

DATA BRIEF

Academic R&D Spending Continues Steady Growth in FY 1998

by M. Marge
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*Federal Government
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R&D performance
holds at 58 to 60
percent over the last
decade*

Separately budgeted research and development (R&D)¹ expenditures in academic science and engineering programs increased in fiscal year (FY) 1998, reaching \$25.7 billion—up 6 percent over 1997 levels. When adjusted for inflation, academic R&D spending increased 5 percent in FY 1998, compared with 3.3 percent constant dollar average annual growth during the 1993-98 period. This information is based on the latest statistics from the National Science Foundation's annual Survey of Research and Development Expenditures at Universities and Colleges.

Sources of R&D Funding

Federally financed academic R&D spending increased nearly 5 percent (3 percent in constant dollars) in FY 1998, to \$15.1 billion. The Federal share of the academic annual R&D performance total has fluctuated narrowly between 58 and 60 percent over the last decade.

R&D expenditures from all non-Federal sources combined increased 9 percent (8 percent in constant dollars), reaching \$10.6 billion in FY 1998. Institutional funds increased the fastest—11 percent—followed by gains of 10 percent each from industry and all other non-government sources (including private foundations and voluntary sources). State and local governments' R&D funding rose 2 percent (table 1).

Total expenditures devoted to basic research at universities and colleges rose to \$17.4 billion, a 5-percent increase over FY 1997 or

a 4-percent gain after adjusting for inflation. The Federal Government provided \$10.9 billion for a 5-percent increase (3 percent in constant dollars).

Applied research and development activities combined totaled \$8.4 billion in FY 1998, up nearly 9 percent over FY 1997 levels. The Federal Government provided 50 percent of the applied R&D total in FY 1998.

Fields of Research

Academic R&D spending in engineering increased 6 percent over FY 1997 levels, and nearly 7 percent in the sciences. R&D spending grew faster than the 1.3-percent rate of inflation in 7 of the 9 major science and engi-

Table 1. R&D expenditures at universities and colleges, by source of funds: fiscal years 1993 and 1997-98

(In millions of dollars)

| Source and field | Fiscal year 1998 | Fiscal year 1997 | Fiscal year 1993 |
|---------------------------------------|------------------|------------------|------------------|
| Total..... | 25,735 | 24,188 | 19,951 |
| (In 1996 dollars) ¹ | 24,985 | 23,784 | 21,243 |
| Source of funds: | | | |
| Federal Government..... | 15,077 | 14,420 | 11,956 |
| State and local governments..... | 1,928 | 1,883 | 1,559 |
| Industry..... | 1,870 | 1,700 | 1,360 |
| Institutional funds..... | 4,999 | 4,495 | 3,589 |
| All other sources..... | 1,861 | 1,690 | 1,486 |
| Character of work: | | | |
| Basic research..... | 17,382 | 16,498 | 13,303 |
| Applied research and development..... | 8,353 | 7,690 | 6,648 |

Electronic Dissemination

SRS data are available through the World Wide Web (<http://www.nsf.gov/sbe/srs/>). For more information about obtaining reports, contact paperpubs@nsf.gov or call 301-947-2722. For NSF's Telephonic Device for the Deaf, dial 703-292-5090.

¹Separately budgeted research and development (simply referred to as R&D throughout the remainder of this report) includes all funds expended for activities specifically organized to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organizational unit within the institution.

¹Based on the gross domestic product implicit price deflator.

NOTE: Because of rounding, detail may not add to totals.

SOURCE: National Science Foundation/Division of Science Resources Studies, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1998

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neering areas for which data were collected. The exceptions were the social sciences and the catch-all other sciences, not elsewhere classified, (n.e.c.) category. Rates of growth ranged from a high of 13 percent in psychology to a 9-percent decrease in other sciences, n.e.c. Federally financed expenditures kept pace with inflation in 8 of the 9 major science and engineering fields, the exception being in the other sciences, n.e.c.

University Shares

Academic R&D expenditures historically have been highly concentrated in relatively few institutions. The 100 leading research institutions (out of the 547 institutions represented in this survey) accounted for 82 percent of Federally financed R&D spending and 81 percent of all R&D dollars in FY 1998. The 20 leading research performers represented a 34-percent share of Federally sponsored R&D expenditures and 31 percent of total academic R&D spending (table 2).

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Table 2. Twenty institutions reporting the largest academic R&D expenditures in the sciences and engineering: fiscal years 1997-98

(In millions of dollars)

| Institution | Total | | Federal | |
|---------------------------------------|-------------|-------------|-------------|-------------|
| | Fiscal year | Fiscal year | Fiscal year | Fiscal year |
| | 1998 | 1997 | 1998 | 1997 |
| Total ¹ | 25,735 | 24,188 | 15,077 | 14,420 |
| Total, leading 20 institutions..... | 8,090 | 7,639 | 5,105 | 4,947 |
| 1. Johns Hopkins U ² | 854 | 829 | 753 | 725 |
| 2. University of Michigan..... | 497 | 483 | 311 | 296 |
| 3. U CA Los Angeles..... | 447 | 375 | 234 | 239 |
| 4. U WI Madison..... | 444 | 420 | 241 | 234 |
| 5. U of Washington..... | 432 | 410 | 337 | 321 |
| 6. U CA Berkeley..... | 420 | 357 | 171 | 186 |
| 7. U CA San Diego..... | 419 | 378 | 262 | 275 |
| 8. MA Institute of Tech..... | 413 | 411 | 311 | 311 |
| 9. Stanford University..... | 410 | 395 | 342 | 332 |
| 10. Texas A&M University..... | 394 | 367 | 145 | 145 |
| 11. U CA San Francisco..... | 380 | 334 | 220 | 229 |
| 12. Cornell University..... | 364 | 351 | 204 | 206 |
| 13. Pennsylvania State U..... | 363 | 340 | 186 | 185 |
| 14. University of Minnesota..... | 360 | 363 | 205 | 200 |
| 15. U of Illinois Urbana..... | 339 | 386 | 169 | 156 |
| 16. U of Pennsylvania..... | 333 | 296 | 248 | 217 |
| 17. University of Colorado..... | 311 | 270 | 228 | 192 |
| 18. Harvard University..... | 306 | 300 | 252 | 223 |
| 19. University of Arizona..... | 302 | 285 | 162 | 152 |
| 20. Ohio State University..... | 302 | 289 | 124 | 123 |
| Total, all other institutions..... | 17,645 | 16,549 | 9,972 | 9,473 |

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

²Includes R&D expenditures for Applied Physics Laboratory(APL). For FY 1998, APL reported \$443 million in total and \$425 million in federally-financed R&D expenditures.

NOTE: Because of rounding, detail may not add to totals.

SOURCE: National Science Foundation/Division of Science Resources Studies, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1998

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