

DATA BRIEF

Academic R&D Expenditures Outpace Inflation in FY 1994

by M. Marge Machen

Federally financed academic R&D growth held firm in FY 1994.

Academic expenditures for total separately budgeted research and development (R&D) activities in the sciences and engineering (S&E) reached \$21 billion dollars in FY 1994—an increase of nearly 6 percent from 1993 levels. When adjusted for inflation, academic R&D spending grew almost 4 percent, matching the average annual rate of real growth during the last 5 years.

Federally financed spending for separately budgeted R&D expenditures increased by almost 6 percent (4 percent in constant dollars) in 1994 to a total of \$12.7 billion. The Federal Government provided 60 percent of the research dollars expended at universities and colleges in FY 1994, the same proportion reached in 1993, indicating a leveling after a period of slow decline since 1983, when the Federal share was 63 percent of total.

R&D spending from non-Federal sources reached \$8.4 billion in FY 1994, an increase of more than 5 percent (3 percent in constant dollars). Non-Federal sources, while accounting for only two-fifths of all academic R&D spending, have for years experienced the fastest rates of growth of all spending sources. Gains in institutional funds and in the catchall "all other sources" category (including private foundations and voluntary sources) each rose 7 percent, whereas funding from industry rose 5 percent. Of all the non-Federal sources, only State and local governments reported little growth in university R&D support (less than 0.5 percent) in FY 1994 (table 1).

Academic institutions have historically devoted approximately two-thirds of their R&D efforts to the performance of basic research, a trend that was uninterrupted in 1994. Academic basic research funds rose 6 percent in 1994 (4 percent in constant dollars), to \$14.1 billion. The Federal share —

Table 1. R&D expenditures at universities and colleges, by source of funds

[Millions of dollars]

Source and field	Fiscal Year 1994	Fiscal Year 1993	Fiscal Year 1984
Total.....	\$21,081	\$19,940	\$8,620
(In 1987 dollars) ^{1/}	16,811	16,211	9,483
Source of funds:			
Federal Government.....	12,661	11,956	5,431
State and local governments.....	1,562	1,559	690
Industry.....	1,430	1,361	475
Institutional funds.....	3,838	3,578	1,411
All other sources.....	1,590	1,486	613
Character of work:			
Basic research.....	14,095	13,302	5,733
Applied research and development.....	6,986	6,638	2,887

^{1/} Based on the gross domestic product implicit price deflator.

NOTE: Because of rounding, figures may not add to the total shown.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges, Fiscal Year 1994

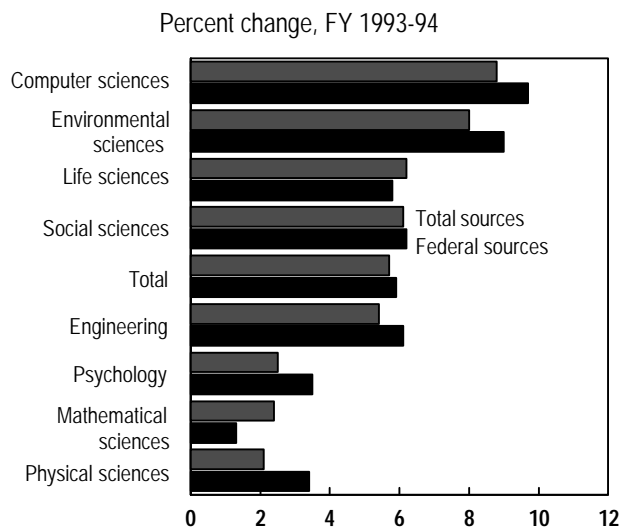
\$8.9 billion—accounted for 63 percent of the basic research total. Combined applied research and development activities totaled \$7.0 billion, up 5 percent between 1993 and 1994.

R&D expenditures increased faster than the 3-percent rate of inflation in five of the eight major science and engineering fields for which data are available. Rates of growth range from a high of 9 percent in computer sciences to a low of 2 percent in physical sciences (chart 1). Federal funding in all fields but mathematical sciences kept pace with inflation in 1994. Academic spending in engineering rose 5 percent, to \$3.3 billion in 1994, with civil engineering increasing the most, by nearly 7 percent.

Electronic Dissemination

SRS data are available through the World Wide Web (<http://www.nsf.gov/sbe/srs/stats.htm>) and also through STIS, NSF's online Science and Technology Information System, described in NSF flyer 95-64, "Getting NSF Information and Publications." For a paper copy of the flyer, call 703-306-1130. For an electronic copy of the *STIS User's Guide*, send an e-mail with the phrase "get NSF9410.TXT" to stisserv@nsf.gov. For NSF's Telephonic Device for the Deaf, dial 703-306-0090.

Chart 1. R&D Expenditures at universities and colleges, by field



SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges Fiscal Year 1994

R&D spending for the leading 20 university performers in FY 1994 totaled \$6.7 billion, and constituted a 32-percent and 36-percent share of total and federally funded spending, respectively (table 2). The largest 100 academic R&D performers expended \$16.9 billion, and accounted for 80 percent of the R&D total and 83 percent of federally financed expenditures. These 1994 shares are similar to those reported during the past decade.

This Data Brief was prepared by M. Marge Machen, National Science Foundation, Division of Science Resources Studies, 4201 Wilson Boulevard, Suite 965, Arlington, VA 22230. For a free copy, write to the above address, call 703-306-1773, or send e-mail to srspubs@nsf.gov.

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Table 2. Twenty institutions reporting the highest academic R&D expenditures in the sciences and engineering: FY 1993-94

[Millions of dollars]

Institution	Total		Federal	
	Fiscal year 1994	Fiscal year 1993	Fiscal year 1994	Fiscal year 1993
Total all institutions 1/.....	21,081	19,940	12,661	11,956
Total, Leading 20 institutions.....	6,679	6,417	4,540	4,311
1. Johns Hopkins U 2/.....	784	746	712	674
2. University of Michigan.....	431	426	265	250
3. U WI Madison.....	393	372	225	214
4. MA Institute of Tech.....	364	366	271	267
5. Texas A&M University.....	356	323	137	123
6. University of Washington.....	344	335	281	269
7. U CA San Diego.....	332	307	266	243
8. Stanford University.....	319	307	269	254
9. University of Minnesota.....	318	332	181	175
10. Cornell University.....	313	311	194	195
11. U CA San Francisco.....	312	315	213	210
12. Pennsylvania State U.....	303	283	169	160
13. U CA Berkeley.....	290	284	153	156
14. U CA Los Angeles.....	280	278	190	189
15. Harvard University.....	278 e	257	190	182
16. University of Arizona	270	236	146	113
17. U TX Austin.....	261	249	150	139
18. U of Pennsylvania.....	251	234	186	174
19. University of IL Urbana.....	245	253	139	141
20. Columbia University.....	236	205	203	183
Total, all other institutions.....	14,402	13,523	8,121	7,645

1/ Data do not include R&D performed by university-administered federally funded research and development centers.

2/ Data for the Johns Hopkins University include the Applied Physics Laboratory, which reported \$459 million in total and \$447 million in federally funded R&D expenditures for 1994 and \$447 million in total and \$431 million in federally financed expenditures for 1993.

NOTE: Because of rounding, figures may not add to the total shown.

KEY: e-estimate

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges, Fiscal Year 1994

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