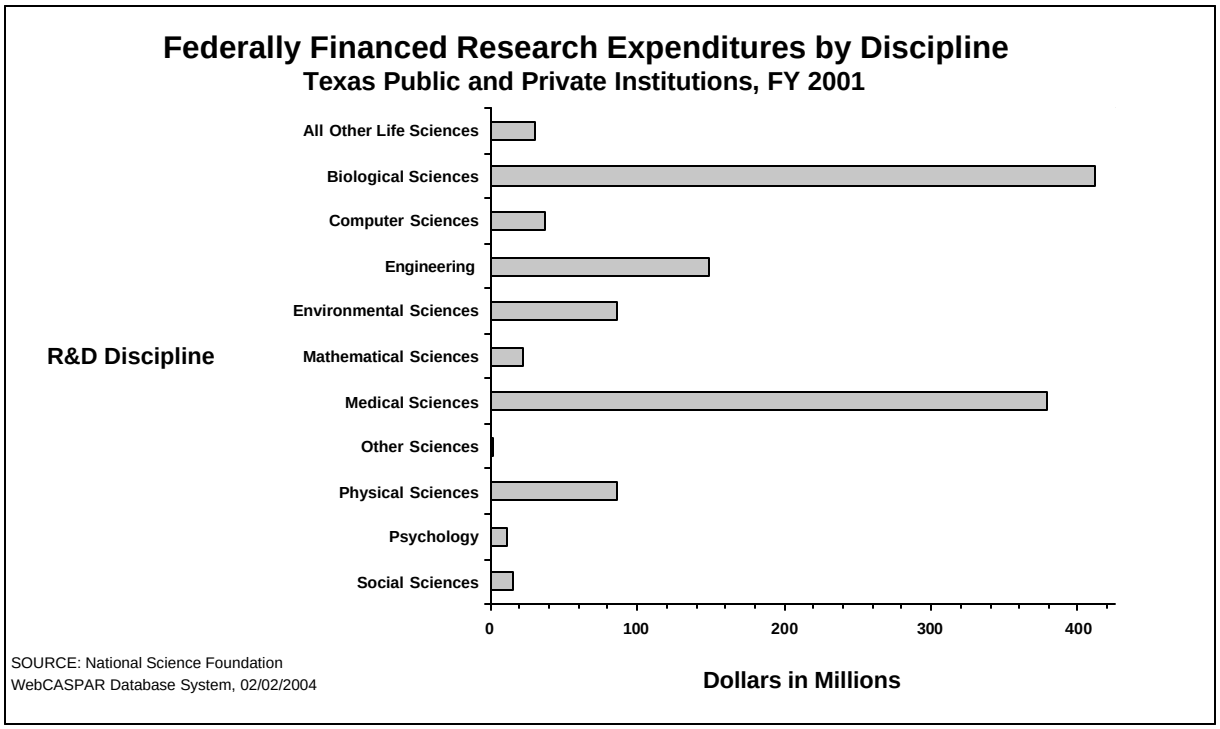
Texas Universities and Colleges with Federal Science and Engineering R&D Obligations of More Than $10 Million by Support Agency, FY 2001 (Dollars in Thousands)

Institution	National Institutes of Health	Dept. of Defense	National Science Foundation	NASA	Dept. of Energy	Dept. of Agriculture	All Other Federal Agencies	Total of All Federal Agencies
Baylor-Coll. of Medicine	$209,565	$10,257	$829	$1,896	$637	$4,580	$3,918	$231,682
UT at Austin	$34,244	$67,946	$35,192	$8,065	$14,048	$240	$4,776	$164,511
UT Southwestern Med Center	$139,529	$6,492	$625	$108	$0	$0	$154	$146,908
UT M.D. Anderson Cancer	$95,486	$10,370	$115	$565	$0	$0	$946	$107,482
UTHSC at Houston	$79,326	$8,433	$407	$639	$0	$0	$7,310	$96,115
UTHSC at San Antonio	$65,706	$5,530	$703	$150	$0	$0	$5,181	$77,270
Texas A&M	$13,628	$12,498	$19,338	$6,027	$3,051	$16,988	$5,557	$77,087
UTMB at Galveston	$61,069	$4,441	$859	$1,325	$510	$0	$1,508	$69,712
Rice	$5,021	$5,604	$16,410	$3,233	$3,128	$445	$221	$34,062
Texas A&M System Office	$20,337	$1,419	$0	$0	$1,528	$10	$0	$23,294
Univ. of Houston	$12,038	$1,066	$3,607	$1,985	$2,066	$0	$1,267	$22,029
Texas Tech	$6,134	$1,054	$1,164	$1,548	$1,207	$391	$2,629	$14,127
University of North Texas	$6,000	$2,247	$1,827	$174	$120	$125	$10	$10,503

SOURCE: National Science Foundation, WebCASPAR Database System, 02/02/2004

Figure 12 shows federally financed research and development expenditures at Texas public and independent higher education institutions by scientific discipline. Most of the expenditures are made in medical and biological sciences.

Figure 12



APPENDIX A – RESEARCH EXPENDITURES SURVEYS

THECB - Survey of Research Expenses, FY 2003
Public Universities and Health-Related Institutions
About the On-Line Form

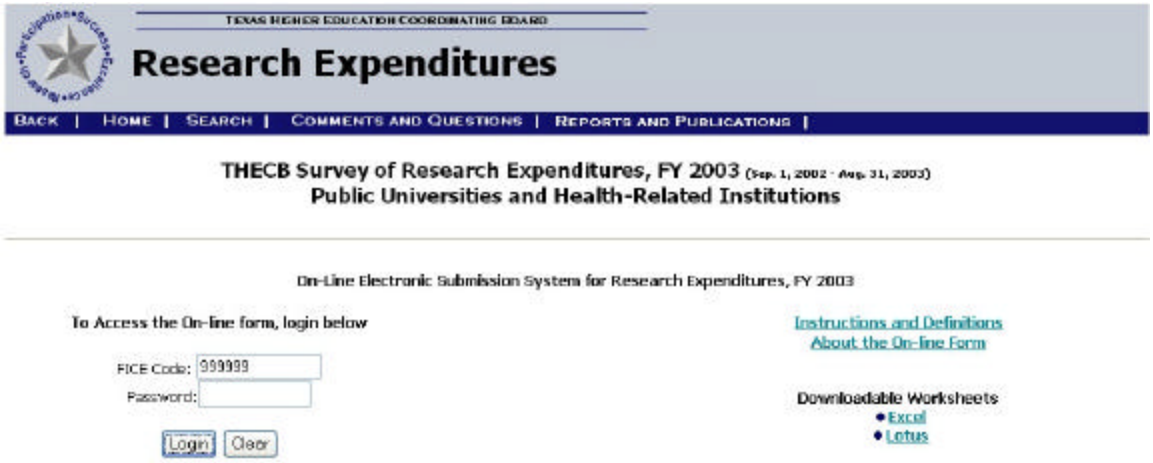
The survey should be completed by using the on-line form by December 12, 2003

The on-line form will be used to submit your institution's FY 2003 research expense data. The login page for the form has an instructions page and links to previous expenditures reports. Blank Lotus and Excel worksheets can be downloaded here, but the information still must be entered into the on-line form.

The on-line form consists of five parts, easily navigated with the buttons on the bottom of each web page. The whole form is saved when clicking on the "Total" buttons, going from page to page or clicking the "Save and Logoff" buttons. Using the "Reload Last Save" button will return information changed on a particular page before any other buttons are clicked on. Clicking underlined row or column labels will open a viewable definition for that item, and full instructions and definitions are accessible from the bottom of any page. Use whole dollar amounts, as the system will truncate decimals. The system will ignore any characters (dollar signs, commas, etc.) typed into entry blocks in parts 2-5. Click on any "Total" button to calculate column and row totals which are clearly marked in yellow.

The FICE code for your institution will be used to log in to the system, and please safeguard the provided password and authorization code. The password may be issued to individuals for completion of the form. When the form is ready for final submission, the final approval authority (usually the highest research executive at the institution) clicks the "Submit to THECB" button in part 5 and enters name, title and the authorization code.

Using the print button before final authorization will produce a draft printout of all forms. After final authorization, your data cannot be accessed or altered, but a printout of the final version can be produced. If you have questions or need assistance, contact information is located at the bottom of each web page or you may call Dale Cherry or Linda Domelsmith at 512-427-6150.



TEXAS HIGHER EDUCATION COORDINATING BOARD

Research Expenditures

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THECB Survey of Research Expenditures, FY 2003 (Sep. 1, 2002 - Aug. 31, 2003)
Part 1 of 5 - Contact Information

First Name: Last Name:
Title:

Institution: ISA Texas University
Address:

College Town, TX 78727
Phone Number: E-mail:

Save and Logoff | Go to Part 2 | Print | Reload Last Save

TEXAS HIGHER EDUCATION COORDINATING BOARD

Research Expenditures

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THECB Survey of Research Expenditures, FY 2003 (Sep. 1, 2002 - Aug. 31, 2003)
Part 2 of 5 - Expenditures for Conduct of R&D by Field
ISA Texas University

Sources of Funds(use whole dollar amounts)

	Federal	State		Institution Controlled	Private		Total
		Appropriated	Contract/Grants		Profit	Non-Profit	
1. Agricultural Sciences	0	0	0	0	0	0	$0
2. Biological and Other Life Sciences	0	0	0	0	0	0	$0
3. Computer Science	0	0	0	0	0	0	$0
4. Engineering	0	0	0	0	0	0	$0
5. Environmental Sciences	0	0	0	0	0	0	$0
6. Mathematical Sciences	0	0	0	0	0	0	$0
7. Medical Sciences	0	0	0	0	0	0	$0
8. Physical Sciences	0	0	0	0	0	0	$0
9. Psychology	0	0	0	0	0	0	$0
10. Social Sciences	0	0	0	0	0	0	$0
11. Other Sciences not classified above	0	0	0	0	0	0	$0
12. Arts and Humanities	0	0	0	0	0	0	$0
13. Business Administration	0	0	0	0	0	0	$0
14. Education	0	0	0	0	0	0	$0
15. Law and Public Administration	0	0	0	0	0	0	$0
16. Other Non-Science Activities not classified above	0	0	0	0	0	0	$0
Total Expenditures for Conduct of R&D Total	$0	$0	$0	$0	$0	$0	$0

Save and Logoff | Back to Part 1 | Go to Part 3 | Print | Reload Last Save

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THECB Survey of Research Expenditures, FY 2003 (Sep. 1, 2002 - Aug. 31, 2003)
Part 3 of 5 - Details for Total Expenditures for Conduct of R&D
ISA Texas University

1. Expenses for R&D, as defined in this report, that are reported as the functional total expenses for research on the Statement of Revenues, Expenses and Changes in Net Assets, Annual Financial Report	0
2. Indirect costs associated with figure reported in line 1	0
3. Capital outlay for research equipment (do not include R&D plant expenses or construction)	0
4. Expenditures for Conduct of R&D made by institution's research foundation or 501(C)3 corporation on behalf of the institution and not reported on institution's Annual Financial Report, including indirect costs not reported in line 2	0
5. Pass-throughs from Texas Engineering Experiment Station for conduct of R&D not reported in Line 1	0
Sum of 1 through 5	$0
Sum of 1 through 5 MUST equal "Total Expenditures for Conduct of R&D" from Part 2	$0

Save and Logoff | Back to Part 2 | Go to Part 4 | Print | Reload Last Save

TEXAS HIGHER EDUCATION COORDINATING BOARD

Research Expenditures

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THECB Survey of Research Expenditures, FY 2003 (Sep. 1, 2002 - Aug. 31, 2003)
Part 4 of 5 - Total Expenditures for Research-Related Activities
ISA Texas University

Sources of Funds(use whole dollar amounts)

	Federal	State		Institution Controlled	Private		Total
		Appropriated	Contract/Grants		Profit	Non-Profit	
1. Expenses for Activities Reported as Research on the Statement of Revenues, Expenses and Changes in Net Assets, Annual Financial Report, but not meeting the narrow definition of R&D used in this report.	0	0	0	0	0	0	$0
2. Other Research-related equipment expenditures (noncurrent fund expenses, etc. - do not include R&D plant expenses or construction)	0	0	0	0	0	0	$0
3. Total Expenditures for Conduct of R&D (from Part 2)	$0	$0	$0	$0	$0	$0	$0
Total Expenditures for Research-Related Activities (Sum of 1-3) Total	$0	$0	$0	$0	$0	$0	$0

Save and Logoff | Back to Part 3 | Go to Part 5 | Print | Reload Last Save

Part 5 for Public Universities

TEXAS HIGHER EDUCATION COORDINATING BOARD

Research Expenditures

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THECB Survey of Research Expenditures, FY 2003 (Sep. 1, 2002 - Aug. 31, 2003)
Part 5 of 5 - Expenditures for Conduct of R&D in Areas of Special Interest
(funds may be reported in more than one area)
ISA Texas University

Sources of Funds(use whole dollar amounts)

	Federal	State		Institution Controlled	Private		Total
		Appropriated	Contract/Grants		Profit	Non-Profit	
1. Aerospace Technology	0	0	0	0	0	0	$0
2. Biotechnology	0	0	0	0	0	0	$0
3. Energy	0	0	0	0	0	0	$0
4. Environmental Sciences	0	0	0	0	0	0	$0
5. Food, Fiber, Agricultural Products	0	0	0	0	0	0	$0
6. Manufacturing Technology	0	0	0	0	0	0	$0
7. Materials Science	0	0	0	0	0	0	$0
8. Microelectronics and Computer Technology	0	0	0	0	0	0	$0
9. Water Resources	0	0	0	0	0	0	$0
Total Expenditures for Conduct of R&D in Areas of Special Interest (Sum of categories above) Total	$0	$0	$0	$0	$0	$0	$0

Save and Logoff | Back to Part 4 | Submit to THECB | Print | Reload Last Save

Part 5 for Public Health Institutions

TEXAS HIGHER EDUCATION COORDINATING BOARD

Research Expenditures

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THECB Survey of Research Expenditures, FY 2003 (Sep. 1, 2002 - Aug. 31, 2003)
Part 5 of 5 - Expenditures for Conduct of R&D in Areas of Special Interest
(funds may be reported in more than one area)
ISA Texas Health Institution

Sources of Funds(use whole dollar amounts)

	Federal	State		Institution Controlled	Private		Total
		Appropriated	Contract/Grants		Profit	Non-Profit	
1. Aging	0	0	0	0	0	0	$0
2.Cancer Research	0	0	0	0	0	0	$0
3. Cardiovascular Research	0	0	0	0	0	0	$0
4. Child Health and Human Development	0	0	0	0	0	0	$0
5. Mental Health	0	0	0	0	0	0	$0
6. Substance Abuse	0	0	0	0	0	0	$0
Total Expenditures for Conduct of R&D in Areas of Special Interest (Sum of categories above) Total	$0	$0	$0	$0	$0	$0	$0

Save and Logoff | Back to Part 4 | Submit to THECB | Print | Reload Last Save

THECB Survey of Research Expenses, FY 2002
Public Universities and Health-Related Institutions
Instructions and Definitions for Survey

The survey should be completed by using the on-line form by December 2, 2002

About This Survey

This is an annual survey conducted by the Texas Higher Education Coordinating Board. It is mandated by the Texas Legislature, and it is the basis for an annual report of research expenses at Texas institutions of higher education.

The report is widely used by institutions of higher education and other state agencies, and excerpts from the report are widely reported in the press. In addition, the data provides the basis for many far-reaching policy and management decisions. It is critical that the data be reported accurately and completely.

This report should be consistent with the Annual Financial Report (AFR) of the institution. Refer to College and University Business Administration, NACUBO.

The report includes only separately budgeted and accounted for expenses and does not include research done by faculty members as a regular part of their academic duties.

The data collection form and definitions are modeled after similar forms used by the National Science Foundation in an effort to provide comparability of data with national data and to reduce the data collection efforts of the institutions.

Blank Lotus 1-2-3 and Excel worksheets can be downloaded here, but the information is required to be entered into the on-line form.

General Concepts and Definitions

A. Research and Development (R&D) activities are defined as follows:

1. Research is systematic study directed toward fuller scientific knowledge or understanding of the subject studies.

2. Development is systematic use of knowledge or understanding gained from research, directed toward the production of useful materials, devices, systems, or methods including design and development of prototypes and processes.

Exclusions from research and development:
- Training of scientific manpower
- Mapping and surveys
- Routine product testing
- Quality Control
- Experimental production
- Collection of general purpose statistics (statistics not collected as part of a specific R&D project)

NOTE: Certain activities may or may not be classified as research and development depending upon circumstances. Examples of such activities are given below in section B, Reporting Guidelines for R&D versus Non-R&D Activities.

B. Selected financial terms

Fiscal Year 2001 - The 12-month accounting period ending August 31, 2001.

Expenditures - All amounts of money paid out by your institution to support R&D activities. Include funds "passed through" to other institutions of higher education. Include earned indirect costs and fringe benefits. Do not include non-monetary awards.

Federal Funds - All Federal monies used in support of the R&D activities of your institution. These include reimbursements, contracts, grants, and any identifiable amounts spent from Federal programs including Federal monies passed through state agencies.

State Sources - Include all expenditures of funds appropriated by the State of Texas not included in institutionally controlled funds listed in paragraph 5 below. Included in this category are state appropriated "Special Items" and state contracts and grants such as ATP and ARP funds, interagency contracts, contracts with Texas local governments, etc.

Institutionally Controlled - Include expenditures of funds that are locally controlled. This would include PUF and AUF funds, other local funds, etc.

Private - Include expenditures of funds from both for-profit and not-for-profit corporations and individuals. Also, include in this category funds from agencies from other states.

Definitions for Specific Items

(Numbering corresponds to line number for on-line data collection form)

Expenses for conduct of R&D - All expenses except those for R&D plant. (Part 2, Total of 1-16)

Capital outlay for research equipment

> As a result of recent changes adopted by the Government Accounting Standards Board, annual financial reports will report expenses rather than expenditures. The major difference is that capital outlays for research equipment will be depreciated over the life of the equipment and will not be separately identified as research items in the annual financial reports. This line allows inclusion of expenditures for equipment that are not included in research expenses (Part 3, line 1). The research definition used for this report does not allow inclusion of expenses for R&D plant or construction (Part 3, Line 3)

Expenses for other research-related activities - Reported as research on the AFR but not meeting the narrower definitions of R&D required in this report. Externally-funded activities that cannot be classified as R&D using the definitions appearing in A, above, are included. Do not include projects funded with "development" funds unless they are related to research activities. (Part 4, Line 1)

Notes: Reporting Guidelines for R&D versus Non-R&D Activities:

> Economic studies - To be classified as research, the activities under this heading should be systematic and intensive. They should not include program planning, implementation, and evaluation unless these activities are designed as a fairly rigorous research effort. For example, a study to determine the impact of proposed tax changes on State revenues, or on Statewide employment, consumption, or industrial output could be reported as economic research. But the collection of economic data on tax revenues, personal income, or industrial output would be reported as economic research only if collected as part of the research project.
>
> Evaluation - Evaluation qualifies as research when it is part of a specific research undertaking. Evaluation conducted separately from a research project is considered research when it involves scientific method and hypothesis testing procedures with fairly rigorous standards. Evaluation activities that do not involve systematic design and testing should not be included.

Demonstration - Demonstration activities that are part of research or development (i.e., that are intended to prove or to test whether a technology or method does, in fact, work) should be included. Demonstration intended to make available information about new technologies or methods should not be included. For example, an educational demonstration on new teaching methods should be reported as an R&D activity if the demonstration is established as an experiment to produce new information, is accomplished within a definite time period, and is accompanied by a thorough evaluation. An educational demonstration to apply or exhibit new teaching methods, or a demonstration without a scheduled termination or a thorough evaluation, should not be reported as an R&D activity.

Collection of statistical data - The collection of statistics is an R&D activity only if conducted as part of a specific research or development program. For example, the regular collection and publication of statistics on the incidence of various diseases within a State by a State health department is general purpose data collection and not research or development. The data gathering is not part of a research program and is designed for use by a range of persons, such as practicing physicians, public health officials, and school officials. If the data on incidence of diseases are gathered as part of a project on the origin and nature of particular diseases, however, or to establish generalizations on why certain individuals or groups contract certain diseases, this would be research.

Satellite information - Photographs and tapes purchased from Federal agencies (or others) sponsoring satellite operations are not considered research and development unless they are used primarily in support of a research or development program. Tapes and photographs that are stored in documentation centers or used primarily for the formulation of regulations are excluded from this survey.

Technology transfer - Technology transfer involves the adoption, and perhaps adaptation, of new techniques or products that have already been brought to a usable condition. The adoption and use of a technology is not research and development, but the adaptation of a technology to meet unique regional or local needs could involve R&D activities. For example, a new method of treating water to make it potable is developed in one State. If another State adopts the same treatment process, the adoption costs for facilities, equipment, personnel, etc., are not R&D expenditures. However, if further systematic, intensive study is required by the second State to modify the treatment process to adapt it to unique local conditions, the costs of modification and adaptation could be R&D expenditures.

Agricultural sciences deal with the production of food and fiber. They include work in plant sciences, animal sciences, aquaculture, agricultural economics, and other topics related to the agricultural enterprise. (Part 2, Line 1)

Biological sciences are those life sciences (apart from medical sciences and agricultural sciences described above) that deal with the origin, development, structure, function, and interaction of living things. Examples of biological sciences are as follows: anatomy; animal sciences; bacteriology; biochemistry; biogeography; biophysics; ecology; embryology; entomology; evolutionary biology; genetics; immunology; microbiology; molecular biology; nutrition and metabolism; parasitology; pathology; pharmacology; physical anthropology; physiology; plant sciences; radiobiology; systematics. (Part 2, Line 2)

Computer science is concerned with the application of mathematical methods to automated information systems, the development of computer technology, and advanced applications of computers. (Part 2, Line 3)

Engineering is concerned with studies directed toward developing engineering principles or toward making specific principles usable in engineering practice. Engineering fields include aeronautical, astronautical, chemical, civil, electrical, mechanical, metallurgy and materials, and engineering not

elsewhere classified, such as agricultural, bioengineering, biomedical, industrial, nuclear, ocean and systems. (Part 2, Line 4)

Environmental sciences (terrestrial and extraterrestrial) are concerned with the gross, non-biological properties (with one exception) of the areas of the solar system that directly or indirectly affect man's survival and welfare. They comprise the fields of atmospheric sciences, geological sciences, and oceanography. The one exception is that expenditures for studies pertaining to life in the sea or other bodies of water are to be reported as support of oceanography and not biology. (Part 2, Line 5)

Mathematical sciences employ logical reasoning with the aid of symbols and are concerned with the development of methods of operation employing such symbols. (Part 2, Line 6)

Medical sciences are concerned with the causes, effects, prevention, or control of abnormal conditions in man or his environment as they relate to health. Included are the clinical medical sciences, which are concerned with the study of the origins, diagnosis, or treatment of a particular disease in living human subjects under controlled conditions, and other medical sciences. Examples of the medical sciences are as follows: internal medicine; neurology; ophthalmology; preventive medicine and public health; psychiatry; radiology; surgery; veterinary medicine; dentistry; physical medicine and rehabilitation; podiatry. (Part 2, Line 7)

Physical sciences are concerned with the understanding of the material universe and its phenomena. They comprise the fields of astronomy, chemistry; physics, and physical sciences not elsewhere classified. (Part 2, Line 8)

Psychology deals with behavior, mental processes, and individual and group characteristics and abilities. Examples of disciplines within psychology are as follows: experimental psychology; animal behavior; clinical psychology; comparative psychology; ethnology; social psychology; educational personnel, vocational psychology and testing; industrial and engineering psychology; development and personality. (Part 2, Line 9)

Social sciences are directed toward an understanding of the behavior of social institutions and groups and of individuals as members of a group. These include anthropology, economics, history, linguistics, political sciences, and sociology. (Part 2, Line 10)

Other sciences not elsewhere classified is a category to be used for multidisciplinary and interdisciplinary projects and cannot be classified within one of the broad fields of science listed above. (Part 2, Line 11)

Arts and humanities include topics such as art, music, history, languages, religion, and other aspects of man's culture and heritage. (Part 2, Line 12)

Business administration deals with the management and operation of business enterprises. It includes work in management, marketing, accounting, and related topics. (Part 2, Line 13)

Education includes research related to any aspect of education. This includes elementary, secondary, and higher education; educational policy; education administration; etc. (Part 2, Line 14)

Law and public administration includes research related to legal systems and to public policy at the federal, state, or local levels. (Part 2, Line 15)

Other non-science activities should include all non-science disciplines not appropriately categorized above. (Part 2, Line 16)

Areas of Special Interest - This section is intended to provide information on expenditures in areas of special interest to the public. The list is not all-inclusive. The totals in Part 5 will not normally be equal to the "Total Expenditures for Conduct of R&D" found in Part 2. Further, expenditures may overlap two or

more categories (e.g., a given project may be reported both as materials science and microelectronics or as mental health and substance abuse). Institutions may need to use ad hoc estimators to come up with these numbers. (Part 5)

APPENDIX B – INSTITUTIONAL CONTACTS

The following list contains the institutional representatives who submitted the data for this report. They may be contacted directly for additional information regarding research activities on individual campuses.

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