

**Status on FY2003 Research Funding
at the University of Missouri**

D. Lanette Vaughn
Associate Research Analyst, Institutional Research & Planning
VaughnLa@umsystem.edu

P&B 2005, Report 7

December 2005

Institutional Research and Planning
University of Missouri System

<http://www.umsystem.edu/planning>

Executive Summary

This report highlights research funding at the University of Missouri using data provided by the National Science Foundation (NSF). More specifically, it examines research funding at the public AAU institutions and at the four campuses of the University of Missouri.

Data used in this study are from fiscal year 2003. Although more recent data are available for the University of Missouri, this is the most recent data available for all public AAU institutions. References to the “University of Missouri” or the “University” refer to the four-campus system. In this report trends in research funding have been examined from at least five years up to and including 2003.

The key findings include:

Federal Research Expenditures

- On average, federal research expenditures at the University of Missouri have increased 63% since 1999 and 277% since 1990. This compares to an increase of 50% and 150%, respectively, at the public AAU institutions (Table 1).
- From 1999 to 2003, the University’s market share in federal research expenditures among the public AAU institutions has remained about the same, ranging from 1.47 to 1.60 (Table 2).
- In terms of federal research expenditures, the University of Missouri ranked 27th among the 34 public AAU institutions in 2003. The University held the rank of 31st in 1990 (Table 3).
- Life sciences was the discipline where most of the public AAU universities made the highest percentage of their federal research expenditures (Table 4).

ORGANIZATION

The report has been organized into the following sections:

Section I:	Federal Research Expenditures (Tables 1–5)
Section II:	Research Expenditures from Industry (Table 6)
Section III:	Research Expenditures by Source of Funds (Table 7)
Section IV:	Definitions and Technical Notes

SECTION I FEDERAL RESEARCH EXPENDITURES

The federal research expenditures reported in this section include expenditures classified as science and engineering (S&E) research and development (R&D) funds. When trend data are examined, increases or decreases in funding are noted from various years as early as 1990 to 2003. In addition, a definition of *federal research expenditures* is provided in Section IV: Definitions and Technical Notes.

Federal Flow-Through Expenditures

Beginning in 1996, federal research expenditures for the University of Missouri include federal flow-through expenditures. Originating from a federal agency, these expenditures have been awarded to industry, state agencies in Missouri, foundations, or another college or university and then passed on to the University of Missouri. The University has typically classified these expenditures based on the intermediary (i.e., industry, etc.). In 1996, however, the University of Missouri began classifying these expenditures based on their original source, the federal government. Consequently, the increase in federal research expenditures in fiscal years 1996 to 2003 for the University of Missouri can be partially attributed to this NSF-accepted classification method.

Please note that annual totals in research expenditures for FY1996 and FY1997 were retroactively changed in 1999. Consequently, these revised totals will not match previously published figures for these two fiscal years.

Table 1:

Public AAU Institutions: Trends in Federal Research Expenditures for Science and Engineering

Table 1 shows the trend in federal research expenditures for the public AAU institutions and the four campuses of the University of Missouri. Percentage increases in funds are displayed for 1990 and 1998.

- On average, federal research expenditures at the University of Missouri have increased 63% since 1999 and 277% since 1990. This compares to an increase of 50% and 150%, respectively, at the public AAU institutions.

Table 1. Trends in Federal Expenditures for Science and Engineering R&D at Public AAU Institutions for 1990, 1999-2003

Institution	(\$ in thousands)						increase since 1990	increase since 1999
	1990	1999	2000	2001	2002	2003		
U of Nebraska at Lincoln (03 Central Ad)*	22,686	36,977	37,831	43,877	51,405	96,627	326%	161%
University of Pittsburgh	90,700	194,618	228,155	268,571	306,913	345,625	281%	78%
U CA Irvine	52,492	75,505	88,274	101,735	115,548	133,873	155%	77%
U CA Davis	77,424	124,463	141,740	154,937	176,644	208,327	169%	67%
U CA Los Angeles	164,442	251,999	274,162	312,858	366,762	421,174	156%	67%
U of Iowa	79,046	122,638	140,764	155,249	180,743	197,260	150%	61%
University of Virginia	58,801	108,495	119,243	122,868	152,358	173,442	195%	60%
University of Florida	64,614	122,296	120,374	139,744	167,108	194,958	202%	59%
University of Kansas	26,786	57,272	68,950	74,494	82,663	90,876	239%	59%
U WI-Madison	178,862	249,961	278,629	304,009	345,003	396,231	122%	59%
University of Michigan	180,456	334,226	364,033	396,117	444,255	516,818	186%	55%
University of Colorado	116,394	244,686	300,394	308,643	340,466	377,941	225%	54%
U of Washington	203,353	368,112	389,622	435,103	487,059	565,602	178%	54%
U of NC Chapel Hill	92,468	182,935	194,794	221,615	254,571	280,678	204%	53%
Iowa State University	34,043	54,179	59,976	62,024	71,419	82,297	142%	52%
SUNY at Buffalo	66,876	85,490	96,410	96,595	128,842	129,794	94%	52%
Pennsylvania State U	136,656	199,105	226,074	245,951	284,706	301,094	120%	51%
Indiana University	57,155	102,262	107,577	116,781	132,759	153,625	169%	50%
Michigan State University	58,221	89,835	97,112	112,359	122,595	133,820	130%	49%
Ohio State University	78,878	135,216	132,219	161,092	177,883	198,488	152%	47%
University of Arizona	92,920	178,126	187,161	199,484	211,772	259,074	179%	45%
U of IL Urbana-Champaign	117,168	185,767	193,490	195,316	214,323	266,487	127%	43%
University of Minnesota	143,810	207,761	229,958	264,289	295,301	293,266	104%	41%
U TX at Austin	109,593	164,913	178,889	195,184	219,158	231,996	112%	41%
Rutgers the State U NJ	40,977	75,664	79,711	77,156	91,205	106,060	159%	40%
U CA San Diego	182,555	292,007	326,037	343,276	359,383	400,100	119%	37%
Purdue University	64,464	95,708	92,010	98,151	107,477	129,199	100%	35%
University of Oregon	20,151	27,336	30,793	32,232	37,177	36,127	79%	32%
U MD at College Park	66,410	145,081	136,605	145,515	194,095	183,206	176%	26%
U CA Berkeley	131,717	191,025	208,338	208,080	217,297	238,206	81%	25%
SUNY at Stony Brook	55,911	93,937	96,641	93,265	108,122	112,452	101%	20%
U CA Santa Barbara	47,873	74,026	80,754	76,828	78,370	88,422	85%	19%
Texas A&M University	93,001	149,151	149,639	149,382	163,488	177,119	90%	19%
Public AAU Institution Average**	91,118	152,145	165,344	179,175	202,632	227,887	150%	50%
University of Missouri:***								
Columbia	24,422	53,875	65,420	68,435	77,742	84,211	245%	56%
Kansas City	2,767	7,206	7,490	8,176	10,795	14,232	414%	98%
Rolla	3,863	8,731	9,804	11,929	15,749	18,142	370%	108%
St Louis	1,167	4,841	4,523	4,321	4,755	4,978	327%	3%
University Total	32,219	74,653	87,237	92,861	109,041	121,563	277%	63%

Source: National Science Foundation/Division of Science Resources Statistics, Survey of Research and Development Expenditures at Colleges and Universities, FY 2003, B-27.

*U of Nebraska at Lincoln is reported for previous years, but for 2003, only U of Nebraska Central Administration data was available and is reported here.

**AAU average excludes U of Missouri-Columbia.

***Federal flow-through funds are included in the University of Missouri figures beginning in FY 1996.

If comparing data from this table with previous published tables, please notice that Texas A&M University and SUNY at Stony Brook were new members of the AAU with the 2000 data and are included for the first time that year.

Table 2:

Public AAU Institutions: Market Share Increases and Decreases in Federal Research Expenditures

An alternative approach to understanding how well the University of Missouri has "competed" with other public AAU institutions is to examine the market share of each institution over time. That is, of the total federal research expenditures secured by the public AAU institutions in a given year, what percentage of that total has each institution secured? How has that institution's market share shifted from year to year? One advantage of market share analysis is that it helps to level the playing field among major and less-than-major players who compete for research dollars. In Table 2, the market share of federal research expenditures has been calculated for the public AAU institutions in 1999, 2000, 2002, and 2003.

- Among the public AAU institutions, the market share for the University of Missouri increased from 1.47 in 1999 to 1.57 in 2000. From 2000 to 2003, the University's market share decreased from 1.57 to 1.59. Then, in 2003, the University market share decreased from 1.60 to 1.59. Overall the market share for the University of Missouri has not changed much since 1999.

Table 2. Market Share Gain or Loss in Federal Expenditures for Science and Engineering R&D at Public AAU Institutions for 1999, 2000, 2002, and 2003

Institution	(\$ in thousands)								Market Share +/- since 1999
	1999		2000		2002		2003		
	\$	Market Share	\$	Market Share	\$	Market Share	\$	Market Share	
University of Pittsburgh	194,618	3.82	228,155	4.12	306,913	4.52	345,625	4.52	0.70
U CA Los Angeles	251,999	4.95	274,162	4.95	366,762	5.40	421,174	5.51	0.57
U of Nebraska at Lincoln (03 Central Ad)*	36,977	0.73	37,831	0.68	51,405	0.76	96,627	1.26	0.54
U CA Davis	124,463	2.44	141,740	2.56	176,644	2.60	208,327	2.73	0.28
U WI-Madison	249,961	4.91	278,629	5.03	345,003	5.08	396,231	5.19	0.28
U CA Irvine	75,505	1.48	88,274	1.59	115,548	1.70	133,873	1.75	0.27
University of Michigan	334,226	6.56	364,033	6.57	444,255	6.54	516,818	6.76	0.20
U of Washington	368,112	7.22	389,622	7.03	487,059	7.17	565,602	7.40	0.18
U of Iowa	122,638	2.41	140,764	2.54	180,743	2.66	197,260	2.58	0.17
University of Florida	122,296	2.40	120,374	2.17	167,108	2.46	194,958	2.55	0.15
University of Colorado	244,686	4.80	300,394	5.42	340,466	5.01	377,941	4.95	0.14
University of Virginia	108,495	2.13	119,243	2.15	152,358	2.24	173,442	2.27	0.14
U of Missouri-Total	74,653	1.47	87,237	1.57	109,041	1.60	121,563	1.59	0.13
U of NC Chapel Hill	182,935	3.59	194,794	3.51	254,571	3.75	280,678	3.67	0.08
University of Kansas	57,272	1.12	68,950	1.24	82,663	1.22	90,876	1.19	0.07
Pennsylvania State U	199,105	3.91	226,074	4.08	284,706	4.19	301,094	3.94	0.03
SUNY at Buffalo	85,490	1.68	96,410	1.74	128,842	1.90	129,794	1.70	0.02
Iowa State University	54,179	1.06	59,976	1.08	71,419	1.05	82,297	1.08	0.01
Indiana University	102,262	2.01	107,577	1.94	132,759	1.95	153,625	2.01	0.00
Michigan State University	89,835	1.76	97,112	1.75	122,595	1.80	133,820	1.75	-0.01
Ohio State University	135,216	2.65	132,219	2.39	177,883	2.62	198,488	2.60	-0.06
University of Oregon	27,336	0.54	30,793	0.56	37,177	0.55	36,127	0.47	-0.06
Rutgers the State U NJ	75,664	1.48	79,711	1.44	91,205	1.34	106,060	1.39	-0.10
University of Arizona	178,126	3.50	187,161	3.38	211,772	3.12	259,074	3.39	-0.11
U of IL Urbana-Champaign	185,767	3.65	193,490	3.49	214,323	3.15	266,487	3.49	-0.16
Purdue University	95,708	1.88	92,010	1.66	107,477	1.58	129,199	1.69	-0.19
U TX at Austin	164,913	3.24	178,889	3.23	219,158	3.22	231,996	3.04	-0.20
University of Minnesota	207,761	4.08	229,958	4.15	295,301	4.35	293,266	3.84	-0.24
U CA Santa Barbara	74,026	1.45	80,754	1.46	78,370	1.15	88,422	1.16	-0.30
SUNY at Stony Brook	93,937	1.84	96,641	1.74	108,122	1.59	112,452	1.47	-0.37
U MD at College Park	145,081	2.85	136,605	2.46	194,095	2.86	183,206	2.40	-0.45
U CA San Diego	292,007	5.73	326,037	5.88	359,383	5.29	400,100	5.24	-0.50
Texas A&M University	149,151	2.93	149,639	2.70	163,488	2.41	177,119	2.32	-0.61
U CA Berkeley	191,025	3.75	208,338	3.76	217,297	3.20	238,206	3.12	-0.63
	5,095,425	100.00	5,543,596	100.00	6,795,911	100.00	7,641,827	100.00	

Source: National Science Foundation/Division of Science Resources Statistics, Survey of Research and Development Expenditures at Colleges and Universities, FY 2003, B-27.

*U of Nebraska at Lincoln is reported for previous years, but for 2003, only U of Nebraska Central Administration data was available and is reported here.

If comparing data from this table with previous published tables, please notice that Texas A&M University and SUNY at Stony Brook were new members of the AAU with the 2000 data and are included for the first time that year.

Market Share (MS): An institution's federal research expenditures in a given year divided by the federal research expenditures for all public AAU institutions in the same year.

Table 3:
Public AAU Institutions: The University of Missouri's Rank in Federal Research Expenditures

Table 3 ranks the public AAU institutions in terms of federal research dollars secured in 1990 and 2003.

- The University of Missouri ranked 27th among the 34 public AAU institutions in 2003. This is an improvement over its 1990 ranking (31st).

Table 3. Federal Expenditures for Science and Engineering R&D: Changes in Rank Among the Public AAU Institutions between 1990 and 2003

(\$ in thousands)

1990			2003		
Rank	Institution	\$	Rank	Institution	\$
1	U of Washington	203,353	1	U of Washington	565,602
2	U of California-San Diego	182,555	2	U of Michigan	516,818
3	U of Michigan	180,456	3	U of California-Los Angeles	421,174
4	U of Wisconsin-Madison	178,862	4	U of California-San Diego	400,100
5	U of California-Los Angeles	164,442	5	U of Wisconsin-Madison	396,231
6	U of Minnesota	143,810	6	U of Colorado	377,941
7	Pennsylvania State U	136,656	7	U of Pittsburgh	345,625
8	U of California-Berkeley	131,717	8	Pennsylvania State U	301,094
9	U of Illinois-Urbana	117,168	9	U of Minnesota	293,266
10	U of Colorado	116,394	10	U of N Carolina-Chapel Hill	280,678
11	U of Texas-Austin	109,593	11	U of Illinois-Urbana	266,487
12	Texas A&M University	93,001	12	U of Arizona	259,074
13	U of Arizona	92,920	13	U of California-Berkeley	238,206
14	U of N Carolina-Chapel Hill	92,468	14	U of Texas-Austin	231,996
15	U of Pittsburgh	90,700	15	U of California-Davis	208,327
16	U of Iowa	79,046	16	Ohio State U	198,488
17	Ohio State U	78,878	17	U of Iowa	197,260
18	U of California-Davis	77,424	18	U of Florida	194,958
19	SUNY-Buffalo	66,876	19	U of Maryland-College Park	183,206
20	U of Maryland-College Park	66,410	20	Texas A&M University	177,119
21	U of Florida	64,614	21	U of Virginia	173,442
22	Purdue U	64,464	22	Indiana U	153,625
23	U of Virginia	58,801	23	U of California-Irvine	133,873
24	Michigan State U	58,221	24	Michigan State U	133,820
25	Indiana U	57,155	25	SUNY-Buffalo	129,794
26	SUNY at Stony Brook	55,911	26	Purdue U	129,199
27	U of California-Irvine	52,492		University Of Missouri-Total	121,563
28	U of California-Santa Barbara	47,873	27	SUNY at Stony Brook	112,452
29	Rutgers, the State U of NJ	40,977	28	Rutgers, the State U of NJ	106,060
30	Iowa State U	34,043	29	U of Nebraska at Lincoln (03 Central Ad)*	96,627
	University Of Missouri-Total	32,219	30	U of Kansas	90,876
31	U of Kansas	26,786	31	U of California-Santa Barbara	88,422
32	U of Missouri-Columbia	24,422	32	U of Missouri-Columbia	84,211
33	U of Nebraska at Lincoln (03 Central Ad)*	22,686	33	Iowa State U	82,297
34	U of Oregon	20,151	34	U of Oregon	36,127

Source: National Science Foundation/Division of Science Resources Statistics, Survey of Research and Development Expenditures at Colleges and Universities, FY 2003, B-27.

*U of Nebraska at Lincoln is reported for previous years, but for 2003, only U of Nebraska Central Administration data was available and is reported here.

**Federal flow-through funds are included in the University of Missouri figures beginning in FY 1996.

If comparing data from this table with previous published tables, please notice that Texas A&M University and SUNY at Stony Brook were new members of the AAU with the 2000 data and are included for the first time that year.

Table 4:
Distribution of Federal Research Expenditures by Field

Table 4 displays the federal research expenditures by discipline area for the University of Missouri and other public AAU institutions.

- In 2003, the majority of federal research funds expended by the public AAU institutions were in the life sciences (56%) followed by engineering (14%), the physical sciences (11%) and environmental sciences (6%).
- The University of Missouri-Columbia campus very closely mirrored the AAU institution average in life sciences and engineering 74% and 10% respectively.

Table 4. Federal R&D Expenditures at the Public AAU Institutions by Science and Engineering Field, FY2003

Institution	Engi- neering	Physical	Environ- mental	Math & computer	Life sciences	Psy- chology	Social Sciences	Sciences Nec	Total (\$ in thousands)
	Row Percentages								
U of Washington	8	5	14	2	69	1	1	0	565,602
University of Michigan	22	5	1	1	55	2	13	0	516,818
U CA Los Angeles	10	9	3	3	71	2	2	0	421,174
U CA San Diego	8	8	18	13	51	1	1	0	400,100
U WI-Madison	15	8	9	3	54	5	5	0	396,231
University of Colorado	6	15	16	2	55	2	2	0	377,941
University of Pittsburgh	3	4	0	1	87	2	1	1	345,625
Pennsylvania State U	37	13	8	6	29	3	3	1	301,094
University of Minnesota	9	7	2	4	72	3	3	0	293,266
U of NC Chapel Hill	0	6	4	3	78	2	7	0	280,678
U of IL Urbana-Champaign	25	12	5	33	20	2	2	1	266,487
University of Arizona	11	24	3	3	55	1	4	0	259,074
U CA Berkeley	27	24	2	3	37	3	3	0	238,206
U TX at Austin	35	22	5	16	13	3	5	1	231,996
U CA Davis	9	7	6	2	74	0	2	0	208,327
Ohio State University	16	9	3	3	59	3	8	0	198,488
U of Iowa	6	7	1	1	83	2	1	0	197,260
University of Florida	20	10	2	4	61	3	1	0	194,958
U MD at College Park	26	23	5	12	16	2	16	0	183,206
Texas A&M University	22	9	34	6	26	1	1	0	177,119
University of Virginia	14	8	1	4	69	3	1	0	173,442
Indiana University	0	11	1	5	73	5	5	0	153,625
U CA Irvine	8	11	2	5	69	2	3	0	133,873
Michigan State University	6	23	0	3	55	3	9	0	133,820
SUNY at Buffalo	15	6	1	3	72	2	1	0	129,794
Purdue University	32	11	2	6	42	3	3	0	129,199
SUNY at Stony Brook	9	17	11	6	54	2	1	0	112,452
Rutgers the State U NJ	13	12	11	8	48	4	3	0	106,060
U of Nebraska at Lincoln (03 Central Ad)*	8	8	3	4	65	5	5	2	96,627
University of Kansas	9	6	3	1	75	1	5	1	90,876
U CA Santa Barbara	36	22	13	11	4	7	6	0	88,422
University of Missouri-Columbia	10	3	1	2	74	5	5	0	84,211
Iowa State University	27	8	4	6	45	0	10	1	82,297
University of Oregon	4	48	8	19	15	6	0	0	36,127
Public AAU Institution Distribution	14	11	6	6	56	2	4	0	7,604,475

Source: National Science Foundation/Division of Science Resources Statistics, Survey of Research and Development Expenditures at Colleges and University, FY 2003, B-37.

*U of Nebraska at Lincoln is reported for previous years, but for 2003, only U of Nebraska Central Administration data was available and is reported here.

IR&P/lv/ag 12/05

***Table 5:
Public AAU Institutions: Market Share of Federal Research Expenditures within Each Discipline Area***

Table 5 displays each public AAU institution's market share within the eight discipline areas.

- Market share leaders in each discipline area were: University of Michigan in engineering (10.5%), the University of Arizona in the physical sciences (7.6%), the University of Washington in environmental sciences (15.6%), University of Illinois Urbana-Champaign in math and computer science (20.9%), the University of Washington in life sciences (9.2%), University Wisconsin-Madison in psychology (11.1%), University of Michigan in the social sciences (23.1%) and University of Pittsburg in other sciences (18.0%).

Table 5. Market Share in Federal R&D Expenditures by Discipline Area Among the Public AAU Institutions, FY 2003

Institution	Engi- neering	Physical	Environ- mental	Math & computer	Life sciences	Psy- chology	Social Sciences	Other sciences	Total (\$ in thousands)
U of Washington	4.0	3.2	15.6	2.7	9.2	4.2	2.1	0.0	565,602
University of Michigan	10.5	3.1	1.0	1.7	6.7	4.9	23.1	0.5	516,818
U CA Los Angeles	3.7	4.8	2.2	3.3	7.0	4.3	2.6	9.1	421,174
U CA San Diego	3.0	3.8	14.6	12.3	4.8	2.9	1.4	0.0	400,100
U WI-Madison	5.5	4.0	7.4	3.0	5.0	11.1	6.5	0.0	396,231
University of Colorado	2.2	7.0	12.5	1.7	4.9	4.5	3.0	4.8	377,941
University of Pittsburgh	1.0	1.8	0.1	1.1	7.0	3.4	1.6	18.0	345,625
Pennsylvania State U	10.1	4.9	4.8	4.4	2.0	5.4	3.3	8.0	301,094
University of Minnesota	2.5	2.4	1.2	3.1	5.0	4.5	2.6	0.0	293,266
U of NC Chapel Hill	0.0	2.0	2.4	2.1	5.1	2.9	6.3	0.0	280,678
U of IL Urbana-Champaign	6.0	3.9	2.7	20.9	1.3	3.5	1.4	12.2	266,487
University of Arizona	2.5	7.6	1.4	1.7	3.3	1.3	3.3	0.2	259,074
U CA Berkeley	5.8	7.1	1.1	1.7	2.1	4.2	2.2	2.4	238,206
U TX at Austin	7.3	6.2	2.1	8.9	0.7	3.5	3.9	15.6	231,996
U CA Davis	1.7	1.7	2.5	0.9	3.6	0.3	1.0	3.6	208,327
Ohio State University	2.9	2.2	1.1	1.4	2.7	2.7	5.0	3.1	198,488
U of Iowa	1.0	1.7	0.2	0.4	3.8	2.4	0.4	0.0	197,260
University of Florida	3.5	2.3	0.8	1.7	2.8	3.3	0.6	0.0	194,958
U MD at College Park	4.3	5.2	1.8	5.2	0.7	2.1	9.5	0.0	183,206
Texas A&M University	3.6	2.0	12.3	2.7	1.1	1.1	0.5	0.2	177,119
University of Virginia	2.2	1.7	0.5	1.5	2.8	3.1	0.4	0.6	173,442
Indiana University	0.1	2.1	0.3	1.7	2.6	4.0	2.4	0.7	153,625
U CA Irvine	1.0	1.8	0.6	1.5	2.2	1.7	1.2	0.1	133,873
Michigan State University	0.7	3.7	0.1	1.1	1.7	2.2	3.9	2.1	133,820
SUNY at Buffalo	1.7	1.0	0.1	1.0	2.2	1.4	0.4	0.1	129,794
Purdue University	3.8	1.8	0.4	1.9	1.3	1.8	1.5	2.3	129,199
SUNY at Stony Brook	0.9	2.3	2.5	1.6	1.4	1.3	0.3	0.0	112,452
Rutgers the State U NJ	1.3	1.6	2.4	1.9	1.2	2.5	1.0	0.0	106,060
U of Nebraska at Lincoln (03 Central Ad)*	0.7	0.9	0.7	1.0	1.5	2.7	1.5	7.4	96,627
University of Kansas	0.7	0.6	0.5	0.2	1.6	0.6	1.4	4.3	90,876
U CA Santa Barbara	2.9	2.4	2.4	2.4	0.1	3.1	1.7	1.3	88,422
University of Missouri-Columbia	0.7	0.3	0.2	0.5	1.5	2.1	1.5	0.0	84,211
Iowa State University	2.0	0.8	0.7	1.1	0.9	0.1	2.6	3.2	82,297
University of Oregon	0.1	2.1	0.6	1.6	0.1	1.1	0.0	0.1	36,127
Public AAU Institution Distribution	1,100,364	820,506	490,445	419,845	4,260,720	189,872	300,479	22,244	7,604,475

Source: National Science Foundation/Division of Science Resources Statistics, Survey of Research and Development Expenditures at Colleges and University, FY 2003, B-37.

*U of Nebraska at Lincoln is reported for previous years, but for 2003, only U of Nebraska Central Administration data was available and is reported here.

IR&P/lv/ag 12/05

SECTION II

RESEARCH EXPENDITURES FROM INDUSTRY

Table 6:
Public AAU Institutions: Industry-Sponsored Research Expenditures

Table 6 shows the growth in industry-sponsored research expenditures for the public AAU institutions from 1990 to 2003 and the gain or loss from 1999 to 2003. The institutions are arranged in descending order based on gain or loss since 1999. Please note that a definition of *industry-sponsored research expenditures* is provided in Section III: Definitions and Technical Notes.

- University of Arizona and Pennsylvania State University, show the largest gains in industry-sponsored research expenditures among the public AAU institutions.
- The institutions that lead the public AAU group in terms of industry-sponsored research are Pennsylvania State University (\$77.6 million) and University of Washington (\$48 million)
- The University of Missouri secured \$10.9 million in industry-sponsored research expenditures in 2002 and almost \$9.9 million in 2003.

Table 6. Industry-Sponsored R&D Expenditures at Public AAU Institutions for 1990, 1999-2003

Institution	(\$ in thousands)						\$ Gain/Loss since 1990	\$ Gain/Loss since 1999
	1990	1999	2000	2001	2002	2003		
University of Arizona	10,246	16,660	22,412	22,934	23,104	31,079	20,833	14,419
Pennsylvania State U	34,806	65,698	64,393	67,658	67,131	77,660	42,854	11,962
U of Nebraska at Lincoln (03 Central Ad)*	3,394	5,466	5,991	5,908	6,805	14,314	10,920	8,848
U CA Santa Barbara	2,655	4,742	5,499	6,001	10,482	13,550	10,895	8,808
U CA Davis	7,461	16,242	17,891	16,989	20,754	22,688	15,227	6,446
Purdue University	11,632	28,856	29,997	29,765	29,614	34,720	23,088	5,864
SUNY at Buffalo	2,118	5,485	5,590	11,598	12,726	10,575	8,457	5,090
U MD at College Park	14,229	3,053		7,315	5,078	8,060	-6,169	5,007
Michigan State University	4,557	7,647	11,230	10,953	11,458	11,307	6,750	3,660
Indiana University	2,316	4,820	5,384	6,375	5,312	8,079	5,763	3,259
U WI Madison	12,123	14,172	16,127	17,237	16,746	15,918	3,795	1,746
University of Michigan	27,128	34,432	35,515	34,439	33,252	36,087	8,959	1,655
Rutgers the State U NJ	6,754	9,833	8,843	10,965	11,772	10,821	4,067	988
U of NC Chapel Hill	2,179	5,886	6,835	6,971	6,601	6,551	4,372	665
U CA Berkeley	10,892	21,928	27,851	26,791	24,999	22,460	11,568	532
U of IL Urbana-Champaign	20,762	12,864	12,693	10,992	11,796	13,253	-7,509	389
University of Colorado	7,426	9,867	9,291	9,002	11,822	10,239	2,813	372
University of Minnesota	18,086	23,933	26,392	26,454	26,572	24,152	6,066	219
U of Iowa	6,827	20,778	17,262	21,394	19,169	20,954	14,127	176
Iowa State University	5,525	14,905	15,075	13,177	16,047	14,384	8,859	-521
SUNY at Stony Brook	2,426	7,416	7,567	7,026	5,947	4,950	2,524	-2,466
U CA San Diego	9,135	31,356	34,541	36,845	32,299	28,868	19,733	-2,488
U of Washington	22,215	51,319	57,405	43,312	46,702	48,222	26,007	-3,097
University of Virginia	6,406	12,989	17,266	7,733	9,026	9,053	2,647	-3,936
U CA Los Angeles	8,310	34,404	33,427	32,539	31,686	30,425	22,115	-3,979
University of Florida	12,237	28,183	34,879	36,417	19,017	23,893	11,656	-4,290
U CA Irvine	3,115	16,539	18,615	15,803	14,261	11,101	7,986	-5,438
Ohio State University	14,744	52,034	57,075	54,736	51,135	45,957	31,213	-6,077
U TX Austin	3,507	39,729	24,740	30,310	26,114	32,174	28,667	-7,555
Texas A&M University	26,197	34,722	31,084	35,110	33,300	27,006	809	-7,716
University of Pittsburgh	6,481	12,990	14,676	14,817	13,023	4,427	-2,054	-8,563
University of Kansas	4,473	14,393	15,712	4,155	5,098	2,821	-1,652	-11,572
Public AAU Institution Average**	10,324	20,729	22,299	21,304	20,589	21,117	10,793	388
University of Missouri:								
Columbia	9,130	3,832	4,007	4,654	5,042	4,802	-4,328	970
Kansas City	1,383	427	660	1,665	1,371	1,215	-168	788
Rolla	2,186	2,079	2,543	3,088	4,282	3,540	1,354	1,461
St Louis	69	386	461	395	205	304	235	-82
University Total	12,768	6,724	7,671	9,802	10,900	9,861	-2,907	3,137

Source: National Science Foundation/Division of Science Resources Statistics, Survey of Research and Development Expenditures at Colleges and University, FY 2003, B-32. Office of Sponsored Programs, Samuel Peterson for UM Campuses.

*U of Nebraska at Lincoln is reported for previous years, but for 2003, only U of Nebraska Central Administration data was available and is reported here.

**AAU average excludes U of Missouri-Columbia.

If comparing data from this table with previous published tables, please notice that Texas A&M University and SUNY at Stony Brook were new members of the AAU in 2000 and have been added to the table above.

Data were unavailable for the University of Oregon.

Section III

RESEARCH EXPENDITURES BY SOURCE OF FUNDS

Universities have sources, other than federal agencies, for funding research operations. These sources include funds from state & local agencies, business & industry, funds that are provided by the institution itself and other funding sources.

Table 7:
Public AAU Institutions: Sources of Research Expenditures

Table 7 shows the sources of research expenditures for the public AAU institutions. The institutions are arranged in descending order, based on the institution's percentage of research funds that are provided by the federal government.

- The University of Colorado, received 87% of their research expenditures from the federal government, ranking them at the top among the public AAU institutions.
- The University of Missouri-Columbia receives 41% of the research funds it receives from the federal government.
- The University of Missouri funds a higher percentage of its research program (34% to 52%, depending on campus) with institutional funds than almost all of the other public AAU institutions.

Table 7. Total R&D Expenditures at the Public AAU Institutions by Source of Funds, FY2003

Institution	Federal Gov't	State & Local	Industry	Institutional*	Other	Total (\$ in thousands)
University of Colorado	87%	2%	2%	5%	4%	436,761
University of Pittsburgh	84%	3%	1%	6%	6%	409,684
University of Virginia	84%	0%	4%	6%	5%	206,199
U of Washington	83%	2%	7%	6%	2%	684,814
University of Oregon	81%	1%	1%	10%	7%	44,604
U of NC Chapel Hill	72%	4%	2%	22%	0%	390,542
U of Iowa	68%	3%	7%	19%	4%	292,035
U TX at Austin	67%	6%	9%	12%	5%	343,854
University of Michigan	66%	2%	5%	20%	7%	780,054
U CA San Diego	62%	4%	4%	19%	11%	646,508
U CA Santa Barbara	59%	2%	9%	18%	12%	149,130
University of Minnesota	58%	12%	5%	14%	12%	508,557
U CA Irvine	57%	5%	5%	21%	12%	234,656
University of Arizona	57%	4%	7%	28%	5%	454,941
U MD at College Park	57%	6%	3%	31%	3%	321,899
Pennsylvania State U	56%	11%	15%	18%	0%	533,427
SUNY at Stony Brook	56%	2%	2%	32%	7%	200,330
U WI-Madison	55%	6%	2%	28%	10%	721,248
SUNY at Buffalo	54%	3%	4%	28%	10%	240,180
U of Illinois Urbana-Cham	54%	11%	3%	29%	4%	493,581
University of Kansas	53%	4%	2%	36%	6%	173,024
U CA Los Angeles	50%	8%	4%	24%	14%	849,357
U CA Berkeley	47%	7%	4%	28%	14%	507,186
Indiana University	45%	1%	2%	37%	14%	337,669
University of Florida	45%	17%	6%	29%	4%	429,734
U CA Davis	43%	8%	5%	34%	10%	482,145
Purdue University	42%	14%	11%	33%	0%	309,476
Michigan State University	42%	18%	4%	33%	4%	321,410
Iowa State University	41%	21%	7%	29%	1%	199,566
Ohio State University	40%	2%	9%	38%	11%	496,438
Texas A&M University	39%	25%	6%	28%	3%	456,235
Rutgers the State U NJ	39%	13%	4%	35%	10%	274,576
U of Nebraska at Lincoln (03 Central Ad)*	35%	3%	5%	50%	7%	276,424
Public AAU Institution Average**	57%	7%	5%	24%	7%	
University of Missouri:						
Columbia	41%	11%	2%	43%	3%	205,212
Kansas City	46%	0%	4%	45%	5%	31,105
Rolla	50%	1%	10%	34%	5%	35,998
St Louis	39%	1%	2%	52%	7%	12,818
University Average	44%	3%	5%	44%	5%	

Source: National Science Foundation/Division of Science Resources Statistics, Survey of Research and Development Expenditures at Colleges and University, FY 2003, B-30. Office of Sponsored Programs, Samuel Peterson for UM Campuses.

*U of Nebraska at Lincoln is reported for previous years, but for 2003, only U of Nebraska Central Administration data was available and is reported here.

**AAU average excludes U of Missouri-Columbia.

Institutional funds include: 1) institutionally financed funds and 2) unreimbursed costs.

IR&P/lv/ag 12/05

Section IV

DEFINITIONS AND TECHNICAL NOTES

The following definitions, provided by the National Science Foundation (NSF), are most relevant to the tables in this report:

Federal research expenditures: when funds for research from the federal government are actually spent they are then considered “expenditures”. For example, if the University received a two-year, two million dollar grant from NASA in FY1993 and spent \$1.5 million the first year and \$0.5 million in the second year, the federal expenditures would be \$1.5 million for FY1993 and \$0.5 million for FY1994. The reporting of expenditures, in contrast to obligations, provides a more accurate picture of an institution’s research performance because it represents funds that have been already spent as compared to funds that have been promised or are expected. Furthermore, expenditure figures are less likely to show major shifts from year to year because funds received for multi-year grants are only reported in the year that they are spent.

Industry-sponsored research expenditures: these are funds provided by profit making organizations and expended by the University for research-related purposes. These amounts are reported in the fiscal year that they are expended.

The National Science Foundation has historically reported research obligations and expenditures from a number of different perspectives. In this report, specifically, academic Science & Engineering (S&E) obligations and expenditures for Research & Development (R&D) are examined. Thus, funds received from the federal government for Plant, Facilities & Equipment; Fellowships, Traineeships, and Training Grants; General Support, and for other categories have been excluded. For brevity, "Science and Engineering" and "Research and Development" have not been repeated in the text of this document.

For further clarification, please see “IB99-4: Defining Federal Research Expenditures, Federal Research Obligations, and Federal Research Awards” at the following website:

<http://www.umsystem.edu/ums/departments/fa/planning/researchfunding/briefs/briefsib994.shtml>.

Questions or Comments

Questions or comments should be directed to Dr. Lanette Vaughn, Associate Research Analyst, Institutional Research and Planning, 717 Lewis Hall, University of Missouri System, (573) 884-9201, vaughnla@umsystem.edu.