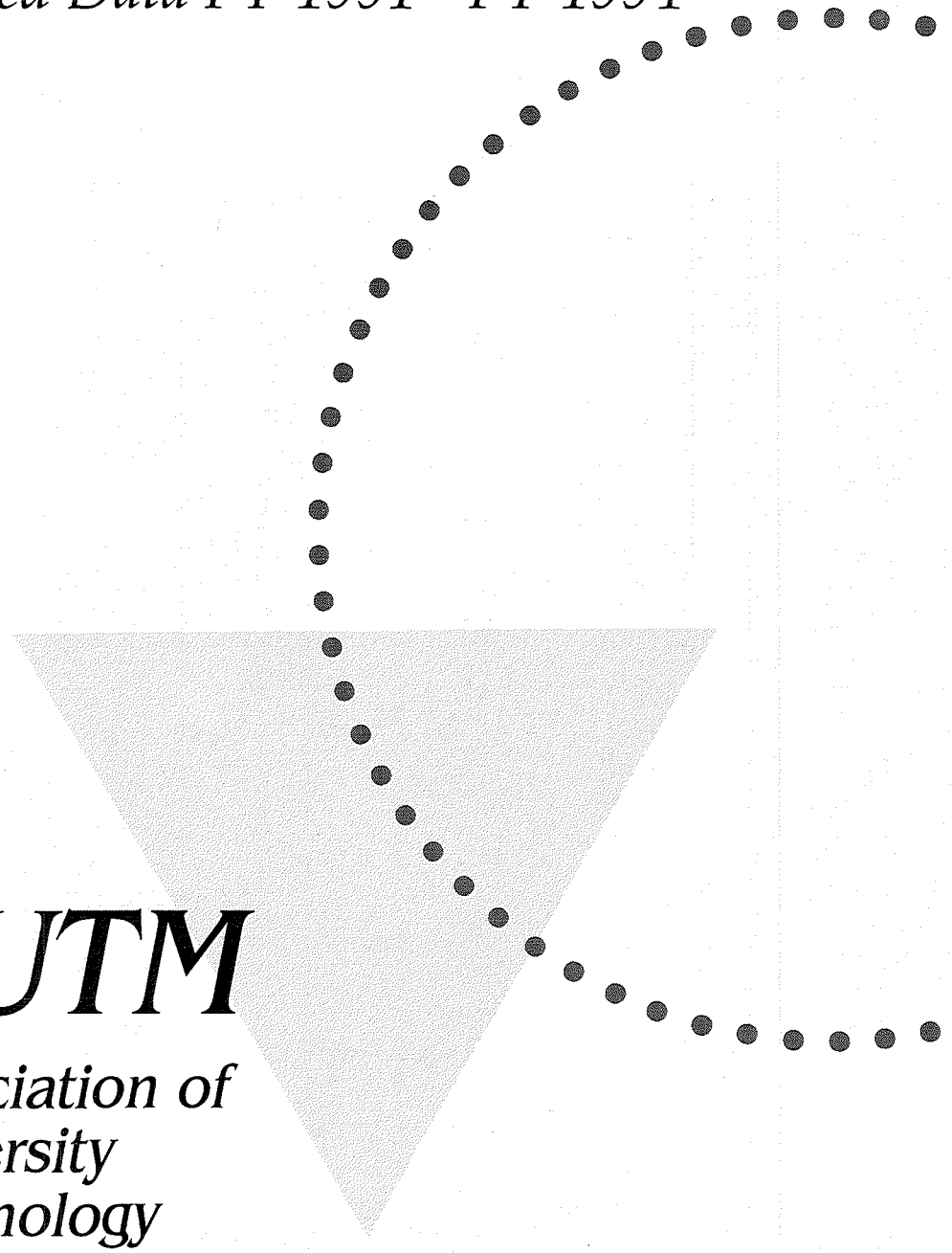
AUTM Licensing Survey

FY 1994 Survey Summary and Selected Data FY 1991 - FY 1994



AUTM

Association of University Technology Managers, Inc.

A MESSAGE FROM THE AUTM PRESIDENT

Dear AUTM Members and Interested Friends:

The FY 1994 AUTM Licensing Survey summary report contains information for fiscal years 1991 through 1994 for U.S. and Canadian academic institutions. The data compiled in this report attest to the strength and importance of the academic technology transfer effort. The continued growth in the numbers of inventions reported, patent applications filed, patents received, licenses and options executed, and royalty income generated documents the contributions made by the academic community to the commercialization of technology for the public good.

These achievements speak to the wisdom of the United States Congress in passing the Bayh-Dole Act in 1980. This Act encourages institutions carrying out federally funded research to take an active role in patenting and licensing inventions; that is certainly occurring. As a result, more inventions are being licensed, including those resulting from federally funded research. The data also show a strong level of activity at Canadian academic institutions, which are making significant contributions within Canada, the United States, and abroad.

This growth in academic technology transfer is having a positive impact. Companies are investing in developing, manufacturing, and marketing products based on the technologies licensed by academic institutions. This investment yields jobs and economic growth, and the resulting products benefit the public. Royalties generated provide incentives to inventors, contribute to reimbursing the institutions for the costs of patenting and licensing technology, and are reinvested in research and teaching, thus ensuring future advances in science, technology, and medicine.

The survey data that AUTM has compiled since 1991 provide a statistical base that is beginning to be used to estimate the economic impact of technology transfer. For example, Dr. Ashley Stevens, Director of the Office of Technology Transfer at Boston University, used the AUTM survey data from FY 1993, an estimated royalty rate of 2%, and a U.S. Census figure of $125,000 in sales per job, to project that academic technology transfer resulted in $17 billion in products sold and supported 137,000 jobs during that fiscal year.

An article just published in Volume VII (1995) of the *AUTM Journal* by Dr. Lori Pressman and other members of the Technology Licensing Office of MIT reported on a study of the pre-production investment made by MIT's active exclusive patent licensees. Based on the results of that study, the authors projected that, even before any products are sold, the licenses granted by universities, hospitals, and research institutes result in the investment of $2 to $5 billion per year by licensees, supporting between 20,000 and 40,000 jobs annually.

Adding the estimates provided by Dr. Stevens on product sales to the pre-production investment figures derived by MIT, the economic impact of licensing by the academic community can be estimated at $20 billion per year, supporting approximately 150,000 jobs annually.

This year's survey also shows that since 1980, over 1,100 new companies were formed based on licenses granted by the academic community. Over 200 of these new companies resulted from licenses granted in FY 1994.



AUTM Licensing Survey

FY 1994 Survey Summary and Selected Data FY 1991 - FY 1994

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Copyright 1995, The Association of University Technology Managers, Inc. For information on the price and availability of the *FY 1994 Survey Summary* or of the *Full Report,* contact Ms. Penny Dalziel, AUTM Headquarters, 49 East Avenue, Norwalk, CT 06851, (203) 845-9015, Fax: (203) 847-1304, autm@ix.netcom.com.

FOREWORD

On behalf of the AUTM Survey, Statistics, and Metrics Committee members, it is with great pleasure that I submit to you the results of the AUTM Licensing Survey for Fiscal Years 1991 through 1994. This survey was commissioned by the Association of University Technology Managers ("AUTM") with approval from the 1995 AUTM Board of Trustees, and was carried out by the AUTM Statistics Committee with assistance from Joyce Brinton (AUTM President), Katherine L. Chapman (AUTM Vice President for Planning), and Jean A. Mahoney (AUTM Vice President for Communications).

Appreciation is extended to the many AUTM members who participated in this survey over the past several years, and to the new institutions that joined in the AUTM Licensing Survey for the first time this year. Your timely and complete responses are to be commended.

The *FY 1994 Survey Summary and Selected Data FY 1991 - FY 1994* report provides an overview of the larger, more detailed report (referred to hereafter as the *Full Report*), and includes aggregate totals and selected data from the *Full Report*. The data summarized in the *Full Report* includes the previously reported figures for Fiscal Years 1991 through 1993, and presents new data accrued for Fiscal Year 1994.

For information on the price and availability of the *Full Report*, contact Ms. Penny Dalziel, AUTM, 49 East Avenue, Norwalk, CT 06851, (203) 845-9015, or Fax: (203) 847-1304. Questions regarding the material presented in this report should be directed to my attention at the University of California, Office of Technology Transfer, 1320 Harbor Bay Parkway, Suite 150, Alameda, CA 94502, (510) 748-6628, Fax: (510) 748-6696, or through the internet at suzanne.quick@ucop.edu.

Suzanne Quick, Chair
AUTM Survey, Statistics,
and Metrics Committee

FY 1994 Survey Summary

INTRODUCTION AND OVERVIEW

Background and Survey Description

The AUTM Licensing Survey is carried out each year by the Association of University Technology Managers, Inc., (AUTM), to provide objective information related to the field of academic technology transfer. The survey gathers data on the technology transfer programs of both U.S. and Canadian institutions. The first AUTM Licensing Survey was conducted in 1993 and focused on Fiscal Years (FY) 1991 and 1992. Since then, the survey has been administered on an annual basis.

The survey itself [1] covers a wide range of topics. It asks for information on technology transfer activity in such areas as invention disclosures, patenting and licensing, and requests financial information such as royalties received, payments made to other institutions, and legal fees and reimbursements. It also asks for certain organizational information, such as staffing levels and numbers of staff carrying out various kinds of work.

Regarding the design of the survey, each question is carefully worded and precise definitions are provided to assure that comparable data are collected from institution to institution. In addition, every effort is made to collect comparable information each year to enable a meaningful analysis of trends within the data collection interval. A few of the questions and definitions on the survey have been fine tuned over time (see Notes, pp. 9-10, and additional annotations throughout the report).[2] One or two new questions also have been asked every year that had not been asked previously.[3] Of special note for the FY 1994 survey (conducted in 1995) was the addition of a question pertaining to the amount of research funding committed to an institution that was "linked" to license or option agreements.

The Survey Reports

The findings of the FY 1994 AUTM Licensing Survey are reported in two documents. The first is entitled *"AUTM Licensing Survey: FY 1994 Survey Summary and Selected Data FY 1991 - FY 1994"* and is referred to as the *"FY 1994 Survey Summary."* It provides FY 1994 results for all respondents divided into the following institutional categories: U.S. Universities, U.S. Hospitals and Research Institutes, Canadian Institutions, and Third-Party Patent Management Firms (see Attachments D and E, pp. 19-27). It also highlights noteworthy developments in FY 1994 and brings together summary information on all institutions that have ever responded to the AUTM Licensing Survey (see Attachment F, pp. 28-32) as well as the subset of these institutions that provided information for FY 1991-1994, the four years for which AUTM survey data have been collected (see Attachment G, pp. 33-36). This latter group is referred to as the "four-year recurrent respondents."[4]

THE FY 1994 AUTM LICENSING SURVEY

Data Collection

The FY 1994 AUTM Licensing Survey is included as Attachment A, pp. 11-14. The survey population for Fiscal Year 1994 consisted of 255 institutions, including: 187 U.S. Universities, 42 U.S. Hospitals and Research Institutes, 21 Canadian Institutions, and 5 Third-Party Patent Management Firms.[7]

The institutions surveyed were asked to provide a best estimate to each question if an exact response was not known. In a few instances, best estimates were provided, and, at times, responses were rounded to the nearest thousands or millions. Not available data are noted as "N.A."

Respondents

Follow-up efforts were heavily concentrated toward the top 100 universities (Source: NSF Table B-4, Federal Obligations for Science and Engineering Research and Development to the 100 Universities and Colleges Receiving the Largest Amounts...), resulting in an 84% response rate from these top institutions. Overall, 62% of those contacted responded, representing 159 organizations for Fiscal Year 1994, including: 120 U.S. Universities, 24 U.S. Hospitals and Research Institutes, 12 Canadian Institutions, and 3 Third-Party Patent Management Firms

A summary of the number of responses by sample population for Fiscal Years 1991 - 1994 is shown in Figure 1. The *Full Report* presents the data reported by every participating institution in each year surveyed, providing information on 183 organizations. However, as noted throughout the reports, some of the reported comparisons are based on data provided by the four-year recurrent respondents, who consistently participated over all four years surveyed. The four-year recurrent respondents include approximately 66% of the top 100 U.S. Universities and 81% of the top 50 U.S. Universities.[8]

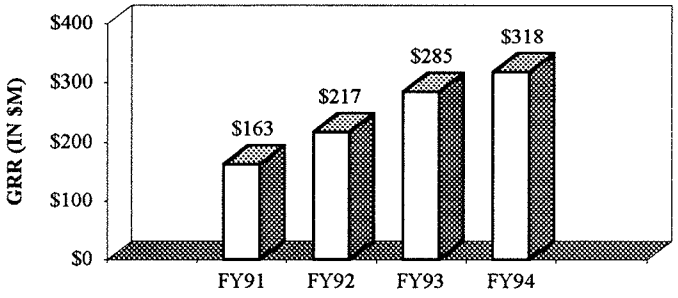
Figure 1:

	Total Surveyed	RESPONSES				
		U.S. Univs.	U.S. Hosps. and Res. Insts.	Canadian Insts.	Patent Mngmnt. Firms	Total
FY 1991 & FY 1992	260	98	20	10	2	130
FY 1993	250	117	26	12	3	158
FY 1994	255	120	24	12	3	159
Participated every year[9]		80	16	8	2	106
Participated in at least one year		137	29	14	3	183

Figure 4 reflects the growth in royalty income from FY 1991 - FY 1994 for the 101 institutions that provided royalty information for all four years of the survey. Royalty income for this group rose from $163 million in FY 1991 to $318 million in FY 1994, representing a 95% increase over the four years studied.

Figure 4:

Gross Royalties Received
(Four-Year Recurrent Respondents, N=101)

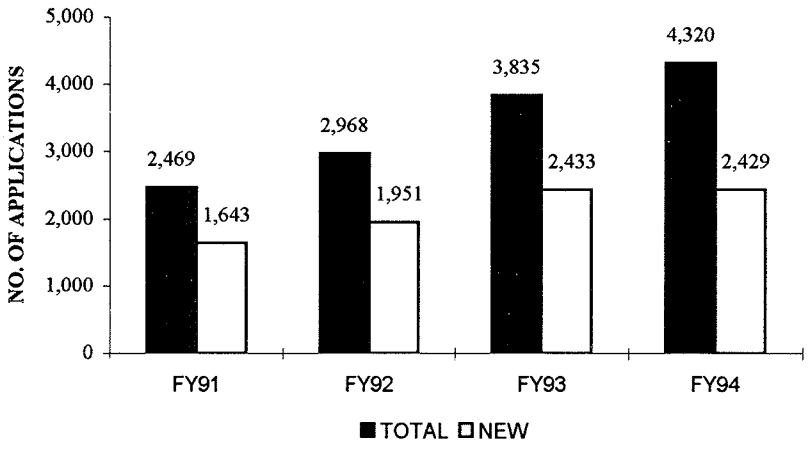


Patenting

Respondents reported that they were issued 1,874 U.S. patents in FY 1994, an increase of 17% over the prior year.[11] Patent application activity also rose. Cumulatively, a total of 13,592 U.S. patent applications were filed by AUTM Licensing Survey respondents from FY 1991 through FY 1994. Sixty-two percent (62%) of these, or 8,456, were new applications.[12] Figures 5A and 5B depict the movement in patent and new patent application activity among the total group of respondents and the subset of four-year recurrent respondents, respectively.

Figure 5A:

Total and New U.S. Patent Applications Filed
(All Respondents for Each Year:
FY91: N=130; FY92: N=130; FY93: N=158; FY94: N=159)

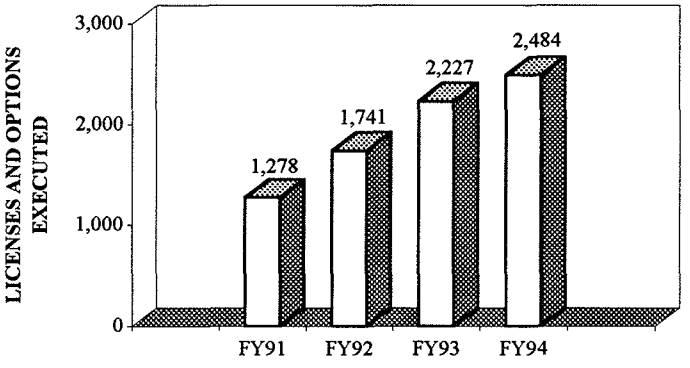


Licensing

FY 1994 also saw a continuation in the growth of licensing activity. Respondents executed 2,484 licenses and options in FY 1994, yielding a cumulative total of 7,730 licenses and options executed since FY 1991.

Figure 7:

Licenses and Options Executed
(All Respondents for Each Year:
FY91: N=130; FY92: N=130; FY93: N=158; FY94: N=159)



The pattern of growth in licensing activity among the 98 institutions that have consistently provided AUTM with their level of activity in this area is seen in Figure 8, which indicates a 63% increase in activity since FY 1991.

Figure 8:

Licenses and Options Executed
(Four-Year Recurrent Respondents, N=98)

	FY 1991	FY 1992	FY 1993	FY 1994
Licenses/Options Executed	1,160	1,539	1,652	1,892
% Increase Over Prior Year		33%	7%	15%
% Increase FY 91 - FY 94				63%

NOTES

[1] *See Attachment A for the AUTM Licensing Survey and its Definitions and Instructions page.*

[2] *The definitions for Total Sponsored Research Expenditures, Research Expenditures: Federal Government Sources, and Research Expenditures: Industrial Sources were modified beginning with FY 1993 to request annual expenditure amounts as opposed to annual sponsored funding levels. In addition, industrial support provided for clinical trial studies could not be excluded from industrial support expenditures due to the institutions' tracking systems. Therefore, in FY 1993 and thereafter, this exclusion was dropped from the survey. To help managers identify if clinical trial studies might be included in the reported figure for research expenditures from industrial sources, a new question was added to the survey in FY 1993 to determine if the participating institution includes a Medical School.*

[3] *Royalties Paid to Other Institutions and the number of U.S. Patents Issued are examples of questions that were added to the survey after the survey's implementation the first year. These data have only been accrued for FY 1993 and FY 1994.*

[4] *Four-year recurrent respondents are those institutions, excluding third-party patent management firms (PMFs), that have participated in all four years of the AUTM Licensing Survey. Because the four-year recurrent respondents sample is used to identify trends, patent management firms were excluded from this category to avoid double-counting in the data. Attachment G includes summary totals for selected data elements for the four-year recurrent respondents by sample population, excluding PMFs. (The criteria for Attachment G differs from Attachment F, which includes all responses provided for all participating institutions, even if those institutions responded to the survey in only one year.) The total number of maximum four-year recurrent respondents is 104: 106 minus 2 PMFs (see Figure 1). When four-year recurrent respondents are studied, "N=x," where "x" represents the sample size, will never be greater than 104, but could be less depending on the number of four-year recurrent respondents that provided a response to the data element being analyzed, ("N.A." responses are also excluded from the four-year recurrent respondents).*

[5] *The comparable tables included in the Full Report list the four-year recurrent respondents and their respective values reported from year to year for each of the selected data elements shown in Attachment G.*

[6] *Tables showing data for FY 1991 - FY 1994 reflect all organizations that participated in the AUTM Licensing Survey for any of these years. Tables presenting data for only one year or a few years reflect only those institutions that participated in the survey for the year(s) shown.*

[7] *Institutions surveyed include universities and colleges, teaching hospitals, not-for-profit research firms, and third-party patent management firms that manage intellectual property for these institutions.*

[8] *Follow-up efforts were heavily concentrated toward the top 50 universities for FY 1991 and FY 1992. Beginning with FY 1993, these efforts were expanded to include the top 100 universities. There is greater representation in the four-year recurrent respondents sample, therefore, of the universities that fall within the top 50 than of those that are among the top 100.*

[9] *Represents the maximum number for four-year recurrent respondents: 106 minus PMFs, or 104.*

[10] *Gross royalties received include: license issue fees, payments under options, annual minimums, running royalties, termination payments, the amount of equity received when cashed-in, and software end user license fees equal to $1,000 or more, but <u>not</u> research funding, patent reimbursement fees, a valuation of equity not cashed-in, software end user license fees less than $1,000, or trademark licensing royalties from university insignia. Adjusted gross royalties are derived by deducting the amount of Royalties Paid to Other Institutions from gross royalties received. It is noteworthy that there has been a change in the manner in which these data were derived. In FY*

Attachment A

AUTM Licensing Survey

☐ We encourage you to fully disclose your institution's name and data. If confidential treatment of your institution's name is essential, however, you may request anonymity by checking here.

1. ***Name of Institution***: _____

2. Does your ***institution include a Medical School***? ☐ Yes ☐ No

(The following should reflect the appropriate individual to be contacted should clarification of the survey results be required:)

Name: _____
Office: _____
Title: _____
Address: _____
_____
City State Zipcode
_____
Phone # FAX #

3. How much ***research funding*** was committed to your institution as a direct result of license or option agreements executed in Fiscal Year 1994? _____.

4. How many ***start-up companies*** were formed during Fiscal Year 1994 that were dependent upon the licensing of your institution's technology for initiation? _____.

5. How many individuals employed at your institution provide ***professional services*** for technology transfer? _____ FTE(s). What full-time equivalent is spent on technology licensing? _____ FTE(s).

6. How many individuals employed at your institution provide ***staff support*** for technology transfer? _____ FTE(s). What full-time equivalent is spent on technology licensing? _____ FTE(s).

7. What was the ***annual amount of research <u>expenditures</u>*** (include both direct and indirect costs) for your institution for the following categories:

Year	*Total Research Expenditures*	*Fed. Govt. Expenditures*	*Industry Expenditures*	
Fiscal 1994	_____	_____	_____	**Industry & Federal Govt. Expenditures May Not Equal Total Research Expenditures.**

Instructions and Definitions

Attachment A

Instructions:

Please answer each question carefully. Every question has been worded to attempt to reduce ambiguities. If you are not able to provide an exact response to a question, we would like you to provide your *best estimate* to the question, as opposed to providing no answer at all. Recognizing that misinterpretations may still occur, you are encouraged to contact Ms. Diane Hoffman at (609) 799-6187 if clarification is required. The survey requests data for a complete year regardless of your reporting year, i.e., Fiscal 1994 may be 10/93-9/94 or 7/93-6/94 or 1/1/94-12/31/94.

Definitions:

Research Funding	Research Funding includes the total amount of research support committed to your institution (even if the funds are to be spent over several years) as components of license or option agreements that were fully executed in the survey period.
Start-up Company	As used in this survey, a company that was dependent upon licensing the institution's technology for initiation.
Eligible FTEs	Persons employed in the office of technology transfer and, in rare instances, those whose duties are *specifically assigned* to supporting technology transfer activities, i.e., an industrial liaison, intellectual property counsel, but not persons employed in an office of sponsored programs.
Technology Transfer	Technology Transfer includes those activities associated with both technology licensing (see definition below) and industry research agreements.
Technology Licensing	Technology Licensing includes activities associated with the evaluation and marketing of technology (including trademarks but not university's insignia) and intellectual property management, and those of license administration. It does not include activities associated with industry research agreements.
Industry Expenditures	Industry Expenditures include expenditures made by the institution in support of its research activities funded by *corporations*, but not expenditures supported by other sources such as foundations and other nonprofit organizations.
Foreign	Foreign includes: foreign governments and individuals; nonprofit organizations or companies headquartered in a foreign country; U.S. subsidiaries of foreign corporations; and, joint venture companies located in the U.S. in which a foreign partner has controlling interest.
Royalties	Royalties include: license issue fees, payments under options, annual minimums, running royalties, termination payments, the amount of equity received when cashed-in, and software end user license fees equal to $1,000 or more, but not research funding, patent reimbursement fees, a valuation of equity not cashed-in, software end user license fees < $1,000, or trademark licensing royalties from university insignia.
Royalties Paid to Other Institutions	Royalties Paid to Other Institutions is a subset of gross royalties received and should not be subtracted from the total. This number will be used to better define the double-count of royalties received reported under this survey.

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* ***As stated in the Foreword, the Full Report is available separately.***

Attachment C

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ALL RESPONDENTS:

Attachment D

	U.S. UNIVERSITIES	U.S. HOSPITALS & RESEARCH INSTITUTES	CANADIAN INSTITUTIONS (U.S. $)	PATENT MANAGEMENT FIRMS	TOTAL
Professional FTEs:					
Technology Transfer	356.85	53.78	50.20	19.00	479.83
Licensing Activities	238.82	31.23	39.20	29.00	338.25
Staff Support FTEs:					
Technology Transfer	271.10	31.18	27.60	8.00	337.88
Licensing Activities	169.31	20.10	17.40	22.50	229.31
Research Expenditures: Industrial Sources	$1,362,913,750	$233,764,356	$64,273,110	$5,428,773	$1,666,379,989
Research Expenditures: Federal Govt. Sources	$10,602,876,734	$908,117,563	$310,482,872	$0	$11,821,477,169
Total Sponsored Research Expenditures	$16,058,644,323	$1,465,486,884	$684,158,438	$5,428,773	$18,213,718,418
Licenses/Options Executed	2,049	211	141	83	2,484
Start-up Companies Formed	175	22	29	15	241
Gross Royalties Received	$265,932,578	$84,002,583	$5,770,558	$66,104,159	$421,809,878
Royalties Paid to Other Institutions	$20,774,204	$620,224	$243,174	$39,938,894	$61,576,496
Legal Fees Expended	$53,345,200	$12,962,180	$2,327,310	$584,306	$69,218,996
Legal Fees Reimbursed	$25,600,573	$6,555,736	$903,228	$177,896	$33,237,433
Licenses/Options Generating Royalties	3,560	491	242	241	4,534
Invention Disclosures Received	6,697	749	445	852	8,743
Total U.S. Patent Applications Filed	3,477	575	157	111	4,320
New U.S. Patent Applications Filed	2,015	287	98	29	2,429

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TABLE 1

Attachment E

(Ranked by FY 1994 Royalties Received)

U.S. UNIVERSITIES: Name of Institution	FY 1994 Royalties Received	FY 1994 Licenses Generating Royalties	FY 1994 Professional FTEs for Licensing	FY 1994 Legal Fees Expended	FY 1994 Legal Fees Reimbursed	FY 1994 Invention Disclosures Received	FY 1994 U.S. Patent Applications Filed	FY 1994 U.S. Patents Issued	FY 1994 Licenses & Options Executed	Total Active Licenses & Options
Texas A&M University System	$1,501,871	57	3.00	$454,404	$74,067	72	38	24	33	132
Emory University	$1,500,000	9	0.90	$448,700	$182,100	35	22	7	6	38
Univ. of Illinois, Urbana, Champaign	$1,438,338	97	1.50	$91,540	$2,663	48	29	18	60	131
Univ. of Colorado	$1,289,257	30	2.00	$318,000	$20,000	91	44	13	17	60
Univ. of Minnesota	$1,278,757	66	2.00	$1,056,550	$861,720	136	63	34	36	242
Univ. of Pennsylvania	$1,200,000	44	5.00	$1,400,000	$387,160	113	107	45	42	65
Univ. of Kentucky Research Fndtn	$1,153,144	10	1.00	$200,000	$0	44	27	4	18	40
Ohio State University	$1,121,890	30	1.50	$362,028	$125,065	79	28	9	21	54
Purdue Research Foundation	$1,050,000	87	2.00	$445,329	$306,291	116	30	11	43	128
Brigham Young University	$1,038,977	40	2.00	$99,806	$84,224	24	5	10	12	58
Univ. of Tennessee Research Corp.	$988,018	23	1.30	$342,265	$263,930	59	25	6	8	30
Univ. of North Carolina/ Chapel Hill	$886,384	33	2.05	$214,931	$174,557	75	46	12	15	90
Arizona State University	$874,884	6	1.00	$456,265	$0	26	8	5	5	10
Univ. of Illinois at Chicago	$872,800	21	3.00	$139,400	$130,200	34	5	1	6	30
SUNY Research Foundation	$831,780	53	8.25	$1,116,366	$192,645	153	61	38	40	132
Univ. of Alabama/Birmingham	$802,970	48	3.00	$203,637	$113,795	73	50	7	26	130
Northwestern University	$799,363	20	1.00	$307,900	$193,663	45	23	14	12	50
Univ. of Maryland, College Park	$671,749	65	4.00	$239,819	$93,949	73	27	17	41	118
Indiana University	$667,000	29	2.80	$336,000	$217,000	64	N.A.	4	20	94
Case Western Reserve University	$656,530	15	2.00	$109,000	$37,000	25	15	3	25	80
Univ. of Iowa Research Fndtn	$630,298	37	1.30	$407,978	$177,628	69	22	11	23	65
Virginia Tech Intellectual Properties, Inc.	$626,838	31	0.75	$55,139	$0	80	30	20	17	69
Wayne State University	$618,000	5	1.20	$312,260	$322,460	29	12	15	10	40
Vanderbilt University	$605,353	12	0.50	$263,311	$111,804	60	11	9	11	46
Thomas Jefferson University	$597,000	25	3.00	$561,000	$164,000	54	58	15	18	47
Univ. of Chicago-ARCH Dev. Corp.	$554,028	22	2.00	$375,886	$751,986	59	38	9	12	79
Oregon State University	$518,428	26	0.80	$136,190	$43,374	19	14	14	5	37
Univ. of Connecticut	$514,000	6	1.00	$260,000	$85,000	35	18	6	6	22
Univ. of Dayton	$504,246	10	1.00	$105,129	$16,454	35	4	9	7	66
Univ. of Southern California	$495,260	28	2.00	$336,077	$65,048	68	41	16	19	30
Temple University	$493,710	18	3.00	$350,360	$203,850	23	12	10	5	26

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TABLE 1

Attachment E

(Ranked by FY 1994 Royalties Received)

U.S. UNIVERSITIES: Name of Institution	FY 1994 Royalties Received	FY 1994 Licenses Generating Royalties	FY 1994 Professional FTEs for Licensing	FY 1994 Legal Fees Expended	FY 1994 Legal Fees Reimbursed	FY 1994 Invention Disclosures Received	FY 1994 U.S. Patent Applications Filed	FY 1994 U.S. Patents Issued	FY 1994 Licenses & Options Executed	Total Active Licenses & Options
Montana State University	$65,117	19	1.00	$25,000	$20,000	10	6	3	7	19
Univ. of Oregon	$65,000	7	0.30	$42,800	$0	19	11	6	5	N.A.
Univ. of Massachusetts/Amherst	$62,525	8	0.50	$2,858	$0	10	7	2	24	38
Drexel University	$62,000	6	0.50	$92,506	$54,369	9	3	2	4	10
Univ. of Denver	$61,000	1	0.10	$31,567	$0	7	3	1	0	1
Medical College of Ohio	$56,735	4	0.25	$67,300	$15,332	6	9	0	3	13
Rice University	$55,000	1	0.10	$85,000	$0	2	10	10	4	4
Northeastern University	$52,500	4	0.25	$250,000	$11,603	36	24	21	1	7
Florida Atlantic University	$50,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
New York Medical College	$31,263	2	0.50	$34,860	$30,805	5	2	1	1	8
Univ. of South Alabama	$25,000	1	0.50	$32,000	$0	3	1	1	1	3
Univ. of Oklahoma Health Science Ctr.	$19,000	2	0.25	$138,160	$93,057	12	10	4	1	12
Univ. of North Carolina/Charlotte	$14,326	7	0.30	$130,022	$10,576	12	5	2	7	8
Ohio University	$12,000	1	0.25	$75,000	$5,500	18	9	4	4	17
New Mexico State University	$11,470	3	0.25	$64,012	$10,844	32	6	3	6	18
Northern Illinois University	$10,000	1	0.50	$35,000	$11,000	8	4	2	1	8
Univ. of Nebraska Medical Center	$10,000	3	1.50	$225,000	$25,000	35	19	12	4	27
Univ. of South Carolina	$7,300	2	0.00	$48,767	$0	10	2	5	0	7
Univ. of New Orleans	$4,000	2	0.05	$0	$0	5	0	1	1	3
Univ. of Alabama in Huntsville	$2,434	3	0.10	$25,077	$0	7	0	5	0	8
California State Univ./Fullerton	$500	1	0.02	$1,000	$0	2	0	0	0	1
Illinois State University	$0	0	0.25	$0	$0	5	0	0	0	2
Marshall University Research Corp.	$0	0	0.10	$0	$0	1	0	0	0	0
New Jersey Institute of Technology	$0	1	1.25	$95,000	$0	26	6	3	1	2
San Diego State University	$0	0	0.50	$5,990	$0	2	4	0	0	0
Univ. of North Texas	$0	0	0.05	N.A.	N.A.	5	0	0	0	1
Univ. of Tulsa	$0	0	0.40	$0	$0	0	0	0	0	0
TOTAL U.S. UNIVERSITIES	**$265,932,578**	**3,560**	**238.82**	**$53,345,200**	**$25,600,573**	**6,697**	**3,477**	**1,596**	**2,049**	**8,276**

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TABLE 1 **Attachment E**

(Ranked by FY 1994 Royalties Received)

CANADIAN INSTITUTIONS:

Name of Institution	FY 1994 Royalties Received (U.S. $)	FY 1994 Licenses Generating Royalties	FY 1994 Professional FTEs for Licensing	FY 1994 Legal Fees Expended (U.S. $)	FY 1994 Legal Fees Reimbursed (U.S. $)	FY 1994 Invention Disclosures Received	FY 1994 U.S. Patent Applications Filed	FY 1994 U.S. Patents Issued	FY 1994 Licenses & Options Executed	Total Active Licenses & Options
Univ. of Waterloo	$1,400,000	34	1.50	$140,567	$24,160	N.A.	18	3	16	74
UTI Inc./University of Calgary	$1,235,963	51	4.50	$476,674	$247,583	42	14	2	38	143
Univ. of British Columbia	$878,542	37	10.00	$571,160	$163,598	108	45	18	21	105
Univ. of Toronto	$821,436	26	3.00	$232,081	$141,298	95	15	6	8	25
Univ. of Alberta	$579,714	27	5.20	$250,824	$153,659	75	21	6	16	46
Queen's University	$441,277	19	3.00	$130,028	$21,075	38	15	9	10	30
Mount Sinai Hospital	$188,545	18	1.00	$156,175	$76,935	8	8	3	8	18
Univ. of Manitoba	$169,926	13	1.00	$239,784	$32,844	12	7	3	12	46
Simon Fraser University	$26,317	5	3.00	$33,024	$1,388	47	4	0	4	11
Carleton University	$12,775	6	1.00	$7,572	$0	8	0	0	5	19
Biotechnology Research Institute	$8,742	4	4.00	$74,779	$40,688	N.A.	6	0	3	11
Univ. of Western Ontario	$7,321	2	2.00	$14,642	$0	12	4	2	0	1
TOTAL CANADIAN INSTITUTIONS	**$5,770,558**	**242**	**39.20**	**$2,327,310**	**$903,228**	**445**	**157**	**52**	**141**	**529**

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TABLE 1

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ALL RESPONDENTS:	FY 1994 Royalties Received	FY 1994 Licenses Generating Royalties	FY 1994 Professional FTEs for Licensing	FY 1994 Legal Fees Expended	FY 1994 Legal Fees Reimbursed	FY 1994 Invention Disclosures Received	FY 1994 U.S. Patent Applications Filed	FY 1994 U.S. Patents Issued	FY 1994 Licenses & Options Executed	Total Active Licenses & Options
U.S. UNIVERSITIES	$265,932,578	3,560	238.82	$53,345,200	$25,600,573	6,697	3,477	1,596	2,049	8,276
U.S. HOSPITALS & RESEARCH INSTITUTES	$84,002,583	491	31.23	$12,962,180	$6,555,736	749	575	168	211	978
CANADIAN INSTITUTIONS (U.S. $)	$5,770,558	242	39.20	$2,327,310	$903,228	445	157	52	141	529
PATENT MANAGEMENT FIRMS	$66,104,159	241	29.00	$584,306	$177,896	852	111	58	83	160
TOTAL ALL RESPONDENTS	**$421,809,878**	**4,534**	**338.25**	**$69,218,996**	**$33,237,433**	**8,743**	**4,320**	**1,874**	**2,484**	**9,943**

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U.S. HOSPITALS & RESEARCH INSTITUTES:	FY 1994 Aggregate Totals	FY 1993 Aggregate Totals	FY 1992 Aggregate Totals	FY 1991 Aggregate Totals
Research Expenditures: Industrial Sources	$233,764,356	$269,026,381	$112,600,236	$95,320,190
Research Expenditures: Federal Govt. Sources	$908,117,563	$912,999,693	$584,130,363	$520,892,149
Total Sponsored Research Expenditures	$1,465,486,884	$1,507,164,756	$902,266,306	$802,177,881
Licenses/Options Executed	211	252	192	119
Gross Royalties Received	$84,002,583	$73,969,108	$60,223,269	$45,255,639
Royalties Paid to Other Institutions	$620,224	$438,956	N.A.	N.A.
Licenses/Options Generating Royalties	491	409	315	268
Legal Fees Expended	$12,962,180	$11,307,985	$8,325,439	$6,428,582
Legal Fees Reimbursed	$6,555,736	$4,865,384	$4,008,997	$2,749,296
Invention Disclosures Received	749	772	577	472
Total U.S. Patent Applications Filed	575	539	438	416
New U.S. Patent Applications Filed	287	297	245	220
U.S. Patents Issued	168	173	N.A.	N.A.

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PATENT MANAGEMENT FIRMS:	FY 1994 Aggregate Totals	FY 1993 Aggregate Totals	FY 1992 Aggregate Totals	FY 1991 Aggregate Totals
Research Expenditures: Industrial Sources	$5,428,773	$14,057,779	$1,785,000	$1,600,000
Research Expenditures: Federal Govt. Sources	$0	$20,000,000	N.A.	N.A.
Total Sponsored Research Expenditures	$5,428,773	$34,057,779	$1,785,000	$1,600,000
Licenses/Options Executed	83	61	34	31
Gross Royalties Received	$66,104,159	$58,673,994	$50,648,801	$43,055,673
Royalties Paid to Other Institutions	$39,938,894	$37,369,565	N.A.	N.A.
Licenses/Options Generating Royalties	241	194	142	124
Legal Fees Expended	$584,306	$2,722,169	$3,071,586	$3,250,640
Legal Fees Reimbursed	$177,896	$417,585	$156,671	$25,995
Invention Disclosures Received	852	818	784	735
Total U.S. Patent Applications Filed	111	105	97	54
New U.S. Patent Applications Filed	29	78	18	29
U.S. Patents Issued	58	50	N.A.	N.A.

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U.S. UNIVERSITIES: (Four-Year Recurrent Respondents)	FY 1994 Selected Totals	FY 1993 Selected Totals	FY 1992 Selected Totals	FY 1991 Selected Totals
Research Expenditures: Industrial Sources	$1,062,521,347	$965,770,147	$879,799,330	$781,994,352
Research Expenditures: Federal Govt. Sources	$8,795,118,568	$8,433,074,672	$8,654,640,166	$7,949,450,842
Total Sponsored Research Expenditures	$13,124,420,873	$11,936,227,157	$11,612,907,108	$10,747,916,914
Licenses/Options Executed	1,636	1,389	1,306	1,007
Gross Royalties Received	$242,714,472	$219,152,772	$167,277,695	$127,640,425
Licenses/Options Generating Royalties	3,044	2,870	2,443	2,035
Legal Fees Expended	$39,617,345	$35,807,837	$30,795,608	$25,905,079
Legal Fees Reimbursed	$17,176,659	$14,828,231	$10,481,119	$7,431,251
Invention Disclosures Received	5,428	5,388	5,180	4,607
Total U.S. Patent Applications Filed	2,858	2,419	2,017	1,800
New U.S. Patent Applications Filed	1,679	1,569	1,380	1,235

See Note 4, p. 9.

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CANADIAN INSTITUTIONS (U.S. $): (Four-Year Recurrent Respondents)	FY 1994 Selected Totals	FY 1993 Selected Totals	FY 1992 Selected Totals	FY 1991 Selected Totals
Research Expenditures: Industrial Sources	$52,563,175	$45,632,883	$46,225,600	$44,914,165
Research Expenditures: Federal Govt. Sources	$231,885,226	$237,751,923	$252,342,400	$257,387,499
Total Sponsored Research Expenditures	$570,269,662	$595,891,473	$446,060,000	$455,767,501
Licenses/Options Executed	84	90	47	43
Gross Royalties Received	$4,329,610	$4,082,835	$4,153,048	$3,314,127
Licenses/Options Generating Royalties	169	141	111	109
Legal Fees Expended	$1,256,326	$1,223,395	$638,877	$495,004
Legal Fees Reimbursed	$580,725	$550,619	$235,950	$286,521
Invention Disclosures Received	344	284	275	235
Total U.S. Patent Applications Filed	122	74	93	71
New U.S. Patent Applications Filed	81	51	79	57

See Note 4, p. 9.

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Suggested Citation

The Association of University Technology Managers, Inc., report entitled, *AUTM Licensing Survey: FY 1994 Survey Summary and Selected Data FY 1991 - FY 1994.*

Availability of Publication

For information on the price and availability of the *FY 1994 Survey Summary and Selected Data FY 1991 - FY 1994* report or the *Full Report*, contact Ms. Penny Dalziel, 49 East Avenue, Norwalk, CT 06851, Phone: (203) 845-9015, Fax: (203) 847-1304.

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ALL RESPONDENTS: (Four-Year Recurrent Respondents, Excluding Patent Management Firms)	FY 1994 Selected Totals	FY 1993 Selected Totals	FY 1992 Selected Totals	FY 1991 Selected Totals
Research Expenditures: Industrial Sources	$1,247,191,896	$1,142,236,465	$1,033,332,166	$919,815,707
Research Expenditures: Federal Govt. Sources	$9,703,042,460	$9,303,740,340	$9,471,500,929	$8,718,882,490
Total Sponsored Research Expenditures	$14,757,704,765	$13,546,135,450	$12,917,913,414	$11,980,346,296
Licenses/Options Executed	1,892	1,652	1,539	1,160
Gross Royalties Received	$318,258,329	$285,343,792	$216,843,325	$162,983,618
Licenses/Options Generating Royalties	3,625	3,349	2,841	2,385
Legal Fees Expended	$50,356,471	$45,442,313	$39,446,385	$32,617,462
Legal Fees Reimbursed	$23,329,895	$19,883,086	$14,596,393	$10,400,384
Invention Disclosures Received	6,324	6,257	6,018	5,306
Total U.S. Patent Applications Filed	3,465	2,932	2,532	2,282
New U.S. Patent Applications Filed	1,994	1,853	1,690	1,509

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U.S. HOSPITALS & RESEARCH INSTITUTES: (Four-Year Recurrent Respondents)	FY 1994 Selected Totals	FY 1993 Selected Totals	FY 1992 Selected Totals	FY 1991 Selected Totals
Research Expenditures: Industrial Sources	$132,107,374	$130,833,435	$107,307,236	$92,907,190
Research Expenditures: Federal Govt. Sources	$676,038,666	$632,913,745	$564,518,363	$512,044,149
Total Sponsored Research Expenditures	$1,063,014,230	$1,014,016,820	$858,946,306	$776,661,881
Licenses/Options Executed	172	173	186	110
Gross Royalties Received	$71,214,247	$62,108,185	$45,412,582	$32,029,066
Licenses/Options Generating Royalties	412	338	287	241
Legal Fees Expended	$9,482,800	$8,411,081	$8,011,900	$6,217,379
Legal Fees Reimbursed	$5,572,511	$4,504,236	$3,879,324	$2,682,612
Invention Disclosures Received	552	585	563	464
Total U.S. Patent Applications Filed	485	439	422	411
New U.S. Patent Applications Filed	234	233	231	217

See Note 4, p. 9.

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ALL RESPONDENTS:	FY 1994 Aggregate Totals	FY 1993 Aggregate Totals	FY 1992 Aggregate Totals	FY 1991 Aggregate Totals
Research Expenditures: Industrial Sources	$1,666,379,989	$1,561,864,199	$1,166,399,938	$1,022,219,553
Research Expenditures: Federal Govt. Sources	$11,821,477,169	$11,395,104,446	$10,393,561,887	$9,275,106,157
Total Sponsored Research Expenditures	$18,213,718,418	$17,103,947,203	$14,412,989,520	$12,957,480,588
Licenses/Options Executed	2,484	2,227	1,741	1,278
Gross Royalties Received	$421,809,878	$380,212,419	$287,384,577	$221,607,337
Royalties Paid to Other Institutions	$61,576,496	$57,366,590	N.A.	N.A.
Licenses/Options Generating Royalties	4,534	4,198	3,377	2,711
Legal Fees Expended	$69,218,996	$66,214,161	$45,629,290	$37,250,399
Legal Fees Reimbursed	$33,237,433	$28,383,312	$15,732,830	$10,845,638
Invention Disclosures Received	8,743	8,581	7,345	6,337
Total U.S. Patent Applications Filed	4,320	3,835	2,968	2,469
New U.S. Patent Applications Filed	2,429	2,433	1,951	1,643
U.S. Patents Issued	1,874	1,603	N.A.	N.A.

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CANADIAN INSTITUTIONS:	FY 1994 Aggregate Totals (U.S. $)	FY 1993 Aggregate Totals (U.S. $)	FY 1992 Aggregate Totals (U.S. $)	FY 1991 Aggregate Totals (U.S. $)
Research Expenditures: Industrial Sources	$64,273,110	$55,746,806	$46,953,659	$46,045,723
Research Expenditures: Federal Govt. Sources	$310,482,872	$300,586,085	$262,775,142	$267,509,935
Total Sponsored Research Expenditures	$684,158,438	$687,047,338	$472,420,978	$484,021,929
Licenses/Options Executed	141	177	54	49
Gross Royalties Received	$5,770,558	$5,299,502	$4,153,048	$3,314,127
Royalties Paid to Other Institutions	$243,174	$35,398	N.A.	N.A.
Licenses/Options Generating Royalties	242	182	111	109
Legal Fees Expended	$2,327,310	$1,933,584	$698,829	$524,337
Legal Fees Reimbursed	$903,228	$649,969	$235,950	$286,521
Invention Disclosures Received	445	393	284	250
Total U.S. Patent Applications Filed	157	92	94	73
New U.S. Patent Applications Filed	98	65	80	59
U.S. Patents Issued	52	73	N.A.	N.A.

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U.S. UNIVERSITIES:	FY 1994 Aggregate Totals	FY 1993 Aggregate Totals	FY 1992 Aggregate Totals	FY 1991 Aggregate Totals
Research Expenditures: Industrial Sources	$1,362,913,750	$1,223,033,233	$1,005,061,043	$879,253,640
Research Expenditures: Federal Govt. Sources	$10,602,876,734	$10,161,518,668	$9,546,656,382	$8,486,704,073
Total Sponsored Research Expenditures	$16,058,644,323	$14,875,677,330	$13,036,517,236	$11,669,680,778
Licenses/Options Executed	2,049	1,737	1,461	1,079
Gross Royalties Received	$265,932,578	$242,269,815	$172,359,459	$129,981,898
Royalties Paid to Other Institutions	$20,774,204	$19,522,671	N.A.	N.A.
Licenses/Options Generating Royalties	3,560	3,413	2,809	2,210
Legal Fees Expended	$53,345,200	$50,250,423	$33,533,436	$27,046,840
Legal Fees Reimbursed	$25,600,573	$22,450,374	$11,331,212	$7,783,826
Invention Disclosures Received	6,697	6,598	5,700	4,880
Total U.S. Patent Applications Filed	3,477	3,099	2,339	1,926
New U.S. Patent Applications Filed	2,015	1,993	1,608	1,335
U.S. Patents Issued	1,596	1,307	N.A.	N.A.

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TABLE 1 **Attachment E**

(Ranked by FY 1994 Royalties Received)

PATENT MANAGEMENT FIRMS:

Name of Institution	FY 1994 Royalties Received	FY 1994 Licenses Generating Royalties	FY 1994 Professional FTEs for Licensing	FY 1994 Legal Fees Expended	FY 1994 Legal Fees Reimbursed	FY 1994 Invention Disclosures Received	FY 1994 U.S. Patent Applications Filed	FY 1994 U.S. Patents Issued	FY 1994 Licenses & Options Executed	Total Active Licenses & Options
Research Corporation Technologies	$59,141,000	158	16.00	N.A.	N.A.	671	61	20	44	N.A.
Competitive Technologies, Inc. (CTI)	$6,700,000	56	12.00	$251,000	$15,000	72	15	15	23	112
Center for Innovative Technology	$263,159	27	1.00	$333,306	$162,896	109	35	23	16	48
TOTAL PATENT MNGMNT. FIRMS	**$66,104,159**	**241**	**29.00**	**$584,306**	**$177,896**	**852**	**111**	**58**	**83**	**160**

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TABLE 1 **Attachment E**

(Ranked by FY 1994 Royalties Received)

U.S. HOSPITALS & RESEARCH INSTITUTES: Name of Institution	FY 1994 Royalties Received	FY 1994 Licenses Generating Royalties	FY 1994 Professional FTEs for Licensing	FY 1994 Legal Fees Expended	FY 1994 Legal Fees Reimbursed	FY 1994 Invention Disclosures Received	FY 1994 U.S. Patent Applications Filed	FY 1994 U.S. Patents Issued	FY 1994 Licenses & Options Executed	Total Active Licenses & Options
Sloan Kettering Institute for Cancer Res.	$31,500,000	16	1.00	$570,000	N.A.	28	47	10	7	47
City of Hope National Medical Ctr.	$23,936,611	18	1.25	N.A.	$32,330	21	26	1	5	41
Health Research, Inc.	$4,992,972	20	0.50	$212,169	$11,000	11	7	3	7	51
Brigham & Women's Hospital	$4,068,103	33	1.50	$1,266,890	$650,000	45	43	23	23	57
SRI International	$4,000,000	22	1.00	$1,000,000	$160,000	95	37	26	13	47
Mayo Foundation	$3,747,000	89	5.00	$279,000	$49,000	124	18	3	42	155
Wistar Institute	$3,700,000	27	2.00	$575,000	$24,000	9	8	1	6	61
Dana-Farber Cancer Institute	$3,159,952	30	2.50	$993,533	$117,842	65	57	18	10	76
Massachusetts General Hospital	$984,356	28	3.50	$3,648,965	$2,901,381	95	128	24	16	93
Salk Institute	$915,646	79	1.80	$1,588,606	$1,213,791	20	47	15	18	156
Children's Hospital, Boston	$830,497	19	2.50	$478,613	$137,132	62	49	8	12	24
Fred Hutchinson Cancer Res. Ctr.	$614,104	50	1.50	$194,500	$46,500	31	29	7	14	69
Children's Hospital of Philadelphia	$573,500	4	0.50	$183,380	$100,000	14	12	5	2	6
New England Medical Center	$357,000	12	1.50	$417,000	$268,000	16	11	8	16	31
Houston Advanced Research Center	$292,318	2	1.30	$160,900	$79,000	6	6	4	3	6
Fox Chase Cancer Center	$95,364	10	1.00	$62,000	$1,195	22	21	1	3	11
St. Jude Children's Research Hospital	$78,192	17	0.33	$82,931	$41,000	8	3	0	5	17
Woods Hole Oceanographic Inst.	$76,000	3	1.00	$38,000	$0	2	1	4	1	7
California Pacific Medical Ctr. Res. Inst.	$50,000	1	0.05	$20,300	$6,200	1	1	0	1	2
National Jewish Center	$30,968	11	0.00	$130,182	$15,365	14	7	N.A.	3	12
Albert Einstein Healthcare Network	$0	0	1.00	$4,000	N.A.	10	1	1	N.A.	N.A.
La Jolla Cancer Research Fndtn.	$0	0	0.25	$1,000,000	$700,000	48	12	2	3	7
Ramsey Foundation	$0	0	0.20	$18,211	$0	0	3	3	0	0
Rhode Island Hospital	$0	0	0.05	$38,000	$2,000	2	1	1	1	2
TOTAL U.S. HOSPITALS & RESEARCH INSTITUTES	**$84,002,583**	**491**	**31.23**	**$12,962,180**	**$6,555,736**	**749**	**575**	**168**	**211**	**978**

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TABLE 1 **Attachment E**

(Ranked by FY 1994 Royalties Received)

U.S. UNIVERSITIES: Name of Institution	FY 1994 Royalties Received	FY 1994 Licenses Generating Royalties	FY 1994 Professional FTEs for Licensing	FY 1994 Legal Fees Expended	FY 1994 Legal Fees Reimbursed	FY 1994 Invention Disclosures Received	FY 1994 U.S. Patent Applications Filed	FY 1994 U.S. Patents Issued	FY 1994 Licenses & Options Executed	Total Active Licenses & Options
Penn State University	$476,132	36	2.00	$328,724	$102,096	102	41	16	22	N.A.
Oregon Health Sciences University	$434,721	23	1.20	$304,832	$86,308	23	26	10	12	64
Univ. of Pittsburgh	$434,065	15	0.60	$566,291	$67,000	32	23	14	9	27
Univ. of Rhode Island	$375,000	5	1.00	$75,000	$20,000	16	10	5	3	6
Princeton University	$359,000	11	0.70	$89,000	N.A.	52	29	9	12	43
Brown University Research Fndtn	$295,841	9	0.75	$62,466	$0	19	14	5	5	9
Univ. of Texas Hlth Sci Ctr, San Antonio	$286,975	15	1.50	$534,252	$250,000	26	12	8	9	54
Mississippi State University	$283,399	3	0.25	$30,984	$0	12	4	0	2	7
Kansas State University Research Fndtn.	$276,563	23	1.50	$271,818	$95,349	30	9	20	11	37
Univ. of Maryland, Baltimore	$274,127	10	4.00	$135,464	$54,853	56	14	8	6	22
Louisiana State University	$254,752	15	1.00	$100,000	$39,673	31	21	6	6	43
Univ. of Arkansas, Fayetteville	$250,670	10	0.50	$128,480	$6,957	26	9	8	1	16
Colorado State University	$227,891	19	0.50	$101,604	$29,721	48	7	2	5	32
Univ. of Delaware	$227,754	10	0.30	$119,046	$16,668	13	7	4	5	34
Univ. of Arizona	$180,331	22	0.75	$111,475	$89,731	74	17	9	11	72
Wake Forest University	$176,814	10	1.60	$137,285	$52,650	20	7	3	6	16
Univ. of Central Florida	$173,750	5	0.50	$51,156	$0	26	17	5	0	9
Dartmouth College	$169,119	27	0.00	$144,404	$56,155	13	14	7	7	27
Washington State University	$165,210	23	1.50	$113,524	$72,932	28	13	7	14	42
Georgetown University	$153,777	10	1.00	$419,944	$112,000	37	9	6	9	28
Univ. of Texas M.D. Anderson Cancer Ctr.	$150,000	9	3.00	$757,000	$328,000	48	23	17	22	28
Univ. of Massachusetts Medical Center	$117,753	14	2.00	$137,318	N.A.	26	16	4	1	15
Univ. of Akron	$112,435	8	1.00	$400,000	$0	27	22	15	9	11
Brandeis University	$110,000	10	0.35	$31,658	$17,916	13	8	3	8	28
Univ. of Miami	$108,448	12	2.50	$120,174	$61,816	68	8	3	25	38
Hahnemann University	$105,000	12	2.00	$48,000	$28,000	16	19	3	8	15
Syracuse University	$102,350	15	1.00	$79,644	$30,738	12	3	8	8	19
Tufts University	$98,863	11	1.00	$150,000	$0	45	16	7	7	21
Univ. of Kansas	$96,226	8	3.00	$63,359	$5,900	51	10	3	8	11
Lehigh University	$85,000	5	N.A.	$28,000	$7,500	25	13	5	4	14
Ball State University	$67,762	6	0.00	N.A.	N.A.	23	3	1	2	8

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TABLE 1 **Attachment E**

(Ranked by FY 1994 Royalties Received)

U.S. UNIVERSITIES: Name of Institution	FY 1994 Royalties Received	FY 1994 Licenses Generating Royalties	FY 1994 Professional FTEs for Licensing	FY 1994 Legal Fees Expended	FY 1994 Legal Fees Reimbursed	FY 1994 Invention Disclosures Received	FY 1994 U.S. Patent Applications Filed	FY 1994 U.S. Patents Issued	FY 1994 Licenses & Options Executed	Total Active Licenses & Options
Univ. of California System	$50,210,000	481	38.80	$6,442,000	$4,452,000	559	389	126	138	870
Stanford University	$37,700,000	200	9.00	$2,200,000	$806,000	165	84	60	150	829
Columbia University	$26,746,141	104	4.60	$1,279,363	$82,276	101	53	20	39	276
Michigan State University	$14,556,761	28	2.25	$398,188	$115,680	82	46	20	16	55
Univ. of Washington/Wash. Res. Fndtn.	$12,300,000	87	9.00	$817,000	$50,000	153	58	15	39	166
Iowa State University	$9,600,000	45	4.00	$4,900,000	$3,800,000	139	81	43	93	168
W.A.R.F./Univ. of Wisconsin-Madison	$8,348,713	75	3.00	$2,771,682	$886,373	134	183	51	35	182
Florida State University	$6,771,968	9	0.50	$668,134	$522,119	15	24	11	3	10
Harvard University	$5,817,671	99	6.80	$1,700,000	$1,200,000	111	91	28	68	219
Univ. of Florida	$5,177,050	20	1.00	$384,460	$554,251	75	66	45	22	129
Univ. of Rochester	$4,904,405	10	0.50	$271,149	$52,834	35	11	10	10	42
Univ. of Virginia Patents Fndtn.	$4,635,032	38	1.00	$212,142	$205,655	43	30	6	17	42
Massachusetts Inst. of Technology (MIT)	$4,560,000	163	9.60	$3,208,000	$1,360,000	280	203	100	74	337
Clemson University	$4,400,000	7	0.50	$135,629	$6,835	30	11	7	3	12
Tulane University	$3,816,851	14	1.25	$150,737	$91,569	17	9	10	7	55
Washington University	$3,100,000	68	2.60	$611,000	$447,045	19	51	19	44	130
Univ. of Texas Southwestern Med. Ctr.	$2,673,000	27	0.55	$645,022	$150,217	43	31	12	8	60
California Institute of Technology	$2,650,000	25	1.00	$604,000	$143,000	298	58	52	18	60
Rutgers, The State University of NJ	$2,452,000	58	3.00	$743,373	$503,151	58	54	21	14	102
Johns Hopkins University	$2,297,899	103	4.25	$1,055,227	$704,379	182	85	32	52	234
New York University	$2,000,000	15	N.A.	$800,000	$355,000	48	N.A.	N.A.	N.A.	N.A.
Univ. of Cincinnati	$1,976,884	10	0.50	$94,067	$47,118	36	21	8	7	37
Univ. of Utah	$1,938,828	51	3.00	$290,633	$36,855	145	46	25	44	121
Baylor College of Medicine	$1,900,000	76	4.00	$468,000	N.A.	65	12	8	35	145
Georgia Institute of Technology	$1,872,257	27	1.00	$348,045	$69,378	132	50	17	23	81
Yale University	$1,650,000	56	2.00	$300,000	$90,000	89	23	13	13	155
North Carolina State University	$1,632,000	37	2.50	$720,000	$368,400	86	51	40	39	160
Univ. of Missouri System	$1,565,184	20	0.50	$221,144	$123,244	55	14	8	19	56
Duke University	$1,556,163	47	3.00	$731,331	$381,531	98	73	30	25	144
Univ. of Michigan	$1,529,000	50	4.50	$1,142,800	$593,400	97	61	28	29	114
Carnegie Mellon University	$1,507,000	17	2.00	$378,983	$80,581	66	10	6	14	33

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FOUR-YEAR RECURRENT RESPONDENTS
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Attachment C

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CONTINUES ON NEXT PAGE...

Total U.S. Patent Applications Filed	Total U.S. Patent Applications Filed includes any filing made during the year requested, including new filings, CIPs, continuations, divisionals, and reissues.
New U.S. Patent Applications Filed	New U.S. Patent Applications Filed is a subset of Total U.S. Patent Applications Filed. It does not include continuations, divisionals, or reissues, and typically does not include CIPs. A CIP may only be counted as a new invention if filed with substantially new matter.
U.S. Patents Issued	U.S. Patents Issued to your institution in the year requested.

8. How many ***licenses/options*** did your institution ***execute in the year*** indicated? How many licenses/options are ***active***? How many of these licenses/options ***include equity***?

The following # of licenses should exclude software end user licenses under $1,000.

Year	*# of Licenses/Options Executed In...*		*Total # of Active Licenses/Options*		*Total # of Licenses/Options w/ Equity*	
	U.S.	*Foreign*	*U.S.*	*Foreign*	*U.S.*	*Foreign*
Fiscal 1994	____	____				
Cumulative for All Years			____	____	____	____

9. What was the amount of ***royalties*** received at your institution and the ***total number of licenses/options yielding royalties*** in the year indicated? How much of total ***royalties received was paid to other institutions***?

Year	*Royalties Received ($)*	*Total # of Licenses/Options Yielding Royalties*	*Royalties Paid to Other Institutions*
Fiscal 1994	____	____	____

10. How much did your institution ***spend in external legal fees*** for patents and/or copyrights? How much did your institution receive in ***reimbursements for these fees from licensees***?

Year	*Amount Spent in External Legal Fees*	*Amount Reimbursed by Licensees*
Fiscal 1994	____	____

11. How many ***Invention Disclosures were received, U. S. Patent Applications filed, and U. S. Patents Issued to your institution*** in the year indicated? Of the total U.S. Patent Applications filed, how many of these filings were ***New***?

Year	*Invention Disclosures Received*	*Total U. S. Patent Applications Filed*	*New U. S. Patent Applications Filed*	*U.S. Patents Issued*
Fiscal 1994	____	____	____	____

Return Survey to: Diane C. Hoffman, Inc., Attn: AUTM Licensing Survey, 23 Perrine Path
Cranbury, NJ 08512, Phone: (609) 799-6187, Fax: (609) 799-5247

1991 and FY 1992, Royalties Paid to Other Institutions included only those paid by Research Corporation Technologies to universities for whom it managed technologies at $29 million and $32 million, respectively, and by Stanford University to the University of California for the Cohen Boyer licenses at $7 million for each year. In FY 1993, a new question was added to the survey to request these data from all institutions participating in the survey. This resulted in a higher amount of reported Royalties Paid to Other Institutions, most predominantly from Research Corporation Technologies at $37 million, and from Stanford University, University of California System, Harvard University, and Columbia University, who shared a combined total of approximately $19.5 million.

[11] *U.S. Patents Issued was added to the survey after the survey's implementation the first year. These data have only been accrued for FY 1993 and FY 1994.*

[12] *"Total U.S. Patent Applications Filed" includes any filing during the year, including continuations-in-part (CIPs), continuations, divisionals, and reissues. "New U.S. Patent Applications Filed" is a subset of "Total U.S. Patent Applications Filed."*

[13] *Legal fees expended and reimbursed include the amount spent by the institutions in external legal fees for patents and/or copyrights and the amount reimbursed by licensees for these fees, respectively. Direct payment of patenting costs by licensees is not included in the legal fees expended and legal fees reimbursed data.*

[14] *See AUTM Licensing Survey, question 3, and the definition for "Research Funding" in the Definitions and Instruction page, for the new request on research funding committed. Research Funding should be distinguished from Research Expenditures: Industrial Sources requested in question 7. The former represents funding committed over multiple years that was linked to license or option agreements signed in FY 1994. The latter reflects annual expenditures made at the institution in support of ongoing research activities, which were funded from industrial sources but were not necessarily connected to a license or option agreement.*

[15] *The reader may wish to refer to the AUTM Public Benefits Survey: Summary of Results, April, 1994, for further examples of impact.*

Other Selected Findings

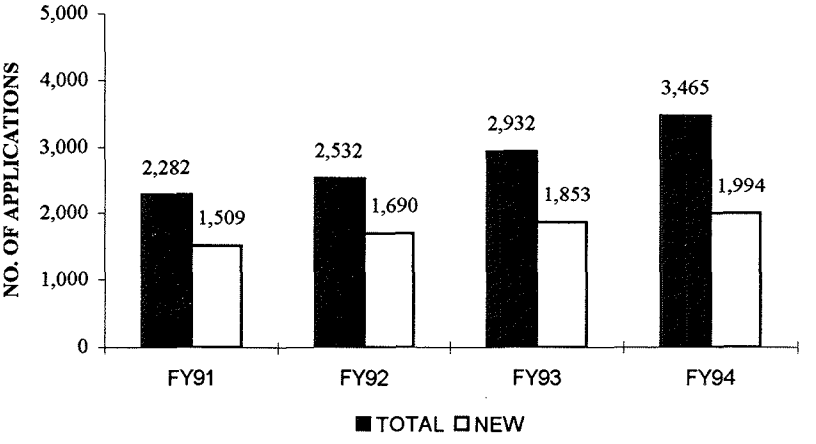
The FY 1994 AUTM Licensing Survey was the first to request data on research funding committed in conjunction with the execution of license and option agreements. Respondents were asked to provide the amount of funding committed, even if it was to be spent over several years. Those who responded reported a total of $134 million of research funds committed.[14] Many of the participating institutions, however, indicated that although they have received research funds linked to license and option agreements, they do not track this information, and thus could not provide the requested data. In addition, some of the institutions that responded noted that they only track these data on an annual basis, and thus were reporting only a portion of the research funding linked to their agreements in FY 1994. Because of the difficulty in tracking these data and the low response rate to this request, the reported amount of research funding committed for FY 1994 is believed to be understated.

The FY 1994 survey was also the first to ask a question regarding the number of start-up companies initiated in a given year. (The FY 1993 survey had asked for information on the total number of start-up companies initiated since 1980.) Start-up company activity in FY 1994 was 241 companies as compared with a total of 1,169 for the 13-year period 1980-1993, indicating that such activity is occurring at an increased rate.

These data and the additional findings presented in the *Full Report* point to a range of impacts of academic technology transfer.[15] Internally, through licensing revenues and commitment of research funds linked to licenses, technology transfer activities have become a positive source of funding for many institutions. The revenues derived supplement those from other sources and take on greater significance as institutions of higher education increasingly confront financial challenges and constraints. In a broader context, across the board acceleration in licensing and patenting activity bode well in regard to the introduction of new products and processes into society that were originated within academic institutions. In addition, there are side benefits such as an increase in industrial sponsored research, economic development associated with product commercialization and small company start-ups, an increase in industrial/academic interactions, and a benefit to society through more rapid translation of academic research to commercial use.

Figure 5B:

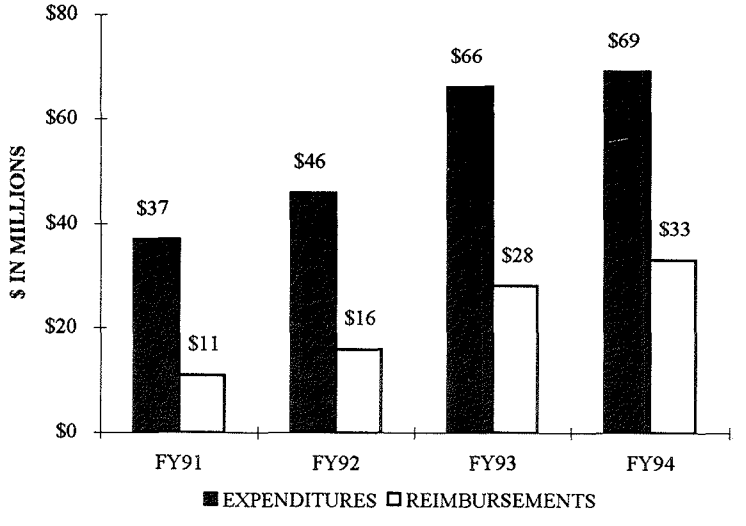
Total and New U.S. Patent Applications Filed
(Four-Year Recurrent Respondents, N=100)



As would be expected, the increase in patent prosecution activity was accompanied by an increase in legal fees, which rose to $69 million in FY 1994. [13] These costs have been offset by the success of AUTM member institutions at recovering a significantly greater proportion of their patent prosecution expenses. Since FY 1991, legal fee recovery trends have moved steadily upwards, and neared 50% in FY 1994 (see Figure 6).

Figure 6:

Legal Fees Expended and Reimbursed
(All Respondents for Each Year:
FY91: N=130; FY92: N=130; FY93: N=158; FY94: N=159)



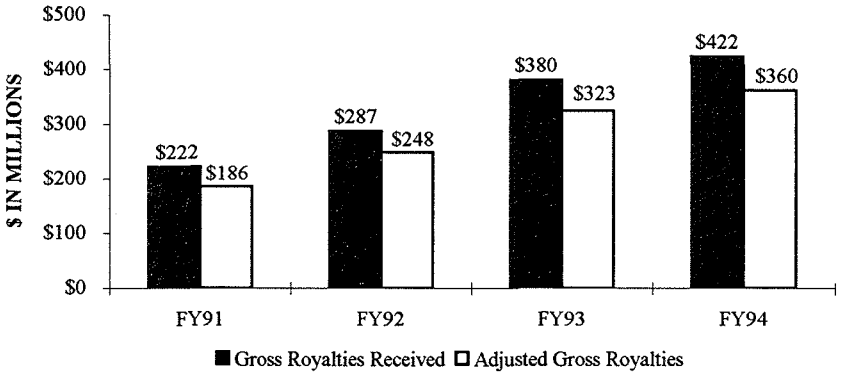
SELECTED HIGHLIGHTS

Royalties

Gross royalties received in FY 1994 increased to $422 million, while adjusted gross royalties increased to $360 million. Cumulative gross royalties received by participating institutions since FY 1991 topped $1.3 billion, and adjusted gross royalties exceeded $1.1 billion.[10]

Figure 2:

Gross Royalties Received and Adjusted Gross Royalties
(All Respondents for Each Year:
FY91: N=130; FY92: N=130; FY93: N=158; FY94: N=159)



Shown below in Figure 3 is a frequency distribution of gross royalties received for survey participants in each year. The number of institutions reporting $5 million or more increased from 9 to 14 in the last four years, while the number reporting between $500 thousand and $5 million increased from 39 to 66.

Figure 3:

Royalty Ranges and No. of Institutions in Each Range

GROSS ROYALTIES RECEIVED (GRR)	FY 1991	FY 1992	FY 1993	FY 1994
GRR ≥ $20 M	2	4	6	6
$ 10 M ≤ GRR < $ 20 M	6	6	4	2
$ 5 M ≤ GRR < $ 10 M	1	1	3	6
$ 1 M ≤ GRR < $ 5 M	17	27	35	39
$ 0.5 M ≤ GRR < $ 1 M	22	16	24	27
GRR < $ 0.5 M	82	76	86	79
Total Participants	130	130	158	159

The second document is entitled *"AUTM Licensing Survey: Fiscal Year 1991 - Fiscal Year 1994"* and is referred to as the *Full Report.* The *Full Report* includes the *FY 1994 Survey Summary,* as well as FY 1991 through FY 1994 institution-by-institution responses to survey questions. Also included are subtotals for the institutions, summarized by the four categories of organizations noted above.

Tables in the *Full Report* have been expanded this year to include new data on committed research funding linked to license and option agreements, royalties paid to other institutions, U.S. patents issued, and start-up companies formed. Also included in the *Full Report* are a series of tables that compare the year to year responses on selected questions of those institutions that have provided four full years of data for the survey.[5]

The Table of Contents for the *Full Report* and a listing of the tables contained in each section can be found in Attachments B and C of the *FY 1994 Survey Summary*, respectively.[6]

Use of the Survey Information

The findings of the AUTM Licensing Survey are intended to be of interest to a broad audience, ranging from government officials and policy makers to university administrators and technology managers who work in the field. The former, for example, should find it especially instructive to track the progress that the field of academic technology transfer has made in facilitating the transformation of research results into commercially available products and processes. This information contributes to an understanding of the public benefits of university-based technology transfer and provides a basis for assessing the economic and societal importance of the field. Those at universities, hospitals, and research institutes can make use of the survey information in self-evaluation and should find value in comparing the performance of their programs with those of other comparable institutions on a range of measures. Data are ranked by the major data elements presented in the tables, which is a practice common when developing statistical reports. Such ordering of the information enables the reader to easily see the range of values, i.e. highest to lowest, and is not intended to make a statement on an institution's performance.

Those of us who have contributed to this project provide these findings with the assurance that the data were carefully collected and that every effort was made to assure their accuracy. We also suggest that this information is best used as a starting place or as a point of departure for more extensive analysis. Clearly, the data presented here support a number of generalizations about the movement of the field. However, academic technology transfer is a complex process and true understanding of its development and impacts can only come through in-depth, thoughtful consideration of the forces at work behind the numbers.

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The products and processes derived from technologies licensed by the academic community have contributed substantially to the public benefit. New diagnostic and therapeutic products have saved lives, reduced suffering and disability, and improved our ability to prevent disease. The products of academic technology have also increased the competitiveness of existing businesses and spawned entire new industries. Some examples are listed below:

- Taxol (Florida State University). A potentially revolutionary anticancer agent. Taxol's sole source prior to this semi-synthesis process was the bark of the Pacific yew tree. Clinical trials show Taxol's unprecedented effectiveness in treating advanced ovarian cancer and its potential for halting breast cancer as well. Taxol is now in widespread use throughout the world.

- Haemophilus b conjugate vaccine (University of Rochester). This was the first vaccine approved for infants since the acceptance of the polio vaccine. This vaccine has reduced bacterial meningitis incidence in children by 94%, according to some studies.

- Hepatitis B vaccine and related gene expression technologies (University of California and University of Washington). A synthetic version of the traditional Hepatitis-B vaccine that is much safer because it is manufactured using genetic engineering techniques and thus does not expose individuals to the live virus. This vaccine is now widely utilized both in the U.S. and abroad.

- Vitamin D and related technologies (W.A.R.F./University of Wisconsin-Madison). Vitamin D derivatives have found application in the prevention and/or treatment of various diseases including osteoporosis, renal osteodystrophy, hypoparathyroidism, and psoriasis.

- Cisplatin and carboplatin cancer treating agents (Michigan State University). Cisplatin and carboplatin are dominant chemotherapy drugs and are used in treating a number of cancer types, either individually or in combination with other drugs.

- Recombinant DNA technology (Stanford University and the University of California). This technology is central to the U.S. biotechnology industry.

- Introduction of DNA into eukaryotic cells (Columbia University). These patents cover processes that are used for making valuable proteins for treating diseases.

- Atomic Force Microscope (AFM) (University of California). The AFM scans the surface of objects and uses sophisticated electronics to interpret the atomic force and create a visual image. This breakthrough technology, which makes it possible to visualize dynamic events in living cells, has been featured on eight covers of the prestigious journal, *Science*.

- Fax technology (Iowa State University). The Iowa State fax technology provided a way to maintain appropriate spacing among words being transmitted online, and was used in fax machines developed in the 1980's.

AUTM's Public Benefit Survey, conducted in 1993, provides a snapshot of additional licensed products that are in the marketplace. Even with only 45 institutions responding and with a survey limit of no more than five products per institution, over 175 products were reported, including a considerable number of pharmaceutical and diagnostic products. Many more products are currently on the market. Many others are under development and will reach the market in the coming years.

AUTM will continue to monitor and report on the activities of its members and hopes to expand the data it collects. Your thoughts on the usefulness of these data and their presentation is appreciated and encouraged.

Joyce Brinton
1995 AUTM President