

RESEARCH EXPENDITURES

September 1, 1998 - August 31, 1999

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Texas Public Universities and
Health-Related Institutions

Texas Higher Education Coordinating Board
Division of Finance, Campus Planning, and Research
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April 2000

Texas Higher Education Coordinating Board

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Coordinating Board Mission

The mission of the Texas Higher Education Coordinating Board is to provide the Legislature advice and comprehensive planning capability for higher education, to coordinate the effective delivery of higher education, to administer programs efficiently and to improve higher education for the people of Texas.

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.

Created by the Texas Legislature in 1965, the Texas Higher Education Coordinating Board works with institutions of higher education, other state agencies, the Legislature and the Governor to ensure that Texans seeking higher education have access to high quality programs. The Board's overall responsibilities include assessing the state of higher education in Texas, making recommendations to the Governor, Legislature and institutions for its enhancement, and establishing policies for the efficient and effective use of the state's higher education resources.

EXECUTIVE SUMMARY

This research expenditures report is based on data provided by each Texas public university and health-related institution for Fiscal Year 1999 – September 1, 1998 through August 31, 1999. Highlights include:

- C Total research expenditures increased 5.1 percent over Fiscal Year 1998. Research expenditures in Fiscal Year 1999 were \$1,451,722,101. In Fiscal Year 1998, the total was \$1,381,422,783.
- Total research expenditures have increased by 182 percent since Fiscal Year 1989.
- C Royalties, licensing fees, or other transactions involving intellectual property produced through research generated \$20,696,725 – a 21.6 percent increase over the \$17,027,688 received in Fiscal Year 1998. In Fiscal Year 1999, 226 new intellectual properties were produced, compared to 260 in Fiscal Year 1998.
- Five Institutions – Texas A&M University (including Texas A&M service agencies), The University of Texas Southwestern Medical Center at Dallas, The University of Texas M. D. Anderson Cancer Center, The University of Texas Health Science Center at San Antonio, and The University of Texas at Austin – generated 92.2 percent of intellectual property income.
- C The federal government provided 54.9 percent of the research funds expended, compared to 54.5 percent in Fiscal Year 1998.
- C Scientific discipline categories benefitting from the largest research expenditures include medical sciences – \$427,275,227; biological and other life sciences – \$314,522,814; engineering – \$253,810,225; and physical sciences – \$118,552,372. Funding for biological sciences rose by 57 percent in Fiscal Year 1999 compared to the previous year.
- C Research expenditures in some areas of special interest include: cancer – \$193,913,145; biotechnology – \$78,434,946; environmental science and engineering – \$72,201,396; food, fiber, and agricultural products – \$60,704,046; energy – \$47,222,231; microelectronics and computer technology – \$44,927,735; and cardiovascular research - \$27,087,423.
- C The top 10 research institutions together account for 90 percent of all research expenditures in the state's public universities and health-related institutions. The top five account for 70.6 percent. Five of the top 10 are health-related institutions. Four institutions – The University of Texas Southwestern Medical Center at Dallas, The University of Texas Health Science Center at Houston, The University of Texas Health Science Center at San Antonio, and The University of Texas at El Paso – have substantially higher ratios of federal-to-state support for research than the other seven institutions in the research expenditures top 10 list.
- C Consistent with funding patterns for recent years, slightly more than one-half of higher education research funds from federal and state sources supported research in life sciences – medical, biological, and agricultural sciences.

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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 comparing it with data provided by the institutions in their Annual Financial Reports. Institutions are asked to ensure that the data reported are consistent with data in their Annual Financial Reports, and a set of definitions is provided 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 surveys completed by each institution. Appendix B includes a list of the institutional contacts who collected the data on their campuses.

MAJOR FINDINGS

Total research expenditures at Texas public institutions of higher education increased by 5.1 percent during Fiscal Year 1999, continuing a long-term growth trend. Research expenditures increased by 4.0 percent at public universities and by 6.6 percent at public health-related institutions.

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 70.6 percent of total research expenditures. The top 10 institutions accounted for 90 percent of the total.

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 1998.

Texas health-related institutions have very strong research programs. Five of them ranked among the top 10 Texas public institutions in research expenditures.

Table 1

Research and Development Expenditure Rankings, FY 1999				
Institution	1996	1997	1998	1999
Texas A&M University (including Texas A&M Services)	1	1	1	1
The University of Texas at Austin	2	2	2	2
The University of Texas Southwestern Medical Center at Dallas	3	3	3	3
The University of Texas M.D. Anderson Cancer Center	4	4	4	4
The University of Texas Health Science Center at Houston	5	5	5	5
The University of Texas Health Science Center at San Antonio	6	6	6	6
The University of Texas Medical Branch at Galveston	7	7	7	7
University of Houston	8	8	8	8
Texas Tech University	9	9	9	9
The University of Texas at El Paso	13	11	11	10

The federal government funded 54.9 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 institutions¹ nationwide, the National Science

¹For this purpose, academic institutions are generally defined as institutions of higher education that grant doctorates in science or engineering and/or spend at least \$50,000 for separately budgeted research and development.

Foundation/SRS, *Academic Research and Development Expenditures: Fiscal Year 1998, Early Release Table B-29* shows that 53.6 percent of the academic research was funded by the federal government. State government in Texas provided 19.4 percent of the funds for all research expenditures in the state's public higher education institutions. Institutional and private funding accounted for the remaining 25.7 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 Expenditure Ratio Rankings, FY 1999			
Institution	R&D Rank	Fed/State Ratio	Ratio Rank
The University of Texas Southwestern Medical Center at Dallas	3	18.23	1
The University of Texas Health Science Center at Houston	5	10.61	2
The University of Texas Health Science Center at San Antonio	6	8.06	3
The University of Texas at El Paso	10	7.54	4
The University of Texas Medical Branch at Galveston	7	5.68	5
The University of Texas at Austin	2	4.10	6
Texas A&M University (including Texas A&M Services)	1	1.52	7
University of Houston	8	1.39	8
The University of Texas M.D. Anderson Cancer Center	4	1.37	9
Texas Tech University	9	1.25	10

Medical sciences, accounting for 29.4 percent of the total, led all other disciplines in expenditures. The top five disciplines – medical sciences, engineering, biological and other life sciences, physical sciences, and environmental sciences – collectively accounted for 83.9 percent of all reported research expenditures.

Institutions earned \$20,696,725 from royalties, licenses, and other transactions involving 706 different intellectual properties produced through research. In Fiscal Year 1999, 226 new patents or copyrights were issued to Texas public higher education institutions.

STATEWIDE SUMMARY DATA

Expenditures related to research are divided into two categories: (1) expenditures for the conduct of research and development, and (2) other sponsored activities. "Other 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.

Tables 3 and 4 and Figures 1– 4 provide information on expenditures 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.

Table 3

Sources of Funds for Research and Other Research-Related Sponsored Programs, FY 1999				
	Federal	State		Institution
		Appropriated	Contracts and Grants	
Public Universities				
Research and Development	\$429,468,890	\$113,107,209	\$80,161,727	\$88,517,933
Other	\$15,998,434	\$4,246,702	\$2,880,008	\$2,708,645
Total	\$445,467,324	\$117,353,911	\$83,041,735	\$91,226,578
Public Health-Related Institutions				
Research and Development	\$367,176,245	\$83,801,061	\$4,113,546	\$11,366,652
Other	\$62,330	\$4,133,379	\$322,360	\$18,315,631
Total	\$367,238,575	\$87,934,440	\$4,435,906	\$29,682,283
All Public Institutions				
Research and Development	\$796,645,135	\$196,908,270	\$84,275,273	\$99,884,585
Other	\$16,060,764	\$8,380,081	\$3,202,368	\$21,024,276
Totals	\$812,705,899	\$205,288,351	\$87,477,641	\$120,908,862

Table 3 - continued

Sources of Funds for Research and Other Research-Related Sponsored Programs, FY 1999			
	Private		Total
	Profit	Non-Profit	
Public Universities			
Research and Development	\$29,204,623	\$88,733,333	\$829,193,715
Other	\$554,246	\$2,274,896	\$28,662,931
Total	\$29,758,869	\$91,008,229	\$857,856,646
Public Health-Related Institutions			
Research and Development	\$60,195,582	\$95,875,299	\$622,528,385
Other	\$1,419	\$288,064	\$23,123,183
Total	\$60,197,001	\$96,163,363	\$645,651,568
All Public Institutions			
Research and Development	\$89,400,205	\$184,608,632	\$1,451,722,100
Other	\$555,665	\$2,562,960	\$51,786,115
Totals	\$89,955,870	\$187,171,592	\$1,503,508,214

Figure 1

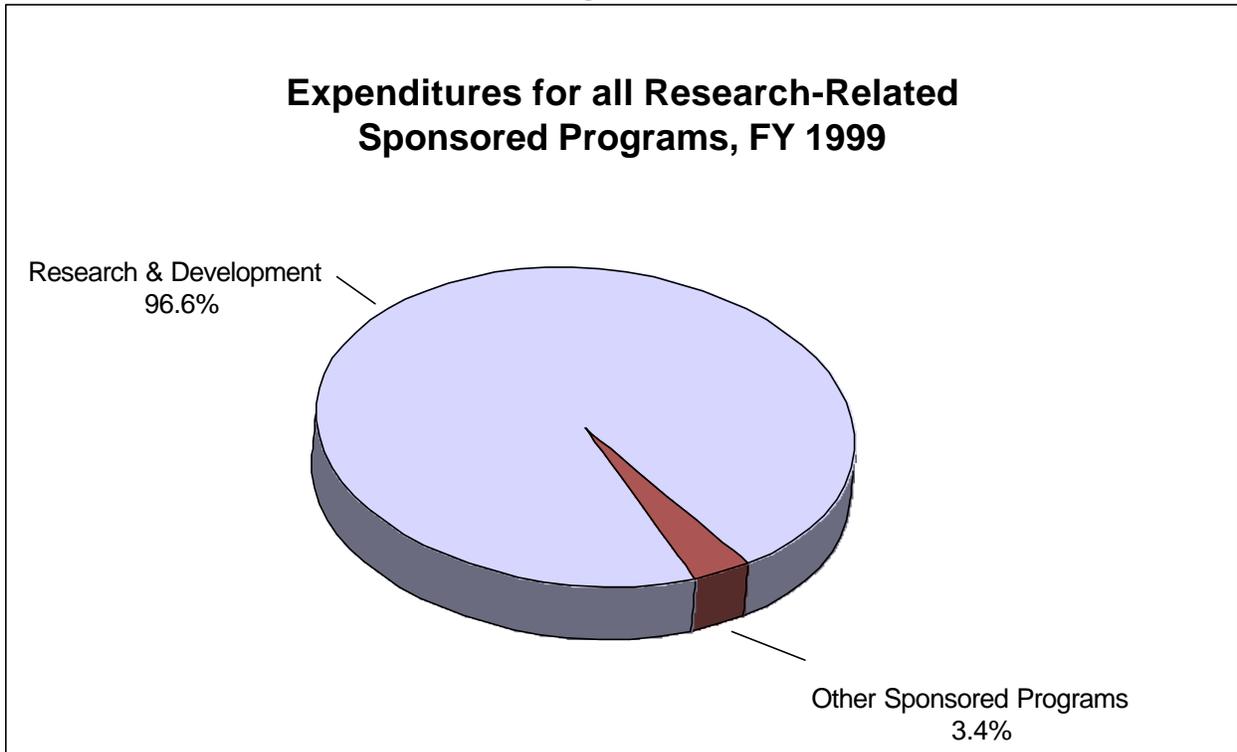


Figure 2

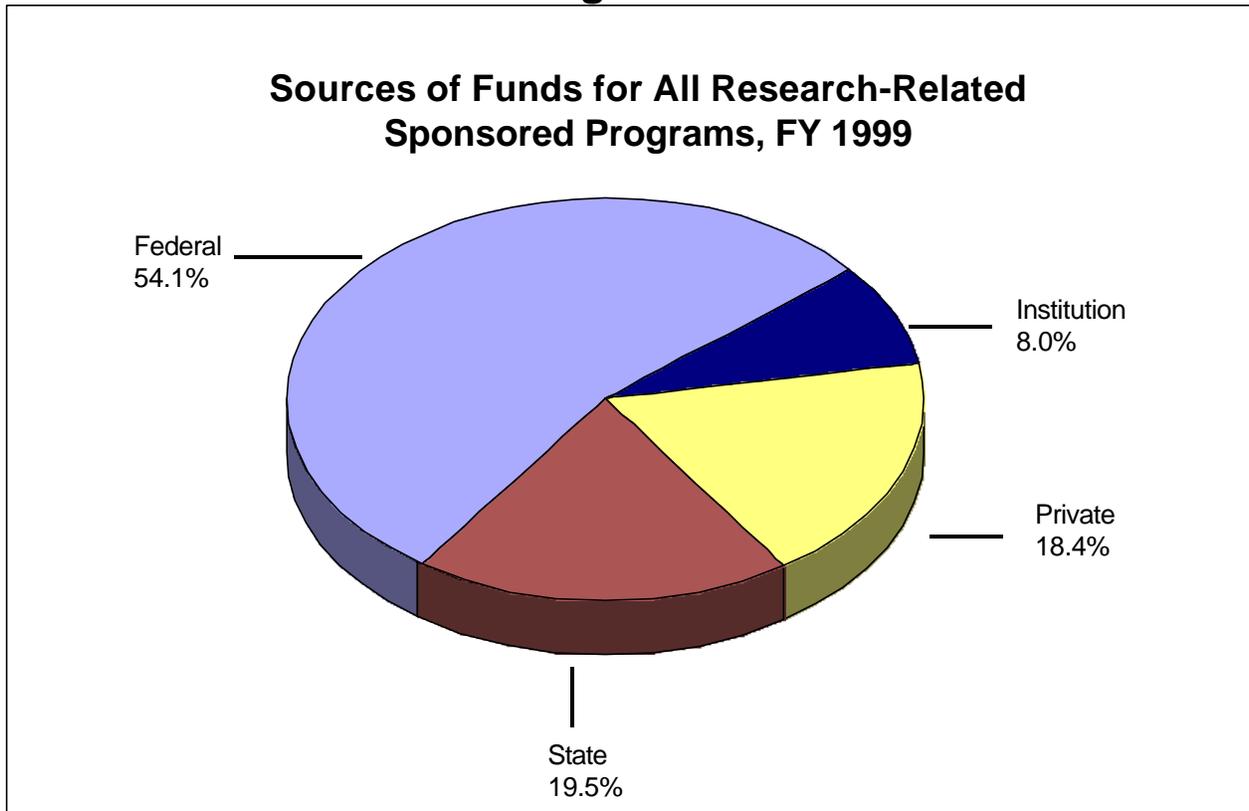


Figure 3

**Sources of Funds for Research and Development
at Texas Public Universities, FY 1999**

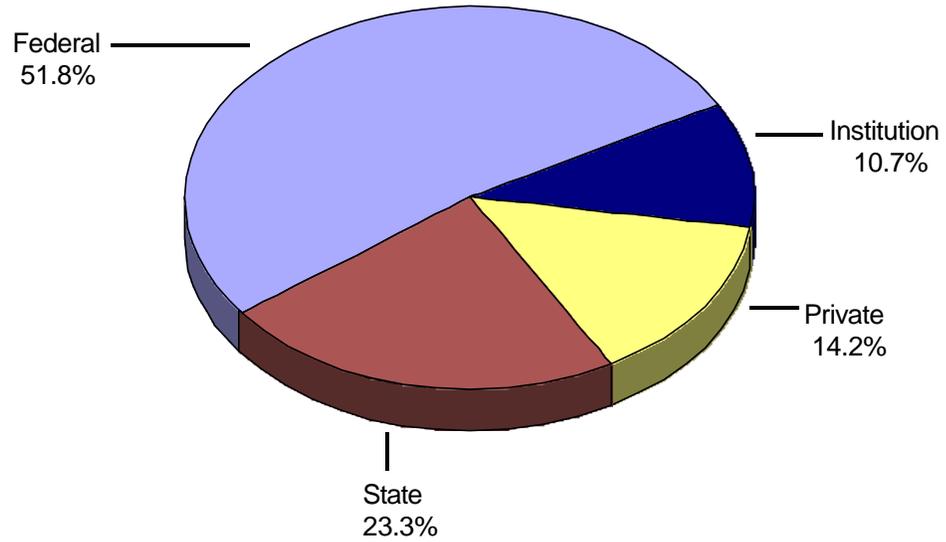


Figure 4

**Sources of Funds for Research and Development
at Texas Public Health-Related Institutions, FY 1999**

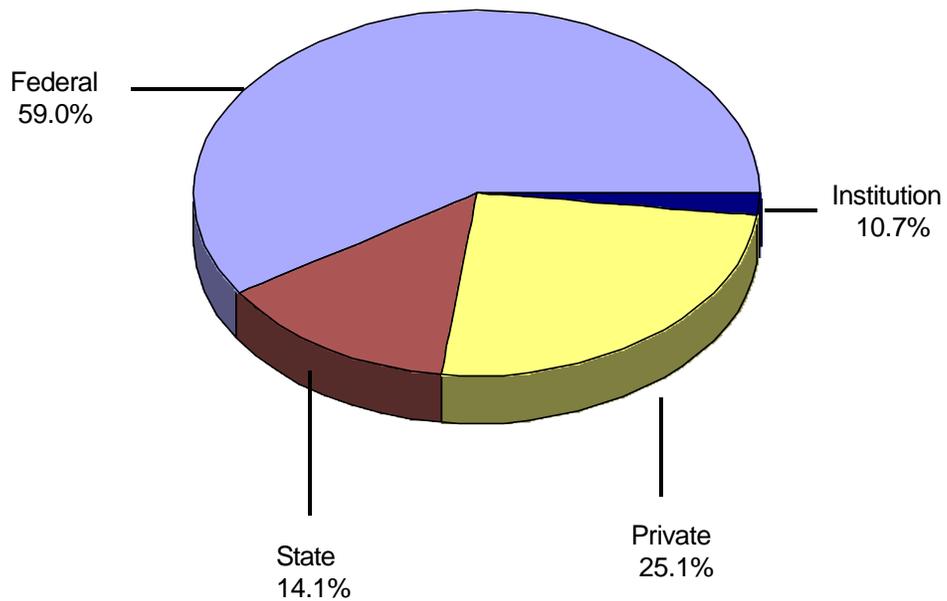


Table 4 indicates expenditures in the 16 different fields defined in Appendix A. The Coordinating Board's instructions directed institutions to assign project expenditures to only one field to avoid duplication.

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 expenditures in that field rather than in agricultural sciences.

Table 4

Expenditures for Conduct of R&D by Field and Source of Funding, FY 1999				
Texas Public Institutions of Higher Education				
Field	Federal	State		Institution
		Appropriated	Contracts and Grants	
Agricultural Sciences	\$20,834,133	\$25,856,630	\$2,924,176	\$8,882,951
Biological and Other Life Sciences	\$175,637,665	\$66,204,338	\$5,083,705	\$19,031,474
Computer Science	\$17,444,987	\$1,296,319	\$1,559,471	\$3,180,846
Engineering	\$130,020,542	\$17,374,191	\$38,843,037	\$30,893,327
Environmental Sciences	\$72,773,515	\$10,017,623	\$4,839,937	\$3,944,925
Mathematical Sciences	\$6,130,370	\$2,731,473	\$722,493	\$626,470
Medical Sciences	\$247,785,566	\$44,886,405	\$4,242,283	\$8,892,274
Physical Sciences	\$74,617,855	\$10,444,384	\$10,365,223	\$6,858,835
Psychology	\$7,799,677	\$804,191	\$1,151,987	\$965,321
Social Sciences	\$16,464,312	\$6,749,757	\$5,077,770	\$4,390,669
Other Sciences	\$2,466,478	\$3,513,933	\$897,947	\$2,701,452
Arts and Humanities	\$977,851	\$707,136	\$366,172	\$3,176,713
Business Administration	\$2,945,289	\$1,914,168	\$1,263,142	\$1,060,846
Education	\$18,344,451	\$1,170,494	\$4,912,017	\$2,580,778
Law and Public Administration	\$882,011	\$215,208	\$1,053,750	\$245,926
Other Non-Science Activities	\$1,520,432	\$3,022,019	\$972,162	\$2,451,777
Totals	\$796,645,135	\$196,908,270	\$84,275,273	\$99,884,584

Table 4 - continued

Expenditures for Conduct of R&D by Field and Source of Funding, FY 1999 Texas Public Institutions of Higher Education			
Field	Private Sources		Total
	Profit	Non-Profit	
Agricultural Sciences	\$4,383,040	\$9,939,051	\$72,819,981
Biological and Other Life Sciences	\$9,857,908	\$38,707,724	\$314,522,814
Computer Science	\$565,251	\$985,643	\$25,032,517
Engineering	\$14,643,417	\$22,035,711	\$253,810,225
Environmental Sciences	\$2,556,965	\$9,676,893	\$103,809,858
Mathematical Sciences	\$214,121	\$360,249	\$10,785,176
Medical Sciences	\$51,347,295	\$70,121,402	\$427,275,227
Physical Sciences	\$2,887,822	\$13,378,253	\$118,552,372
Psychology	\$191,346	\$709,472	\$11,621,994
Social Sciences	\$860,585	\$4,945,363	\$38,488,456
Other Sciences	\$865,201	\$3,229,148	\$13,674,160
Arts and Humanities	\$32,776	\$1,414,470	\$6,675,118
Business Administration	\$342,769	\$3,687,673	\$11,213,887
Education	\$571,124	\$3,127,558	\$30,706,422
Law and Public Administration	\$16,237	\$770,842	\$3,183,974
Other Non-Science Activities	\$64,349	\$1,519,181	\$9,549,920
Totals	\$89,400,206	\$184,608,633	\$1,451,722,101

Tables 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 R&D Areas of Special Interest, FY 1999				
Texas Public Universities				
Functional Area	Federal	State		Institution
		Appropriated	Contracts and Grants	
Aerospace Technology	\$15,079,524	\$411,788	\$348,496	\$601,556
Biotechnology	\$26,460,236	\$26,702,509	\$1,720,542	\$12,685,033
Energy	\$28,283,077	\$3,313,664	\$3,474,189	\$1,700,255
Environmental Science & Engineering	\$43,485,978	\$9,047,246	\$4,870,289	\$3,115,933
Food, Fiber, Agricultural Products	\$15,468,154	\$23,570,154	\$1,884,965	\$8,350,337
Manufacturing Technology	\$5,225,813	\$2,089,737	\$1,477,746	\$226,657
Materials Science	\$21,286,565	\$1,201,214	\$4,409,946	\$867,759
Microelectronics & Computer Technology	\$32,245,649	\$1,561,355	\$3,447,090	\$1,149,262
Water Resources	\$2,638,351	\$1,193,296	\$791,883	\$501,947
Totals	\$190,173,347	\$69,090,963	\$22,425,146	\$29,198,739

Table 5 - continued

Expenditures for R&D Areas of Special Interest, FY 1999			
Texas Public Universities			
Functional Area	Private		Total
	Profit	Non-Profit	
Aerospace Technology	\$220,341	\$1,359,720	\$18,021,425
Biotechnology	\$962,586	\$9,904,040	\$78,434,946
Energy	\$2,096,589	\$8,354,457	\$47,222,231
Environmental Science & Engineering	\$2,042,062	\$9,639,888	\$72,201,396
Food, Fiber, Agricultural Products	\$3,633,473	\$7,796,963	\$60,704,046
Manufacturing Technology	\$1,170,197	\$1,906,509	\$12,096,659
Materials Science & Engineering	\$2,070,464	\$4,989,823	\$34,825,771
Microelectronics & Computer Technology	\$1,939,311	\$4,585,068	\$44,927,735
Water Resources	\$484,568	\$1,923,288	\$7,533,333
Totals	\$14,619,591	\$50,459,756	\$375,967,542

Table 6

Expenditures for Conduct of R&D in Areas of Special Interest, FY 1999 Texas Public Health-Related Institutions				
Functional Area	Federal	State		Institution
		Appropriated	Contracts and Grants	
Aging	\$12,429,587	\$1,563,025	\$111,208	\$3,095
Cancer Research	\$99,118,451	\$51,952,200	\$650,605	\$4,433,740
Cardiovascular Research	\$18,390,657	\$1,903,111	\$0	\$70,737
Child Health and Human Development	\$5,695,512	\$268,320	\$859,984	\$664,913
Mental Health	\$5,604,517	\$1,366,969	\$0	\$102,344
Substance Abuse	\$8,491,487	\$545,179	\$35,882	\$8,234
Totals	\$149,730,210	\$57,598,805	\$1,657,679	\$5,283,063

Table 6 - continued

Expenditures for Conduct of R&D in Areas of Special Interest, FY 1999 Texas Public Health-Related Institutions			
Functional Area	Private		Total
	Profit	Non-Profit	
Aging	\$448,609	\$1,037,248	\$15,592,772
Cancer Research	\$15,326,590	\$22,431,558	\$193,913,145
Cardiovascular Research	\$3,597,545	\$3,125,373	\$27,087,423
Child Health and Human Development	\$494,741	\$1,814,272	\$9,797,742
Mental Health	\$1,498,189	\$381,679	\$8,953,697
Substance Abuse	\$81,692	\$85,952	\$9,248,425
Totals	\$21,447,365	\$28,876,082	\$264,593,204

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 5

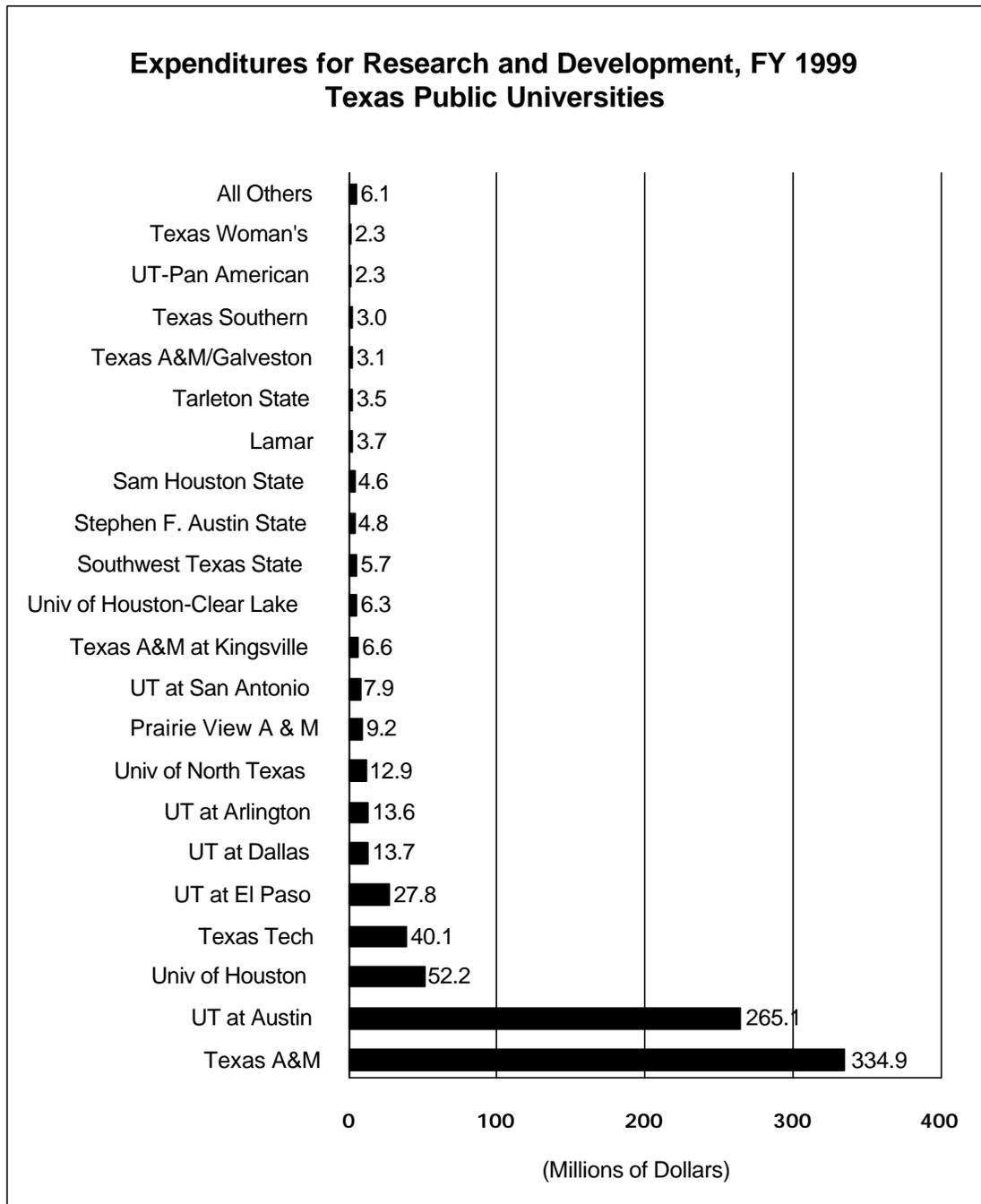


Table 7

Total Expenditures for Research and Other Research-Related Sponsored Programs by Source of Funds, FY 1999						
Institution	Federal		State			
	Federal		Appropriated		Contracts and Grants	
	R&D	Other	R&D	Other	R&D	Other
Midwestern State	\$42,359	\$0	\$8,632	\$0	\$0	\$0
Stephen F. Austin State	\$775,560	\$0	\$0	\$0	\$155,109	\$0
Texas A&M University System						
Prairie View A&M	\$8,773,141	\$410,528	\$0	\$0	\$235,822	\$0
Tarleton State	\$1,531,022	\$0	\$1,642,380	\$0	\$177,328	\$0
Texas A&M and Services	\$145,366,594	\$1,927,631	\$65,100,261	\$1,022,934	\$30,718,464	\$480,554
Texas A&M-Commerce	\$118,668	\$0	\$76,584	\$0	\$34,663	\$0
Texas A&M-Corpus Christi	\$383,507	\$2,071	\$1,888	\$344,198	\$169,446	\$237,227
Texas A&M at Galveston	\$1,384,321	\$0	\$322,925	\$321,873	\$457,342	\$0
Texas A&M International	\$101,124	\$0	\$0	\$0	\$285,324	\$0
Texas A&M-Kingsville	\$1,770,786	\$2,249,123	\$2,137,551	\$0	\$864,868	\$1,374,222
Texas A&M-TeXarkana	\$0	\$0	\$0	\$0	\$0	\$186
West Texas A&M	\$99,996	\$0	\$1,206,171	\$787,039	\$63,924	\$0
Texas Southern	\$2,431,236	\$0	\$0	\$0	\$364,733	\$0
Texas State University System						
Angelo State	\$10,583	\$0	\$423,423	\$9,770	\$22,561	\$0
Lamar	\$2,914,687	\$365,066	\$718,000	\$101,413	\$17,618	\$129,185
Sam Houston State	\$3,557,061	\$0	\$0	\$0	\$620,270	\$50,000
Southwest Texas State	\$3,444,132	\$0	\$1,291,951	\$0	\$0	\$0
Sul Ross State	\$74,277	\$0	\$326,663	\$0	\$105,877	\$0
Sul Ross - Rio Grande	\$0	\$0	\$9,058	\$0	\$0	\$0
Texas Tech	\$17,219,633	\$0	\$9,362,208	\$0	\$4,398,806	\$0
Texas Woman's	\$1,306,319	\$2,692	\$516,732	\$729,447	\$286,512	\$0
University of Texas System						
UT at Arlington	\$6,289,004	\$0	\$4,277,057	\$0	\$425,417	\$0
UT at Austin	\$159,245,662	\$8,009,299	\$14,559,486	\$0	\$24,302,986	\$608,634
UT at Brownsville	\$21,857	\$34,131	\$0	\$0	\$34,230	\$0
UT at Dallas	\$7,192,600	\$0	\$1,408,325	\$0	\$409,368	\$0
UT at El Paso	\$23,871,116	\$0	\$2,481,205	\$0	\$685,705	\$0
UT-Pan American	\$1,077,255	\$0	\$845,060	\$0	\$121,509	\$0
UT of the Permian Basin	\$155,219	\$0	\$398,678	\$0	\$0	\$0
UT at San Antonio	\$5,480,519	\$0	\$1,186,360	\$426,120	\$498,769	\$0
UT at Tyler	\$22,519	\$0	\$0	\$44,126	\$12,375	\$0
University of Houston System						
Univ. of Houston	\$23,479,128	\$2,940,245	\$3,327,266	\$0	\$13,529,418	\$0
Univ. of Houston-Clear Lake	\$5,565,256	\$0	\$375,360	\$0	\$122,381	\$0
Univ. of Houston-Downtown	\$563,024	\$57,648	\$136,914	\$459,782	\$0	\$0
Univ. of Houston-Victoria	\$0	\$0	\$0	\$0	\$0	\$0
University of North Texas	\$5,200,725	\$0	\$967,071	\$0	\$1,040,902	\$0
Totals	\$429,468,890	\$15,998,434	\$113,107,209	\$4,246,702	\$80,161,727	\$2,880,008

Shading indicates the five highest expenditures in each category.

Table 7 - continued

Total Expenditures for Research and Other Research-Related Sponsored Programs by Source of Funds						
Institution	Institution		Private, Profit		Private, Non-Profit	
	R&D	Other	R&D	Other	R&D	Other
Midwestern State	\$0	\$3,249	\$0	\$0	\$55,738	\$0
Stephen F. Austin State	\$1,536,946	\$0	\$202,527	\$0	\$2,120,601	\$0
Texas A&M University System						
Prairie View A&M	\$85,201	\$366,355	\$120,109	\$4,771	\$4,311	\$0
Tarleton State	\$19,280	\$0	\$0	\$0	\$94,440	\$0
Texas A&M and Services	\$52,522,544	\$225,696	\$16,002,832	\$143,128	\$25,179,933	\$250,655
Texas A&M-Commerce	\$0	\$0	\$0	\$0	\$260,984	\$0
Texas A&M-Corpus Christi	\$0	\$0	\$54,255	\$1,833	\$229,500	\$290,418
Texas A&M at Galveston	\$248,084	\$166,984	\$322,153	\$0	\$325,814	\$17,104
Texas A&M International	\$32,127	\$0	\$0	\$0	\$0	\$0
Texas A&M-Kingsville	\$0	\$0	\$1,588,004	\$125,372	\$257,777	\$0
Texas A&M-Texarkana	\$0	\$0	\$0	\$0	\$0	\$0
West Texas A&M	\$0	\$0	\$0	\$0	\$122,291	\$0
Texas Southern	\$24,518	\$0	\$96,812	\$0	\$37,624	\$0
Texas State University System						
Angelo State	\$0	\$0	\$32,882	\$0	\$21,360	\$0
Lamar	\$0	\$135,377	\$40,559	\$2,422	\$49,710	\$53,737
Sam Houston State	\$181,105	\$0	\$8,155	\$0	\$184,160	\$0
Southwest Texas State	\$233,720	\$0	\$0	\$0	\$691,500	\$0
Sul Ross State	\$0	\$0	\$0	\$0	\$113,733	\$0
Sul Ross - Rio Grande	\$0	\$0	\$0	\$0	\$0	\$0
Texas Tech	\$1,739,756	\$405,514	\$3,687,033	\$0	\$3,697,236	\$0
Texas Woman's	\$0	\$0	\$66,369	\$0	\$82,989	\$0
University of Texas System						
UT at Arlington	\$216,672	\$0	\$639,782	\$0	\$1,741,936	\$0
UT at Austin	\$24,615,161	\$0	\$0	\$72,911	\$42,398,695	\$310,973
UT at Brownsville	\$17	\$0	\$0	\$0	\$0	\$0
UT at Dallas	\$587,230	\$1,120,350	\$1,391,616	\$0	\$2,687,548	\$0
UT at El Paso	\$19,517	\$244,444	\$7,167	\$0	\$690,015	\$0
UT-Pan American	\$79,478	\$0	\$27,911	\$0	\$145,410	\$0
UT of the Permian Basin	\$150,716	\$0	\$4,576	\$0	\$42,862	\$0
UT at San Antonio	\$229,606	\$40,676	\$96,534	\$0	\$422,328	\$0
UT at Tyler	\$16,628	\$0	\$0	\$0	\$36,488	\$0
University of Houston System						
Univ. of Houston	\$3,347,665	\$0	\$3,599,953	\$203,809	\$4,917,554	\$1,352,009
Univ. of Houston-Clear Lake	\$94,605	\$0	\$121,856	\$0	\$67,786	\$0
Univ. of Houston-Downtown	\$0	\$0	\$1,570	\$0	\$0	\$0
Univ. of Houston-Victoria	\$0	\$0	\$0	\$0	\$0	\$0
University of North Texas	\$2,537,357	\$0	\$1,091,968	\$0	\$2,053,010	\$0
Totals	\$88,517,933	\$2,708,645	\$29,204,623	\$554,246	\$88,733,333	\$2,274,896

Shading indicates the five highest expenditures in each category.

Table 7 - continued

Total Expenditures for Research and Other Research-Related Sponsored Programs by Source of Funds, FY 1999			
Institution	Total		
	R&D	Other	R&D and Other
Midwestern State	\$106,729	\$3,249	\$109,978
Stephen F. Austin State	\$4,790,743	\$0	\$4,790,743
Texas A&M University System			
Prairie View A&M	\$9,218,584	\$781,654	\$10,000,238
Tarleton State	\$3,464,450	\$0	\$3,464,450
Texas A&M and Services	\$334,890,628	\$4,050,598	\$338,941,226
Texas A&M-Commerce	\$490,899	\$0	\$490,899
Texas A&M-Corpus Christi	\$838,596	\$875,747	\$1,714,343
Texas A&M at Galveston	\$3,060,639	\$505,961	\$3,566,600
Texas A&M International	\$418,575	\$0	\$418,575
Texas A&M-Kingsville	\$6,618,986	\$3,748,717	\$10,367,703
Texas A&M-Texarkana	\$0	\$186	\$186
West Texas A&M	\$1,492,382	\$787,039	\$2,279,421
Texas Southern	\$2,954,923	\$0	\$2,954,923
Texas State University System			
Angelo State	\$510,809	\$9,770	\$520,579
Lamar	\$3,740,574	\$787,200	\$4,527,774
Sam Houston State	\$4,550,751	\$50,000	\$4,600,751
Southwest Texas State	\$5,661,303	\$0	\$5,661,303
Sul Ross State	\$620,550	\$0	\$620,550
Sul Ross - Rio Grande	\$9,058	\$0	\$9,058
Texas Tech	\$40,104,672	\$405,514	\$40,510,186
Texas Woman's	\$2,258,921	\$732,139	\$2,991,060
University of Texas System			
UT at Arlington	\$13,589,868	\$0	\$13,589,868
UT at Austin	\$265,121,990	\$9,001,817	\$274,123,807
UT at Brownsville	\$56,104	\$34,131	\$90,235
UT at Dallas	\$13,676,687	\$1,120,350	\$14,797,037
UT at El Paso	\$27,754,725	\$244,444	\$27,999,169
UT-Pan American	\$2,296,623	\$0	\$2,296,623
UT of the Permian Basin	\$752,051	\$0	\$752,051
UT at San Antonio	\$7,914,116	\$466,796	\$8,380,912
UT at Tyler	\$88,010	\$44,126	\$132,136
University of Houston System			
Univ. of Houston	\$52,200,984	\$4,496,063	\$56,697,047
Univ. of Houston-Clear Lake	\$6,347,244	\$0	\$6,347,244
Univ. of Houston-Downtown	\$701,508	\$517,430	\$1,218,938
Univ. of Houston-Victoria	\$0	\$0	\$0
University of North Texas	\$12,891,033	\$0	\$12,891,033
Totals	\$829,193,715	\$28,662,931	\$857,856,646

Shading indicates the five highest expenditures in each category.

Table 8

Federal R&D Expenditures/FTE Faculty Ratio, FY 1999			
Institution	Federal R&D Expenditures	FTE Faculty*	Federal R&D Expenditures/ FTE
Midwestern State	\$42,359	132.08	\$320.71
Stephen F. Austin State	\$775,560	327.92	\$3,365.09
Texas A&M University System			
Prairie View A&M	\$8,773,141	140.07	\$62,633.98
Tarleton State	\$1,531,022	147.83	\$10,356.64
Texas A&M and Services	\$145,366,594	1651.86	\$88,011.76
Texas A&M-Commerce	\$118,668	180.50	\$657.44
Texas A&M-Corpus Christi	\$383,507	179.86	\$2,132.25
Texas A&M at Galveston	\$1,384,321	31.22	\$44,340.84
Texas A&M International	\$101,124	92.25	\$1,096.20
Texas A&M-Kingsville	\$1,770,786	206.40	\$8,579.39
Texas A&M-Texarkana	\$0	27.25	\$0.00
West Texas A&M	\$99,996	141.76	\$705.39
Texas Southern	\$2,431,236	230.32	\$10,555.90
Texas State University System			
Angelo State	\$10,583	138.52	\$76.40
Lamar	\$2,914,687	206.00	\$14,148.97
Sam Houston State	\$3,557,061	302.59	\$11,755.38
Southwest Texas State	\$3,444,132	492.43	\$6,994.16
Sul Ross State	\$74,277	68.50	\$1,084.34
Sul Ross-Rio Grande	\$0	19.75	\$0.00
Texas Tech	\$17,219,633	728.98	\$23,621.54
Texas Woman's	\$1,306,319	277.05	\$4,715.10
University of Texas System			
UT at Arlington	\$6,289,004	490.95	\$12,809.87
UT at Austin	\$159,245,662	1603.01	\$99,341.65
UT at Brownsville	\$21,857	58.38	\$374.39
UT at Dallas	\$7,192,600	234.14	\$30,719.23
UT at El Paso	\$23,871,116	394.60	\$60,494.47
UT-Pan American	\$1,077,255	285.10	\$3,778.52
UT of the Permian Basin	\$155,219	57.00	\$2,723.14
UT at San Antonio	\$5,480,519	268.58	\$20,405.54
UT at Tyler	\$22,519	119.25	\$188.84
University of Houston System			
Univ. of Houston	\$23,479,128	791.81	\$29,652.48
Univ. of Houston-Clear Lake	\$5,565,256	151.33	\$36,775.63
Univ. of Houston-Downtown	\$563,024	134.52	\$4,185.43
Univ. of Houston-Victoria	\$0	33.50	\$0.00
University of North Texas	\$5,200,725	637.19	\$8,161.97
Totals	\$429,468,890	10,982.50	\$39,104.84

* FTE Faculty indicates number of full-time equivalents for tenured and tenure-track faculty for fall 1998.

Table 9

Expenditures for Conduct of R&D by Field, FY 1999
Texas Public Universities

Institution	Agricultural Sciences	Biological and Other Life Sciences	Computer Science	Engineering	Environmental Sciences	Mathematical Sciences
Midwestern State	\$0	\$36,858	\$42,359	\$0	\$0	\$582
Stephen F. Austin State	\$3,421,770	\$548,381	\$28,881	\$0	\$23	\$123,617
Texas A&M University System						
Prairie View A&M	\$3,179,518	\$0	\$935,181	\$3,585,950	\$33,489	\$1,925
Tarleton State	\$249	\$27,380	\$0	\$11,013	\$3,101,177	\$9,212
Texas A&M	\$49,284,087	\$69,993,649	\$1,770,244	\$102,907,158	\$59,002,186	\$2,231,432
Texas A&M-Commerce	\$210,994	\$6,018	\$591	\$0	\$0	\$0
Texas A&M-Corpus Christi	\$0	\$46,332	\$32,536	\$0	\$743,832	\$0
Texas A&M at Galveston	\$0	\$74,303	\$0	\$34,816	\$2,721,822	\$0
Texas A&M International	\$0	\$251,661	\$975	\$0	\$0	\$3,825
Texas A&M at Kingsville	\$3,650,518	\$1,170,834	\$41,608	\$1,108,001	\$351,927	\$0
Texas A&M-Texarkana	\$0	\$0	\$0	\$0	\$0	\$0
West Texas A&M	\$1,082,611	\$30,086	\$1,983	\$184,958	\$46,455	\$4,506
Texas Southern	\$0	\$1,764,807	\$85,225	\$18,468	\$188,181	\$93,770
Texas State University System						
Angelo State	\$357,328	\$63,126	\$8,506	\$0	\$0	\$0
Lamar	\$0	\$45,980	\$0	\$676,961	\$2,244,537	\$17,899
Sam Houston State	\$80,782	\$166	\$228,343	\$0	\$1,504,853	\$188,354
Southwest Texas State	\$15,428	\$1,252,649	\$27,770	\$10,778	\$246,258	\$67,777
Sul Ross State	\$92,352	\$175,291	\$0	\$0	\$103,411	\$0
Sul Ross - Rio Grande	\$0	\$0	\$0	\$0	\$0	\$0
Texas Tech	\$10,824,074	\$2,544,372	\$378,384	\$12,192,195	\$2,236,857	\$715,254
Texas Woman's	\$0	\$1,582,005	\$0	\$0	\$0	\$34,737
University of Texas System						
UT at Arlington	\$554	\$967,450	\$2,135,228	\$4,962,962	\$579,919	\$115,149
UT at Austin	\$0	\$24,696,140	\$11,434,884	\$102,398,725	\$24,690,267	\$869,684
UT at Brownsville	\$34,230	\$0	\$0	\$0	\$0	\$0
UT at Dallas	\$0	\$1,664,860	\$629,843	\$1,391,089	\$1,185,803	\$118,427
UT at El Paso	\$0	\$2,784,083	\$1,680,699	\$7,363,399	\$2,709,972	\$1,265,636
UT-Pan American	\$0	\$107,378	\$89,460	\$375,855	\$80,779	\$0
UT-Permian Basin	\$0	\$0	\$0	\$0	\$10,375	\$0
UT at San Antonio	\$0	\$2,837,743	\$1,038,171	\$680,904	\$0	\$98,308
UT at Tyler	\$0	\$38,232	\$0	\$0	\$0	\$0
University of Houston System						
Univ of Houston	\$0	\$4,467,907	\$3,258,910	\$9,100,527	\$952,870	\$782,994
Univ of Houston-Clear Lake	\$0	\$67,167	\$282,718	\$5,147,549	\$134,418	\$11,765
Univ of Houston-Downtown	\$0	\$0	\$580,347	\$0	\$41,160	\$26,039
Univ of Houston-Victoria	\$0	\$0	\$0	\$0	\$0	\$0
University of North Texas	\$95,728	\$1,091,965	\$319,671	\$497,268	\$899,287	\$356,613
Totals	\$72,330,223	\$118,336,823	\$25,032,517	\$252,648,576	\$103,809,858	\$7,137,505

Shading indicates the five highest expenditures in each field.

Table 9 - continued

**Expenditures for Conduct of R&D by Field, FY 1999
Texas Public Universities**

Institution	Medical Sciences	Physical Sciences	Psychology	Social Sciences	Other Sciences
Midwestern State	\$943	\$0	\$0	\$0	\$0
Stephen F. Austin State	\$1,338	\$295,644	\$17,398	\$167,434	\$0
Texas A&M University System					
Prairie View A&M	\$391,086	\$923,593	\$0	\$51,713	\$0
Tarleton State	\$11,741	\$3,768	\$379	\$3,863	\$36,051
Texas A&M	\$6,924,647	\$19,472,410	\$2,677,149	\$12,523,805	\$1,863,333
Texas A&M-Commerce	\$2,500	\$134,404	\$5,933	\$560	\$67,668
Texas A&M-Corpus Christi	\$0	\$955	\$0	\$284	\$0
Texas A&M at Galveston	\$0	\$190,277	\$0	\$24,073	\$0
Texas A&M International	\$0	\$2,664	\$3,732	\$6,078	\$0
Texas A&M at Kingsville	\$0	\$74,260	\$0	\$0	\$0
Texas A&M-Texarkana	\$0	\$0	\$0	\$0	\$0
West Texas A&M	\$0	\$71,060	\$0	\$0	\$10,224
Texas Southern	\$0	\$192,374	\$0	\$0	\$164,608
Texas State University System					
Angelo State	\$0	\$39,329	\$33,075	\$0	\$0
Lamar	\$0	\$193,519	\$0	\$20,916	\$0
Sam Houston State	\$0	\$337,357	\$0	\$1,586,038	\$4,227
Southwest Texas State	\$428,156	\$1,548,282	\$229	\$26,442	\$0
Sul Ross State	\$0	\$0	\$0	\$245,514	\$0
Sul Ross - Rio Grande	\$0	\$0	\$0	\$0	\$0
Texas Tech	\$0	\$5,334,898	\$211,966	\$3,550,460	\$430,077
Texas Woman's	\$370,670	\$37,627	\$5,259	\$39,860	\$140,163
University of Texas System					
UT at Arlington	\$377,248	\$1,921,541	\$188,260	\$237,138	\$29,083
UT at Austin	\$1,658,561	\$56,937,538	\$2,857,374	\$7,899,909	\$4,714,455
UT at Brownsville	\$0	\$0	\$0	\$21,857	\$0
UT at Dallas	\$1,012,873	\$4,377,381	\$1,079,389	\$1,956,544	\$0
UT at El Paso	\$474,097	\$2,113,446	\$680,163	\$4,049,606	\$386,250
UT-Pan American	\$682,779	\$192,706	\$3,607	\$216,614	\$0
UT of the Permian Basin	\$0	\$41,117	\$0	\$0	\$60,737
UT at San Antonio	\$0	\$226,267	\$0	\$2,722,678	\$0
UT at Tyler	\$28,397	\$16,117	\$0	\$0	\$0
University of Houston System					
Univ of Houston	\$3,019,505	\$18,495,986	\$2,799,743	\$1,353,879	\$1,258,877
Univ of Houston-Clear Lake	\$15,000	\$110,575	\$124,615	\$50,100	\$2,603
Univ of Houston-Downtown	\$0	\$7,680	\$0	\$0	\$44,685
Univ of Houston-Victoria	\$0	\$0	\$0	\$0	\$0
University of North Texas	\$58,150	\$1,581,573	\$933,723	\$1,733,091	\$0
Totals	\$15,457,691	\$114,874,348	\$11,621,994	\$38,488,456	\$9,213,041

Shading indicates the five highest expenditures in each field.

Table 9- continued

**Expenditures for Conduct of R&D by Field, FY 1999
Texas Public Universities**

Institution	Arts and Humanities	Business Administration	Education	Law and Public Administration	Other Non-Sciences	Total
Midwestern State	\$5,581	\$20,406	\$0	\$0	\$0	\$106,729
Stephen F. Austin State	\$170,183	\$2,138	\$11,787	\$2,149	\$0	\$4,790,743
Texas A&M University System						
Prairie View A&M	\$0	\$11,113	\$105,016	\$0	\$0	\$9,218,584
Tarleton State	\$5,019	\$4,489	\$17,069	\$0	\$233,040	\$3,464,450
Texas A&M	\$376,583	\$3,006,252	\$2,757,229	\$94,410	\$6,054	\$334,890,628
Texas A&M-Commerce	\$13,285	\$8,786	\$18,649	\$95	\$21,416	\$490,899
Texas A&M-Corpus Christi	\$0	\$0	\$14,657	\$0	\$0	\$838,596
Texas A&M at Galveston	\$7,493	\$0	\$0	\$7,855	\$0	\$3,060,639
Texas A&M International	\$4,335	\$9,162	\$24,132	\$0	\$112,011	\$418,575
Texas A&M at Kingsville	\$292	\$0	\$24,501	\$0	\$197,045	\$6,618,986
Texas A&M-Texarkana	\$0	\$0	\$0	\$0	\$0	\$0
West Texas A&M	\$24,141	\$0	\$32,657	\$0	\$3,701	\$1,492,382
Texas Southern	\$0	\$0	\$0	\$0	\$447,490	\$2,954,923
Texas State University System						
Angelo State	\$8,727	\$718	\$0	\$0	\$0	\$510,809
Lamar	\$0	\$128	\$0	\$0	\$540,634	\$3,740,574
Sam Houston State	\$0	\$96,552	\$524,079	\$0	\$0	\$4,550,751
Southwest Texas State	\$453,345	\$50,532	\$1,249,264	\$14,315	\$270,078	\$5,661,303
Sul Ross State	\$0	\$0	\$3,982	\$0	\$0	\$620,550
Sul Ross - Rio Grande	\$0	\$0	\$9,058	\$0	\$0	\$9,058
Texas Tech	\$53,148	\$959,313	\$653,416	\$20,258	\$0	\$40,104,672
Texas Woman's	\$24,498	\$0	\$24,102	\$0	\$0	\$2,258,921
University of Texas System						
UT at Arlington	\$68,934	\$51,094	\$261,971	\$300,205	\$1,393,132	\$13,589,868
UT at Austin	\$3,350,631	\$3,757,619	\$13,175,442	\$1,924,470	\$4,756,291	\$265,121,990
UT at Brownsville	\$0	\$0	\$17	\$0	\$0	\$56,104
UT at Dallas	\$114,977	\$145,501	\$0	\$0	\$0	\$13,676,687
UT at El Paso	\$16,844	\$441,193	\$3,283,559	\$233,675	\$272,103	\$27,754,725
UT-Pan American	\$50,180	\$325,459	\$169,102	\$2,704	\$0	\$2,296,623
UT of the Permian Basin	\$10,916	\$421,266	\$46,832	\$52,287	\$108,521	\$752,051
UT at San Antonio	\$66,108	\$197,160	\$46,777	\$0	\$0	\$7,914,116
UT at Tyler	\$0	\$5,264	\$0	\$0	\$0	\$88,010
University of Houston System						
Univ of Houston	\$1,057,581	\$1,230,602	\$2,913,546	\$497,733	\$1,010,324	\$52,200,984
Univ of Houston-Clear Lake	\$1,199	\$158,725	\$62,730	\$0	\$178,080	\$6,347,244
Univ of Houston-Downtown	\$0	\$0	\$1,597	\$0	\$0	\$701,508
Univ of Houston-Victoria	\$0	\$0	\$0	\$0	\$0	\$0
University of North Texas	\$699,452	\$310,415	\$4,280,280	\$33,818	\$0	\$12,891,034
Totals	\$6,583,452	\$11,213,887	\$29,711,451	\$3,183,974	\$9,549,920	\$829,193,716

Shading indicates the five highest expenditures in each field.

Table 10

**Expenditures for Conduct of R&D by Area of Special Interest, FY 1999
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	\$354,775	\$0	\$3,417,530	\$1,768,056
Texas A&M University System					
Prairie View A & M	\$632,920	\$0	\$86,676	\$230,343	\$2,788,137
Tarleton State	\$0	\$0	\$0	\$3,101,177	\$0
Texas A&M	\$2,161,679	\$58,265,104	\$5,508,030	\$7,680,892	\$39,584,801
Texas A&M-Commerce	\$0	\$0	\$0	\$6,018	\$59,727
Texas A&M-Corpus Christi	\$0	\$40	\$0	\$769,014	\$0
Texas A&M at Galveston	\$0	\$13,859	\$0	\$843,289	\$0
Texas A&M International	\$0	\$0	\$0	\$0	\$0
Texas A&M at Kingsville	\$122,698	\$761,253	\$223,307	\$1,492,637	\$3,570,567
Texas A&M-Texarkana	\$0	\$0	\$0	\$0	\$0
West Texas A&M	\$0	\$0	\$181,471	\$166,283	\$918,739
Texas Southern	\$0	\$0	\$164,674	\$383,185	\$0
Texas State University System					
Angelo State	\$0	\$9,265	\$0	\$0	\$357,328
Lamar	\$0	\$0	\$66,025	\$2,867,639	\$0
Sam Houston State	\$0	\$166	\$4,995	\$1,514,332	\$80,782
Southwest Texas State	\$71,296	\$64,749	\$0	\$123,991	\$25,039
Sul Ross State	\$0	\$0	\$0	\$77,094	\$34,621
Sul Ross - Rio Grande	\$0	\$0	\$0	\$0	\$0
Texas Tech	\$2,376,283	\$2,956,104	\$5,089,879	\$9,677,637	\$10,055,123
Texas Woman's	\$0	\$0	\$0	\$0	\$262,500
University of Texas System					
UT at Arlington	\$1,020,701	\$1,270,718	\$976,689	\$580,747	\$3,084
UT at Austin	\$5,201,584	\$10,876,706	\$27,748,842	\$30,276,928	\$328,521
UT at Brownsville	\$0	\$0	\$0	\$34,230	\$0
UT at Dallas	\$1,715,387	\$1,781,943	\$751,926	\$507,239	\$191,357
UT at El Paso	\$1,313,258	\$1,050,018	\$303,913	\$4,998,955	\$309,040
UT-Pan American	\$0	\$0	\$0	\$80,779	\$9,705
UT of the Permian Basin	\$0	\$0	\$6,747	\$0	\$0
UT at San Antonio	\$468,525	\$0	\$0	\$226,267	\$0
UT at Tyler	\$0	\$0	\$0	\$0	\$0
University of Houston System					
Univ of Houston	\$2,575,129	\$768,809	\$5,923,225	\$1,566,503	\$94,783
Univ of Houston-Clear Lake	\$0	\$67,167	\$0	\$134,418	\$0
Univ of Houston-Downtown	\$317,109	\$0	\$0	\$38,111	\$0
Univ of Houston-Victoria	\$0	\$0	\$0	\$0	\$0
Univ of North Texas	\$44,856	\$194,270	\$185,832	\$1,406,158	\$262,136
Totals	\$18,021,425	\$78,434,946	\$47,222,231	\$72,201,396	\$60,704,046

Shading indicates the five highest expenditures in each field.

Table 10 - continued

Expenditures for Conduct of R&D by Area of Special Interest, FY 1999					
Texas Public Universities					
Institution	Manufacturing Technology	Materials Science	Microelectronics & Computer Technology	Water Resources	Total
Midwestern State	\$0	\$0	\$0	\$0	\$0
Stephen F. Austin State	\$0	\$0	\$110,309	\$1,034,709	\$6,685,379
Texas A&M University System					
Prairie View A&M	\$19,099	\$145,491	\$0	\$0	\$3,902,666
Tarleton State	\$0	\$0	\$0	\$0	\$3,101,177
Texas A&M	\$1,203,080	\$2,988,010	\$782,685	\$2,298,920	\$120,473,201
Texas A&M-Commerce	\$0	\$81,844	\$591	\$0	\$148,180
Texas A&M-Corpus Christi	\$0	\$0	\$32,534	\$22,066	\$823,654
Texas A&M at Galveston	\$0	\$0	\$0	\$0	\$857,148
Texas A&M International	\$0	\$0	\$0	\$0	\$0
Texas A&M-Kingsville	\$0	\$229,528	\$0	\$8,431	\$6,408,421
Texas A&M-Texarkana	\$0	\$0	\$0	\$0	\$0
West Texas A&M	\$0	\$24,056	\$1,100	\$0	\$1,291,649
Texas Southern	\$0	\$0	\$106,976	\$0	\$654,835
Texas State University System					
Angelo State	\$0	\$0	\$0	\$0	\$366,593
Lamar	\$61,537	\$0	\$0	\$13,743	\$3,008,944
Sam Houston State	\$0	\$41,950	\$172,949	\$0	\$1,815,174
Southwest Texas State	\$0	\$819,056	\$0	\$16,881	\$1,121,012
Sul Ross State	\$0	\$0	\$0	\$0	\$111,715
Sul Ross - Rio Grande	\$0	\$0	\$0	\$0	\$0
Texas Tech	\$2,967,811	\$5,342,630	\$2,724,007	\$1,445,359	\$42,634,833
Texas Woman's	\$0	\$0	\$0	\$0	\$262,500
University of Texas System					
UT at Arlington	\$3,733,307	\$1,920,040	\$3,598,420	\$192,116	\$13,295,822
UT at Austin	\$859,515	\$13,637,862	\$22,428,054	\$1,801,237	\$113,159,249
UT at Brownsville	\$0	\$0	\$0	\$0	\$34,230
UT at Dallas	\$0	\$1,657,322	\$1,819,119	\$0	\$8,424,293
UT at El Paso	\$376,024	\$2,194,039	\$1,580,049	\$304,369	\$12,429,665
UT-Pan American	\$304,623	\$0	\$87,198	\$0	\$482,305
UT of the Permian Basin	\$0	\$0	\$0	\$0	\$6,747
UT at San Antonio	\$0	\$0	\$1,038,171	\$11,155	\$1,744,118
UT at Tyler	\$0	\$0	\$0	\$0	\$0
University of Houston System					
Univ of Houston	\$1,671,630	\$5,638,681	\$4,105,681	\$95,793	\$22,440,234
Univ of Houston-Clear Lake	\$0	\$0	\$5,430,267	\$0	\$5,631,852
Univ of Houston-Downtown	\$317,109	\$7,138	\$160,110	\$0	\$839,577
Univ of Houston-Victoria	\$0	\$0	\$0	\$0	\$0
Univ of North Texas	\$582,924	\$98,124	\$749,515	\$288,554	\$3,812,369
Totals	\$12,096,659	\$34,825,771	\$44,927,735	\$7,533,333	\$375,967,542

Shading indicates the five highest expenditures in each field.

INSTITUTIONAL DATA – HEALTH-RELATED INSTITUTIONS

This section of the report contains detailed information on research expenditures 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 6

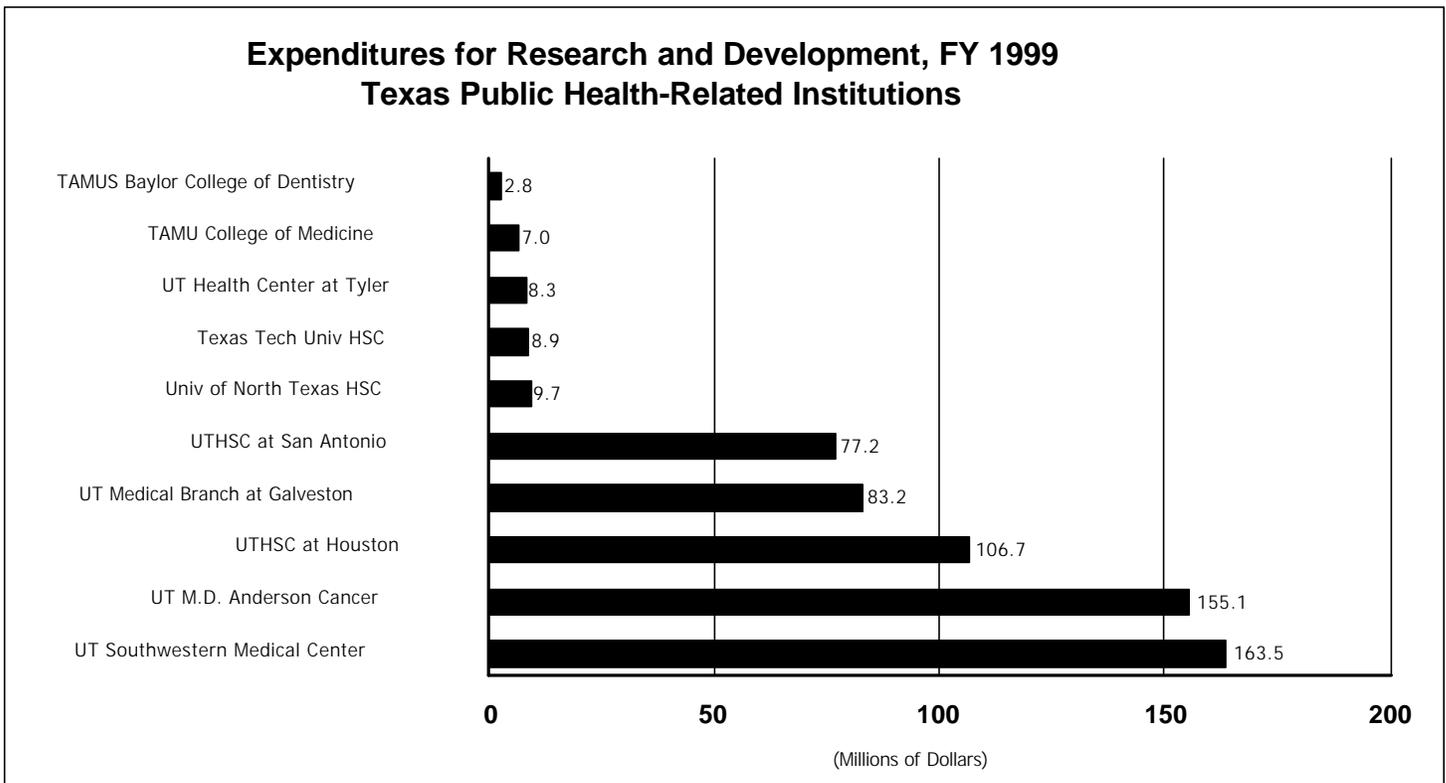


Table 11

Total Expenditures for Sponsored Programs by Source of Funds, FY 1999						
Institution	Federal		Appropriated		Contracts and Grants	
	R&D	Other	R&D	Other	R&D	Other
TAMU College of Medicine	\$3,385,338	\$0	\$1,295,636	\$698,883	\$58,811	\$0
TAMUS Baylor College of	\$1,480,612	\$0	\$96,958	\$0	\$229,229	\$0
Texas Tech Univ HSC	\$3,360,508	\$0	\$2,586,164	\$0	\$4,932	\$0
Univ North Tx HSC	\$5,370,431	\$0	\$70,009	\$0	\$517,057	\$0
UT M.D. Anderson Cancer	\$69,412,772	\$0	\$50,370,240	\$0	\$186,495	\$0
UTMB at Galveston	\$55,061,209	\$62,330	\$9,011,712	\$3,434,496	\$674,235	\$282,026
UTHSC at Houston	\$72,684,140	\$0	\$5,274,358	\$0	\$1,573,083	\$0
UT Health Center at Tyler	\$2,297,638	\$0	\$3,764,055	\$0	\$0	\$0
UTHSC at San Antonio	\$54,128,757	\$0	\$6,715,777	\$0	\$0	\$0
UT Southwestern Medical Center	\$99,994,840	\$0	\$4,616,152	\$0	\$869,704	\$40,334
Totals	\$367,176,245	\$62,330	\$83,801,061	\$4,133,379	\$4,113,546	\$322,360

Shading indicates the five highest expenditures in each category.

Table 11 - continued

Total Expenditures for Sponsored Programs by Source of Funds, FY 1999						
Institution	Institution		Private, Profit		Private, Non-Profit	
	R&D	Other	R&D	Other	R&D	Other
TAMU College of Medicine	\$171,470	\$0	\$1,301,570	\$0	\$744,275	\$0
TAMUS Baylor College of	\$690,200	\$0	\$127,020	\$0	\$224,325	\$0
Texas Tech Univ HSC	\$1,047,751	\$0	\$768,713	\$1,419	\$1,177,734	\$4,238
Univ North Tx HSC	\$1,342,597	\$0	\$1,240,428	\$0	\$1,148,294	\$0
UT M.D. Anderson Cancer	\$4,211,622	\$0	\$12,975,303	\$0	\$17,969,965	\$0
UTMB at Galveston	\$699,219	\$201,567	\$6,365,792	\$0	\$11,423,926	\$117,858
UTHSC at Houston	\$908,121	\$0	\$12,872,116	\$0	\$13,391,345	\$0
UT Health Center Tyler	\$1,160,735	\$0	\$650,496	\$0	\$383,295	\$0
UTHSC at San Antonio	\$114,830	\$0	\$0	\$0	\$16,288,632	\$0
UT Southwestern Med Center	\$1,020,107	\$18,114,064	\$23,894,144	\$0	\$33,123,508	\$165,968
Totals	\$11,366,652	\$18,315,631	\$60,195,582	\$1,419	\$95,875,299	\$288,064

Shading indicates the five highest expenditures in each category.

Table 11 - continued

Total Expenditures for Sponsored Programs by Source of Funds, FY 1999			
Institution	Total		
	R&D	Other	Total
TAMU College of Medicine	\$6,957,100	\$698,883	\$7,655,983
TAMUS Baylor College of Dentistry	\$2,848,344	\$0	\$2,848,344
Texas Tech Univ HSC	\$8,945,802	\$5,657	\$8,951,459
Univ North Tx HSC	\$9,688,816	\$0	\$9,688,816
UT M.D. Anderson Cancer	\$155,126,397	\$0	\$155,126,397
UTMB at Galveston	\$83,236,093	\$4,098,277	\$87,334,370
UTHSC at Houston	\$106,703,163	\$0	\$106,703,163
UT Health Center at Tyler	\$8,256,219	\$0	\$8,256,219
UTHSC at San Antonio	\$77,247,996	\$0	\$77,247,996
UT Southwestern Med Center	\$163,518,455	\$18,320,366	\$181,838,821
Totals	\$622,528,385	\$23,123,183	\$645,651,568

Shading indicates the five highest expenditures in each category.

Table 12

Expenditures for Conduct of R&D by Field, FY 1999					
Texas Public Health-Related Institutions					
Institution	Agricultural Sciences	Biological and Other Life Sciences	Engineering	Mathematical Sciences	Medical Sciences
TAMU College of Medicine	\$0	\$0	\$0	\$0	\$6,863,873
TAMUS Baylor College of Dentistry	\$0	\$0	\$0	\$0	\$2,848,344
Texas Tech Univ HSC	\$0	\$4,085,443	\$0	\$0	\$4,860,359
Univ North Tx HSC	\$0	\$0	\$0	\$0	\$8,693,845
UT M.D. Anderson Cancer	\$0	\$67,760,212	\$0	\$3,625,220	\$80,062,941
UTMB at Galveston	\$0	\$39,057,553	\$1,161,649	\$0	\$42,925,526
UTHSC at Houston	\$0	\$17,089,479	\$0	\$0	\$89,613,684
UT Health Center at Tyler	\$489,758	\$0	\$0	\$22,451	\$7,744,010
UTHSC at San Antonio	\$0	\$0	\$0	\$0	\$77,247,996
UT Southwestern Med Center	\$0	\$68,193,304	\$0	\$0	\$90,956,958
Totals	\$489,758	\$196,185,991	\$1,161,649	\$3,647,671	\$411,817,536

Shading indicates the five highest expenditures in each field.

Table 12 - continued

Expenditures for Conduct of R&D by Field FY 1999					
Texas Public Health-Related Institutions					
Institution	Physical Sciences	Other Sciences	Arts & Humanities	Education	Total
TAMU College of Medicine	\$0	\$92,926	\$301	\$0	\$6,957,100
TAMUS Baylor College of Dentistry	\$0	\$0	\$0	\$0	\$2,848,344
Texas Tech Univ. HSC	\$0	\$0	\$0	\$0	\$8,945,802
Univ. of North Texas HSC	\$0	\$0	\$0	\$994,971	\$9,688,816
UT M.D. Anderson Cancer	\$3,678,024	\$0	\$0	\$0	\$155,126,397
UTMB at Galveston	\$0	\$0	\$91,365	\$0	\$83,236,093
UTHSC at Houston	\$0	\$0	\$0	\$0	\$106,703,163
UT Health Center at Tyler	\$0	\$0	\$0	\$0	\$8,256,219
UTHSC at San Antonio	\$0	\$0	\$0	\$0	\$77,247,996
UT Southwestern Medical Center	\$0	\$4,368,193	\$0	\$0	\$163,518,455
Totals	\$3,678,024	\$4,461,119	\$91,666	\$994,971	\$622,528,385

Shading indicates the five highest expenditures in each field.

Table 13

Expenditures for R&D by Area of Special Interest, FY 1999 Texas Public Health-Related Institutions				
Institution	Aging	Cancer Research	Cardiovascular Research	Child Health and Human Development
TAMU College of Medicine	\$107,558	\$96,931	\$1,548,275	\$102,753
TAMUS Baylor College of Dentistry	\$0	\$244,223	\$0	\$0
Texas Tech Univ HSC	\$1,657,290	\$436,458	\$1,006,700	\$53,590
Univ North Tx HSC	\$529,730	\$441,840	\$1,133,543	\$44,130
UT M.D. Anderson Cancer	\$0	\$155,126,396	\$0	\$0
UTMB at Galveston	\$4,650,608	\$6,065,517	\$660,589	\$861,623
UTHSC at Houston	\$2,483,367	\$2,709,676	\$9,663,482	\$8,562,633
UT Health Center at Tyler	\$0	\$19,903	\$0	\$0
UTHSC at San Antonio	\$4,430,892	\$12,498,823	\$5,320,014	\$173,013
UT Southwestern Med Center	\$1,733,327	\$16,273,378	\$7,754,820	\$0
Totals	\$15,592,772	\$193,913,145	\$27,087,423	\$9,797,742

Shading indicates the five highest expenditures in each field.

Table 13 - continued

Expenditures for Research and Development by Area of Special Interest, FY 1999 Texas Public Health-Related Institutions			
Institution	Mental Health	Substance Abuse	Total
TAMU College of Medicine	\$46,246	\$106,264	\$2,008,027
TAMUS Baylor College of Dentistry	\$0	\$0	\$244,223
Texas Tech Univ HSC	\$1,599,597	\$841,401	\$5,595,036
Univ North Tx HSC	\$53,949	\$1,085,699	\$3,288,891
UT M.D. Anderson Cancer	\$0	\$0	\$155,126,396
UTMB at Galveston	\$429,773	\$793,992	\$13,462,102
UTHSC at Houston	\$4,213,159	\$3,343,553	\$30,975,870
UT Health Center at Tyler	\$0	\$0	\$19,903
UTHSC at San Antonio	\$812,813	\$2,727,672	\$25,963,227
UT Southwestern Med Center	\$1,798,160	\$349,844	\$27,909,528
Totals	\$8,953,697	\$9,248,425	\$264,593,204

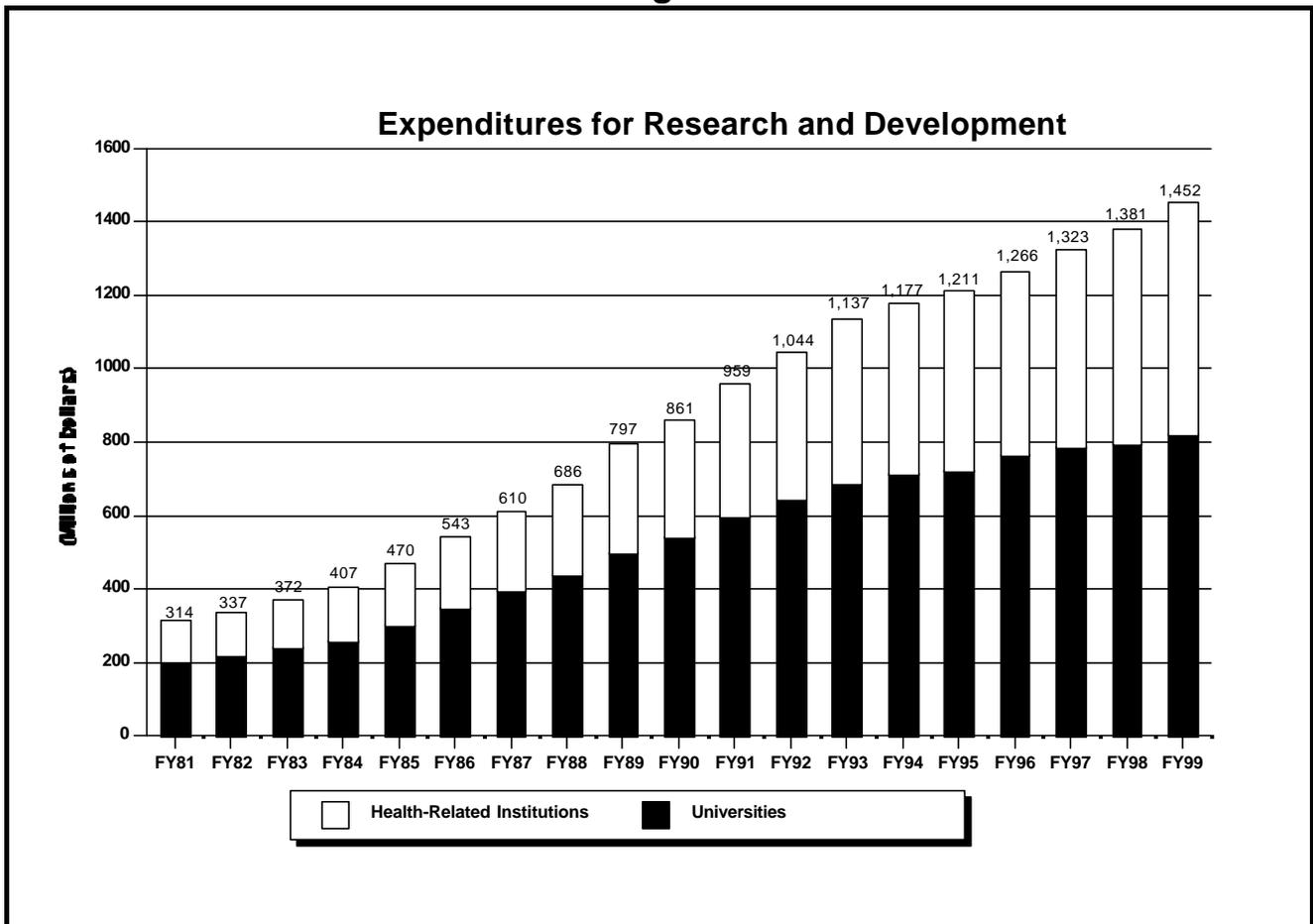
Shading indicates the five highest expenditures in each field.

HISTORICAL DATA

Much of the data in this report will 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 1999 are probably understated compared to expenditures reported in previous years. Figure 7 graphs total research and development expenditures since 1981.

Figure 7



Fifteen institutions reported \$20,696,725 in income from research-related intellectual property, representing a 22 percent increase over the \$17,027,688 earned in Fiscal Year 1998. There has been a 84.9 percent increase since 1996. Table 14 shows the income received at each institution and the number of intellectual properties producing income.

Table 14

Intellectual Property Income								
Institution	FY 1996		FY 1997		FY 1998		FY 1999	
	Income	Number *						
Texas A&M and Services	\$3,022,753	80	\$4,010,887	113	\$4,466,679	131	\$5,262,289	152
Sam Houston State	\$0	0	\$0	0	\$1,500	1	\$1,500	1
Texas Tech University	\$89,875	5	\$118,847	5	\$77,782	6	\$175,000	91
UT at Arlington	\$26,644	3	\$50,962	2	\$97,189	2	\$89,254	2
UT at Austin	\$1,882,793	150	\$2,112,342	237	\$2,027,908	163	\$1,929,390	165
UT at Dallas	\$340,085	8	\$123,710	11	\$94,007	6	\$48,725	4
UT at El Paso	\$9,560	1	\$5,044	1	\$19,854	1	\$42,470	19
University of Houston	\$75,385	6	\$75,409	18	\$80,178	9	\$120,831	40
Subtotals	\$5,447,095	253	\$6,497,201	387	\$6,865,097	319	\$7,669,459	474
Texas Tech Univ HSC	\$1,010	1	\$630	1	\$0	0	\$0	0
Univ North Tx HSC	\$0	0	\$0	0	\$0	0	\$381,242	1
UT M.D. Anderson**	\$805,906	88	\$740,000	119	\$3,416,603	119	\$3,169,420	60
UTMB at Galveston	\$207,694	9	\$180,832	15	\$139,294	22	\$406,939	22
UTHSC at Houston	\$707,707	11	\$311,703	10	\$341,959	9	\$343,050	7
UT Health Ctr at Tyler	\$0	0	\$0	0	\$0	0	\$600	5
UTHSC at San Antonio	\$1,910,527	12	\$2,843,988	17	\$2,360,481	23	\$3,863,467	28
UT Southwestern Med Ctr	\$2,864,484	105	\$3,301,766	142	\$3,904,254	130	\$4,862,549	109
Subtotals	\$6,497,328	226	\$7,378,919	304	\$10,162,591	303	\$13,027,267	232
Totals	\$11,194,423	479	\$13,876,120	691	\$17,027,668	622	\$20,696,725	706

*Number of intellectual properties (patents, copyrights, and licensing agreements) producing income.

**In 1999, this institution removed licensing-related research funding from intellectual property reported for FY91-98. Corrected data for previous reports include: FY 1991 - \$111,000; FY 1992 - \$362,000; FY 1993 - \$201,310; FY 1994 - \$150,049; and FY 1995 - \$131,000.

Table 15 on the following page shows total research and development expenditures at Texas public universities over the past four years. Table 16 shows federal research and development expenditures and the ratio of federal-to-state research and development expenditures over the past four years. Tables 17 and 18 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 19.

Table 15

Expenditures for Research and Development					
Institution	FY 1996	FY 1997	FY 1998	FY 1999	Percent Change *
Midwestern State	\$61,773	\$42,362	\$163,939	\$106,729	72.78%
Stephen F. Austin State	\$4,164,473	\$4,996,332	\$4,081,908	\$4,790,743	15.04%
Texas A&M University System and					
Prairie View A&M	\$10,969,332	\$9,858,828	\$9,952,339	\$9,218,584	-15.96%
Tarleton State	\$2,480,705	\$2,587,483	\$3,414,779	\$3,464,450	39.66%
Texas A&M and Services	\$315,797,309	\$312,578,077	\$335,200,654	\$334,890,628	6.05%
Texas A&M-Commerce	\$398,360	\$384,638	\$519,102	\$490,899	23.23%
Texas A&M-Corpus Christi	\$1,555,205	\$1,543,154	\$991,483	\$838,596	-46.08%
Texas A&M at Galveston	\$2,197,815	\$2,666,538	\$3,048,955	\$3,060,639	39.26%
Texas A&M International	\$188,267	\$53,575	\$139,748	\$418,575	122.33%
Texas A&M-Kingsville	\$5,863,953	\$6,119,017	\$7,465,352	\$6,618,986	12.88%
Texas A&M-Texarkana	\$0	\$0	\$0	\$0	NA
West Texas A&M	\$1,235,377	\$1,526,907	\$2,630,689	\$1,492,382	20.80%
Texas Southern	\$3,820,649	\$3,867,189	\$3,291,677	\$2,954,923	-22.66%
Texas State University System					
Angelo State	\$516,954	\$509,516	\$601,619	\$510,809	-1.19%
Lamar	\$3,221,513	\$3,001,499	\$3,706,891	\$3,740,574	16.11%
Sam Houston State	\$5,338,509	\$5,692,419	\$2,181,736	\$4,550,751	-14.76%
Southwest Texas State	\$5,819,715	\$3,842,183	\$5,239,186	\$5,661,303	-2.72%
Sul Ross State	\$316,382	\$313,429	\$603,936	\$620,550	96.14%
Sul Ross-Rio Grande	\$1,010	\$6,947	\$7,500	\$9,058	796.83%
Texas Tech	\$29,684,845	\$33,640,423	\$39,400,079	\$40,104,672	35.10%
Texas Woman's	\$1,878,040	\$2,308,034	\$2,423,907	\$2,258,921	20.28%
University of Texas System					
UT at Arlington	\$25,258,379	\$28,519,577	\$20,294,157	\$13,589,868	-46.20%
UT at Austin	\$241,481,290	\$258,088,337	\$249,812,376	\$265,121,990	9.79%
UT at Brownsville	\$61,569	\$53,443	\$73,874	\$56,104	-8.88%
UT at Dallas	\$14,106,648	\$15,008,478	\$13,589,349	\$13,676,687	-3.05%
UT at El Paso	\$13,717,203	\$17,315,076	\$14,789,490	\$27,754,725	102.34%
UT-Pan American	\$2,071,412	\$2,110,574	\$1,986,602	\$2,296,623	10.87%
UT of the Permian Basin	\$479,526	\$454,021	\$875,818	\$752,051	56.83%
UT at San Antonio	\$5,892,443	\$5,986,882	\$7,669,758	\$7,914,116	34.31%
UT at Tyler	\$395,669	\$448,265	\$677,505	\$88,010	-77.76%
University of Houston System					
Univ. of Houston	\$48,678,533	\$44,589,826	\$48,331,934	\$52,200,984	7.24%
Univ. of Houston-Clear Lake	\$3,280,804	\$3,156,359	\$2,065,679	\$6,347,244	93.47%
Univ. of Houston-Downtown	\$990,275	\$989,881	\$1,212,506	\$701,508	-29.16%
Univ. of Houston-Victoria	\$20,561	\$13,465	\$18,537	\$0	-100.00%
Univ. of North Texas	\$16,535,145	\$13,336,410	\$10,744,671	\$12,891,033	-22.04%
Totals	\$768,479,643	\$785,609,144	\$797,207,735	\$829,193,715	7.90%

* Percent change for 1999, relative to 1996; NA indicates "not applicable."

Table 16

Expenditures for Research and Development								
Institution	FY 1996		FY 1997		FY 1998		FY 1999	
	Federal R&D Dollars	Fed/State	Federal R&D	Fed/State	Federal R&D Dollars	Fed/State	Federal R&D Dollars	Fed/State
Midwestern State	\$18,257	1.84	\$5,624	0.44	\$103,994	7.01	\$42,359	4.91
Stephen F. Austin State	\$1,687,020	427.0	\$2,288,456	32.29	\$1,125,175	7.65	\$775,560	5.00
Texas A&M University System								
Prairie View A&M	\$10,657,992	56.23	\$9,428,834	65.61	\$9,609,905	48.74	\$8,773,141	37.20
Tarleton State	\$831,562	0.55	\$1,070,161	0.73	\$1,374,861	0.77	\$1,531,022	0.84
Texas A&M and Services	\$146,969,502	1.72	\$141,960,304	1.66	\$140,487,243	1.56	\$145,366,594	1.52
Texas A&M-Commerce	\$146,344	1.39	\$114,325	1.49	\$133,728	0.95	\$118,668	1.07
Texas A&M-Corpus Christi	\$696,546	6.51	\$826,440	2.33	\$498,475	2.78	\$383,507	2.24
Texas A&M at Galveston	\$803,982	1.35	\$1,347,941	2.84	\$1,354,356	1.96	\$1,384,321	1.77
Texas A&M International	\$163,822	6.70	\$5,520	0.26	\$44,932	0.86	\$101,124	0.35
Texas A&M-Kingsville	\$1,808,578	0.70	\$1,602,996	0.57	\$1,873,600	0.51	\$1,770,786	0.59
Texas A&M-Texarkana	\$0	NA	\$0	NA	\$0	NA	\$0	NA
West Texas A&M	\$100,083	0.10	\$72,145	0.05	\$118,864	0.05	\$99,996	0.08
Texas Southern	\$3,473,776	11.80	\$3,707,347	75.67	\$2,879,874	14.61	\$2,431,236	6.67
Texas State University System								
Angelo State	\$961	0.00	\$1,864	0.00	\$80,922	0.19	\$10,583	0.02
Lamar	\$2,091,222	2.18	\$1,758,158	1.56	\$2,844,284	3.69	\$2,914,687	3.96
Sam Houston State	\$4,497,667	8.63	\$4,974,014	9.72	\$1,537,418	3.23	\$3,557,061	5.73
Southwest Texas State	\$2,385,620	1.28	\$1,448,596	1.11	\$1,587,078	0.72	\$3,444,132	2.67
Sul Ross State	\$137,304	1.23	\$147,979	1.30	\$144,983	0.38	\$74,277	0.17
Sul Ross-Rio Grande	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0.00
Texas Tech	\$11,354,803	1.10	\$13,383,042	1.07	\$16,153,476	1.13	\$17,219,633	1.25
Texas Woman's	\$1,038,389	1.77	\$1,326,470	2.01	\$1,497,582	2.35	\$1,306,319	1.63
University of Texas System								
UT at Arlington	\$14,975,514	2.14	\$21,083,328	4.55	\$12,016,400	2.26	\$6,289,004	1.34
UT at Austin	\$147,807,148	4.33	\$157,336,911	4.23	\$149,656,912	4.09	\$159,245,662	4.10
UT at Brownsville	\$0	0.00	\$0	0.00	\$0	0.00	\$21,857	0.64
UT at Dallas	\$5,263,990	3.74	\$6,371,163	4.02	\$7,729,020	3.66	\$7,192,600	3.96
UT at El Paso	\$10,471,945	6.60	\$13,855,019	6.98	\$11,009,110	5.90	\$23,871,116	7.54
UT-Pan American	\$1,235,793	1.60	\$1,029,730	1.08	\$1,234,879	2.08	\$1,077,255	1.11
UT of the Permian Basin	\$335,908	4.38	\$307,224	2.70	\$321,389	0.82	\$155,219	0.39
UT at San Antonio	\$4,147,788	3.87	\$4,229,496	3.64	\$5,195,954	2.98	\$5,480,519	3.25
UT at Tyler	\$4,426	0.01	\$285,812	2.59	\$425,552	28.85	\$22,519	1.82
University of Houston System								
Univ. of Houston	\$26,482,227	1.74	\$22,838,362	1.59	\$23,708,230	1.68	\$23,479,128	1.39
Univ. of Houston-Clear Lake	\$3,009,120	35.37	\$3,023,031	55.12	\$1,435,583	21.80	\$5,565,256	11.18
Univ. of Houston-Downtown	\$947,282	NA	\$900,094	NA	\$1,048,769	NA	\$563,024	4.11
Univ. of Houston-Victoria	\$0	0.00	\$942	0.08	\$0	0.00	\$0	NA
Univ. of North Texas	\$5,774,282	1.26	\$5,521,724	2.12	\$4,319,951	3.03	\$5,200,725	2.59
Totals	\$409,318,853	2.41	\$422,253,052	2.43	\$401,552,499	2.20	\$429,468,890	2.22

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

Table 17

Expenditures for Research and Development					
Institution	FY 1996	FY 1997	FY 1998	FY 1999	Percent Change*
TAMU College of Medicine	\$5,364,169	\$4,372,595	\$5,234,246	\$6,957,100	29.70%
TAMUS Baylor College of Dentistry	**	\$2,245,922	\$2,358,952	\$2,848,344	NA
Texas Tech University HSC	\$7,529,539	\$7,293,378	\$8,126,026	\$8,945,802	18.81%
University of North Texas HSC	\$6,498,831	\$7,257,431	\$8,741,658	\$9,688,816	49.09%
UT M.D. Anderson Cancer Center	\$120,963,970	\$129,578,261	\$141,260,451	\$155,126,397	28.24%
UTMB at Galveston	\$65,389,518	\$69,102,931	\$76,604,190	\$83,236,093	27.29%
UTHSC at Houston	\$82,803,494	\$95,638,639	\$102,443,780	\$106,703,163	28.86%
UT Health Center at Tyler	\$6,757,577	\$6,282,452	\$7,588,544	\$8,256,219	22.18%
UTHSC at San Antonio	\$71,837,194	\$74,695,676	\$78,146,072	\$77,247,996	7.53%
UT Southwestern Medical Center	\$130,162,124	\$140,589,359	\$153,711,130	\$163,518,455	25.63%
Totals	\$497,306,416	\$537,056,644	\$584,215,049	\$622,528,385	25.18%

* Percent change for 1999, relative to 1996. NA indicates "not applicable."

** This institution was not a public institution in this year.

Table 18

Expenditures for Research and Development								
Institution	FY 1996		FY 1997		FY 1998		FY 1999	
	Federal R&D	Fed/State	Federal R&D Dollars	Fed/State	Federal R&D Dollars	Fed/State	Federal R&D Dollars	Fed/State
TAMU College of Medicine	\$4,150,998	19.73	\$3,787,196	NA	\$3,334,453	4.26	\$3,385,338	2.50
TAMUS Baylor College of Dentistry	**	NA	\$841,584	3.86	\$1,336,823	5.57	\$1,480,612	4.54
Texas Tech University HSC	\$3,024,593	1.39	\$2,916,655	1.50	\$3,079,069	1.13	\$3,360,508	1.30
University of North Texas HSC	\$4,846,555	18.89	\$5,272,622	16.60	\$5,644,989	14.58	\$5,370,431	9.15
UT M.D. Anderson Cancer Center	\$42,793,595	0.90	\$49,701,904	1.04	\$63,073,959	1.31	\$69,412,772	1.37
UTMB at Galveston	\$38,322,819	3.36	\$42,006,133	3.89	\$48,588,233	4.22	\$55,061,209	5.68
UTHSC at Houston	\$61,455,947	14.27	\$67,205,688	11.63	\$70,895,807	10.93	\$72,684,140	10.61
UT Health Center at Tyler	\$1,155,693	0.57	\$1,215,622	0.73	\$1,799,884	0.87	\$2,297,638	0.61
UTHSC at San Antonio	\$51,203,151	7.71	\$53,477,559	7.50	\$55,843,751	8.54	\$54,128,757	8.06
UT Southwestern Medical Center	\$81,467,992	11.31	\$89,357,005	12.81	\$97,199,674	17.35	\$99,994,840	18.23
Totals	\$288,421,343	3.52	\$315,781,968	3.82	\$350,796,642	4.15	\$367,176,245	4.18

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

** This institution was not a public institution in this year.

Table 19

Federal Expenditures for Research and Development by Field Texas Public Universities and Health-Related Institutions					
Field	FY 99	FY98	One- Year Change	FY 94	Five- Year Change
Agricultural Sciences	\$20,834,133	\$22,052,381	-5.52%	\$16,595,836	25.54%
Biological and Other Life Sciences	\$175,637,665	\$92,634,712	89.60%	\$78,085,910	124.93%
Computer Science	\$17,444,987	\$21,511,751	-18.90%	\$12,872,374	35.52%
Engineering	\$130,020,542	\$118,015,109	10.17%	\$102,857,074	26.41%
Environmental Sciences	\$72,773,515	\$67,621,865	7.62%	\$78,856,051	-7.71%
Mathematical Sciences	\$6,130,370	\$4,414,108	38.88%	\$5,567,734	10.11%
Medical Sciences	\$247,785,566	\$312,242,150	-20.64%	\$225,573,432	9.85%
Physical Sciences	\$74,617,855	\$71,019,361	5.07%	\$77,859,512	-4.16%
Psychology	\$7,799,677	\$7,473,966	4.36%	\$7,331,751	6.38%
Social Sciences	\$16,464,312	\$12,280,859	34.06%	\$9,722,437	69.34%
Other Sciences	\$2,466,478	\$2,483,413	-0.68%	\$178,873	1278.90%
Arts and Humanities	\$977,851	\$1,409,914	-30.64%	\$820,147	19.23%
Business Administration	\$2,945,289	\$4,057,713	-27.42%	\$4,229,280	-30.36%
Education	\$18,344,451	\$11,650,784	57.45%	\$7,078,539	159.16%
Law and Public Administration	\$882,011	\$1,608,349	-45.16%	\$244,868	260.20%
Other Non-Science Activities	\$1,520,432	\$1,872,706	-18.81%	\$718,670	111.56%
Totals	\$796,645,135	\$752,349,142	5.89%	\$628,592,488	26.73%

APPENDIX A – RESEARCH EXPENDITURES SURVEYS

TEXAS HIGHER EDUCATION COORDINATING BOARD

RESEARCH EXPENDITURES

Texas Public Universities

Instructions and Survey for Fiscal Year 1999

- Your final report from last year is enclosed. The printing has been reduced so that the report is contained on one page.
- For more information contact Dr. Linda Domelsmith at (512) 483-6150.
- The Sponsored Research Officer and the Fiscal Officer should review the report for completeness prior to returning to the

Texas Higher Education Coordinating Board
Educational Data Center
P.O. Box 12788
Austin, TX 78711-2788

- A blank Lotus 1-2-3 worksheet will be mailed electronically to your Office of Sponsored Programs.
-

*****Completed form should be returned by **December 15, 1999*******

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 expenditures 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 expenditures 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.

Institutions are encouraged to submit their data in machine-readable form. A blank Lotus 1-2-3 worksheet is enclosed for that purpose.

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:

1. Training of scientific manpower
2. Mapping and surveys
3. Routine product testing
4. Quality Control

5. Experimental production
6. 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 under 1.B., Reporting Guidelines for R&D versus Non-R&D Activities, on page 2.

A. Selected financial terms

1. **Fiscal Year 1999** - The 12-month accounting period ending August 31, 1999.
2. **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.
3. **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 spend from Federal programs.
4. **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.
5. **Institutionally Controlled** - Include expenditures of funds which are locally controlled. This would include PUF and AUF funds, other local funds, etc.
6. **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 on data collection form)

- 1.A. **Expenditures for conduct of R&D** - All expenditures except those for R&D plant.
- 1.B. **Expenditures 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 which 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.

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.

2.A. **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.

2.B. **Biological sciences** are those life sciences (apart from medical sciences and agricultural sciences described above) which 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.
- 2.C. **Computer science** is concerned with the application of mathematical methods to automated information systems, the development of computer technology, and advanced applications of computers.
- 2.D. **Engineering** is concerned with studies directed toward developing engineering principals or toward making specific principles usable in engineering practice. Engineering fields include aeronautical, astronautical, chemical, civil, electrical, mechanical, metallurgy and materials, and engineering not else-where classified, such as agricultural, bioengineering, biomedical, industrial, nuclear, ocean and systems.
- 2.E. **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.
- 2.F. **Mathematical sciences** employ logical reasoning with the aid of symbols and are concerned with the development of methods of operation employing such symbols.
- 2.G. **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.
- 2.H. **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.
- 2.J. **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.
- 2.J. **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.
- 2.K. **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.
- 2.L. **Arts and humanities** includes topics such as art, music, history, languages, religion, and other aspects of man's culture and heritage.
- 2.M. **Business administration** deals with the management and operation of business enterprises. It includes work in management, marketing, accounting, and related topics.
- 2.N. **Education** includes research related to any aspect of education. This includes elementary, secondary, and higher education; educational policy; education administration; etc.
- 2.O. **Law and public administration** includes research related to legal systems and to public policy at the federal, state, or local levels.
- 2.P. **Other non-science activities** should include all non-science disciplines not appropriately categorized above.
3. **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 sum of the totals in columns 3.A. through 3.I. will not normally be equal to 1.A. Further, expenditures may overlap two or more categories (e.g., a given project may be reported both as materials science and micro-electronics). Institutions may need to use ad hoc estimators to come up with these numbers.
4. **Intellectual property** includes patents, copyrights, and licensing agreements.

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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Related information is also available at these websites:

Texas Higher Education Coordinating Board:

<http://www.thecb.state.tx.us>

Research Office in Finance, Campus Planning, and Research Division:

<http://www.thecb.state.tx.us/divisions/research/research.htm>

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