

# Technology Development and Transfer, FY 2001-2002

Texas Higher Education Coordinating Board  
Division of Finance, Campus Planning, and Research  
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## Executive Summary

This report, required by Texas Education Code, Section 153.008 (SB 1190 of the 77th Legislature), is a compilation of data provided by each Texas public university and health-related institution for Fiscal Years 2001 and 2002. Highlights include:

- Revenue received from intellectual property grew from \$30,555,510 in Fiscal Year 2001 to \$34,337,653 in Fiscal Year 2002, a 12.4 percent increase.
- Total direct expenses for technology transfer activities increased from \$12,697,285 in Fiscal Year 2001 to \$16,533,575 in Fiscal Year 2002. For both years, the single largest expense category was for legal expenses, including patent prosecution costs.
- In Fiscal Year 2002, 93 employees were engaged in technology transfer activities at Texas public universities and health-related institutions across the state.
- In Fiscal Year 2001, Texas public universities and health-related institutions received 700 invention disclosures and 164 U.S. patents, executed 99 exclusive and 88 non-exclusive licensing agreements, and formed 31 start-up companies.
- In Fiscal Year 2002, Texas public universities and health-related institutions received 747 invention disclosures and 168 U.S. patents, executed 102 exclusive and 65 non-exclusive licensing agreements, and formed 25 start-up companies.
- In Fiscal Year 2002, the top five institutions signing exclusive licensing agreements were The University of Texas at Austin, The University of Texas M. D. Anderson Cancer Center, The University of Texas Southwestern Medical Center, The University of Texas Medical Branch at Galveston, and the Texas Agricultural Experiment Station. The Texas Agricultural Experiment Station and The University of Texas Southwestern Medical Center also executed most of the non-exclusive licensing agreements in Fiscal Year 2002.
- The University of Texas M.D. Anderson Cancer Center holds the largest number of shares of publicly traded stock through intellectual property agreements.

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## **Introduction**

Through SB 1190, the 77th Legislature authorized the establishment of Centers for Technology Development and Transfer at public higher education institutions to enhance the economic growth and diversification of the state. The legislation also charged the Coordinating Board with reporting technology transfer activities at public higher education institutions. This is the first biennial technology transfer report to meet that requirement. It compiles data submitted by Texas public higher education institutions. The survey form is included in Appendix A. Contact information for the individuals who submitted the information is included in Appendix B.

## **Intellectual Property Protection**

Texas public universities and health-related institutions use a variety of methods, shown in Tables 1 and 2, to document and protect intellectual property and initiate transfer of new knowledge to the market place. Because protecting intellectual property is usually a multi-year process, patents granted during one fiscal year arise from patent filings and invention discoveries made in previous fiscal years. The period of time required to move an idea from inception to commercial product varies considerably. Rene Mallet, Interim Director of the Office of Technology Licensing and Intellectual Property at The University of Texas at Austin, estimates that it takes 10-to-15 years to develop diagnostic or therapeutic products requiring federal Food and Drug Administration approval, three-to-seven or more years to develop products arising from engineering and physical sciences, and one-to-three years to develop software products.

For FY 2001 Texas public higher education institutions received 700 invention disclosures, while for FY 2002 they received 747. In FY 2001 they filed 475 patent applications, received 164, and executed 99 and 88 exclusive and non-exclusive licensing agreements respectively. In FY 2002 the numbers of filed and received patent applications increased to 549 and 168, while the numbers of exclusive and non-exclusive licensing agreements executed were 102 and 65 (Tables 1 and 2).

The University of Texas Southwestern Medical Center in Dallas reported the largest number of invention disclosures and U.S. patents granted for both fiscal years. The University of Texas at Austin filed the most patent applications and executed the largest number of exclusive licensing agreements for FY 2001 and FY 2002. The Texas Agricultural Experiment Station reported the largest number of non-exclusive licensing agreements for both years.

Two institutions pursued Plant Variety Protection Act certificates: Texas Agricultural Experiment Station and Texas Tech University. No copyright registrations were reported for commercial products in FY 2001 and 22 were reported in FY 2002. In FY 2002, all public health-related institutions, 14 public universities, and four Texas A&M service agencies reported activities related to intellectual property protection (Table 2).

Table 1

Activities to Protect and Commercialize New Intellectual Properties, FY 2001							
Institution	Number of new:						
	Invention Disclosures Received	U.S. Patent Applications		PVPA* Certificates Granted	Licensing Agreements Executed		Start-Up Companies Formed**
		Filed	Granted		Exclusive	Non-exclusive	
Stephen F. Austin State	0	1	1	0	0	0	0
<b>Texas A&amp;M University System</b>							
Tarleton State	1	0	0	0	0	0	0
Texas A&M	30	12	1	0	5	1	0
Texas A&M at Galveston	1	1	0	0	0	0	0
Texas Ag. Experiment Station	19	24	11	2	9	24	0
Texas Cooperative Ext.	2	0	0	0	1	0	1
Texas Eng. Experiment Station	59	54	15	0	11	2	3
Texas Transportation Institute	9	7	6	0	4	0	0
<i>Texas A&amp;M HSC</i>	12	11	3	0	0	1	0
Lamar	1	1	0	0	0	0	0
<b>Texas Tech University System</b>							
Texas Tech	28	16	5	0	3	1	2
<i>Texas Tech Univ. HSC</i>	20	2	2	0	0	0	1
Texas Woman's	1	1	0	0	0	0	0
<b>University of Texas System</b>							
UT at Arlington	5	2	3	0	1	0	0
UT at Austin	85	80	20	0	19	15	11
UT at Dallas	16	14	5	0	4	2	0
UT at El Paso	7	1	0	0	1	0	0
UT at San Antonio	4	0	1	0	0	0	0
<i>UT M.D. Anderson Cancer</i>	92	38	19	0	5	5	2
<i>UTMB at Galveston</i>	76	66	8	0	5	12	0
<i>UTHSC at Houston</i>	30	20	10	0	4	6	2
<i>UTHSC at San Antonio</i>	29	16	11	0	3	3	0
<i>UT Southwestern Medical Center</i>	115	79	23	0	16	8	3
<b>University of Houston System</b>							
Univ. of Houston	38	17	8	0	2	8	5
Univ. of Houston-Clear Lake	0	0	0	0	1	0	0
<b>University of North Texas System</b>							
Univ. of North Texas	11	4	1	0	2	0	0
<i>Univ. of North TX HSC</i>	9	8	11	0	3	0	1
<b>Totals</b>	<b>700</b>	<b>475</b>	<b>164</b>	<b>2</b>	<b>99</b>	<b>88</b>	<b>31</b>

\*PVPA = Plant Variety Protection Act

\*\*Corporations, partnerships and other business entities formed to commercialize intellectual property owned by institution.

**Table 2**

Activities to Protect and Commercialize New Intellectual Properties, FY 2002									
Institution	Number of new:								
	Invention Disclosures Received	U.S. Patent Applications		PVPA* Applications Filed through USDA	PVPA* Certificates Granted	Licensing Agreements Executed		U.S. Copyright Registrations for Commercial Products	Start-Up Companies Formed**
		Filed	Granted			Exclusive	Non-exclusive		
<b>Texas A&amp;M University System</b>									
Prairie View A&M	1	2	0	0	0	1	0	0	0
Texas A&M	24	22	4	0	0	3	2	0	1
Texas A&M at Galveston	1	1	0	0	0	0	0	0	0
Texas A&M-Kingsville	1	0	0	0	0	0	0	0	0
Texas Ag. Experiment Station	40	29	9	6	8	8	26	0	1
Texas Cooperative Ext.	0	0	0	0	0	0	0	3	0
Texas Eng. Experiment Station	58	71	20	0	0	7	1	3	1
Texas Transportation Institute	13	13	2	0	0	2	1	0	0
Texas A&M HSC	12	16	3	0	0	0	0	0	0
Lamar	1	0	0	0	0	0	0	0	0
<b>Texas Tech University System</b>									
Texas Tech	48	16	16	2	0	5	0	0	2
Texas Tech Univ. HSC	14	11	1	0	0	4	0	0	1
<b>University of Texas System</b>									
UT at Arlington	11	5	2	0	0	1	0	0	1
UT at Austin	83	81	21	0	0	18	6	9	4
UT at Dallas	12	16	5	0	0	0	0	0	0
UT at El Paso	10	3	0	0	0	0	0	0	0
UT of the Permian Basin	1	0	0	0	0	0	0	0	0
UT at San Antonio	4	1	1	0	0	0	0	0	0
UT M.D. Anderson Cancer	86	63	20	0	0	15	3	0	6
UTMB at Galveston	70	45	4	0	0	10	6	5	0
UTHSC at Houston	44	28	5	0	0	4	3	0	1
UT Health Center at Tyler	2	1	1	0	0	0	0	0	0
UTHSC at San Antonio	30	19	12	0	0	2	3	0	2
UT Southwestern Medical Center	128	62	32	0	0	13	13	0	2
Univ. of Houston	37	28	5	0	0	4	1	2	0
<b>University of North Texas System</b>									
Univ. of North Texas	5	6	2	0	0	0	0	0	0
Univ. of North TX HSC	11	10	3	0	0	5	0	0	3
<b>Totals</b>	<b>747</b>	<b>549</b>	<b>168</b>	<b>8</b>	<b>8</b>	<b>102</b>	<b>65</b>	<b>22</b>	<b>25</b>

\*PVPA = Plant Variety Protection Act

\*\*Corporations, partnerships and other business entities formed to commercialize intellectual property owned by institution.

**Equity Interests**

Tables 3 and 4 show equity interests held by institutions under intellectual property agreements for FY 2001 and 2002. Seven health-related institutions, five universities and the Texas A&M University System reported equity interests. The total number of shares of non-publicly traded stock increased over the biennium while the total number of shares of publicly traded stock decreased slightly. A comparison of the two tables shows a substantial decline in fair market value of publicly traded stock, a trend commonly seen for the 2001-2002 economic downturn. The University of Texas M.D. Anderson Cancer Center owns the largest number of shares private and public stock. Its holdings accounted for 96 percent of the total fair market value of public stock held by public higher education institutions for FY 2002.



**Table 3**

<b>Established and New Equity Interests Held by Institution Through Intellectual Property Agreements, FY 2001</b>					
<b>Institution</b>	<b>Number of Enterprises</b>		<b>Number of Non-public Shares of Stock Held</b>	<b>Shares of Public Stock Held</b>	
	<b>Non-public</b>	<b>Public</b>		<b>Number</b>	<b>Fair Market Value</b>
<b>Texas A&amp;M University System*</b>	5	0	517,217	0	\$0
<b>University of Texas System</b>					
UT at Austin	9	3	1,764,917	43,410	\$571,566
UT at Dallas	1	0	250,000	0	\$0
UT at El Paso	1	0	5,500	0	\$0
<i>UT M.D. Anderson Cancer</i>	3	7	3,302,629	1,690,457	\$10,111,503
<i>UTMB at Galveston</i>	3	0	**	0	\$0
<i>UTHSC at Houston</i>	1	1	20,000	8,801	\$18,922
<i>UTHSC at San Antonio</i>	6	0	3,389,046	0	\$0
<i>UT Southwestern Medical Center</i>	7	1	5,160,849	24,372	\$97,488
Univ. of Houston	4	0	4,865,820	0	\$0
<i>Univ. of North TX HSC</i>	2	1	1,069,500	1,002,500	***
<b>Totals</b>	<b>42</b>	<b>13</b>	<b>20,345,478</b>	<b>2,769,540</b>	<b>\$10,799,479</b>

\*Reported by the System Administration for the Texas A&M University System.

\*\*The equity in non-public enterprise(s) is not quantified as a number of shares.

\*\*\*These shares were not traded in the market at the time of this report.

**Table 4**

<b>Established and New Equity Interests Held by Institution Through Intellectual Property Agreements, FY 2002</b>					
<b>Institution</b>	<b>Number of Enterprises</b>		<b>Number of Non-public Shares of Stock Held</b>	<b>Shares of Public Stock Held</b>	
	<b>Non-public</b>	<b>Public</b>		<b>Number</b>	<b>Fair Market Value</b>
<b>Texas A&amp;M University System*</b>	6	0	567,217	0	\$0
<b>Texas Tech University System</b>					
Texas Tech	2	0	**	0	\$0
<i>Texas Tech Univ. HSC</i>	1	0	**	0	\$0
<b>University of Texas System</b>					
UT at Austin	12	3	2,142,417	23,334	\$76,811
UT at Dallas	1	0	250,000	0	\$0
UT at El Paso	1	0	5,500	0	\$0
<i>UT M.D. Anderson Cancer</i>	11	8	6,715,413	1,690,457	\$2,925,377
<i>UTMB at Galveston</i>	4	0	**	0	\$0
<i>UTHSC at Houston</i>	3	1	589,939	8,801	\$18,482
<i>UTHSC at San Antonio</i>	6	0	3,389,046	0	\$0
<i>UT Southwestern Medical Center</i>	7	1	5,247,849	24,372	\$23,885
Univ. of Houston	4	0	4,908,200	0	\$0
<i>Univ. of North TX HSC</i>	5	1	1,369,500	1,002,500	***
<b>Totals</b>	<b>63</b>	<b>14</b>	<b>25,185,081</b>	<b>2,749,464</b>	<b>\$3,044,555</b>

\*Reported by the System Administration for the Texas A&M University System.

\*\*The equity in non-public enterprise(s) is not quantified as a number of shares.

\*\*\*These shares were not traded in the market at the time of this report.

## Intellectual Property Income

Revenue received from intellectual property grew from \$30,555,510 in FY 2001 to \$34,337,653 in FY 2002, a 12.4 percent increase (Tables 5 and 6). Seven institutions, including four health-related institutions, reported income in the millions: The University of Texas Southwestern Medical Center (\$10.7M in Fiscal

**Table 5**

Revenue Received from Intellectual Property Owned by Institution, FY 2001									
Institution	Number of Properties Producing Income and Revenue								
	Received from:								
	Royalties and Fees		Reimbursed Patent Expenses		Cashed-in Equity		Other		Total
#	\$	#	\$	#	\$	#	\$		
<b>Texas A&amp;M University System</b>									
Prairie View A&M	1	\$124	0	\$0	0	\$0	0	\$0	\$124
Texas A&M	11	\$95,846	2	\$6,192	0	\$0	0	\$0	\$102,038
Texas Ag. Experiment Station	137	\$2,715,107	21	\$109,116	0	\$0	0	\$0	\$2,824,223
Texas Cooperative Ext.	2	\$150,291	1	\$2,850	0	\$0	0	\$0	\$153,141
Texas Eng. Experiment Station	14	\$383,540	25	\$267,885	0	\$0	0	\$0	\$651,425
Texas Eng. Ext. Service	2	\$10,236	0	\$0	0	\$0	0	\$0	\$10,236
Texas Transportation Institute	8	\$3,130,394	5	\$27,232	0	\$0	0	\$0	\$3,157,626
<i>Texas A&amp;M HSC</i>	2	\$8,000	2	\$30,814	0	\$0	0	\$0	\$38,814
<b>Texas Tech University System</b>									
Texas Tech	3	\$26,500	0	\$0	0	\$0	1	\$250,000	\$276,500
<i>Texas Tech Univ. HSC</i>	1	\$12,500	0	\$0	0	\$0	0	\$0	\$12,500
<b>University of Texas System</b>									
UT at Arlington	1	\$92,074	0	\$0	0	\$0	0	\$0	\$92,074
UT at Austin	25	\$2,269,843	23	\$401,797	0	\$0	2	\$97,129	\$2,768,769
UT at Brownsville	6	\$2,366	0	\$0	0	\$0	0	\$0	\$2,366
UT at Dallas	5	\$161,662	8	\$80,137	0	\$0	0	\$0	\$241,799
UT at El Paso	1	\$750	0	\$0	0	\$0	0	\$0	\$750
<i>UT M.D. Anderson Cancer</i>	24	\$3,456,621	62	\$433,322	1	\$1,034,769	0	\$0	\$4,924,712
<i>UTMB at Galveston</i>	24	\$684,859	34	\$385,969	0	\$0	0	\$0	\$1,070,828
<i>UTHSC at Houston</i>	17	\$857,051	3	\$32,785	0	\$0	0	\$0	\$889,836
<i>UTHSC at San Antonio</i>	31	\$2,220,191	16	\$186,559	0	\$0	0	\$0	\$2,406,751
<i>UT Southwestern Medical Center</i>	138	\$10,138,586	25	\$172,516	1	\$200,793	0	\$0	\$10,511,895
Univ. of Houston	10	\$240,935	2	\$168,080	0	\$0	0	\$0	\$409,015
<b>University of North Texas System</b>									
Univ. of North Texas	2	\$5,088	0	\$0	0	\$0	0	\$0	\$5,088
<i>Univ. of North TX HSC</i>	1	\$5,000	0	\$0	0	\$0	0	\$0	\$5,000
<b>Totals</b>	<b>466</b>	<b>\$26,667,565</b>	<b>229</b>	<b>\$2,305,254</b>	<b>2</b>	<b>\$1,235,562</b>	<b>3</b>	<b>\$347,129</b>	<b>\$30,555,510</b>

Note: Overlap may occur in number of intellectual properties producing income since one property could produce more than one kind of income.

Year 2002), The University of Texas M.D. Anderson Cancer Center (\$5.7M), The University of Texas at Austin (\$5.0M), the Texas Transportation Institute (\$3.5M), the Texas Agricultural Experiment Station (\$3.0M), The University of Texas Health Science Center at San Antonio (\$2.4M), and the University of Texas Health Science Center at Houston (\$1.6M). The Texas Transportation Institute has successfully deployed a small number of properties (N=9) that produce a sizeable revenue stream. In FY 2002, royalties accounted for 89.4 percent and reimbursed patent expenses accounted for 9.6 percent of the total revenue.

**Table 6**

Revenue Received from Intellectual Property Owned by Institution, FY 2002									
Institution	Number of Properties Producing Income and Revenue Received from:								
	Royalties and Fees		Reimbursed Patent Expenses		Cashed-in Equity		Other		Total
	#	\$	#	\$	#	\$	#	\$	
<b>Texas A&amp;M University System</b>									
Prairie View A&M	1	\$65	0	\$0	0	\$0	0	\$0	\$65
Texas A&M	6	\$76,488	5	\$7,198	0	\$0	0	\$0	\$83,686
Texas Ag. Experiment Station	146	\$2,839,735	18	\$169,035	0	\$0	0	\$0	\$3,008,770
Texas Cooperative Ext.	2	\$8,791	1	\$2,142	0	\$0	0	\$0	\$10,933
Texas Eng. Experiment Station	12	\$261,610	27	\$280,288	0	\$0	0	\$0	\$541,898
Texas Eng. Ext. Service	3	\$22,808	0	\$0	0	\$0	0	\$0	\$22,808
Texas Transportation Institute	9	\$3,378,928	10	\$84,771	0	\$0	0	\$0	\$3,463,699
Texas Vet. Medical Diag. Laboratory	1	\$254	0	\$0	0	\$0	0	\$0	\$254
Texas A&M HSC	1	\$30,000	2	\$14,719	0	\$0	0	\$0	\$44,719
<b>Texas Tech University System</b>									
Texas Tech	2	\$6,871	0	\$0	0	\$0	1	\$100,000	\$106,871
Texas Tech Univ. HSC	1	\$1,200	0	\$0	0	\$0	1	\$100,000	\$101,200
<b>University of Texas System</b>									
UT at Arlington	3	\$113,250	0	\$0	0	\$0	0	\$0	\$113,250
UT at Austin	27	\$3,942,102	27	\$947,926	1	\$118,564	0	\$0	\$5,008,592
UT at Brownsville	6	\$2,328	0	\$0	0	\$0	0	\$0	\$2,328
UT at Dallas	0	\$0	8	\$47,971	0	\$0	0	\$0	\$47,971
UT at El Paso	1	\$750	0	\$0	0	\$0	0	\$0	\$750
UT M.D. Anderson Cancer	50	\$4,793,044	86	\$941,478	0	\$0	0	\$0	\$5,734,522
UTMB at Galveston	26	\$621,685	25	\$303,258	0	\$0	0	\$0	\$924,943
UTHSC at Houston	18	\$1,423,816	10	\$175,787	0	\$0	0	\$0	\$1,599,603
UTHSC at San Antonio	31	\$2,330,490	8	\$103,059	0	\$0	0	\$0	\$2,433,549
UT Southwestern Medical Center	126	\$10,498,934	32	\$175,248	1	\$17,774	0	\$0	\$10,691,956
Univ. of Houston	9	\$345,526	2	\$40,000	0	\$0	0	\$0	\$385,526
Univ. of North Texas	2	\$5,072	2	\$4,687	0	\$0	0	\$0	\$9,759
<b>Totals</b>	<b>483</b>	<b>\$30,703,748</b>	<b>263</b>	<b>\$3,297,567</b>	<b>2</b>	<b>\$136,338</b>	<b>2</b>	<b>\$200,000</b>	<b>\$34,337,653</b>

Note: Overlap may occur in number of intellectual properties producing income since one property could produce more than one kind of income.

### Technology Transfer Expenses

Direct expenses related to intellectual property transfer are shown in Tables 7-12. Technology transfer offices are typically small operations considering the size of the institutions served. Less than 100 employees, primarily professional and support staff, are engaged in technology transfer activities at the public higher education institutions across the state. The single largest outlay is for legal expenses including patent prosecution costs. Although intellectual property income has been steadily growing, most technology transfer offices have been in place for a relatively short period of time at Texas higher education institutions and may continue to operate at a deficit. In FY 2001 and 2002, all of the institutions that were successful at securing revenues in the millions had intellectual property revenues that exceeded direct expenditures (Tables 13 and 14).

Table 7

Total Expenditures for Activities Conducted Under Technology Transfer, FY 2001							
Institution	Personnel	Facilities, Rent	Legal Expenses*	Operating Expenses	Travel	Equipment** and Other	Total
<b>Texas A&amp;M University System</b>							
Texas Eng. Ext. Service	\$8,000	\$0	\$4,252	\$0	\$0	\$0	\$12,252
System Administration	\$889,028	\$55,620	\$1,227,234	\$77,317	\$44,747	\$21,648	\$2,315,594
<b>Texas Tech University System</b>							
Texas Tech	\$189,693	\$0	\$253,154	\$16,074	\$18,562	\$2,662	\$480,145
Texas Tech Univ. HSC	\$47,423	\$0	\$63,288	\$4,018	\$4,641	\$655	\$120,025
Texas Woman's	\$0	\$0	\$10,000	\$0	\$0	\$0	\$10,000
<b>University of Texas System</b>							
UT at Arlington	\$0	\$0	\$46,253	\$0	\$4,240	\$7,074	\$57,567
UT at Austin	\$522,291	\$0	\$607,779	\$31,865	\$14,500	\$0	\$1,176,435
UT at Dallas	\$35,000	\$0	\$239,245	\$4,000	\$2,000	\$0	\$280,245
UT at El Paso	\$65,154	\$0	\$10,460	\$0	\$2,476	\$0	\$78,090
UT at San Antonio	\$0	\$0	\$22,743	\$0	\$0	\$0	\$22,743
UT M.D. Anderson Cancer	\$786,810	\$53,250	\$1,315,601	\$122,306	\$13,750	\$29,910	\$2,321,627
UTMB at Galveston	\$454,833	\$0	\$544,790	\$43,759	\$11,732	\$0	\$1,055,114
UTHSC at Houston	\$184,065	\$0	\$306,027	\$3,913	\$3,015	\$0	\$497,020
UT Health Center at Tyler	\$0	\$0	\$15,531	\$0	\$0	\$0	\$15,531
UTHSC at San Antonio	\$661,052	\$7,682	\$516,322	\$65,188	\$21,422	\$141,162	\$1,412,828
UT Southwestern Medical Center	\$746,489	\$0	\$1,106,631	\$169,930	\$37,815	\$144,789	\$2,205,654
Univ. of Houston	\$234,727	\$0	\$93,086	\$37,094	\$7,865	\$170,643	\$543,416
Univ. of North TX HSC	\$72,000	\$0	\$16,000	\$0	\$5,000	\$0	\$93,000
<b>Totals</b>	<b>\$4,896,566</b>	<b>\$116,552</b>	<b>\$6,398,396</b>	<b>\$575,464</b>	<b>\$191,766</b>	<b>\$518,543</b>	<b>\$12,697,285</b>

\*Includes patent prosecution costs.

\*\*Purchases in excess of \$5,000

Table 8

Total Expenditures for Activities Conducted Under Technology Transfer, FY 2002							
Institution	Personnel	Facilities, Rent	Legal Expenses*	Operating Expenses	Travel	Equipment** and Other	Total
<b>Texas A&amp;M University System</b>							
Texas Eng. Ext. Service	\$10,500	\$0	\$907	\$0	\$0	\$0	\$11,407
System Administration	\$983,589	\$67,375	\$1,464,316	\$82,098	\$43,454	\$39,392	\$2,680,224
<b>Texas Tech University System</b>							
Texas Tech	\$208,830	\$26,564	\$165,092	\$13,680	\$8,408	\$0	\$422,574
Texas Tech Univ. HSC	\$52,208	\$6,641	\$41,273	\$3,420	\$2,102	\$0	\$105,644
<b>University of Texas System</b>							
UT at Arlington	\$0	\$0	\$60,873	\$0	\$7,734	\$0	\$68,607
UT at Austin	\$539,999	\$0	\$1,159,608	\$80,658	\$7,663	\$0	\$1,787,928
UT at Dallas	\$67,000	\$0	\$443,200	\$4,000	\$2,500	\$0	\$516,700
UT at El Paso	\$72,466	\$0	\$11,593	\$0	\$1,984	\$177	\$86,220
UT of the Permian Basin	\$0	\$0	\$322	\$0	\$0	\$0	\$322
UT at San Antonio	\$0	\$0	\$20,486	\$0	\$0	\$0	\$20,486
UT M.D. Anderson Cancer	\$901,349	\$85,800	\$2,561,300	\$128,016	\$11,802	\$46,293	\$3,734,560
UTMB at Galveston	\$524,693	\$0	\$703,303	\$29,394	\$10,498	\$0	\$1,267,888
UTHSC at Houston	\$224,079	\$0	\$454,402	\$9,600	\$3,503	\$24,326	\$715,910
UT Health Center at Tyler	\$0	\$0	\$15,790	\$0	\$0	\$0	\$15,790
UTHSC at San Antonio	\$564,459	\$68,255	\$551,860	\$44,454	\$2,400	\$126,708	\$1,358,136
UT Southwestern Medical Center	\$1,172,737	\$0	\$1,429,427	\$422,299	\$83,909	\$74,792	\$3,183,164
Univ. of Houston	\$241,393	\$0	\$77,085	\$12,435	\$5,094	\$127,009	\$463,015
Univ. of North TX HSC	\$72,000	\$0	\$18,000	\$0	\$5,000	\$0	\$95,000
<b>Totals</b>	<b>\$5,635,302</b>	<b>\$254,635</b>	<b>\$9,178,837</b>	<b>\$830,054</b>	<b>\$196,051</b>	<b>\$438,696</b>	<b>\$16,533,575</b>

\*Includes patent prosecution costs.

\*\*Purchases in excess of \$5,000

**Table 9**

<b>Net Income for Activities Conducted Under Technology Transfer, FY 2001</b>			
<b>Institution</b>	<b>Total Expenses for Technology Transfer</b>	<b>Revenue Received from Intellectual Properties</b>	<b>Net Income (Revenue Received - Total Expenses)</b>
<b>Texas A&amp;M University System*</b>	\$2,327,846	\$6,937,627	\$4,609,781
<b>Texas Tech University System</b>			
Texas Tech	\$480,145	\$276,500	(\$203,645)
<i>Texas Tech Univ. HSC</i>	\$120,025	\$12,500	(\$107,525)
Texas Woman's	\$10,000	\$0	(\$10,000)
<b>University of Texas System</b>			
UT at Arlington	\$57,567	\$92,074	\$34,507
UT at Austin	\$1,176,435	\$2,768,769	\$1,592,334
UT at Brownsville	\$0	\$2,366	\$2,366
UT at Dallas	\$280,245	\$241,799	(\$38,446)
UT at El Paso	\$78,090	\$750	(\$77,340)
UT at San Antonio	\$22,743	\$0	(\$22,743)
<i>UT M.D. Anderson Cancer</i>	\$2,321,627	\$4,924,712	\$2,603,085
<i>UTMB at Galveston</i>	\$1,055,114	\$1,070,828	\$15,714
<i>UTHSC at Houston</i>	\$497,020	\$889,836	\$392,816
<i>UT Health Center at Tyler</i>	\$15,531	\$0	(\$15,531)
<i>UTHSC at San Antonio</i>	\$1,412,828	\$2,406,751	\$993,923
<i>UT Southwestern Medical Center</i>	\$2,205,654	\$10,511,895	\$8,306,241
Univ. of Houston	\$543,416	\$409,015	(\$134,401)
<b>University of North Texas System</b>			
Univ. of North Texas	\$0	\$5,088	\$5,088
<i>Univ. of North TX HSC</i>	\$93,000	\$5,000	(\$88,000)
<b>Totals</b>	<b>\$12,697,285</b>	<b>\$30,555,510</b>	<b>\$17,858,225</b>

\*Reported by the System Administration for the Texas A&M University System.

**Table 10**

<b>Net Income for Activities Conducted Under Technology Transfer, FY 2002</b>			
<b>Institution</b>	<b>Total Expenses for Technology Transfer</b>	<b>Revenue Received from Intellectual Properties</b>	<b>Net Income (Revenue Received - Total Expenses)</b>
<b>Texas A&amp;M University System*</b>	\$2,691,631	\$7,176,832	\$4,485,201
<b>Texas Tech University System</b>			
Texas Tech	\$422,574	\$106,871	(\$315,703)
<i>Texas Tech Univ. HSC</i>	\$105,644	\$101,200	(\$4,444)
<b>University of Texas System</b>			
UT at Arlington	\$68,607	\$113,250	\$44,644
UT at Austin	\$1,787,928	\$5,008,592	\$3,220,664
UT at Dallas	\$516,700	\$47,971	(\$468,729)
UT at Brownsville	\$0	\$2,328	\$2,328
UT at El Paso	\$86,220	\$750	(\$85,470)
UT of the Permian Basin	\$322	\$0	(\$322)
UT at San Antonio	\$20,486	\$0	(\$20,486)
<i>UT M.D. Anderson Cancer</i>	\$3,734,560	\$5,734,522	\$1,999,962
<i>UTMB at Galveston</i>	\$1,267,888	\$924,943	(\$342,945)
<i>UTHSC at Houston</i>	\$715,910	\$1,599,603	\$883,693
<i>UT Health Center at Tyler</i>	\$15,790	\$0	(\$15,790)
<i>UTHSC at San Antonio</i>	\$1,358,136	\$2,433,549	\$1,075,414
<i>UT Southwestern Medical Center</i>	\$3,183,164	\$10,691,956	\$7,508,792
Univ. of Houston	\$463,015	\$385,526	(\$77,490)
<i>Univ. of North TX HSC</i>	\$95,000	\$9,759	(\$85,241)
<b>Totals</b>	<b>\$16,533,575</b>	<b>\$34,337,653</b>	<b>\$17,804,079</b>

\*Reported by the System Administration for the Texas A&M University System.

## Technology Transfer Highlights

Institutions reported the following highlights of technology transfer activities for the 2001-2002 biennium:

- Therasense, Inc., of Alameda, California is using patented technologies from The University of Texas at Austin in its first product, FreeStyle, a glucose self-monitoring system for diabetics “that dramatically reduces the pain of testing” by relying on tiny blood samples. This technology is now the third leading source of royalty income at UT and is expected to grow.
- “In FY 2001-2002, The University of Texas Southwestern Medical Center received approximately \$5 million in milestone and royalty payments related to the world-wide launch of a biopharmaceutical product that dissolves blood clots... The drug is used primarily in the acute management of heart attacks. Its potential utility in the treatment of strokes is under investigation.”
- The University of Texas at Austin has received \$5.4 million to date in royalty revenues and stock sales for technologies that “create physical objects from digital input.” The technologies were originally licensed to DTM, an Austin-based company which was founded in 1986 and employed up to 115 people. In 1999, DTM was acquired by 3D Systems of Valencia, California.
- Volcano Therapeutics, Inc., a new start-up company from The University of Texas Health Science Center at Houston, “recently received second-round financing and has a product in clinical trials.”
- Molecular Imprints, an Austin-based company founded in 2001 on technology developed solely at The University of Texas at Austin, will produce a new tool for use in semiconductor lithography. Molecular Imprints has “received nearly \$12 million in first-round venture capital funding” and “has acquired \$2.4 million in federal contracts.”
- VidaCare Corporation, a medical device start-up venture, was established to commercialize technologies developed by The University of Texas Health Science Center at San Antonio.
- In 2001, the University of Houston licensed to Xeotron, a faculty spin-off company, a platform of technologies for the development of BioChips for DNA, RNA, and microfluidics. The technologies “allow the production of high quality, custom bioarrays with quick turn-around at an affordable price.” The company, which established operations in Houston, “obtained \$9 million in venture capital funding” and began manufacturing and selling the “XeoChip” in summer 2002.
- Kevin D. Nelson, Assistant Professor of Biomedical Engineering at The University of Texas at Arlington, established a new company, TissueGen, Inc., to develop and commercialize a biodegradable fiber that provides time-controlled release of drugs, proteins, viruses, and other therapeutic agents. UTA’s Arlington Technology Incubator is assisting with the commercialization.
- The University of Texas Southwestern Medical Center successfully launched Eliance Biotechnology to discover “antigens useful for creating vaccines to treat and prevent infections and cancers.” The company, which attracted \$2.5 million in venture funding in FY 2001, “merged with MacroGenics as part of a \$13 million financing/acquisition” package in FY 2002. The Dallas site, one of three operational sites for MacroGenics, has been expanded.
- Hepsera, a drug to treat Hepatitis B, was approved by the U.S. Food and Drug Administration. Hepsera is the third new drug developed at The University of Texas M. D. Anderson Cancer Center.

- Respirationics continues to provide “a major share of licensing revenue to The University of Texas at Arlington” for a device that controls sleep apnea. Khosrow Behbehani, Professor of Biomedical Engineering, and colleagues invented the device and are continuing research to advance technology in this area.

## **Acknowledgement**

The Coordinating Board wishes to thank the institutions and their representatives for suggestions regarding the survey format. Terry Young, Executive Director of the Technology Licensing Office at the Texas A&M University System, was especially helpful in providing extended assistance and advice.

## Appendix A – Survey

### Technology Development and Transfer Survey Fiscal Years 2001 and 2002

Completion of this biennial survey will satisfy reporting requirements under Chapter 153.008 (Texas Education Code). Any questions regarding the survey should be directed to Linda Domelsmith (512-427-6150; Linda.Domelsmith@theccb.state.tx.us). Please mail or fax the completed survey to Linda Domelsmith, Director of Research Programs, Texas Higher Education Coordinating Board, P.O. Box 12788, Austin, TX 78711 (Fax: 512-427-6147)

**Deadline: Monday, October 25, 2002**

#### Contact Information

Institution Name	
Contact Person's Name	
Title	
Department or Office	
Address	
Phone Number	
Fax Number	
E-Mail Address	

#### Section I: Activities to Protect and Commercialize New Intellectual Properties

	FY 2001	FY 2002
Number of new invention disclosures received		
Number of new U.S. patent applications filed (including provisionals, divisionals, and continuations in part)		
Number of new U.S. patent applications granted		
Number of new Plant Variety Protection Act (PVPA) applications filed through USDA		
Number of new PVPA certificates granted		
Number of new licensing agreements executed:	Exclusive	
	Non-exclusive	
Number of new U.S. copyright registrations for commercial products		
Number of new corporations, partnerships, and other business entities established to commercialize intellectual property owned by your institution		



**Section II: Established and New Equity Interests Held by Your Institution under Intellectual Property Agreements**

	FY 2001		FY 2002	
	Number of shares of stock held at end of FY 2001	Fair Market Value at End of FY 2001	Number of shares of stock held at end of FY 2002	Fair Market Value at End of FY 2002
Publicly-traded enterprises (list separately; attach additional page(s) if necessary)				
<b>Total for publicly-traded enterprises</b>				
Nonpublicly-traded enterprises (list separately; attach additional page(s) if necessary)	Number of shares of stock held at end of FY 2001		Number of shares of stock held at end of FY 2002	
<b>Total for nonpublicly-traded enterprises</b>				

**Section III: Revenues Received from Intellectual Property Owned by Your Institution**

	FY 2001		FY 2002	
	Number of Properties Producing Income in FY 2001	Revenue Received in FY 2001	Number of Properties Producing Income in FY 2002	Revenue Received in FY 2002
Royalties and fees				
Reimbursed patent expenses				
Cashed-in equity				
Other				
<b>Total</b>				

## Section IV: Direct Expenditures for Activities Conducted Under Technology Transfer

	FY 2001		FY 2002	
	Number of Employees at end of FY 2001	Expenses for FY 2001	Number of Employees at end of FY 2002	Expenses for FY 2002
Personnel				
Executive/Managerial				
Professional Staff				
Support Staff				
Students				
Facilities, Rent				
Legal Expenses (including patent prosecution costs)				
Equipment (purchases in excess of \$5,000)				
Operating Expenses				
Travel				
Other				
<b>Total</b>				

## Section V: Commercial Successes

For possible inclusion in reports to the Legislature and other publications, please briefly describe up three of your most successful commercial accomplishments for FY 2001-2002.

## 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 reports available from the Texas Higher Education Coordinating Board, Division of Finance, Campus Planning, and Research:

*Research Experiences for High School Science and Math Teachers – Summer 2001, July 2002*

*Research Expenditures, September 1, 2000 – August 31, 2001, May 2002*

*Advanced Research Program/Advanced Technology Program – 2001, Report of Awards, May 2002*

*Special Item Funding for Texas Public Institutions of Higher Education, January 2002*

*Research Assessment Program – 2000 Final Report, July 2000*

*Technology Workforce Development Grants Program Annual Report, October 2002*

**Related information is also available at these websites:**

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

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

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

<http://www.arpap.com/>

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