Appendix table 5-1

**Academic R&D expenditures directed to basic research, applied research, and development: 1970–2006**

(Percent distribution)

| Year | All academic R&D | Basic research | Applied research | Development |
|---|---|---|---|---|
| 1970 | 100.0 | 76.7 | 18.6 | 4.6 |
| 1971 | 100.0 | 76.7 | 19.5 | 3.8 |
| 1972 | 100.0 | 73.9 | 22.4 | 3.7 |
| 1973 | 100.0 | 71.2 | 24.5 | 4.2 |
| 1974 | 100.0 | 71.0 | 24.7 | 4.4 |
| 1975 | 100.0 | 69.5 | 26.2 | 4.4 |
| 1976 | 100.0 | 68.6 | 26.7 | 4.7 |
| 1977 | 100.0 | 68.3 | 25.9 | 5.8 |
| 1978 | 100.0 | 67.6 | 25.0 | 7.5 |
| 1979 | 100.0 | 67.0 | 24.8 | 8.2 |
| 1980 | 100.0 | 66.8 | 25.1 | 8.0 |
| 1981 | 100.0 | 66.9 | 25.1 | 8.0 |
| 1982 | 100.0 | 67.0 | 25.2 | 7.9 |
| 1983 | 100.0 | 66.9 | 25.6 | 7.5 |
| 1984 | 100.0 | 67.1 | 25.5 | 7.4 |
| 1985 | 100.0 | 68.1 | 24.5 | 7.3 |
| 1986 | 100.0 | 68.8 | 24.1 | 7.1 |
| 1987 | 100.0 | 67.5 | 25.1 | 7.4 |
| 1988 | 100.0 | 65.7 | 26.6 | 7.7 |
| 1989 | 100.0 | 65.4 | 26.8 | 7.8 |
| 1990 | 100.0 | 65.7 | 26.0 | 8.3 |
| 1991 | 100.0 | 66.3 | 25.3 | 8.4 |
| 1992 | 100.0 | 66.6 | 25.2 | 8.2 |
| 1993 | 100.0 | 66.6 | 25.1 | 8.3 |
| 1994 | 100.0 | 66.7 | 24.9 | 8.4 |
| 1995 | 100.0 | 67.0 | 25.0 | 8.0 |
| 1996 | 100.0 | 67.7 | 24.8 | 7.5 |
| 1997 | 100.0 | 70.9 | 22.2 | 6.9 |
| 1998 | 100.0 | 73.8 | 19.9 | 6.2 |
| 1999 | 100.0 | 74.3 | 20.7 | 4.9 |
| 2000 | 100.0 | 74.5 | 21.7 | 3.8 |
| 2001 | 100.0 | 74.7 | 21.5 | 3.8 |
| 2002 | 100.0 | 74.9 | 21.4 | 3.6 |
| 2003 | 100.0 | 75.0 | 21.2 | 3.7 |
| 2004 | 100.0 | 75.2 | 20.9 | 3.9 |
| 2005 | 100.0 | 74.9 | 21.2 | 3.9 |
| 2006 | 100.0 | 74.5 | 21.5 | 3.9 |

NOTES: Expenditure levels for academic R&D refer to calendar years and are based on fiscal year data approximations. Because of changes in estimation procedures, character of work data before FY 1998 not comparable with that of later years. For details of methodological issues of measurement, see National Science Foundation, Division of Science Resources Statistics (NSF/SRS), National Patterns of Research and Development Resources: Methodology Report (forthcoming). Data based on annual reports by performers. See appendix tables 4-3, 4-7, 4-11, and 4-15.

SOURCE: NSF/SRS, National Patterns of R&D Resources (annual series, preliminary data for 2005 and 2006).

Appendix table 5-2 (Page 1 of 2)

**Support for academic R&D, by sector: 1972–2006**

| Year | All sources | Federal government | State/local government | Industry | Academic institutions | All other sources |
|---|---|---|---|---|---|---|
| | Current $millions | | | | | |
| 1972 | 2,630 | 1,795 | 269 | 74 | 305 | 187 |
| 1973 | 2,884 | 1,985 | 295 | 84 | 318 | 202 |
| 1974 | 3,022 | 2,032 | 308 | 95 | 368 | 219 |
| 1975 | 3,409 | 2,288 | 332 | 113 | 417 | 259 |
| 1976 | 3,729 | 2,512 | 364 | 123 | 446 | 285 |
| 1977 | 4,067 | 2,726 | 374 | 139 | 514 | 314 |
| 1978 | 4,625 | 3,059 | 414 | 170 | 623 | 359 |
| 1979 | 5,366 | 3,598 | 472 | 193 | 735 | 368 |
| 1980 | 6,063 | 4,098 | 491 | 236 | 835 | 403 |
| 1981 | 6,847 | 4,571 | 546 | 291 | 1,004 | 435 |
| 1982 | 7,324 | 4,768 | 616 | 337 | 1,111 | 491 |
| 1983 | 7,882 | 4,989 | 626 | 389 | 1,302 | 576 |
| 1984 | 8,620 | 5,431 | 690 | 475 | 1,411 | 613 |
| 1985 | 9,687 | 6,064 | 752 | 560 | 1,617 | 694 |
| 1986 | 10,928 | 6,712 | 915 | 700 | 1,869 | 732 |
| 1987 | 12,153 | 7,343 | 1,023 | 790 | 2,168 | 828 |
| 1988 | 13,463 | 8,193 | 1,106 | 872 | 2,356 | 935 |
| 1989 | 14,977 | 8,991 | 1,224 | 994 | 2,698 | 1,071 |
| 1990 | 16,286 | 9,638 | 1,324 | 1,127 | 3,006 | 1,191 |
| 1991 | 17,585 | 10,234 | 1,474 | 1,204 | 3,367 | 1,307 |
| 1992 | 18,818 | 11,093 | 1,491 | 1,279 | 3,547 | 1,409 |
| 1993 | 19,951 | 11,957 | 1,559 | 1,360 | 3,589 | 1,486 |
| 1994 | 21,030 | 12,650 | 1,555 | 1,422 | 3,828 | 1,575 |
| 1995 | 22,174 | 13,333 | 1,690 | 1,489 | 4,048 | 1,614 |
| 1996 | 23,049 | 13,842 | 1,812 | 1,605 | 4,171 | 1,619 |
| 1997 | 24,373 | 14,316 | 1,910 | 1,737 | 4,698 | 1,712 |
| 1998 | 25,859 | 15,153 | 1,944 | 1,888 | 5,003 | 1,870 |
| 1999 | 27,534 | 16,103 | 2,022 | 2,033 | 5,381 | 1,995 |
| 2000 | 30,073 | 17,538 | 2,200 | 2,156 | 5,924 | 2,254 |
| 2001 | 32,811 | 19,233 | 2,321 | 2,219 | 6,614 | 2,425 |
| 2002 | 36,394 | 21,864 | 2,506 | 2,191 | 7,133 | 2,700 |
| 2003 | 40,087 | 24,759 | 2,646 | 2,162 | 7,663 | 2,857 |
| 2004 | 43,242 | 27,631 | 2,879 | 2,129 | 7,752 | 2,852 |
| 2005 | 45,777 | 29,191 | 2,942 | 2,294 | 8,258 | 3,093 |
| 2006 | 47,760 | 30,033 | 3,016 | 2,428 | 9,062 | 3,221 |
| | 2000 constant $millions | | | | | |
| 1972 | 8,852 | 6,042 | 905 | 249 | 1,027 | 629 |
| 1973 | 9,297 | 6,399 | 951 | 271 | 1,025 | 651 |
| 1974 | 9,086 | 6,110 | 926 | 286 | 1,106 | 658 |
| 1975 | 9,284 | 6,231 | 904 | 308 | 1,136 | 705 |
| 1976 | 9,472 | 6,381 | 925 | 312 | 1,133 | 724 |
| 1977 | 9,611 | 6,442 | 884 | 328 | 1,215 | 742 |
| 1978 | 10,240 | 6,773 | 917 | 376 | 1,379 | 795 |
| 1979 | 10,995 | 7,372 | 967 | 395 | 1,506 | 754 |
| 1980 | 11,422 | 7,720 | 925 | 445 | 1,573 | 759 |
| 1981 | 11,748 | 7,843 | 937 | 499 | 1,723 | 746 |
| 1982 | 11,762 | 7,657 | 989 | 541 | 1,784 | 789 |
| 1983 | 12,123 | 7,673 | 963 | 598 | 2,003 | 886 |
| 1984 | 12,786 | 8,056 | 1,023 | 705 | 2,093 | 909 |
| 1985 | 13,917 | 8,712 | 1,080 | 805 | 2,323 | 997 |
| 1986 | 15,343 | 9,423 | 1,285 | 983 | 2,624 | 1,028 |
| 1987 | 16,628 | 10,047 | 1,400 | 1,081 | 2,966 | 1,133 |
| 1988 | 17,859 | 10,868 | 1,467 | 1,157 | 3,125 | 1,240 |
| 1989 | 19,124 | 11,481 | 1,563 | 1,269 | 3,445 | 1,368 |
| 1990 | 20,051 | 11,866 | 1,630 | 1,388 | 3,701 | 1,466 |
| 1991 | 20,867 | 12,144 | 1,749 | 1,429 | 3,995 | 1,551 |
| 1992 | 21,783 | 12,841 | 1,726 | 1,481 | 4,106 | 1,631 |

Appendix table 5-2 (Page 2 of 2)

**Support for academic R&D, by sector: 1972–2006**

| Year | All sources | Federal government | State/local government | Industry | Academic institutions | All other sources |
|---|---|---|---|---|---|---|
| 1993 | 22,590 | 13,539 | 1,765 | 1,540 | 4,064 | 1,683 |
| 1994 | 23,306 | 14,019 | 1,723 | 1,576 | 4,242 | 1,745 |
| 1995 | 24,058 | 14,466 | 1,834 | 1,616 | 4,392 | 1,751 |
| 1996 | 24,548 | 14,742 | 1,930 | 1,709 | 4,442 | 1,724 |
| 1997 | 25,512 | 14,985 | 1,999 | 1,818 | 4,918 | 1,792 |
| 1998 | 26,730 | 15,663 | 2,009 | 1,952 | 5,172 | 1,933 |
| 1999 | 28,094 | 16,431 | 2,063 | 2,074 | 5,491 | 2,036 |
| 2000 | 30,073 | 17,538 | 2,200 | 2,156 | 5,924 | 2,254 |
| 2001 | 32,247 | 18,903 | 2,281 | 2,181 | 6,500 | 2,383 |
| 2002 | 35,079 | 21,074 | 2,415 | 2,112 | 6,875 | 2,602 |
| 2003 | 37,861 | 23,384 | 2,499 | 2,042 | 7,237 | 2,698 |
| 2004 | 39,852 | 25,465 | 2,653 | 1,962 | 7,144 | 2,628 |
| 2005 | 40,916 | 26,091 | 2,630 | 2,050 | 7,381 | 2,765 |
| 2006 | 41,413 | 26,042 | 2,615 | 2,105 | 7,858 | 2,793 |
| | Percent distribution | | | | | |
| 1972 | 100.0 | 68.3 | 10.2 | 2.8 | 11.6 | 7.1 |
| 1973 | 100.0 | 68.8 | 10.2 | 2.9 | 11.0 | 7.0 |
| 1974 | 100.0 | 67.2 | 10.2 | 3.1 | 12.2 | 7.2 |
| 1975 | 100.0 | 67.1 | 9.7 | 3.3 | 12.2 | 7.6 |
| 1976 | 100.0 | 67.4 | 9.8 | 3.3 | 12.0 | 7.6 |
| 1977 | 100.0 | 67.0 | 9.2 | 3.4 | 12.6 | 7.7 |
| 1978 | 100.0 | 66.1 | 9.0 | 3.7 | 13.5 | 7.8 |
| 1979 | 100.0 | 67.1 | 8.8 | 3.6 | 13.7 | 6.9 |
| 1980 | 100.0 | 67.6 | 8.1 | 3.9 | 13.8 | 6.6 |
| 1981 | 100.0 | 66.8 | 8.0 | 4.3 | 14.7 | 6.4 |
| 1982 | 100.0 | 65.1 | 8.4 | 4.6 | 15.2 | 6.7 |
| 1983 | 100.0 | 63.3 | 7.9 | 4.9 | 16.5 | 7.3 |
| 1984 | 100.0 | 63.0 | 8.0 | 5.5 | 16.4 | 7.1 |
| 1985 | 100.0 | 62.6 | 7.8 | 5.8 | 16.7 | 7.2 |
| 1986 | 100.0 | 61.4 | 8.4 | 6.4 | 17.1 | 6.7 |
| 1987 | 100.0 | 60.4 | 8.4 | 6.5 | 17.8 | 6.8 |
| 1988 | 100.0 | 60.9 | 8.2 | 6.5 | 17.5 | 6.9 |
| 1989 | 100.0 | 60.0 | 8.2 | 6.6 | 18.0 | 7.2 |
| 1990 | 100.0 | 59.2 | 8.1 | 6.9 | 18.5 | 7.3 |
| 1991 | 100.0 | 58.2 | 8.4 | 6.8 | 19.1 | 7.4 |
| 1992 | 100.0 | 58.9 | 7.9 | 6.8 | 18.8 | 7.5 |
| 1993 | 100.0 | 59.9 | 7.8 | 6.8 | 18.0 | 7.4 |
| 1994 | 100.0 | 60.2 | 7.4 | 6.8 | 18.2 | 7.5 |
| 1995 | 100.0 | 60.1 | 7.6 | 6.7 | 18.3 | 7.3 |
| 1996 | 100.0 | 60.1 | 7.9 | 7.0 | 18.1 | 7.0 |
| 1997 | 100.0 | 58.7 | 7.8 | 7.1 | 19.3 | 7.0 |
| 1998 | 100.0 | 58.6 | 7.5 | 7.3 | 19.3 | 7.2 |
| 1999 | 100.0 | 58.5 | 7.3 | 7.4 | 19.5 | 7.2 |
| 2000 | 100.0 | 58.3 | 7.3 | 7.2 | 19.7 | 7.5 |
| 2001 | 100.0 | 58.6 | 7.1 | 6.8 | 20.2 | 7.4 |
| 2002 | 100.0 | 60.1 | 6.9 | 6.0 | 19.6 | 7.4 |
| 2003 | 100.0 | 61.8 | 6.6 | 5.4 | 19.1 | 7.1 |
| 2004 | 100.0 | 63.9 | 6.7 | 4.9 | 17.9 | 6.6 |
| 2005 | 100.0 | 63.8 | 6.4 | 5.0 | 18.0 | 6.8 |
| 2006 | 100.0 | 62.9 | 6.3 | 5.1 | 19.0 | 6.7 |

NOTE: See appendix table 4-1 for gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006.

Appendix table 5-3
**Federal and nonfederal R&D expenditures at academic institutions, by field and source of funds: 2006**

| Field | All R&D expenditures | | Federally financed expenditures | | Nonfederally financed expenditures | |
|---|---|---|---|---|---|---|
| | Amount ($millions) | Percent distribution | Amount ($millions) | Percent distribution | Amount ($millions) | Percent distribution |
| All fields | 47,760 | 100.0 | 30,033 | 100.0 | 17,727 | 100.0 |
| Science | 40,684 | 85.2 | 25,797 | 85.9 | 14,887 | 84.0 |
| Computer sciences | 1,438 | 3.0 | 1,015 | 3.4 | 422 | 2.4 |
| Environmental sciences | 2,602 | 5.4 | 1,763 | 5.9 | 839 | 4.7 |
| Atmospheric sciences | 507 | 1.1 | 406 | 1.4 | 100 | 0.6 |
| Earth sciences | 897 | 1.9 | 591 | 2.0 | 307 | 1.7 |
| Oceanography | 840 | 1.8 | 558 | 1.9 | 282 | 1.6 |
| Environmental sciences nec | 358 | 0.7 | 208 | 0.7 | 150 | 0.8 |
| Life sciences | 28,831 | 60.4 | 18,268 | 60.8 | 10,563 | 59.6 |
| Agricultural sciences | 2,794 | 5.8 | 881 | 2.9 | 1,912 | 10.8 |
| Biological sciences | 9,044 | 18.9 | 6,240 | 20.8 | 2,805 | 15.8 |
| Medical sciences | 15,808 | 33.1 | 10,434 | 34.7 | 5,373 | 30.3 |
| Life sciences nec | 1,186 | 2.5 | 713 | 2.4 | 473 | 2.7 |
| Mathematical sciences | 530 | 1.1 | 373 | 1.2 | 158 | 0.9 |
| Physical sciences | 3,823 | 8.0 | 2,705 | 9.0 | 1,119 | 6.3 |
| Astronomy | 470 | 1.0 | 317 | 1.1 | 152 | 0.9 |
| Chemistry | 1,424 | 3.0 | 974 | 3.2 | 451 | 2.5 |
| Physics | 1,608 | 3.4 | 1,213 | 4.0 | 395 | 2.2 |
| Physical sciences nec | 321 | 0.7 | 201 | 0.7 | 120 | 0.7 |
| Psychology | 875 | 1.8 | 629 | 2.1 | 246 | 1.4 |
| Social sciences | 1,703 | 3.6 | 711 | 2.4 | 992 | 5.6 |
| Economics | 339 | 0.7 | 119 | 0.4 | 220 | 1.2 |
| Political science | 317 | 0.7 | 107 | 0.4 | 210 | 1.2 |
| Sociology | 400 | 0.8 | 216 | 0.7 | 183 | 1.0 |
| Social sciences nec | 649 | 1.4 | 269 | 0.9 | 380 | 2.1 |
| Sciences nec | 882 | 1.8 | 334 | 1.1 | 548 | 3.1 |
| Engineering | 7,076 | 14.8 | 4,236 | 14.1 | 2,840 | 16.0 |
| Aeronautical/astronautical | 381 | 0.8 | 282 | 0.9 | 99 | 0.6 |
| Bioengineering/biomedical | 476 | 1.0 | 294 | 1.0 | 182 | 1.0 |
| Chemical | 547 | 1.1 | 313 | 1.0 | 235 | 1.3 |
| Civil | 858 | 1.8 | 331 | 1.1 | 527 | 3.0 |
| Electrical | 1,614 | 3.4 | 1,073 | 3.6 | 541 | 3.1 |
| Mechanical | 1,048 | 2.2 | 684 | 2.3 | 363 | 2.1 |
| Metallurgical/materials | 644 | 1.3 | 387 | 1.3 | 256 | 1.4 |
| Engineering nec | 1,508 | 3.2 | 871 | 2.9 | 637 | 3.6 |

nec = not elsewhere classified

NOTES: Detail may not add to total because of rounding. See appendix table 5-2 for detail on nonfederal sources.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006.

Appendix table 5-4



**Expenditures for academic R&D, by field: Selected years, 1975–2006**

| Field | 1975 | 1980 | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Current $millions | | | | | | | | | | | | | | | |
| All fields | 3,409 | 6,063 | 9,687 | 16,286 | 22,174 | 23,049 | 24,373 | 25,859 | 27,534 | 30,073 | 32,811 | 36,394 | 40,087 | 43,242 | 45,777 | 47,760 |
| Computer sciences | 46 | 124 | 281 | 515 | 682 | 690 | 710 | 747 | 861 | 876 | 956 | 1,125 | 1,305 | 1,404 | 1,406 | 1,438 |
| Environmental sciences | 255 | 508 | 705 | 1,069 | 1,434 | 1,489 | 1,533 | 1,625 | 1,692 | 1,765 | 1,829 | 2,017 | 2,194 | 2,353 | 2,551 | 2,602 |
| Atmospheric sciences | NA | 76 | 108 | 173 | 208 | 224 | 246 | 269 | 288 | 288 | 301 | 341 | 396 | 414 | 457 | 507 |
| Earth sciences | NA | 188 | 254 | 355 | 457 | 446 | 450 | 514 | 546 | 563 | 555 | 640 | 724 | 828 | 919 | 897 |
| Oceanography | NA | 176 | 258 | 377 | 473 | 533 | 537 | 546 | 604 | 633 | 673 | 718 | 770 | 779 | 812 | 840 |
| Environmental sciences nec | 255 | 68 | 86 | 164 | 295 | 285 | 301 | 296 | 254 | 282 | 300 | 318 | 305 | 332 | 363 | 358 |
| Life sciences | 1,901 | 3,218 | 5,279 | 8,725 | 12,189 | 12,717 | 13,593 | 14,598 | 15,632 | 17,471 | 19,229 | 21,439 | 23,757 | 25,948 | 27,604 | 28,831 |
| Agricultural sciences | 384 | 676 | 999 | 1,349 | 1,815 | 1,910 | 1,966 | 1,996 | 2,036 | 2,177 | 2,322 | 2,450 | 2,555 | 2,695 | 2,657 | 2,794 |
| Biological sciences | 630 | 1,028 | 1,781 | 2,859 | 3,837 | 3,913 | 4,184 | 4,586 | 5,041 | 5,621 | 5,957 | 6,602 | 7,384 | 8,152 | 8,843 | 9,044 |
| Medical sciences | 811 | 1,423 | 2,318 | 4,154 | 6,070 | 6,391 | 6,908 | 7,472 | 8,003 | 8,986 | 10,191 | 11,488 | 12,779 | 14,037 | 14,877 | 15,808 |
| Life sciences nec | 75 | 91 | 181 | 363 | 468 | 503 | 534 | 545 | 552 | 686 | 760 | 898 | 1,038 | 1,064 | 1,227 | 1,186 |
| Mathematical sciences | 40 | 78 | 128 | 222 | 279 | 289 | 290 | 311 | 314 | 342 | 360 | 388 | 428 | 448 | 495 | 530 |
| Physical sciences | 350 | 677 | 1,148 | 1,807 | 2,257 | 2,259 | 2,372 | 2,484 | 2,606 | 2,713 | 2,805 | 3,017 | 3,276 | 3,546 | 3,704 | 3,823 |
| Astronomy | 27 | 59 | 96 | 170 | 304 | 276 | 288 | 303 | 385 | 386 | 378 | 402 | 392 | 420 | 454 | 470 |
| Chemistry | 121 | 244 | 422 | 648 | 772 | 802 | 821 | 877 | 920 | 962 | 1,008 | 1,129 | 1,226 | 1,318 | 1,365 | 1,424 |
| Physics | 174 | 323 | 551 | 842 | 990 | 988 | 1,059 | 1,079 | 1,149 | 1,208 | 1,241 | 1,287 | 1,418 | 1,522 | 1,604 | 1,608 |
| Physical sciences nec | 29 | 52 | 80 | 147 | 191 | 193 | 204 | 226 | 153 | 158 | 178 | 199 | 240 | 286 | 280 | 321 |
| Psychology | 80 | 110 | 158 | 253 | 371 | 382 | 397 | 445 | 465 | 517 | 583 | 673 | 770 | 782 | 826 | 875 |
| Social sciences | 256 | 339 | 383 | 703 | 1,019 | 1,097 | 1,126 | 1,132 | 1,252 | 1,299 | 1,444 | 1,596 | 1,675 | 1,676 | 1,685 | 1,703 |
| Economics | 56 | 91 | 118 | 201 | 250 | 271 | 261 | 261 | 266 | 255 | 272 | 284 | 313 | 317 | 324 | 339 |
| Political science | 29 | 54 | 59 | 115 | 173 | 180 | 176 | 176 | 200 | 230 | 255 | 283 | 304 | 308 | 324 | 317 |
| Sociology | 69 | 87 | 75 | 132 | 215 | 231 | 257 | 253 | 272 | 301 | 328 | 375 | 368 | 355 | 370 | 400 |
| Social sciences nec | 102 | 107 | 131 | 255 | 381 | 415 | 432 | 442 | 514 | 513 | 588 | 654 | 689 | 695 | 667 | 649 |
| Sciences nec | 100 | 146 | 186 | 336 | 427 | 419 | 515 | 449 | 452 | 535 | 585 | 616 | 690 | 774 | 769 | 882 |
| Engineering | 381 | 862 | 1,418 | 2,656 | 3,516 | 3,708 | 3,839 | 4,070 | 4,261 | 4,555 | 5,019 | 5,522 | 5,993 | 6,310 | 6,738 | 7,076 |
| Aeronautical/astronautical | NA | 53 | 81 | 164 | 241 | 233 | 247 | 250 | 261 | 257 | 339 | 343 | 402 | 432 | 441 | 381 |
| Bioengineering/biomedical | NA | NA | NA | NA | NA | NA | 77 | 102 | 137 | 174 | 213 | 282 | 314 | 370 | 420 | 476 |
| Chemical | NA | 61 | 116 | 218 | 297 | 317 | 317 | 327 | 349 | 376 | 414 | 431 | 453 | 493 | 506 | 547 |
| Civil | NA | 83 | 153 | 284 | 431 | 455 | 472 | 495 | 529 | 601 | 664 | 717 | 776 | 789 | 788 | 858 |
| Electrical | NA | 183 | 337 | 663 | 819 | 888 | 942 | 1,043 | 1,017 | 1,118 | 1,164 | 1,306 | 1,401 | 1,437 | 1,581 | 1,614 |
| Mechanical | NA | 140 | 208 | 391 | 521 | 519 | 518 | 568 | 625 | 633 | 687 | 780 | 821 | 875 | 936 | 1,048 |
| Metallurgical/materials | NA | NA | NA | 274 | 330 | 349 | 389 | 391 | 384 | 399 | 453 | 468 | 548 | 565 | 612 | 644 |
| Engineering nec | 381 | 341 | 523 | 663 | 877 | 946 | 878 | 894 | 960 | 998 | 1,085 | 1,195 | 1,278 | 1,348 | 1,455 | 1,508 |
| | 2000 constant $millions | | | | | | | | | | | | | | | |
| All fields | 9,283 | 11,421 | 13,917 | 20,051 | 24,057 | 24,548 | 25,512 | 26,730 | 28,095 | 30,073 | 32,247 | 35,079 | 37,861 | 39,852 | 40,916 | 41,413 |
| Computer sciences | 124 | 234 | 403 | 634 | 740 | 735 | 743 | 772 | 879 | 876 | 940 | 1,085 | 1,233 | 1,294 | 1,256 | 1,247 |
| Environmental sciences | 695 | 957 | 1,013 | 1,316 | 1,556 | 1,586 | 1,605 | 1,679 | 1,726 | 1,765 | 1,797 | 1,944 | 2,072 | 2,169 | 2,280 | 2,256 |
| Atmospheric sciences | NA | 143 | 155 | 213 | 226 | 239 | 257 | 278 | 294 | 288 | 296 | 329 | 374 | 382 | 408 | 439 |
| Earth sciences | NA | 354 | 365 | 437 | 496 | 475 | 471 | 531 | 557 | 563 | 546 | 617 | 684 | 763 | 821 | 778 |
| Oceanography | NA | 332 | 370 | 464 | 514 | 568 | 562 | 564 | 616 | 633 | 661 | 692 | 727 | 718 | 726 | 728 |

Appendix table 5-4

**Expenditures for academic R&D, by field: Selected years, 1975–2006**



| Field | 1975 | 1980 | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Environmental sciences nec | 695 | 128 | 123 | 202 | 320 | 303 | 315 | 306 | 259 | 282 | 294 | 306 | 288 | 306 | 324 | 310 |
| Life sciences | 5,177 | 6,062 | 7,584 | 10,743 | 13,225 | 13,544 | 14,228 | 15,090 | 15,950 | 17,471 | 18,899 | 20,664 | 22,437 | 23,914 | 24,673 | 25,000 |
| Agricultural sciences | 1,045 | 1,273 | 1,436 | 1,660 | 1,969 | 2,035 | 2,058 | 2,063 | 2,077 | 2,177 | 2,282 | 2,361 | 2,413 | 2,484 | 2,375 | 2,422 |
| Biological sciences | 1,716 | 1,937 | 2,559 | 3,520 | 4,163 | 4,167 | 4,380 | 4,740 | 5,143 | 5,621 | 5,854 | 6,364 | 6,974 | 7,513 | 7,904 | 7,842 |
| Medical sciences | 2,210 | 2,681 | 3,330 | 5,115 | 6,586 | 6,807 | 7,231 | 7,723 | 8,166 | 8,986 | 10,016 | 11,073 | 12,069 | 12,936 | 13,298 | 13,707 |
| Life sciences nec | 205 | 171 | 260 | 447 | 508 | 536 | 559 | 563 | 563 | 686 | 747 | 866 | 980 | 981 | 1,096 | 1,028 |
| Mathematical sciences | 108 | 147 | 184 | 273 | 303 | 307 | 303 | 321 | 320 | 342 | 354 | 374 | 404 | 413 | 442 | 460 |
| Physical sciences | 954 | 1,276 | 1,650 | 2,225 | 2,449 | 2,406 | 2,483 | 2,568 | 2,659 | 2,713 | 2,757 | 2,908 | 3,094 | 3,268 | 3,311 | 3,315 |
| Astronomy | 72 | 110 | 138 | 210 | 330 | 294 | 301 | 313 | 392 | 386 | 372 | 388 | 370 | 387 | 406 | 407 |
| Chemistry | 329 | 460 | 606 | 798 | 837 | 854 | 860 | 906 | 938 | 962 | 991 | 1,088 | 1,158 | 1,214 | 1,220 | 1,235 |
| Physics | 473 | 608 | 792 | 1,036 | 1,074 | 1,052 | 1,108 | 1,115 | 1,173 | 1,208 | 1,219 | 1,240 | 1,340 | 1,403 | 1,434 | 1,394 |
| Physical sciences nec | 80 | 98 | 115 | 181 | 208 | 205 | 214 | 233 | 156 | 158 | 175 | 191 | 227 | 264 | 250 | 278 |
| Psychology | 219 | 207 | 227 | 311 | 402 | 407 | 415 | 460 | 474 | 517 | 573 | 649 | 727 | 721 | 738 | 759 |
| Social sciences | 698 | 639 | 551 | 866 | 1,106 | 1,168 | 1,178 | 1,170 | 1,278 | 1,299 | 1,419 | 1,539 | 1,582 | 1,544 | 1,506 | 1,477 |
| Economics | 152 | 171 | 170 | 247 | 272 | 289 | 273 | 270 | 272 | 255 | 267 | 274 | 296 | 292 | 290 | 294 |
| Political science | 80 | 103 | 85 | 142 | 188 | 192 | 184 | 182 | 204 | 230 | 251 | 273 | 288 | 284 | 289 | 274 |
| Sociology | 187 | 164 | 107 | 162 | 234 | 246 | 270 | 261 | 277 | 301 | 323 | 362 | 348 | 327 | 331 | 346 |
| Social sciences nec | 278 | 201 | 188 | 314 | 413 | 442 | 452 | 457 | 524 | 513 | 578 | 630 | 650 | 641 | 596 | 563 |
| Sciences nec | 272 | 275 | 268 | 414 | 463 | 446 | 539 | 464 | 461 | 535 | 575 | 594 | 651 | 714 | 688 | 764 |
| Engineering | 1,037 | 1,624 | 2,037 | 3,270 | 3,814 | 3,949 | 4,019 | 4,207 | 4,348 | 4,555 | 4,933 | 5,322 | 5,660 | 5,815 | 6,023 | 6,136 |
| Aeronautical/astronautical | NA | 100 | 116 | 201 | 262 | 248 | 259 | 258 | 266 | 257 | 333 | 331 | 380 | 399 | 394 | 331 |
| Bioengineering/biomedical | NA | NA | NA | NA | NA | NA | 80 | 105 | 139 | 174 | 209 | 272 | 296 | 341 | 375 | 413 |
| Chemical | NA | 114 | 167 | 269 | 322 | 338 | 331 | 338 | 356 | 376 | 407 | 415 | 428 | 454 | 452 | 475 |
| Civil | NA | 157 | 220 | 350 | 467 | 484 | 494 | 512 | 540 | 601 | 653 | 691 | 733 | 727 | 704 | 744 |
| Electrical | NA | 345 | 485 | 816 | 888 | 946 | 986 | 1,078 | 1,038 | 1,118 | 1,144 | 1,259 | 1,323 | 1,325 | 1,413 | 1,399 |
| Mechanical | NA | 264 | 298 | 481 | 565 | 553 | 542 | 587 | 638 | 633 | 675 | 752 | 775 | 806 | 836 | 909 |
| Metallurgical/materials | NA | NA | NA | 337 | 358 | 372 | 407 | 405 | 392 | 399 | 445 | 451 | 518 | 521 | 547 | 558 |
| Engineering nec | 1,037 | 643 | 751 | 817 | 952 | 1,008 | 919 | 924 | 979 | 998 | 1,067 | 1,152 | 1,207 | 1,242 | 1,301 | 1,307 |
| | Percent distribution | | | | | | | | | | | | | | | |
| All fields | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Computer sciences | 1.3 | 2.1 | 2.9 | 3.2 | 3.1 | 3.0 | 2.9 | 2.9 | 3.1 | 2.9 | 2.9 | 3.1 | 3.3 | 3.2 | 3.1 | 3.0 |
| Environmental sciences | 7.5 | 8.4 | 7.3 | 6.6 | 6.5 | 6.5 | 6.3 | 6.3 | 6.1 | 5.9 | 5.6 | 5.5 | 5.5 | 5.4 | 5.6 | 5.4 |
| Atmospheric sciences | NA | 1.3 | 1.1 | 1.1 | 0.9 | 1.0 | 1.0 | 1.0 | 1.1 | 1.0 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.1 |
| Earth sciences | NA | 3.1 | 2.6 | 2.2 | 2.1 | 1.9 | 1.8 | 2.0 | 2.0 | 1.9 | 1.7 | 1.8 | 1.8 | 1.9 | 2.0 | 1.9 |
| Oceanography | NA | 2.9 | 2.7 | 2.3 | 2.1 | 2.3 | 2.2 | 2.1 | 2.2 | 2.1 | 2.1 | 2.0 | 1.9 | 1.8 | 1.8 | 1.8 |
| Environmental sciences nec | 7.5 | 1.1 | 0.9 | 1.0 | 1.3 | 1.2 | 1.2 | 1.1 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.7 |
| Life sciences | 55.8 | 53.1 | 54.5 | 53.6 | 55.0 | 55.2 | 55.8 | 56.5 | 56.8 | 58.1 | 58.6 | 58.9 | 59.3 | 60.0 | 60.3 | 60.4 |
| Agricultural sciences | 11.3 | 11.1 | 10.3 | 8.3 | 8.2 | 8.3 | 8.1 | 7.7 | 7.4 | 7.2 | 7.1 | 6.7 | 6.4 | 6.2 | 5.8 | 5.8 |
| Biological sciences | 18.5 | 17.0 | 18.4 | 17.6 | 17.3 | 17.0 | 17.2 | 17.7 | 18.3 | 18.7 | 18.2 | 18.1 | 18.4 | 18.9 | 19.3 | 18.9 |
| Medical sciences | 23.8 | 23.5 | 23.9 | 25.5 | 27.4 | 27.7 | 28.3 | 28.9 | 29.1 | 29.9 | 31.1 | 31.6 | 31.9 | 32.5 | 32.5 | 33.1 |
| Life sciences nec | 2.2 | 1.5 | 1.9 | 2.2 | 2.1 | 2.2 | 2.2 | 2.1 | 2.0 | 2.3 | 2.3 | 2.5 | 2.6 | 2.5 | 2.7 | 2.5 |
| Mathematical sciences | 1.2 | 1.3 | 1.3 | 1.4 | 1.3 | 1.3 | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 1.1 | 1.1 |

Appendix table 5-4 (Page 3 of 3)

**Expenditures for academic R&D, by field: Selected years, 1975–2006**

| Field | 1975 | 1980 | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Physical sciences | 10.3 | 11.2 | 11.9 | 11.1 | 10.2 | 9.8 | 9.7 | 9.6 | 9.5 | 9.0 | 8.6 | 8.3 | 8.2 | 8.2 | 8.1 | 8.0 |
| Astronomy | 0.8 | 1.0 | 1.0 | 1.1 | 1.4 | 1.2 | 1.2 | 1.2 | 1.4 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 |
| Chemistry | 3.5 | 4.0 | 4.4 | 4.0 | 3.5 | 3.5 | 3.4 | 3.4 | 3.3 | 3.2 | 3.1 | 3.1 | 3.1 | 3.0 | 3.0 | 3.0 |
| Physics | 5.1 | 5.3 | 5.7 | 5.2 | 4.5 | 4.3 | 4.3 | 4.2 | 4.2 | 4.0 | 3.8 | 3.5 | 3.5 | 3.5 | 3.5 | 3.4 |
| Physical sciences nec | 0.9 | 0.9 | 0.8 | 0.9 | 0.9 | 0.8 | 0.8 | 0.9 | 0.6 | 0.5 | 0.5 | 0.5 | 0.6 | 0.7 | 0.6 | 0.7 |
| Psychology | 2.4 | 1.8 | 1.6 | 1.6 | 1.7 | 1.7 | 1.6 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.9 | 1.8 | 1.8 | 1.8 |
| Social sciences | 7.5 | 5.6 | 4.0 | 4.3 | 4.6 | 4.8 | 4.6 | 4.4 | 4.5 | 4.3 | 4.4 | 4.4 | 4.2 | 3.9 | 3.7 | 3.6 |
| Economics | 1.6 | 1.5 | 1.2 | 1.2 | 1.1 | 1.2 | 1.1 | 1.0 | 1.0 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 |
| Political science | 0.9 | 0.9 | 0.6 | 0.7 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 |
| Sociology | 2.0 | 1.4 | 0.8 | 0.8 | 1.0 | 1.0 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.9 | 0.8 | 0.8 | 0.8 |
| Social sciences nec | 3.0 | 1.8 | 1.4 | 1.6 | 1.7 | 1.8 | 1.8 | 1.7 | 1.9 | 1.7 | 1.8 | 1.8 | 1.7 | 1.6 | 1.5 | 1.4 |
| Sciences nec | 2.9 | 2.4 | 1.9 | 2.1 | 1.9 | 1.8 | 2.1 | 1.7 | 1.6 | 1.8 | 1.8 | 1.7 | 1.7 | 1.8 | 1.7 | 1.8 |
| Engineering | 11.2 | 14.2 | 14.6 | 16.3 | 15.9 | 16.1 | 15.8 | 15.7 | 15.5 | 15.1 | 15.3 | 15.2 | 14.9 | 14.6 | 14.7 | 14.8 |
| Aeronautical/astronautical | NA | 0.9 | 0.8 | 1.0 | 1.1 | 1.0 | 1.0 | 1.0 | 0.9 | 0.9 | 1.0 | 0.9 | 1.0 | 1.0 | 1.0 | 0.8 |
| Bioengineering/biomedical | NA | NA | NA | NA | NA | NA | 0.3 | 0.4 | 0.5 | 0.6 | 0.6 | 0.8 | 0.8 | 0.9 | 0.9 | 1.0 |
| Chemical | NA | 1.0 | 1.2 | 1.3 | 1.3 | 1.4 | 1.3 | 1.3 | 1.3 | 1.2 | 1.3 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 |
| Civil | NA | 1.4 | 1.6 | 1.7 | 1.9 | 2.0 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 1.9 | 1.8 | 1.7 | 1.8 |
| Electrical | NA | 3.0 | 3.5 | 4.1 | 3.7 | 3.9 | 3.9 | 4.0 | 3.7 | 3.7 | 3.5 | 3.6 | 3.5 | 3.3 | 3.5 | 3.4 |
| Mechanical | NA | 2.3 | 2.1 | 2.4 | 2.3 | 2.3 | 2.1 | 2.2 | 2.3 | 2.1 | 2.1 | 2.1 | 2.0 | 2.0 | 2.0 | 2.2 |
| Metallurgical/materials | NA | NA | NA | 1.7 | 1.5 | 1.5 | 1.6 | 1.5 | 1.4 | 1.3 | 1.4 | 1.3 | 1.4 | 1.3 | 1.3 | 1.3 |
| Engineering nec | 11.2 | 5.6 | 5.4 | 4.1 | 4.0 | 4.1 | 3.6 | 3.5 | 3.5 | 3.3 | 3.3 | 3.3 | 3.2 | 3.1 | 3.2 | 3.2 |

NA = not available; nec = not elsewhere classified

NOTES: Detail may not add to total because of rounding. See appendix table 4-1 for gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006; and Integrated Science and Resources Data System (WebCASPAR), http://webcaspar.nsf.gov.

*Science and Engineering Indicators 2008*

Appendix table 5-5

**Academic R&D funds provided by federal government, by field: Selected years, 1975–2006**

(Percent)

| Field | 1975 | 1980 | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All fields | 67.1 | 67.6 | 62.6 | 59.2 | 60.1 | 60.1 | 58.7 | 58.6 | 58.5 | 58.3 | 58.6 | 60.1 | 61.8 | 63.9 | 63.8 | 62.9 |
| Computer sciences | 74.3 | 70.4 | 69.7 | 66.5 | 70.9 | 72.7 | 71.4 | 68.8 | 67.7 | 66.6 | 67.4 | 68.4 | 71.8 | 73.0 | 72.7 | 70.6 |
| Environmental sciences | 70.8 | 73.1 | 67.2 | 63.7 | 67.1 | 67.6 | 66.1 | 66.3 | 65.2 | 64.2 | 64.9 | 64.0 | 65.9 | 67.8 | 67.7 | 67.8 |
| Atmospheric sciences | NA | 84.1 | 79.8 | 75.7 | 78.6 | 78.4 | 76.0 | 77.8 | 77.5 | 77.5 | 77.3 | 73.3 | 75.2 | 77.4 | 78.5 | 80.2 |
| Earth sciences | NA | 69.7 | 60.7 | 57.7 | 59.9 | 60.1 | 59.8 | 60.8 | 58.9 | 58.9 | 59.3 | 57.8 | 60.8 | 64.8 | 67.0 | 65.8 |
| Oceanography | NA | 77.6 | 72.7 | 69.6 | 70.0 | 69.6 | 66.2 | 66.4 | 67.1 | 66.7 | 66.8 | 67.6 | 69.8 | 70.2 | 67.2 | 66.5 |
| Environmental sciences nec | 70.8 | 59.1 | 53.9 | 50.8 | 65.3 | 67.1 | 66.9 | 65.1 | 60.1 | 55.8 | 58.5 | 58.3 | 56.2 | 57.7 | 57.0 | 58.0 |
| Life sciences | 65.1 | 64.9 | 60.4 | 58.3 | 58.4 | 58.2 | 57.1 | 57.1 | 57.3 | 57.6 | 58.3 | 60.0 | 61.7 | 64.2 | 64.1 | 63.4 |
| Agricultural sciences | 29.4 | 30.9 | 29.4 | 26.2 | 29.3 | 29.3 | 27.9 | 26.7 | 26.8 | 26.6 | 26.6 | 28.1 | 29.9 | 32.2 | 31.8 | 31.5 |
| Biological sciences | 72.5 | 74.0 | 67.9 | 64.5 | 64.9 | 64.7 | 64.2 | 64.1 | 64.0 | 65.1 | 65.0 | 67.0 | 68.0 | 70.5 | 70.1 | 69.0 |
| Medical sciences | 75.6 | 74.4 | 68.0 | 64.3 | 63.1 | 63.0 | 61.2 | 61.0 | 60.8 | 60.6 | 61.4 | 62.7 | 64.5 | 66.9 | 66.5 | 66.0 |
| Life sciences nec | 71.8 | 67.3 | 60.0 | 59.1 | 56.7 | 58.0 | 56.9 | 55.5 | 58.2 | 56.8 | 59.3 | 59.7 | 60.3 | 62.7 | 61.4 | 60.1 |
| Mathematical sciences | 78.6 | 78.4 | 75.9 | 72.6 | 73.5 | 72.1 | 69.8 | 69.0 | 67.0 | 67.3 | 67.3 | 69.2 | 68.9 | 70.9 | 70.0 | 70.3 |
| Physical sciences | 81.4 | 81.9 | 77.5 | 72.8 | 72.6 | 72.2 | 71.0 | 70.9 | 71.5 | 70.6 | 70.3 | 70.7 | 71.9 | 72.4 | 72.2 | 70.7 |
| Astronomy | 73.4 | 75.6 | 67.0 | 66.1 | 68.2 | 66.1 | 63.7 | 62.2 | 70.9 | 71.8 | 68.7 | 69.0 | 69.3 | 68.8 | 68.4 | 67.5 |
| Chemistry | 76.8 | 77.7 | 74.2 | 68.7 | 69.1 | 69.0 | 67.2 | 67.0 | 67.1 | 65.6 | 65.5 | 65.3 | 66.9 | 69.9 | 69.5 | 68.4 |
| Physics | 86.4 | 86.8 | 82.2 | 77.5 | 77.0 | 76.7 | 75.9 | 75.8 | 75.6 | 74.7 | 74.7 | 75.8 | 76.7 | 76.8 | 76.9 | 75.4 |
| Physical sciences nec | 77.7 | 78.7 | 75.1 | 71.8 | 70.8 | 71.0 | 71.0 | 74.7 | 68.7 | 66.9 | 70.7 | 71.4 | 73.7 | 66.2 | 65.0 | 62.6 |
| Psychology | 76.8 | 73.3 | 66.9 | 64.8 | 67.1 | 67.7 | 68.5 | 67.2 | 66.7 | 67.9 | 68.4 | 70.7 | 71.9 | 75.0 | 74.0 | 71.9 |
| Social sciences | 55.2 | 53.8 | 40.1 | 32.2 | 38.1 | 38.6 | 36.3 | 37.6 | 37.7 | 37.8 | 38.0 | 38.7 | 39.9 | 41.6 | 41.4 | 41.7 |
| Economics | 48.2 | 48.8 | 37.0 | 27.1 | 32.0 | 33.4 | 34.4 | 35.3 | 33.8 | 34.9 | 33.0 | 35.1 | 34.0 | 34.4 | 33.6 | 35.1 |
| Political science | 41.8 | 43.4 | 33.1 | 22.0 | 34.5 | 34.6 | 29.5 | 30.3 | 27.0 | 27.3 | 28.9 | 28.2 | 31.9 | 36.6 | 34.9 | 33.8 |
| Sociology | 65.5 | 65.0 | 53.5 | 45.5 | 48.5 | 51.6 | 46.9 | 47.0 | 44.9 | 45.5 | 45.3 | 47.5 | 48.8 | 51.2 | 52.2 | 54.1 |
| Social sciences nec | 55.9 | 54.1 | 38.5 | 33.9 | 37.8 | 36.4 | 33.9 | 36.5 | 40.1 | 39.3 | 40.1 | 39.7 | 41.4 | 42.2 | 42.4 | 41.5 |
| Sciences nec | 57.2 | 53.6 | 49.3 | 41.2 | 45.0 | 41.7 | 40.8 | 38.5 | 34.6 | 34.5 | 32.0 | 35.9 | 34.9 | 34.8 | 38.4 | 37.8 |
| Engineering | 68.1 | 68.6 | 61.2 | 57.4 | 59.8 | 60.2 | 58.8 | 57.8 | 57.4 | 56.6 | 56.8 | 58.5 | 60.2 | 61.9 | 61.2 | 59.9 |
| Aeronautical/astronautical | NA | 79.5 | 76.4 | 77.7 | 76.2 | 73.5 | 74.2 | 68.4 | 70.4 | 70.7 | 75.1 | 72.1 | 76.1 | 76.3 | 75.0 | 73.9 |
| Bioengineering/biomedical | NA | NA | NA | NA | NA | NA | 61.9 | 55.5 | 52.9 | 52.3 | 56.9 | 59.4 | 60.8 | 63.7 | 60.8 | 61.8 |
| Chemical | NA | 64.4 | 55.6 | 50.6 | 54.2 | 54.8 | 52.4 | 51.8 | 51.6 | 52.3 | 51.8 | 53.4 | 54.7 | 54.4 | 58.4 | 57.1 |
| Civil | NA | 64.0 | 51.5 | 41.1 | 43.2 | 43.5 | 42.5 | 39.8 | 41.0 | 39.4 | 39.8 | 41.9 | 42.1 | 44.1 | 42.8 | 38.6 |
| Electrical | NA | 75.7 | 67.7 | 65.1 | 66.4 | 67.6 | 66.3 | 66.4 | 64.0 | 62.7 | 62.4 | 62.8 | 66.0 | 67.5 | 66.2 | 66.5 |
| Mechanical | NA | 67.0 | 64.6 | 61.0 | 65.2 | 64.5 | 62.3 | 61.8 | 62.1 | 60.6 | 60.6 | 65.1 | 64.9 | 67.2 | 67.0 | 65.3 |
| Metallurgical and materials | NA | NA | NA | 50.9 | 53.2 | 54.5 | 57.2 | 56.6 | 56.8 | 56.8 | 53.2 | 56.2 | 57.2 | 62.3 | 60.3 | 60.2 |
| Engineering nec | 68.1 | 65.7 | 57.3 | 54.6 | 58.4 | 59.7 | 55.8 | 55.4 | 55.9 | 56.4 | 56.4 | 58.1 | 60.0 | 60.2 | 59.4 | 57.7 |

NA = not available; nec = not elsewhere classified

SOURCES: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006; and Integrated Science and Resources Data System (WebCASPAR), http://webcaspar.nsf.gov.

Appendix table 5-6 (Page 1 of 3)

**Federal obligations for academic R&D, by agency: 1970–2007**

| Year | All agencies | DOD | DOE[a] | NASA | NIH[b] | NSF | USDA | All other agencies |
|---|---|---|---|---|---|---|---|---|
| | Current $millions | | | | | | | |
| 1970 | 1,476 | 216 | 100 | 131 | 518 | 228 | 65 | 217 |
| 1971 | 1,645 | 211 | 94 | 134 | 603 | 267 | 72 | 264 |
| 1972 | 1,904 | 217 | 85 | 119 | 756 | 362 | 87 | 277 |
| 1973 | 1,917 | 204 | 83 | 111 | 761 | 374 | 94 | 289 |
| 1974 | 2,214 | 197 | 94 | 99 | 1,027 | 389 | 95 | 312 |
| 1975 | 2,411 | 203 | 132 | 108 | 1,077 | 435 | 108 | 348 |
| 1976 | 2,552 | 240 | 145 | 119 | 1,185 | 437 | 120 | 307 |
| 1977 | 2,905 | 273 | 188 | 118 | 1,311 | 511 | 140 | 364 |
| 1978 | 3,375 | 383 | 240 | 127 | 1,493 | 537 | 186 | 408 |
| 1979 | 3,889 | 438 | 260 | 139 | 1,880 | 617 | 200 | 355 |
| 1980 | 4,263 | 495 | 285 | 158 | 2,012 | 685 | 216 | 412 |
| 1981 | 4,466 | 573 | 300 | 171 | 2,101 | 702 | 243 | 376 |
| 1982 | 4,605 | 664 | 277 | 186 | 2,140 | 715 | 255 | 369 |
| 1983 | 4,966 | 724 | 297 | 189 | 2,392 | 783 | 275 | 306 |
| 1984 | 5,547 | 830 | 321 | 204 | 2,715 | 880 | 261 | 335 |
| 1985 | 6,340 | 940 | 357 | 237 | 3,158 | 1,002 | 293 | 352 |
| 1986 | 6,559 | 1,098 | 345 | 254 | 3,243 | 992 | 274 | 355 |
| 1987 | 7,337 | 1,017 | 386 | 294 | 3,903 | 1,096 | 280 | 361 |
| 1988 | 7,828 | 1,071 | 406 | 338 | 4,199 | 1,143 | 305 | 366 |
| 1989 | 8,672 | 1,189 | 454 | 434 | 4,565 | 1,254 | 328 | 449 |
| 1990 | 9,138 | 1,213 | 500 | 471 | 4,779 | 1,321 | 348 | 505 |
| 1991 | 10,169 | 1,152 | 621 | 534 | 5,521 | 1,436 | 386 | 520 |
| 1992 | 10,271 | 1,403 | 640 | 586 | 5,064 | 1,540 | 438 | 600 |
| 1993 | 11,208 | 1,616 | 583 | 614 | 5,848 | 1,562 | 433 | 553 |
| 1994 | 11,797 | 1,703 | 565 | 641 | 6,191 | 1,680 | 439 | 577 |
| 1995 | 11,928 | 1,589 | 594 | 708 | 6,271 | 1,734 | 435 | 597 |
| 1996 | 11,978 | 1,447 | 601 | 665 | 6,620 | 1,740 | 376 | 529 |
| 1997 | 12,559 | 1,345 | 583 | 719 | 7,057 | 1,819 | 441 | 595 |
| 1998 | 13,381 | 1,419 | 623 | 787 | 7,565 | 1,875 | 415 | 697 |
| 1999 | 14,959 | 1,474 | 630 | 787 | 8,761 | 2,076 | 492 | 739 |
| 2000 | 16,821 | 1,606 | 668 | 845 | 10,087 | 2,265 | 554 | 796 |
| 2001 | 19,588 | 2,285 | 743 | 942 | 11,528 | 2,498 | 652 | 939 |
| 2002 | 21,290 | 2,219 | 762 | 1,075 | 13,062 | 2,696 | 592 | 885 |
| 2003 | 22,693 | 1,934 | 790 | 1,096 | 14,350 | 2,978 | 641 | 904 |
| 2004 | 24,170 | 2,036 | 854 | 1,171 | 15,184 | 3,122 | 653 | 1,150 |
| 2005 | 24,842 | 2,192 | 831 | 1,098 | 15,657 | 3,072 | 710 | 1,282 |
| 2006 (estimated) | 25,332 | 2,399 | 730 | 1,153 | 15,696 | 3,107 | 813 | 1,433 |
| 2007 (estimated) | 24,968 | 1,977 | 804 | 1,210 | 15,768 | 3,321 | 584 | 1,304 |
| | 2000 constant $millions | | | | | | | |
| 1970 | 5,462 | 799 | 370 | 485 | 1,917 | 844 | 241 | 803 |
| 1971 | 5,798 | 744 | 331 | 472 | 2,125 | 941 | 254 | 931 |
| 1972 | 6,409 | 730 | 286 | 401 | 2,545 | 1,218 | 293 | 932 |
| 1973 | 6,180 | 658 | 268 | 358 | 2,453 | 1,206 | 303 | 932 |
| 1974 | 6,657 | 592 | 283 | 298 | 3,088 | 1,170 | 286 | 938 |
| 1975 | 6,566 | 553 | 359 | 294 | 2,933 | 1,185 | 294 | 948 |
| 1976 | 6,483 | 610 | 368 | 302 | 3,010 | 1,110 | 305 | 780 |
| 1977 | 6,865 | 645 | 444 | 279 | 3,098 | 1,208 | 331 | 860 |
| 1978 | 7,473 | 848 | 531 | 281 | 3,306 | 1,189 | 412 | 903 |
| 1979 | 7,969 | 897 | 533 | 285 | 3,852 | 1,264 | 410 | 727 |
| 1980 | 8,031 | 933 | 537 | 298 | 3,790 | 1,290 | 407 | 776 |
| 1981 | 7,663 | 983 | 515 | 293 | 3,605 | 1,205 | 417 | 645 |
| 1982 | 7,395 | 1,066 | 445 | 299 | 3,437 | 1,148 | 410 | 593 |
| 1983 | 7,638 | 1,114 | 457 | 291 | 3,679 | 1,204 | 423 | 471 |
| 1984 | 8,228 | 1,231 | 476 | 303 | 4,027 | 1,305 | 387 | 497 |
| 1985 | 9,108 | 1,350 | 513 | 340 | 4,537 | 1,440 | 421 | 506 |

Appendix table 5-6 (Page 2 of 3)
**Federal obligations for academic R&D, by agency: 1970–2007**

| Year | All agencies | DOD | DOE[a] | NASA | NIH[b] | NSF | USDA | All other agencies |
|---|---|---|---|---|---|---|---|---|
| 1986 | 9,209 | 1,542 | 484 | 357 | 4,553 | 1,393 | 385 | 498 |
| 1987 | 10,039 | 1,392 | 528 | 402 | 5,340 | 1,500 | 383 | 494 |
| 1988 | 10,384 | 1,421 | 539 | 448 | 5,570 | 1,516 | 405 | 486 |
| 1989 | 11,073 | 1,518 | 580 | 554 | 5,829 | 1,601 | 419 | 573 |
| 1990 | 11,250 | 1,493 | 616 | 580 | 5,884 | 1,626 | 429 | 622 |
| 1991 | 12,067 | 1,367 | 737 | 633 | 6,551 | 1,703 | 458 | 617 |
| 1992 | 11,889 | 1,624 | 741 | 679 | 5,861 | 1,783 | 507 | 695 |
| 1993 | 12,691 | 1,830 | 660 | 695 | 6,621 | 1,769 | 490 | 626 |
| 1994 | 13,074 | 1,887 | 626 | 711 | 6,862 | 1,862 | 486 | 639 |
| 1995 | 12,941 | 1,724 | 645 | 768 | 6,804 | 1,881 | 472 | 648 |
| 1996 | 12,757 | 1,541 | 640 | 708 | 7,051 | 1,853 | 401 | 563 |
| 1997 | 13,146 | 1,408 | 611 | 753 | 7,387 | 1,904 | 461 | 623 |
| 1998 | 13,832 | 1,467 | 644 | 813 | 7,820 | 1,938 | 429 | 720 |
| 1999 | 15,263 | 1,504 | 643 | 803 | 8,940 | 2,119 | 502 | 754 |
| 2000 | 16,821 | 1,606 | 668 | 845 | 10,087 | 2,265 | 554 | 796 |
| 2001 | 19,251 | 2,246 | 730 | 926 | 11,330 | 2,455 | 641 | 923 |
| 2002 | 20,521 | 2,139 | 734 | 1,036 | 12,590 | 2,598 | 570 | 853 |
| 2003 | 21,433 | 1,827 | 747 | 1,035 | 13,553 | 2,813 | 606 | 854 |
| 2004 | 22,275 | 1,876 | 787 | 1,079 | 13,994 | 2,878 | 602 | 1,059 |
| 2005 | 22,204 | 1,959 | 743 | 981 | 13,994 | 2,746 | 634 | 1,146 |
| 2006 (estimated) | 21,966 | 2,081 | 633 | 1,000 | 13,610 | 2,694 | 705 | 1,243 |
| 2007 (estimated) | 21,115 | 1,672 | 680 | 1,024 | 13,335 | 2,808 | 494 | 1,103 |
| | Percent distribution | | | | | | | |
| 1970 | 100.0 | 14.6 | 6.8 | 8.9 | 35.1 | 15.4 | 4.4 | 14.7 |
| 1971 | 100.0 | 12.8 | 5.7 | 8.1 | 36.7 | 16.2 | 4.4 | 16.0 |
| 1972 | 100.0 | 11.4 | 4.5 | 6.3 | 39.7 | 19.0 | 4.6 | 14.5 |
| 1973 | 100.0 | 10.6 | 4.3 | 5.8 | 39.7 | 19.5 | 4.9 | 15.1 |
| 1974 | 100.0 | 8.9 | 4.2 | 4.5 | 46.4 | 17.6 | 4.3 | 14.1 |
| 1975 | 100.0 | 8.4 | 5.5 | 4.5 | 44.7 | 18.0 | 4.5 | 14.4 |
| 1976 | 100.0 | 9.4 | 5.7 | 4.7 | 46.4 | 17.1 | 4.7 | 12.0 |
| 1977 | 100.0 | 9.4 | 6.5 | 4.1 | 45.1 | 17.6 | 4.8 | 12.5 |
| 1978 | 100.0 | 11.3 | 7.1 | 3.8 | 44.2 | 15.9 | 5.5 | 12.1 |
| 1979 | 100.0 | 11.3 | 6.7 | 3.6 | 48.3 | 15.9 | 5.1 | 9.1 |
| 1980 | 100.0 | 11.6 | 6.7 | 3.7 | 47.2 | 16.1 | 5.1 | 9.7 |
| 1981 | 100.0 | 12.8 | 6.7 | 3.8 | 47.0 | 15.7 | 5.4 | 8.4 |
| 1982 | 100.0 | 14.4 | 6.0 | 4.0 | 46.5 | 15.5 | 5.5 | 8.0 |
| 1983 | 100.0 | 14.6 | 6.0 | 3.8 | 48.2 | 15.8 | 5.5 | 6.2 |
| 1984 | 100.0 | 15.0 | 5.8 | 3.7 | 48.9 | 15.9 | 4.7 | 6.0 |
| 1985 | 100.0 | 14.8 | 5.6 | 3.7 | 49.8 | 15.8 | 4.6 | 5.6 |
| 1986 | 100.0 | 16.7 | 5.3 | 3.9 | 49.4 | 15.1 | 4.2 | 5.4 |
| 1987 | 100.0 | 13.9 | 5.3 | 4.0 | 53.2 | 14.9 | 3.8 | 4.9 |
| 1988 | 100.0 | 13.7 | 5.2 | 4.3 | 53.6 | 14.6 | 3.9 | 4.7 |
| 1989 | 100.0 | 13.7 | 5.2 | 5.0 | 52.6 | 14.5 | 3.8 | 5.2 |
| 1990 | 100.0 | 13.3 | 5.5 | 5.2 | 52.3 | 14.5 | 3.8 | 5.5 |
| 1991 | 100.0 | 11.3 | 6.1 | 5.2 | 54.3 | 14.1 | 3.8 | 5.1 |
| 1992 | 100.0 | 13.7 | 6.2 | 5.7 | 49.3 | 15.0 | 4.3 | 5.8 |
| 1993 | 100.0 | 14.4 | 5.2 | 5.5 | 52.2 | 13.9 | 3.9 | 4.9 |
| 1994 | 100.0 | 14.4 | 4.8 | 5.4 | 52.5 | 14.2 | 3.7 | 4.9 |
| 1995 | 100.0 | 13.3 | 5.0 | 5.9 | 52.6 | 14.5 | 3.6 | 5.0 |
| 1996 | 100.0 | 12.1 | 5.0 | 5.5 | 55.3 | 14.5 | 3.1 | 4.4 |
| 1997 | 100.0 | 10.7 | 4.6 | 5.7 | 56.2 | 14.5 | 3.5 | 4.7 |
| 1998 | 100.0 | 10.6 | 4.7 | 5.9 | 56.5 | 14.0 | 3.1 | 5.2 |
| 1999 | 100.0 | 9.9 | 4.2 | 5.3 | 58.6 | 13.9 | 3.3 | 4.9 |
| 2000 | 100.0 | 9.5 | 4.0 | 5.0 | 60.0 | 13.5 | 3.3 | 4.7 |
| 2001 | 100.0 | 11.7 | 3.8 | 4.8 | 58.9 | 12.8 | 3.3 | 4.8 |
| 2002 | 100.0 | 10.4 | 3.6 | 5.0 | 61.4 | 12.7 | 2.8 | 4.2 |
| 2003 | 100.0 | 8.5 | 3.5 | 4.8 | 63.2 | 13.1 | 2.8 | 4.0 |

Appendix table 5-6 (Page 3 of 3)

**Federal obligations for academic R&D, by agency: 1970–2007**

| Year | All agencies | DOD | DOE[a] | NASA | NIH[b] | NSF | USDA | All other agencies |
|---|---|---|---|---|---|---|---|---|
| 2004 | 100.0 | 8.4 | 3.5 | 4.8 | 62.8 | 12.9 | 2.7 | 4.8 |
| 2005 | 100.0 | 8.8 | 3.3 | 4.4 | 63.0 | 12.4 | 2.9 | 5.2 |
| 2006 (estimated) | 100.0 | 9.5 | 2.9 | 4.6 | 62.0 | 12.3 | 3.2 | 5.7 |
| 2007 (estimated) | 100.0 | 7.9 | 3.2 | 4.8 | 63.2 | 13.3 | 2.3 | 5.2 |

DOD = Department of Defense; DOE = Department of Energy; NASA = National Aeronautics and Space Administration; NIH = National Institutes of Health; NSF = National Science Foundation; USDA = U.S. Department of Agriculture

[a]DOE data for 1970–73 from Atomic Energy Commission, for 1974–76 from Energy Research and Development Administration, and for 1977 and thereafter from DOE.
[b]NIH data include Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA), an agency in the Department of Health and Human Services replaced in 1992 by the Substance Abuse and Mental Health Services Administration. Three research entities of ADAMHA (National Institute of Mental Health, National Institute on Alcohol Abuse and Alcoholism, and National Institute on Drug Abuse) merged at that time into NIH.

NOTES: Detail may not add to total because of rounding. See appendix table 4-1 for gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars.

SOURCES: NSF, Division of Science Resources Statistics, Federal Funds for Research and Development: Fiscal Years 2005, 2006, and 2007 (forthcoming); and Federal Funds for Research and Development: Detailed Historical Tables: Fiscal Years 1951–2002, NSF 03-325 (2003), http://www.nsf.gov/sbe/srs/nsf03325/start.htm.

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Appendix table 5-7 (Page 1 of 3)

**Federal obligations for academic research, by agency: 1970–2007**

| Year | All agencies | DOD | DOE[a] | NASA | NIH[b] | NSF | USDA | All other agencies |
|---|---|---|---|---|---|---|---|---|
| | Current $millions | | | | | | | |
| 1970 | 1,276 | 173 | 97 | 65 | 480 | 223 | 65 | 174 |
| 1971 | 1,430 | 184 | 90 | 70 | 551 | 254 | 72 | 210 |
| 1972 | 1,643 | 177 | 81 | 48 | 677 | 346 | 87 | 226 |
| 1973 | 1,691 | 161 | 79 | 80 | 749 | 370 | 94 | 158 |
| 1974 | 1,958 | 167 | 86 | 85 | 1,004 | 369 | 94 | 153 |
| 1975 | 2,079 | 165 | 112 | 91 | 1,036 | 420 | 108 | 148 |
| 1976 | 2,250 | 192 | 116 | 98 | 1,138 | 429 | 119 | 158 |
| 1977 | 2,584 | 221 | 134 | 105 | 1,269 | 505 | 139 | 211 |
| 1978 | 2,928 | 243 | 175 | 116 | 1,437 | 534 | 181 | 241 |
| 1979 | 3,333 | 271 | 204 | 125 | 1,657 | 612 | 198 | 266 |
| 1980 | 3,699 | 313 | 224 | 146 | 1,835 | 680 | 214 | 287 |
| 1981 | 3,920 | 363 | 248 | 157 | 1,929 | 698 | 240 | 284 |
| 1982 | 4,045 | 413 | 236 | 156 | 1,995 | 713 | 253 | 280 |
| 1983 | 4,468 | 472 | 273 | 170 | 2,246 | 783 | 273 | 250 |
| 1984 | 5,030 | 539 | 311 | 177 | 2,573 | 880 | 260 | 290 |
| 1985 | 5,726 | 587 | 336 | 213 | 2,990 | 1,002 | 292 | 305 |
| 1986 | 5,883 | 707 | 334 | 225 | 3,054 | 992 | 273 | 298 |
| 1987 | 6,640 | 681 | 372 | 263 | 3,651 | 1,096 | 279 | 298 |
| 1988 | 7,023 | 729 | 384 | 310 | 3,856 | 1,143 | 304 | 297 |
| 1989 | 7,793 | 840 | 437 | 387 | 4,167 | 1,254 | 326 | 382 |
| 1990 | 8,137 | 795 | 479 | 422 | 4,349 | 1,321 | 346 | 426 |
| 1991 | 8,868 | 794 | 596 | 474 | 4,729 | 1,436 | 384 | 456 |
| 1992 | 9,061 | 912 | 605 | 512 | 4,517 | 1,540 | 436 | 538 |
| 1993 | 9,892 | 1,090 | 547 | 539 | 5,253 | 1,562 | 429 | 472 |
| 1994 | 10,292 | 1,079 | 529 | 555 | 5,517 | 1,680 | 436 | 496 |
| 1995 | 10,354 | 1,047 | 558 | 588 | 5,481 | 1,734 | 431 | 516 |
| 1996 | 10,707 | 1,071 | 566 | 560 | 5,924 | 1,740 | 373 | 471 |
| 1997 | 11,173 | 945 | 552 | 596 | 6,309 | 1,819 | 437 | 515 |
| 1998 | 11,739 | 963 | 564 | 648 | 6,716 | 1,875 | 408 | 566 |
| 1999 | 13,204 | 989 | 562 | 745 | 7,733 | 2,076 | 482 | 617 |
| 2000 | 16,022 | 1,113 | 619 | 721 | 10,087 | 2,265 | 547 | 670 |
| 2001 | 18,657 | 1,697 | 695 | 812 | 11,528 | 2,498 | 643 | 785 |
| 2002 | 20,285 | 1,591 | 702 | 933 | 13,062 | 2,696 | 581 | 721 |
| 2003 | 21,676 | 1,302 | 729 | 937 | 14,350 | 2,978 | 627 | 754 |
| 2004 | 22,699 | 1,282 | 797 | 661 | 15,184 | 3,122 | 638 | 1,015 |
| 2005 | 23,156 | 1,348 | 776 | 581 | 15,657 | 3,072 | 694 | 1,028 |
| 2006 (estimated) | 23,447 | 1,461 | 696 | 610 | 15,696 | 3,107 | 802 | 1,076 |
| 2007 (estimated) | 23,361 | 1,282 | 761 | 640 | 15,768 | 3,321 | 575 | 1,015 |
| | 2000 constant $millions | | | | | | | |
| 1970 | 4,722 | 640 | 359 | 241 | 1,776 | 825 | 241 | 644 |
| 1971 | 5,040 | 649 | 317 | 247 | 1,942 | 895 | 254 | 740 |
| 1972 | 5,530 | 596 | 273 | 162 | 2,279 | 1,165 | 293 | 761 |
| 1973 | 5,451 | 519 | 255 | 258 | 2,415 | 1,193 | 303 | 509 |
| 1974 | 5,887 | 502 | 259 | 256 | 3,019 | 1,109 | 283 | 460 |
| 1975 | 5,662 | 449 | 305 | 248 | 2,822 | 1,144 | 294 | 403 |
| 1976 | 5,715 | 488 | 295 | 249 | 2,891 | 1,090 | 302 | 401 |
| 1977 | 6,106 | 522 | 317 | 248 | 2,999 | 1,193 | 328 | 499 |
| 1978 | 6,483 | 538 | 387 | 257 | 3,182 | 1,182 | 401 | 534 |
| 1979 | 6,829 | 555 | 418 | 256 | 3,395 | 1,254 | 406 | 545 |
| 1980 | 6,968 | 590 | 422 | 275 | 3,457 | 1,281 | 403 | 541 |
| 1981 | 6,726 | 623 | 426 | 269 | 3,310 | 1,198 | 412 | 487 |
| 1982 | 6,496 | 663 | 379 | 251 | 3,204 | 1,145 | 406 | 450 |
| 1983 | 6,872 | 726 | 420 | 261 | 3,454 | 1,204 | 420 | 385 |
| 1984 | 7,461 | 799 | 461 | 263 | 3,817 | 1,305 | 386 | 430 |
| 1985 | 8,226 | 843 | 483 | 306 | 4,296 | 1,440 | 419 | 438 |

Appendix table 5-7 (Page 2 of 3)

**Federal obligations for academic research, by agency: 1970–2007**

| Year | All agencies | DOD | DOE[a] | NASA | NIH[b] | NSF | USDA | All other agencies |
|---|---|---|---|---|---|---|---|---|
| 1986 | 8,260 | 993 | 469 | 316 | 4,288 | 1,393 | 383 | 418 |
| 1987 | 9,085 | 932 | 509 | 360 | 4,995 | 1,500 | 382 | 408 |
| 1988 | 9,316 | 967 | 509 | 411 | 5,115 | 1,516 | 403 | 394 |
| 1989 | 9,951 | 1,073 | 558 | 494 | 5,321 | 1,601 | 416 | 488 |
| 1990 | 10,018 | 979 | 590 | 520 | 5,354 | 1,626 | 426 | 524 |
| 1991 | 10,523 | 942 | 707 | 562 | 5,612 | 1,703 | 456 | 541 |
| 1992 | 10,488 | 1,056 | 701 | 593 | 5,229 | 1,783 | 505 | 623 |
| 1993 | 11,201 | 1,234 | 620 | 610 | 5,948 | 1,769 | 486 | 534 |
| 1994 | 11,406 | 1,195 | 586 | 615 | 6,114 | 1,862 | 483 | 550 |
| 1995 | 11,234 | 1,136 | 605 | 638 | 5,947 | 1,881 | 468 | 560 |
| 1996 | 11,403 | 1,140 | 603 | 596 | 6,309 | 1,853 | 398 | 502 |
| 1997 | 11,695 | 990 | 578 | 624 | 6,604 | 1,904 | 457 | 539 |
| 1998 | 12,134 | 995 | 583 | 670 | 6,942 | 1,938 | 422 | 585 |
| 1999 | 13,473 | 1,009 | 573 | 760 | 7,890 | 2,119 | 491 | 630 |
| 2000 | 16,022 | 1,113 | 619 | 721 | 10,087 | 2,265 | 547 | 670 |
| 2001 | 18,336 | 1,667 | 683 | 798 | 11,330 | 2,455 | 632 | 772 |
| 2002 | 19,552 | 1,533 | 677 | 899 | 12,590 | 2,598 | 560 | 695 |
| 2003 | 20,473 | 1,229 | 689 | 885 | 13,553 | 2,813 | 592 | 712 |
| 2004 | 20,920 | 1,181 | 735 | 609 | 13,994 | 2,878 | 588 | 935 |
| 2005 | 20,697 | 1,205 | 694 | 519 | 13,994 | 2,746 | 620 | 919 |
| 2006 (estimated) | 20,331 | 1,267 | 603 | 529 | 13,610 | 2,694 | 695 | 933 |
| 2007 (estimated) | 19,756 | 1,084 | 644 | 542 | 13,335 | 2,808 | 486 | 858 |
| | Percent distribution | | | | | | | |
| 1970 | 100.0 | 13.6 | 7.6 | 5.1 | 37.6 | 17.5 | 5.1 | 13.6 |
| 1971 | 100.0 | 12.9 | 6.3 | 4.9 | 38.5 | 17.8 | 5.0 | 14.7 |
| 1972 | 100.0 | 10.8 | 4.9 | 2.9 | 41.2 | 21.1 | 5.3 | 13.8 |
| 1973 | 100.0 | 9.5 | 4.7 | 4.7 | 44.3 | 21.9 | 5.6 | 9.3 |
| 1974 | 100.0 | 8.5 | 4.4 | 4.3 | 51.3 | 18.8 | 4.8 | 7.8 |
| 1975 | 100.0 | 7.9 | 5.4 | 4.4 | 49.8 | 20.2 | 5.2 | 7.1 |
| 1976 | 100.0 | 8.5 | 5.2 | 4.4 | 50.6 | 19.1 | 5.3 | 7.0 |
| 1977 | 100.0 | 8.6 | 5.2 | 4.1 | 49.1 | 19.5 | 5.4 | 8.2 |
| 1978 | 100.0 | 8.3 | 6.0 | 4.0 | 49.1 | 18.2 | 6.2 | 8.2 |
| 1979 | 100.0 | 8.1 | 6.1 | 3.8 | 49.7 | 18.4 | 5.9 | 8.0 |
| 1980 | 100.0 | 8.5 | 6.1 | 3.9 | 49.6 | 18.4 | 5.8 | 7.8 |
| 1981 | 100.0 | 9.3 | 6.3 | 4.0 | 49.2 | 17.8 | 6.1 | 7.2 |
| 1982 | 100.0 | 10.2 | 5.8 | 3.9 | 49.3 | 17.6 | 6.3 | 6.9 |
| 1983 | 100.0 | 10.6 | 6.1 | 3.8 | 50.3 | 17.5 | 6.1 | 5.6 |
| 1984 | 100.0 | 10.7 | 6.2 | 3.5 | 51.2 | 17.5 | 5.2 | 5.8 |
| 1985 | 100.0 | 10.3 | 5.9 | 3.7 | 52.2 | 17.5 | 5.1 | 5.3 |
| 1986 | 100.0 | 12.0 | 5.7 | 3.8 | 51.9 | 16.9 | 4.6 | 5.1 |
| 1987 | 100.0 | 10.3 | 5.6 | 4.0 | 55.0 | 16.5 | 4.2 | 4.5 |
| 1988 | 100.0 | 10.4 | 5.5 | 4.4 | 54.9 | 16.3 | 4.3 | 4.2 |
| 1989 | 100.0 | 10.8 | 5.6 | 5.0 | 53.5 | 16.1 | 4.2 | 4.9 |
| 1990 | 100.0 | 9.8 | 5.9 | 5.2 | 53.5 | 16.2 | 4.2 | 5.2 |
| 1991 | 100.0 | 9.0 | 6.7 | 5.3 | 53.3 | 16.2 | 4.3 | 5.1 |
| 1992 | 100.0 | 10.1 | 6.7 | 5.7 | 49.9 | 17.0 | 4.8 | 5.9 |
| 1993 | 100.0 | 11.0 | 5.5 | 5.4 | 53.1 | 15.8 | 4.3 | 4.8 |
| 1994 | 100.0 | 10.5 | 5.1 | 5.4 | 53.6 | 16.3 | 4.2 | 4.8 |
| 1995 | 100.0 | 10.1 | 5.4 | 5.7 | 52.9 | 16.7 | 4.2 | 5.0 |
| 1996 | 100.0 | 10.0 | 5.3 | 5.2 | 55.3 | 16.3 | 3.5 | 4.4 |
| 1997 | 100.0 | 8.5 | 4.9 | 5.3 | 56.5 | 16.3 | 3.9 | 4.6 |
| 1998 | 100.0 | 8.2 | 4.8 | 5.5 | 57.2 | 16.0 | 3.5 | 4.8 |
| 1999 | 100.0 | 7.5 | 4.3 | 5.6 | 58.6 | 15.7 | 3.6 | 4.7 |
| 2000 | 100.0 | 6.9 | 3.9 | 4.5 | 63.0 | 14.1 | 3.4 | 4.2 |
| 2001 | 100.0 | 9.1 | 3.7 | 4.4 | 61.8 | 13.4 | 3.4 | 4.2 |
| 2002 | 100.0 | 7.8 | 3.5 | 4.6 | 64.4 | 13.3 | 2.9 | 3.6 |
| 2003 | 100.0 | 6.0 | 3.4 | 4.3 | 66.2 | 13.7 | 2.9 | 3.5 |

Appendix table 5-7 (Page 3 of 3)

**Federal obligations for academic research, by agency: 1970–2007**

| Year | All agencies | DOD | DOE[a] | NASA | NIH[b] | NSF | USDA | All other agencies |
|---|---|---|---|---|---|---|---|---|
| 2004 | 100.0 | 5.6 | 3.5 | 2.9 | 66.9 | 13.8 | 2.8 | 4.5 |
| 2005 | 100.0 | 5.8 | 3.4 | 2.5 | 67.6 | 13.3 | 3.0 | 4.4 |
| 2006 (estimated) | 100.0 | 6.2 | 3.0 | 2.6 | 66.9 | 13.3 | 3.4 | 4.6 |
| 2007 (estimated) | 100.0 | 5.5 | 3.3 | 2.7 | 67.5 | 14.2 | 2.5 | 4.3 |

DOD = Department of Defense; DOE = Department of Energy; NASA = National Aeronautics and Space Administration; NIH = National Institutes of Health; NSF = National Science Foundation; USDA = U.S. Department of Agriculture

[a]DOE data for 1970–73 from Atomic Energy Commission, for 1974–76 from Energy Research and Development Administration, and for 1977 and thereafter from DOE.
[b]NIH data include Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA), an agency in the Department of Health and Human Services replaced in 1992 by the Substance Abuse and Mental Health Services Administration. Three research entities of ADAMHA (National Institute of Mental Health, National Institute on Alcohol Abuse and Alcoholism, and National Institute on Drug Abuse) merged at that time into NIH.

NOTES: Academic research includes basic and applied research. Detail may not add to total because of rounding. See appendix table 4-1 for gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars.

SOURCES: NSF, Division of Science Resources Statistics, Federal Funds for Research and Development: Fiscal Years 2005, 2006, and 2007 (forthcoming); and Federal Funds for Research and Development: Detailed Historical Tables: Fiscal Years 1951–2002, NSF 03-325 (2003), http://www.nsf.gov/sbe/srs/nsf03325/start.htm.

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Appendix table 5-8

**Federal agencies' academic research obligations, by field: FY 2005**

(Percent distribution)

| Field | DHS | DOD | DOE | HHS | NASA | NSF | USDA |
|---|---|---|---|---|---|---|---|
| All fields | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Science | 78.7 | 59.9 | 84.7 | 97.2 | 68.7 | 83.4 | 97.1 |
| Physical sciences | 20.0 | 10.1 | 52.8 | 1.8 | 30.9 | 18.6 | 3.2 |
| Astronomy | 0.0 | 0.0 | 0.0 | 0.0 | 19.3 | 2.2 | 0.0 |
| Chemistry | 8.6 | 3.3 | 11.9 | 1.6 | 1.4 | 5.7 | 3.1 |
| Physics | 11.1 | 5.0 | 40.9 | 0.0 | 8.8 | 7.0 | 0.0 |
| Physical sciences nec | 0.2 | 1.8 | 0.0 | 0.1 | 1.4 | 3.8 | 0.0 |
| Mathematics | 1.4 | 4.8 | 2.6 | 0.6 | 0.1 | 6.0 | 0.1 |
| Computer sciences | 2.3 | 15.1 | 1.8 | 0.0 | 1.4 | 17.7 | 0.0 |
| Earth, atmospheric, and ocean sciences | 0.0 | 9.3 | 11.1 | 1.6 | 24.7 | 13.0 | 1.5 |
| Atmospheric sciences | 0.0 | 1.2 | 3.7 | 0.0 | 15.5 | 3.4 | 1.4 |
| Earth sciences | 0.0 | 0.7 | 4.1 | 0.0 | 5.3 | 3.8 | 0.1 |
| Oceanography | 0.0 | 6.6 | 0.1 | 0.0 | 2.0 | 5.6 | 0.0 |
| Other | 0.0 | 0.8 | 3.3 | 1.6 | 1.9 | 0.2 | 0.0 |
| Life sciences | 33.4 | 14.1 | 16.4 | 84.2 | 5.3 | 15.6 | 83.3 |
| Agricultural sciences | 0.9 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 44.1 |
| Biological sciences (excluding environmental) | 31.3 | 4.4 | 9.4 | 43.5 | 2.7 | 12.7 | 21.5 |
| Environmental biology | 0.3 | 0.9 | 0.0 | 0.0 | 0.2 | 2.9 | 16.3 |
| Medical sciences | 1.0 | 6.7 | 6.9 | 34.8 | 1.7 | 0.0 | 1.5 |
| Life sciences nec | 0.0 | 2.0 | 0.1 | 5.9 | 0.6 | 0.0 | 0.0 |
| Psychology | 1.5 | 0.7 | 0.0 | 6.6 | 0.3 | 0.1 | 0.0 |
| Biological aspects | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Social aspects | 1.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.1 | 0.0 |
| Psychology nec | 0.3 | 0.5 | 0.0 | 6.6 | 0.1 | 0.0 | 0.0 |
| Social sciences | 5.5 | 0.0 | 0.0 | 1.2 | 0.0 | 4.8 | 8.9 |
| Anthropology | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 |
| Economics | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 6.9 |
| Political science | 3.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 |
| Sociology | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 2.0 |
| Social sciences nec | 0.2 | 0.0 | 0.0 | 1.2 | 0.0 | 3.3 | 0.0 |
| Other sciences nec | 14.7 | 5.8 | 0.0 | 1.2 | 6.0 | 7.6 | 0.0 |
| Engineering | 21.3 | 40.1 | 15.3 | 2.8 | 31.3 | 16.6 | 2.9 |
| Aeronautical | 0.3 | 3.2 | 0.0 | 0.0 | 19.9 | 0.0 | 0.0 |
| Astronautical | 0.0 | 0.5 | 0.0 | 0.0 | 8.0 | 0.0 | 0.0 |
| Chemical | 0.2 | 0.4 | 4.4 | 0.0 | 0.1 | 1.9 | 0.1 |
| Civil | 1.3 | 0.5 | 0.7 | 0.0 | 0.0 | 1.8 | 0.0 |
| Electrical | 0.2 | 11.8 | 1.9 | 0.0 | 0.6 | 2.2 | 0.0 |
| Mechanical | 0.3 | 3.9 | 0.3 | 0.0 | 0.4 | 0.2 | 0.0 |
| Materials | 0.4 | 8.5 | 3.1 | 0.3 | 0.5 | 4.1 | 0.0 |
| Engineering nec | 18.6 | 11.4 | 5.0 | 2.5 | 2.0 | 6.5 | 2.8 |

nec = not elsewhere classified

DHS = Department of Homeland Security; DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = U.S. Department of Agriculture

NOTES: Academic research includes both basic and applied research. Agencies shown are only ones that report research obligations to academia by S&E field and represent approximately 97% of academic research obligations. Detail may not add to total because of rounding.

SOURCE: NSF, Division of Science Resources Statistics, Federal Funds for Research and Development: Fiscal Years 2005, 2006, and 2007 (forthcoming).

Appendix table 5-9



**Federal academic research obligations provided by major agencies, by field: FY 2005**

(Percent distribution)

| Field | All agencies | DHS | DOD | DOE | HHS | NASA | NSF | USDA |
|---|---|---|---|---|---|---|---|---|
| All fields | 100.0 | 0.1 | 6.0 | 3.4 | 71.3 | 2.6 | 13.6 | 3.1 |
| Science | 100.0 | 0.0 | 3.9 | 3.2 | 75.4 | 1.9 | 12.4 | 3.2 |
| Physical sciences | 100.0 | 0.2 | 8.5 | 25.6 | 17.6 | 11.2 | 35.7 | 1.4 |
| Astronomy | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 62.9 | 37.1 | 0.0 |
| Chemistry | 100.0 | 0.2 | 7.3 | 15.2 | 43.7 | 1.3 | 28.7 | 3.6 |
| Physics | 100.0 | 0.2 | 10.2 | 48.6 | 0.0 | 7.8 | 33.0 | 0.0 |
| Physical sciences nec | 100.0 | 0.0 | 14.8 | 0.0 | 10.1 | 4.9 | 70.2 | 0.0 |
| Mathematics | 100.0 | 0.0 | 17.5 | 5.3 | 26.2 | 0.2 | 49.9 | 0.2 |
| Computer sciences | 100.0 | 0.0 | 26.5 | 1.8 | 0.1 | 1.0 | 70.7 | 0.0 |
| Earth, atmospheric, and ocean sciences | 100.0 | 0.0 | 12.3 | 8.5 | 24.9 | 14.1 | 39.2 | 1.1 |
| Atmospheric sciences | 100.0 | 0.0 | 6.5 | 11.4 | 0.0 | 36.1 | 42.1 | 3.9 |
| Earth sciences | 100.0 | 0.0 | 5.1 | 16.8 | 0.0 | 16.4 | 61.3 | 0.5 |
| Ocean sciences | 100.0 | 0.0 | 32.6 | 0.2 | 0.0 | 4.3 | 62.9 | 0.0 |
| Other | 100.0 | 0.0 | 3.4 | 8.4 | 82.7 | 3.5 | 2.0 | 0.0 |
| Life sciences | 100.0 | 0.0 | 1.3 | 0.9 | 90.6 | 0.2 | 3.2 | 3.9 |
| Agricultural sciences | 100.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.1 | 0.0 | 99.5 |
| Biological sciences (excluding environmental) | 100.0 | 0.0 | 0.8 | 1.0 | 91.0 | 0.2 | 5.1 | 1.9 |
| Environmental biology | 100.0 | 0.0 | 5.5 | 0.0 | 0.7 | 0.6 | 40.9 | 52.2 |
| Medical sciences | 100.0 | 0.0 | 1.6 | 0.9 | 97.1 | 0.2 | 0.0 | 0.2 |
| Life sciences nec | 100.0 | 0.0 | 2.7 | 0.0 | 96.9 | 0.4 | 0.0 | 0.0 |
| Psychology | 100.0 | 0.0 | 0.8 | 0.0 | 98.6 | 0.2 | 0.4 | 0.0 |
| Biological aspects | 100.0 | 1.5 | 95.6 | 0.0 | 0.0 | 2.9 | 0.0 | 0.0 |
| Social aspects | 100.0 | 1.9 | 18.8 | 0.0 | 0.5 | 16.8 | 62.1 | 0.0 |
| Psychology nec | 100.0 | 0.0 | 0.6 | 0.0 | 99.3 | 0.1 | 0.0 | 0.0 |
| Social sciences | 100.0 | 0.2 | 0.0 | 0.0 | 48.4 | 0.0 | 36.2 | 15.2 |
| Anthropology | 100.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 99.7 | 0.0 |
| Economics | 100.0 | 0.1 | 0.0 | 0.0 | 1.4 | 0.0 | 27.6 | 70.8 |
| Political science | 100.0 | 4.8 | 0.0 | 0.0 | 0.0 | 0.0 | 95.2 | 0.0 |
| Sociology | 100.0 | 0.5 | 0.0 | 0.0 | 0.2 | 0.3 | 23.5 | 75.6 |
| Social sciences nec | 100.0 | 0.0 | 0.0 | 0.0 | 65.7 | 0.0 | 34.3 | 0.0 |
| Other sciences nec | 100.0 | 0.3 | 14.4 | 0.0 | 35.8 | 6.4 | 43.0 | 0.0 |

Appendix table 5-9 (Page 2 of 2)

**Federal academic research obligations provided by major agencies, by field: FY 2005**

(Percent distribution)

| Field | All agencies | DHS | DOD | DOE | HHS | NASA | NSF | USDA |
|---|---|---|---|---|---|---|---|---|
| Engineering | 100.0 | 0.1 | 29.7 | 6.5 | 24.7 | 10.0 | 27.9 | 1.1 |
| Aeronautical | 100.0 | 0.0 | 27.0 | 0.0 | 0.0 | 73.0 | 0.0 | 0.0 |
| Astronautical | 100.0 | 0.0 | 13.3 | 0.0 | 0.0 | 86.7 | 0.0 | 0.0 |
| Chemical | 100.0 | 0.0 | 6.1 | 33.9 | 0.0 | 0.6 | 59.1 | 0.4 |
| Civil | 100.0 | 0.3 | 9.3 | 7.8 | 0.0 | 0.1 | 82.4 | 0.2 |
| Electrical | 100.0 | 0.0 | 65.3 | 6.0 | 0.0 | 1.3 | 27.3 | 0.0 |
| Mechanical | 100.0 | 0.1 | 85.1 | 3.5 | 0.0 | 3.7 | 7.6 | 0.1 |
| Materials | 100.0 | 0.0 | 36.5 | 7.8 | 14.8 | 0.9 | 40.0 | 0.0 |
| Engineering nec | 100.0 | 0.3 | 18.5 | 4.7 | 48.7 | 1.4 | 24.1 | 2.3 |

nec = not elsewhere classified

DHS = Department of Homeland Security; DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = U.S. Department of Agriculture

NOTES: Academic research includes both basic and applied research. Agencies shown are only ones that report research obligations to academia by S&E field and represent approximately 97% of academic research obligations.

SOURCE: NSF, Division of Science Resources Statistics, Federal Funds for Research and Development: Fiscal Years 2005, 2006, and 2007 (forthcoming).

*Science and Engineering Indicators 2008*

Appendix table 5-10
**Sources of R&D funds at private and public institutions: 1986, 1996, and 2006**

| Source of funds | All institutions | | Private institutions | | Public institutions | |
|---|---|---|---|---|---|---|
| | Amount (current $millions) | Percent distribution | Amount (current $millions) | Percent distribution | Amount (current $millions) | Percent distribution |
| 1986 | | | | | | |
| All sources | 10,928 | 100.0 | 3,817 | 100.0 | 7,111 | 100.0 |
| Federal government | 6,712 | 61.4 | 2,872 | 75.2 | 3,840 | 54.0 |
| State/local government | 915 | 8.4 | 84 | 2.2 | 832 | 11.7 |
| Industry | 700 | 6.4 | 260 | 6.8 | 440 | 6.2 |
| Academic institutions | 1,869 | 17.1 | 319 | 8.4 | 1,550 | 21.8 |
| Other | 732 | 6.7 | 283 | 7.4 | 449 | 6.3 |
| 1996 | | | | | | |
| All sources | 23,049 | 100.0 | 7,461 | 100.0 | 15,588 | 100.0 |
| Federal government | 13,842 | 60.1 | 5,375 | 72.1 | 8,466 | 54.3 |
| State/local government | 1,812 | 7.9 | 161 | 2.2 | 1,650 | 10.6 |
| Industry | 1,605 | 7.0 | 529 | 7.1 | 1,076 | 6.9 |
| Academic institutions | 4,171 | 18.1 | 752 | 10.1 | 3,419 | 21.9 |
| Other | 1,619 | 7.0 | 643 | 8.6 | 976 | 6.3 |
| 2006 | | | | | | |
| All sources | 47,760 | 100.0 | 15,404 | 100.0 | 32,357 | 100.0 |
| Federal government | 30,033 | 62.9 | 11,569 | 75.1 | 18,464 | 57.1 |
| State/local government | 3,016 | 6.3 | 304 | 2.0 | 2,713 | 8.4 |
| Industry | 2,428 | 5.1 | 764 | 5.0 | 1,663 | 5.1 |
| Academic institutions | 9,062 | 19.0 | 1,626 | 10.6 | 7,436 | 23.0 |
| Other | 3,221 | 6.7 | 1,140 | 7.4 | 2,081 | 6.4 |

NOTE: Detail may not add to total because of rounding.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006; and Integrated Science and Engineering Resources Data System (WebCASPAR), http://webcaspar.nsf.gov.

*Science and Engineering Indicators 2008*

Appendix table 5-11 (Page 1 of 2)

**Top 100 academic institutions in R&D expenditures, by source of funds: 2006**

(Millions of current dollars)

| Rank/academic institution | All sources | Federal government | State/local government | Industry | Academic institutions | All other sources |
|---|---|---|---|---|---|---|
| All institutions | 47,760 | 30,033 | 3,016 | 2,428 | 9,062 | 3,221 |
| 1 Johns Hopkins University[a] (private) | 1,500 | 1,307 | 6 | 25 | 70 | 92 |
| 2 University of Wisconsin–Madison (public) | 832 | 492 | 31 | 20 | 224 | 65 |
| 3 University of California–Los Angeles (public) | 811 | 484 | 15 | 24 | 162 | 126 |
| 4 University of Michigan, all campuses (public) | 800 | 566 | 10 | 32 | 153 | 40 |
| 5 University of California–San Francisco (public) | 796 | 465 | 27 | 36 | 130 | 140 |
| 6 University of Washington (public) | 778 | 650 | 9 | 57 | 43 | 19 |
| 7 University of California–San Diego (public) | 755 | 464 | 26 | 40 | 125 | 100 |
| 8 Stanford University (private) | 679 | 540 | 5 | 35 | 41 | 59 |
| 9 University of Pennsylvania (private) | 676 | 479 | 7 | 38 | 64 | 88 |
| 10 Duke University (private) | 657 | 414 | 18 | 133 | 69 | 23 |
| Total, top 10 | 8,285 | 5,861 | 152 | 440 | 1,081 | 750 |
| 11 Ohio State University, all campuses (public) | 652 | 316 | 98 | 106 | 103 | 29 |
| 12 Cornell University, all campuses (private) | 649 | 390 | 64 | 20 | 128 | 46 |
| 13 Pennsylvania State University, all campuses (public) | 644 | 367 | 70 | 89 | 117 | 1 |
| 14 Massachusetts Institute of Technology (private) | 601 | 476 | 1 | 76 | 11 | 37 |
| 15 University of Minnesota, all campuses (public) | 595 | 326 | 53 | 26 | 108 | 82 |
| 16 University of California–Davis (public) | 573 | 248 | 45 | 26 | 193 | 61 |
| 17 University of Florida (public) | 565 | 248 | 91 | 33 | 164 | 29 |
| 18 Washington University in St. Louis (private) | 548 | 408 | 15 | 14 | 72 | 38 |
| 19 University of California–Berkeley (public) | 546 | 262 | 36 | 25 | 146 | 77 |
| 20 University of Arizona (public) | 536 | 302 | 10 | 33 | 144 | 48 |
| Total, top 20 | 14,194 | 9,205 | 635 | 889 | 2,267 | 1,198 |
| 21 University of Pittsburgh, all campuses (public) | 530 | 422 | 13 | 9 | 62 | 24 |
| 22 Columbia University in the City of New York (private) | 530 | 451 | 13 | 6 | 43 | 18 |
| 23 University of Colorado, all campuses (public) | 513 | 448 | 2 | 11 | 29 | 22 |
| 24 Texas A&M University, all campuses (public) | 493 | 206 | 116 | 34 | 127 | 10 |
| 25 University of Illinois at Urbana-Champaign (public) | 476 | 265 | 35 | 12 | 150 | 14 |
| 26 Baylor College of Medicine (private) | 462 | 288 | 3 | 16 | 61 | 94 |
| 27 Yale University (private) | 460 | 349 | 1 | 17 | 30 | 64 |
| 28 University of Texas M.D. Anderson Cancer Center (public) | 458 | 182 | 122 | 28 | 76 | 50 |
| 29 Harvard University (private) | 453 | 403 | 1 | 6 | 0 | 43 |
| 30 University of Southern California (private) | 450 | 333 | 5 | 25 | 87 | 0 |
| Total, top 30 | 19,020 | 12,553 | 946 | 1,052 | 2,932 | 1,537 |
| 31 University of North Carolina at Chapel Hill (public) | 444 | 329 | 18 | 7 | 89 | 0 |
| 32 Georgia Institute of Technology, all campuses (public) | 441 | 258 | 12 | 37 | 129 | 5 |
| 33 University of Texas at Austin (public) | 431 | 273 | 24 | 33 | 78 | 23 |
| 34 Northwestern University (private) | 420 | 250 | 5 | 12 | 108 | 44 |
| 35 University of Maryland at Baltimore (public) | 405 | 186 | 28 | 34 | 111 | 46 |
| 36 Vanderbilt University (private) | 377 | 300 | 0 | 7 | 54 | 16 |
| 37 Purdue University, all campuses (public) | 373 | 157 | 53 | 46 | 115 | 2 |
| 38 Case Western Reserve University (private) | 369 | 307 | 16 | 6 | 19 | 21 |
| 39 Scripps Research Institute (private) | 367 | 269 | 0 | 16 | 60 | 23 |
| 40 University of Rochester (private) | 367 | 278 | 11 | 29 | 32 | 16 |
| Total, top 40 | 23,014 | 15,161 | 1,113 | 1,279 | 3,728 | 1,733 |
| 41 Michigan State University (public) | 358 | 169 | 49 | 12 | 116 | 13 |
| 42 Indiana University, all campuses (public) | 355 | 171 | 5 | 6 | 120 | 53 |
| 43 University of Maryland at College Park (public) | 354 | 210 | 17 | 11 | 110 | 7 |
| 44 University of Iowa (public) | 346 | 217 | 10 | 19 | 91 | 10 |
| 45 Emory University (private) | 346 | 268 | 12 | 6 | 32 | 28 |
| 46 Louisiana State University, all campuses (public) | 344 | 127 | 85 | 16 | 90 | 26 |
| 47 University of Nebraska, all campuses (public) | 333 | 139 | 7 | 14 | 149 | 24 |
| 48 University of Texas Southwestern Medical Center Dallas (public) | 333 | 197 | 34 | 15 | 14 | 74 |
| 49 University of Illinois at Chicago (public) | 332 | 204 | 6 | 9 | 91 | 22 |
| 50 University of Alabama at Birmingham (public) | 331 | 293 | 0 | 8 | 15 | 15 |
| Total, top 50 | 26,448 | 17,154 | 1,339 | 1,395 | 4,555 | 2,005 |
| 51 North Carolina State University (public) | 331 | 131 | 87 | 42 | 68 | 3 |
| 52 University of Kentucky, all campuses (public) | 324 | 151 | 45 | 9 | 98 | 20 |
| 53 University of Georgia (public) | 324 | 93 | 50 | 6 | 163 | 13 |

Appendix table 5-11 (Page 2 of 2)

**Top 100 academic institutions in R&D expenditures, by source of funds: 2006**

(Millions of current dollars)

| Rank | Academic institution | All sources | Federal government | State/local government | Industry | Academic institutions | All other sources |
|---|---|---|---|---|---|---|---|
| 54 | Virginia Polytechnic Institute and State University (public) | 322 | 120 | 93 | 16 | 77 | 16 |
| 55 | Rutgers, the State University of New Jersey, all campuses (public) | 308 | 129 | 36 | 10 | 103 | 30 |
| 56 | University of Chicago (private) | 305 | 253 | 5 | 5 | 20 | 22 |
| 57 | University of California–Irvine (public) | 300 | 170 | 10 | 16 | 65 | 39 |
| 58 | SUNY at Buffalo, all campuses (public) | 298 | 153 | 12 | 18 | 82 | 32 |
| 59 | University of Cincinnati, all campuses (public) | 294 | 202 | 16 | 5 | 53 | 18 |
| 60 | University of South Florida (public) | 286 | 154 | 29 | 35 | 68 | 0 |
| | Total, top 60 | 29,540 | 18,710 | 1,722 | 1,557 | 5,351 | 2,199 |
| 61 | New York University (private) | 284 | 189 | 5 | 8 | 37 | 46 |
| 62 | SUNY at Albany (public) | 274 | 104 | 62 | 16 | 76 | 17 |
| 63 | Mt. Sinai School of Medicine (private) | 273 | 225 | 2 | 11 | 8 | 27 |
| 64 | Oregon Health & Science University (public) | 272 | 223 | 5 | 12 | 18 | 13 |
| 65 | California Institute of Technology (private) | 270 | 249 | 2 | 8 | 4 | 8 |
| 66 | Boston University (private) | 256 | 239 | 1 | 7 | 0 | 9 |
| 67 | Colorado State University (public) | 254 | 183 | 15 | 14 | 36 | 6 |
| 68 | University of Hawaii at Manoa (public) | 250 | 202 | 9 | 13 | 26 | 0 |
| 69 | University of Tennessee, all campuses (public) | 249 | 114 | 56 | 20 | 43 | 17 |
| 70 | University of Utah (public) | 248 | 175 | 2 | 8 | 45 | 18 |
| | Total, top 70 | 32,171 | 20,612 | 1,880 | 1,673 | 5,645 | 2,360 |
| 71 | University of Medicine and Dentistry of New Jersey (public) | 246 | 141 | 12 | 17 | 51 | 24 |
| 72 | University of Virginia, all campuses (public) | 239 | 204 | 1 | 5 | 20 | 9 |
| 73 | SUNY at Stony Brook, all campuses (public) | 235 | 113 | 4 | 5 | 93 | 20 |
| 74 | Iowa State University (public) | 222 | 105 | 40 | 11 | 62 | 5 |
| 75 | Wayne State University (public) | 221 | 118 | 14 | 9 | 63 | 16 |
| 76 | Rockefeller University (private) | 215 | 94 | 0 | 3 | 110 | 8 |
| 77 | University of Missouri, Columbia (public) | 215 | 102 | 17 | 3 | 89 | 5 |
| 78 | University of Connecticut, all campuses (public) | 215 | 125 | 7 | 7 | 62 | 14 |
| 79 | University of Miami (private) | 214 | 150 | 3 | 20 | 15 | 24 |
| 80 | Carnegie Mellon University (private) | 213 | 185 | 4 | 12 | 5 | 6 |
| | Total, top 80 | 34,404 | 21,949 | 1,983 | 1,766 | 6,214 | 2,493 |
| 81 | Arizona State University, main campus (public) | 202 | 110 | 15 | 12 | 61 | 4 |
| 82 | Dartmouth College (private) | 200 | 140 | 5 | 5 | 37 | 14 |
| 83 | Washington State University (public) | 196 | 81 | 32 | 3 | 70 | 11 |
| 84 | University of Kansas, all campuses (public) | 196 | 116 | 5 | 3 | 64 | 9 |
| 85 | University of Massachusetts at Worcester (public) | 192 | 136 | 35 | 9 | 2 | 8 |
| 86 | Mississippi State University (public) | 190 | 94 | 30 | 7 | 58 | 0 |
| 87 | Oregon State University (public) | 190 | 117 | 37 | 3 | 30 | 3 |
| 88 | Yeshiva University (private) | 189 | 154 | 0 | 2 | 22 | 12 |
| 89 | Princeton University (private) | 188 | 118 | 1 | 6 | 52 | 11 |
| 90 | Florida State University (public) | 186 | 110 | 11 | 1 | 57 | 7 |
| | Total, top 90 | 36,333 | 23,125 | 2,152 | 1,818 | 6,667 | 2,571 |
| 91 | Wake Forest University (private) | 183 | 140 | 11 | 15 | 1 | 17 |
| 92 | University of New Mexico, all campuses (public) | 181 | 128 | 2 | 5 | 44 | 2 |
| 93 | University of Texas Medical Branch (public) | 180 | 120 | 11 | 6 | 26 | 16 |
| 94 | Clemson University (public) | 180 | 56 | 29 | 12 | 79 | 3 |
| 95 | University of Oklahoma, all campuses (public) | 179 | 91 | 13 | 9 | 52 | 13 |
| 96 | Medical University of South Carolina (public) | 176 | 104 | 1 | 12 | 56 | 3 |
| 97 | University of Texas Health Science Center Houston (public) | 175 | 123 | 15 | 9 | 13 | 16 |
| 98 | University of California–Santa Barbara (public) | 174 | 106 | 3 | 14 | 30 | 22 |
| 99 | New Mexico State University, all campuses (public) | 169 | 56 | 19 | 21 | 64 | 10 |
| 100 | Brown University (private) | 158 | 97 | 0 | 12 | 48 | 1 |
| | Total, top 100 | 38,089 | 24,146 | 2,256 | 1,933 | 7,080 | 2,674 |

0 = <$500,000

[a]Johns Hopkins University includes Applied Physics Laboratory, with $709 million in total R&D expenditures and $672 million in federally financed R&D expenditures.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Research and Development Expenditures at Universities and Colleges, FY 2006.

Appendix table 5-12

**Academic institutions receiving federal R&D support, by selected Carnegie classification: 1971–2005**

| Year | All academic institutions | Carnegie institution type | |
|---|---|---|---|
| | | Doctorate-granting—very high or high research activity | Other |
| 1971 | 567 | 192 | 375 |
| 1972 | 623 | 194 | 429 |
| 1973 | 541 | 192 | 349 |
| 1974 | 553 | 192 | 361 |
| 1975 | 559 | 194 | 365 |
| 1976 | 574 | 195 | 379 |
| 1977 | 621 | 193 | 428 |
| 1978 | 677 | 196 | 481 |
| 1979 | 668 | 196 | 472 |
| 1980 | 684 | 195 | 489 |
| 1981 | 620 | 195 | 425 |
| 1982 | 588 | 195 | 393 |
| 1983 | 598 | 194 | 404 |
| 1984 | 600 | 194 | 406 |
| 1985 | 645 | 194 | 451 |
| 1986 | 649 | 194 | 455 |
| 1987 | 737 | 194 | 543 |
| 1988 | 683 | 194 | 489 |
| 1989 | 712 | 194 | 518 |
| 1990 | 747 | 194 | 553 |
| 1991 | 775 | 193 | 582 |
| 1992 | 837 | 196 | 641 |
| 1993 | 889 | 195 | 694 |
| 1994 | 902 | 195 | 707 |
| 1995 | 891 | 196 | 695 |
| 1996 | 838 | 196 | 642 |
| 1997 | 840 | 196 | 644 |
| 1998 | 796 | 195 | 601 |
| 1999 | 789 | 196 | 593 |
| 2000 | 818 | 196 | 622 |
| 2001 | 847 | 196 | 651 |
| 2002 | 858 | 196 | 662 |
| 2003 | 870 | 196 | 674 |
| 2004 | 842 | 196 | 646 |
| 2005 | 877 | 196 | 681 |

NOTES: Institutions designated by 2005 Carnegie classification code. Other institutions include all institutions except very high and high research activity institutions. For information on these institutional categories, see chapter 2 sidebar, "Carnegie Classification of Academic Institutions," and The Carnegie Classification of Institutions of Higher Education, http://www.carnegiefoundation.org/classifications/index.asp, accessed 17 August 2007.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions: FY 2005 (forthcoming); and Integrated Science and Engineering Resources Data System (WebCASPAR), http://webcaspar.nsf.gov.

Appendix table 5-13 (Page 1 of 3)

**Current expenditures for research equipment at academic institutions, by field: Selected years, 1985–2006**

| Field | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Current $millions | | | | | | | | | | | | | |
| All fields | 672 | 1,013 | 1,240 | 1,215 | 1,289 | 1,295 | 1,326 | 1,436 | 1,512 | 1,701 | 1,817 | 1,891 | 1,876 | 1,839 |
| Computer sciences | 35 | 48 | 77 | 67 | 71 | 63 | 63 | 56 | 65 | 101 | 99 | 105 | 72 | 69 |
| Environmental sciences | 48 | 72 | 83 | 88 | 94 | 101 | 99 | 100 | 87 | 132 | 121 | 125 | 122 | 144 |
| Atmospheric sciences | 8 | 11 | 14 | 14 | 15 | 14 | 14 | 12 | 12 | 14 | 17 | 20 | 25 | 54 |
| Earth sciences | 18 | 27 | 27 | 31 | 35 | 37 | 35 | 37 | 29 | 33 | 42 | 43 | 44 | 34 |
| Oceanography | 16 | 20 | 28 | 29 | 31 | 33 | 37 | 34 | 34 | 74 | 50 | 41 | 40 | 45 |
| Environmental sciences nec | 5 | 13 | 15 | 14 | 13 | 17 | 13 | 17 | 11 | 11 | 11 | 22 | 13 | 10 |
| Life sciences | 283 | 420 | 464 | 444 | 479 | 496 | 557 | 630 | 689 | 737 | 819 | 836 | 825 | 755 |
| Agricultural sciences | 52 | 54 | 63 | 63 | 70 | 76 | 72 | 77 | 83 | 72 | 78 | 79 | 72 | 75 |
| Biological sciences | 105 | 171 | 192 | 181 | 196 | 191 | 245 | 269 | 284 | 296 | 337 | 347 | 326 | 300 |
| Medical sciences | 114 | 177 | 187 | 183 | 198 | 213 | 221 | 263 | 303 | 339 | 371 | 376 | 378 | 343 |
| Life sciences nec | 12 | 19 | 22 | 18 | 15 | 16 | 19 | 21 | 20 | 29 | 33 | 34 | 49 | 37 |
| Mathematical sciences | 6 | 10 | 14 | 13 | 15 | 14 | 12 | 10 | 12 | 10 | 8 | 8 | 9 | 9 |
| Physical sciences | 142 | 191 | 240 | 234 | 244 | 254 | 249 | 250 | 241 | 275 | 297 | 337 | 324 | 328 |
| Astronomy | 7 | 13 | 22 | 21 | 26 | 25 | 29 | 25 | 15 | 19 | 19 | 25 | 23 | 20 |
| Chemistry | 54 | 73 | 81 | 88 | 90 | 91 | 102 | 103 | 101 | 122 | 119 | 117 | 112 | 121 |
| Physics | 71 | 91 | 114 | 105 | 109 | 122 | 106 | 110 | 113 | 122 | 139 | 160 | 160 | 153 |
| Physical sciences nec | 10 | 14 | 22 | 19 | 19 | 16 | 11 | 13 | 13 | 12 | 20 | 36 | 30 | 34 |
| Psychology | 9 | 11 | 12 | 12 | 13 | 13 | 12 | 14 | 14 | 19 | 23 | 18 | 15 | 18 |
| Social sciences | 10 | 15 | 27 | 25 | 24 | 22 | 18 | 19 | 17 | 17 | 18 | 14 | 18 | 12 |
| Economics | 3 | 4 | 7 | 6 | 5 | 4 | 4 | 3 | 2 | 2 | 3 | 2 | 2 | 2 |
| Political science | 1 | 1 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 |
| Sociology | 2 | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 3 | 2 | 3 | 2 |
| Social sciences nec | 4 | 7 | 12 | 11 | 11 | 11 | 9 | 11 | 9 | 9 | 9 | 8 | 11 | 7 |
| Sciences nec | 15 | 25 | 51 | 45 | 48 | 33 | 32 | 51 | 54 | 47 | 49 | 53 | 53 | 66 |
| Engineering | 124 | 220 | 272 | 285 | 301 | 298 | 285 | 306 | 333 | 363 | 385 | 394 | 438 | 439 |
| Aeronautical/astronautical | 7 | 13 | 17 | 16 | 19 | 19 | 22 | 20 | 23 | 24 | 22 | 21 | 20 | 19 |
| Bioengineering/biomedical | NA | NA | NA | NA | 4 | 6 | 8 | 14 | 15 | 18 | 20 | 19 | 29 | 25 |
| Chemical | 11 | 18 | 22 | 24 | 23 | 28 | 27 | 26 | 31 | 30 | 32 | 55 | 37 | 38 |
| Civil | 10 | 20 | 22 | 26 | 28 | 21 | 23 | 29 | 32 | 43 | 31 | 34 | 29 | 27 |
| Electrical | 33 | 58 | 68 | 75 | 83 | 82 | 70 | 72 | 79 | 79 | 86 | 81 | 91 | 94 |
| Mechanical | 17 | 32 | 42 | 43 | 46 | 51 | 51 | 54 | 48 | 54 | 55 | 55 | 76 | 84 |
| Metallurgical/materials | NA | 27 | 28 | 32 | 36 | 29 | 28 | 30 | 49 | 41 | 61 | 38 | 51 | 55 |
| Engineering nec | 46 | 51 | 73 | 69 | 62 | 60 | 57 | 61 | 55 | 74 | 78 | 91 | 106 | 98 |
| | 2000 constant $millions | | | | | | | | | | | | | |
| All fields | 965 | 1,247 | 1,345 | 1,294 | 1,350 | 1,338 | 1,353 | 1,436 | 1,486 | 1,640 | 1,716 | 1,742 | 1,676 | 1,595 |
| Computer sciences | 51 | 59 | 83 | 72 | 75 | 66 | 64 | 56 | 64 | 97 | 93 | 97 | 65 | 60 |
| Environmental sciences | 69 | 89 | 90 | 94 | 98 | 105 | 101 | 100 | 86 | 127 | 114 | 116 | 109 | 125 |
| Atmospheric sciences | 12 | 14 | 15 | 14 | 16 | 15 | 15 | 12 | 12 | 14 | 16 | 18 | 22 | 47 |
| Earth sciences | 26 | 34 | 29 | 33 | 37 | 39 | 35 | 37 | 29 | 31 | 40 | 40 | 40 | 30 |
| Oceanography | 23 | 25 | 30 | 31 | 32 | 34 | 38 | 34 | 34 | 71 | 47 | 38 | 36 | 39 |

Appendix table 5-13



**Current expenditures for research equipment at academic institutions, by field: Selected years, 1985–2006**

| Field | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Environmental sciences nec | 7 | 16 | 16 | 15 | 13 | 17 | 14 | 17 | 11 | 10 | 11 | 20 | 11 | 9 |
| Life sciences | 406 | 517 | 503 | 473 | 501 | 512 | 568 | 630 | 677 | 710 | 773 | 770 | 737 | 654 |
| Agricultural sciences | 74 | 66 | 69 | 67 | 73 | 79 | 74 | 77 | 81 | 70 | 74 | 73 | 64 | 65 |
| Biological sciences | 151 | 210 | 208 | 192 | 205 | 197 | 250 | 269 | 279 | 286 | 318 | 320 | 291 | 260 |
| Medical sciences | 164 | 218 | 203 | 195 | 207 | 220 | 225 | 263 | 297 | 327 | 350 | 347 | 338 | 297 |
| Life sciences nec | 17 | 23 | 24 | 19 | 16 | 16 | 19 | 21 | 20 | 28 | 31 | 31 | 44 | 32 |
| Mathematical sciences | 9 | 13 | 16 | 14 | 16 | 15 | 12 | 10 | 11 | 10 | 7 | 7 | 8 | 7 |
| Physical sciences | 204 | 235 | 260 | 249 | 255 | 263 | 254 | 250 | 237 | 265 | 281 | 311 | 290 | 284 |
| Astronomy | 10 | 16 | 24 | 23 | 28 | 26 | 29 | 25 | 15 | 19 | 18 | 23 | 20 | 18 |
| Chemistry | 78 | 90 | 88 | 94 | 94 | 94 | 104 | 103 | 99 | 118 | 112 | 108 | 100 | 105 |
| Physics | 102 | 112 | 124 | 112 | 114 | 126 | 109 | 110 | 111 | 117 | 131 | 147 | 143 | 132 |
| Physical sciences nec | 14 | 17 | 23 | 21 | 20 | 16 | 12 | 13 | 13 | 12 | 19 | 33 | 27 | 30 |
| Psychology | 13 | 13 | 13 | 13 | 14 | 14 | 12 | 14 | 14 | 18 | 21 | 16 | 13 | 16 |
| Social sciences | 14 | 18 | 29 | 27 | 25 | 23 | 18 | 19 | 16 | 17 | 17 | 13 | 16 | 10 |
| Economics | 4 | 5 | 8 | 7 | 6 | 4 | 4 | 3 | 2 | 2 | 3 | 2 | 2 | 1 |
| Political science | 2 | 2 | 3 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 |
| Sociology | 3 | 4 | 5 | 5 | 5 | 4 | 3 | 3 | 3 | 4 | 3 | 2 | 2 | 2 |
| Social sciences nec | 6 | 8 | 13 | 12 | 12 | 11 | 9 | 11 | 9 | 9 | 9 | 8 | 10 | 6 |
| Sciences nec | 21 | 31 | 55 | 48 | 51 | 34 | 33 | 51 | 53 | 46 | 46 | 49 | 47 | 57 |
| Engineering | 179 | 271 | 295 | 304 | 315 | 308 | 291 | 306 | 327 | 350 | 363 | 363 | 392 | 380 |
| Aeronautical/astronautical | 9 | 16 | 18 | 17 | 20 | 20 | 22 | 20 | 23 | 23 | 21 | 20 | 17 | 16 |
| Bioengineering/biomedical | NA | NA | NA | NA | 4 | 6 | 8 | 14 | 15 | 17 | 19 | 17 | 26 | 22 |
| Chemical | 16 | 22 | 24 | 26 | 24 | 29 | 28 | 26 | 30 | 29 | 30 | 50 | 33 | 33 |
| Civil | 15 | 25 | 24 | 27 | 29 | 22 | 24 | 29 | 32 | 41 | 29 | 31 | 26 | 23 |
| Electrical | 47 | 72 | 74 | 80 | 87 | 85 | 71 | 72 | 77 | 76 | 81 | 75 | 81 | 81 |
| Mechanical | 25 | 40 | 45 | 45 | 48 | 53 | 52 | 54 | 47 | 52 | 52 | 51 | 68 | 72 |
| Metallurgical/materials | NA | 33 | 30 | 34 | 38 | 30 | 29 | 30 | 48 | 39 | 58 | 35 | 45 | 47 |
| Engineering nec | 66 | 63 | 80 | 74 | 65 | 62 | 58 | 61 | 54 | 72 | 73 | 83 | 95 | 85 |
| | Percent distribution | | | | | | | | | | | | | |
| All fields | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Computer sciences | 5.3 | 4.7 | 6.2 | 5.5 | 5.5 | 4.9 | 4.8 | 3.9 | 4.3 | 5.9 | 5.4 | 5.5 | 3.9 | 3.8 |
| Environmental sciences | 7.1 | 7.1 | 6.7 | 7.2 | 7.3 | 7.8 | 7.5 | 6.9 | 5.8 | 7.7 | 6.7 | 6.6 | 6.5 | 7.8 |
| Atmospheric sciences | 1.2 | 1.1 | 1.1 | 1.1 | 1.2 | 1.1 | 1.1 | 0.8 | 0.8 | 0.9 | 1.0 | 1.0 | 1.3 | 3.0 |
| Earth sciences | 2.7 | 2.7 | 2.2 | 2.6 | 2.7 | 2.9 | 2.6 | 2.6 | 1.9 | 1.9 | 2.3 | 2.3 | 2.4 | 1.9 |
| Oceanography | 2.4 | 2.0 | 2.2 | 2.4 | 2.4 | 2.5 | 2.8 | 2.3 | 2.3 | 4.3 | 2.8 | 2.2 | 2.1 | 2.4 |
| Environmental sciences nec | 0.8 | 1.3 | 1.2 | 1.2 | 1.0 | 1.3 | 1.0 | 1.2 | 0.7 | 0.6 | 0.6 | 1.1 | 0.7 | 0.5 |
| Life sciences | 42.1 | 41.5 | 37.4 | 36.6 | 37.2 | 38.3 | 42.0 | 43.9 | 45.6 | 43.3 | 45.0 | 44.2 | 44.0 | 41.0 |
| Agricultural sciences | 7.7 | 5.3 | 5.1 | 5.2 | 5.4 | 5.9 | 5.5 | 5.4 | 5.5 | 4.2 | 4.3 | 4.2 | 3.8 | 4.1 |
| Biological sciences | 15.6 | 16.9 | 15.4 | 14.9 | 15.2 | 14.7 | 18.4 | 18.7 | 18.8 | 17.4 | 18.5 | 18.4 | 17.4 | 16.3 |
| Medical sciences | 17.0 | 17.5 | 15.1 | 15.1 | 15.4 | 16.4 | 16.7 | 18.3 | 20.0 | 19.9 | 20.4 | 19.9 | 20.1 | 18.6 |
| Life sciences nec | 1.7 | 1.9 | 1.8 | 1.5 | 1.2 | 1.2 | 1.4 | 1.5 | 1.3 | 1.7 | 1.8 | 1.8 | 2.6 | 2.0 |
| Mathematical sciences | 0.9 | 1.0 | 1.2 | 1.1 | 1.2 | 1.1 | 0.9 | 0.7 | 0.8 | 0.6 | 0.4 | 0.4 | 0.5 | 0.5 |

Appendix table 5-13 (Page 3 of 3)

**Current expenditures for research equipment at academic institutions, by field: Selected years, 1985–2006**

| Field | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Physical sciences | 21.1 | 18.9 | 19.4 | 19.3 | 18.9 | 19.6 | 18.8 | 17.4 | 15.9 | 16.2 | 16.4 | 17.8 | 17.3 | 17.8 |
| Astronomy | 1.0 | 1.3 | 1.8 | 1.8 | 2.1 | 2.0 | 2.2 | 1.7 | 1.0 | 1.1 | 1.0 | 1.3 | 1.2 | 1.1 |
| Chemistry | 8.0 | 7.2 | 6.6 | 7.2 | 7.0 | 7.0 | 7.7 | 7.2 | 6.7 | 7.2 | 6.6 | 6.2 | 6.0 | 6.6 |
| Physics | 10.6 | 9.0 | 9.2 | 8.7 | 8.4 | 9.4 | 8.0 | 7.6 | 7.5 | 7.1 | 7.7 | 8.5 | 8.5 | 8.3 |
| Physical sciences nec | 1.4 | 1.4 | 1.7 | 1.6 | 1.5 | 1.2 | 0.9 | 0.9 | 0.8 | 0.7 | 1.1 | 1.9 | 1.6 | 1.9 |
| Psychology | 1.3 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 | 0.9 | 1.0 | 1.0 | 1.1 | 1.3 | 0.9 | 0.8 | 1.0 |
| Social sciences | 1.5 | 1.5 | 2.1 | 2.1 | 1.9 | 1.7 | 1.3 | 1.3 | 1.1 | 1.0 | 1.0 | 0.8 | 0.9 | 0.7 |
| Economics | 0.4 | 0.4 | 0.6 | 0.5 | 0.4 | 0.3 | 0.3 | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 |
| Political science | 0.2 | 0.1 | 0.3 | 0.3 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Sociology | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 |
| Social sciences nec | 0.6 | 0.7 | 1.0 | 0.9 | 0.9 | 0.8 | 0.6 | 0.8 | 0.6 | 0.5 | 0.5 | 0.4 | 0.6 | 0.4 |
| Sciences nec | 2.2 | 2.5 | 4.1 | 3.7 | 3.8 | 2.5 | 2.4 | 3.5 | 3.6 | 2.8 | 2.7 | 2.8 | 2.8 | 3.6 |
| Engineering | 18.5 | 21.7 | 22.0 | 23.5 | 23.3 | 23.0 | 21.5 | 21.3 | 22.0 | 21.4 | 21.2 | 20.8 | 23.4 | 23.8 |
| Aeronautical/astronautical | 1.0 | 1.2 | 1.3 | 1.3 | 1.5 | 1.5 | 1.6 | 1.4 | 1.5 | 1.4 | 1.2 | 1.1 | 1.0 | 1.0 |
| Bioengineering/biomedical | NA | NA | NA | NA | 0.3 | 0.5 | 0.6 | 0.9 | 1.0 | 1.1 | 1.1 | 1.0 | 1.6 | 1.4 |
| Chemical | 1.7 | 1.8 | 1.8 | 2.0 | 1.8 | 2.2 | 2.1 | 1.8 | 2.0 | 1.8 | 1.8 | 2.9 | 2.0 | 2.1 |
| Civil | 1.6 | 2.0 | 1.8 | 2.1 | 2.1 | 1.7 | 1.8 | 2.0 | 2.1 | 2.5 | 1.7 | 1.8 | 1.5 | 1.5 |
| Electrical | 4.9 | 5.8 | 5.5 | 6.2 | 6.4 | 6.4 | 5.3 | 5.0 | 5.2 | 4.7 | 4.7 | 4.3 | 4.8 | 5.1 |
| Mechanical | 2.6 | 3.2 | 3.4 | 3.5 | 3.5 | 3.9 | 3.8 | 3.8 | 3.2 | 3.2 | 3.0 | 2.9 | 4.1 | 4.5 |
| Metallurgical/materials | NA | 2.7 | 2.3 | 2.6 | 2.8 | 2.2 | 2.1 | 2.1 | 3.3 | 2.4 | 3.4 | 2.0 | 2.7 | 3.0 |
| Engineering nec | 6.8 | 5.1 | 5.9 | 5.7 | 4.8 | 4.7 | 4.3 | 4.3 | 3.6 | 4.4 | 4.3 | 4.8 | 5.6 | 5.3 |

NA = not available; nec = not elsewhere classified

NOTES: Detail may not add to total because of rounding. See appendix table 4-1 for gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006; and Integrated Science and Resources Data System (WebCASPAR), http://webcaspar.nsf.gov.

*Science and Engineering Indicators 2008*

Appendix table 5-14

**Federal share of current funding for research equipment at academic institutions, by field: Selected years, 1985–2006**

(Percent)

| Field | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All fields | 64.4 | 59.9 | 59.3 | 59.5 | 58.6 | 59.8 | 58.2 | 56.3 | 55.5 | 59.1 | 63.3 | 62.0 | 62.7 | 58.9 |
| Computer sciences | 83.0 | 65.8 | 63.5 | 70.8 | 68.9 | 70.4 | 69.0 | 60.4 | 64.1 | 73.7 | 83.4 | 80.6 | 78.9 | 73.7 |
| Environmental sciences | 67.7 | 65.9 | 69.9 | 70.0 | 73.2 | 67.8 | 67.4 | 63.9 | 61.4 | 61.5 | 73.1 | 74.3 | 76.6 | 62.8 |
| Atmospheric sciences | 84.2 | 76.8 | 71.5 | 64.1 | 74.6 | 81.2 | 79.0 | 79.3 | 74.4 | 76.3 | 80.9 | 80.7 | 86.9 | 55.7 |
| Earth sciences | 56.4 | 56.8 | 63.0 | 65.6 | 70.2 | 66.4 | 59.3 | 50.9 | 55.3 | 58.2 | 61.6 | 67.0 | 67.6 | 63.6 |
| Oceanography | 74.2 | 75.1 | 76.5 | 81.7 | 76.3 | 70.8 | 72.1 | 74.4 | 63.4 | 61.5 | 81.2 | 79.5 | 79.0 | 67.5 |
| Environmental sciences nec | 60.7 | 61.4 | 68.5 | 61.2 | 72.3 | 53.8 | 63.0 | 60.8 | 56.8 | 51.5 | 67.2 | 73.2 | 80.4 | 77.6 |
| Life sciences | 55.6 | 53.2 | 48.6 | 50.2 | 50.2 | 50.9 | 49.9 | 52.8 | 52.6 | 55.5 | 59.9 | 60.7 | 61.7 | 56.4 |
| Agricultural sciences | 29.1 | 28.3 | 31.9 | 30.3 | 31.6 | 32.0 | 33.3 | 28.0 | 28.3 | 29.8 | 40.5 | 39.5 | 42.5 | 36.4 |
| Biological sciences | 67.3 | 60.2 | 55.9 | 58.7 | 55.7 | 56.5 | 57.0 | 60.2 | 58.7 | 59.6 | 63.8 | 63.3 | 62.6 | 59.8 |
| Medical sciences | 57.4 | 54.3 | 48.3 | 49.9 | 51.4 | 53.2 | 48.3 | 53.1 | 53.7 | 58.3 | 61.2 | 62.7 | 66.4 | 57.6 |
| Life sciences nec | 49.1 | 50.6 | 34.6 | 36.5 | 48.3 | 43.1 | 41.2 | 43.9 | 49.3 | 45.5 | 51.3 | 60.9 | 48.0 | 58.2 |
| Mathematical sciences | 82.1 | 65.8 | 65.5 | 74.6 | 59.2 | 70.5 | 64.3 | 67.1 | 51.9 | 66.5 | 71.2 | 72.7 | 75.2 | 68.1 |
| Physical sciences | 79.8 | 75.3 | 74.6 | 72.9 | 70.8 | 73.9 | 74.8 | 70.0 | 66.9 | 70.2 | 73.2 | 68.2 | 69.9 | 67.5 |
| Astronomy | 69.3 | 63.1 | 61.5 | 70.7 | 65.1 | 81.6 | 86.5 | 83.4 | 83.1 | 80.6 | 74.4 | 79.5 | 77.4 | 82.0 |
| Chemistry | 76.6 | 71.4 | 70.0 | 68.6 | 65.4 | 67.0 | 67.3 | 61.4 | 57.7 | 62.1 | 65.1 | 66.3 | 71.9 | 65.7 |
| Physics | 84.5 | 81.1 | 81.7 | 77.1 | 76.1 | 76.4 | 79.7 | 76.8 | 71.9 | 76.5 | 78.8 | 71.5 | 73.2 | 73.0 |
| Physical sciences nec | 70.9 | 69.5 | 67.6 | 72.3 | 73.8 | 81.5 | 67.1 | 55.2 | 76.3 | 72.8 | 81.2 | 52.6 | 39.2 | 40.2 |
| Psychology | 71.5 | 63.8 | 63.3 | 62.4 | 62.5 | 62.4 | 65.3 | 64.0 | 62.8 | 70.8 | 74.1 | 71.7 | 63.1 | 68.6 |
| Social sciences | 40.1 | 32.4 | 39.5 | 40.0 | 37.0 | 39.7 | 38.0 | 32.3 | 36.8 | 36.6 | 45.0 | 44.4 | 38.9 | 39.2 |
| Economics | 35.6 | 27.2 | 38.9 | 40.2 | 31.2 | 34.3 | 37.3 | 54.3 | 40.1 | 36.7 | 56.9 | 35.6 | 42.0 | 36.8 |
| Political science | 32.1 | 24.4 | 36.8 | 33.7 | 35.9 | 46.9 | 31.8 | 36.7 | 35.6 | 21.3 | 51.0 | 72.2 | 56.8 | 54.1 |
| Sociology | 53.5 | 43.2 | 46.7 | 48.4 | 43.3 | 47.5 | 42.3 | 44.6 | 35.3 | 42.8 | 50.6 | 47.9 | 39.4 | 29.2 |
| Social sciences nec | 39.1 | 32.8 | 38.0 | 38.6 | 37.6 | 36.6 | 38.1 | 22.1 | 36.7 | 37.4 | 38.0 | 39.1 | 35.6 | 40.8 |
| Science nec | 46.1 | 46.1 | 63.9 | 39.9 | 63.3 | 47.0 | 26.1 | 24.9 | 38.6 | 18.3 | 19.4 | 20.2 | 25.6 | 32.8 |
| Engineering | 62.9 | 58.9 | 60.4 | 61.1 | 56.0 | 59.6 | 58.5 | 55.1 | 53.4 | 58.5 | 60.4 | 56.3 | 57.6 | 57.0 |
| Aeronautical/astronautical | 75.0 | 81.1 | 77.5 | 71.3 | 70.2 | 69.0 | 70.6 | 63.6 | 71.2 | 79.0 | 83.4 | 71.8 | 66.8 | 59.6 |
| Bioengineering/biomedical | NA | NA | NA | NA | 53.1 | 42.3 | 46.7 | 43.1 | 47.4 | 52.7 | 57.8 | 53.0 | 43.5 | 46.2 |
| Chemical | 58.7 | 46.1 | 58.8 | 56.7 | 55.0 | 55.5 | 49.1 | 52.3 | 51.7 | 55.2 | 55.7 | 32.4 | 54.0 | 57.1 |
| Civil | 58.5 | 58.7 | 44.2 | 44.3 | 43.7 | 43.2 | 49.2 | 35.3 | 39.2 | 59.2 | 60.9 | 61.2 | 58.5 | 46.6 |
| Electrical | 68.5 | 61.8 | 61.7 | 68.6 | 61.5 | 66.7 | 65.3 | 61.8 | 58.4 | 59.9 | 67.7 | 69.1 | 66.7 | 66.6 |
| Mechanical | 65.1 | 56.8 | 63.7 | 63.2 | 62.7 | 64.2 | 63.7 | 64.9 | 59.2 | 63.6 | 69.1 | 65.8 | 69.7 | 77.8 |
| Metallurgical/materials | NA | 66.5 | 50.5 | 53.3 | 51.4 | 59.4 | 60.9 | 60.9 | 45.1 | 53.2 | 45.8 | 65.1 | 66.1 | 58.1 |
| Engineering nec | 58.5 | 52.2 | 62.7 | 60.6 | 47.9 | 52.7 | 49.5 | 46.3 | 52.2 | 51.9 | 53.6 | 45.1 | 40.3 | 34.5 |

NA = not available; nec = not elsewhere classified

SOURCES: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006; and Integrated Science and Resources Data System (WebCASPAR), http://webcaspar.nsf.gov.

Appendix table 5-15

**Expenditures of current funds for research equipment at academic institutions as percentage of total academic R&D expenditures, by field: Selected years, 1985–2006**

(Percent)

| Field | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All fields | 6.9 | 6.2 | 5.6 | 5.3 | 5.3 | 5.0 | 4.8 | 4.8 | 4.6 | 4.7 | 4.5 | 4.4 | 4.1 | 3.9 |
| Computer sciences | 12.6 | 9.3 | 11.2 | 9.7 | 10.0 | 8.5 | 7.3 | 6.4 | 6.8 | 9.0 | 7.6 | 7.5 | 5.1 | 4.8 |
| Environmental sciences | 6.8 | 6.8 | 5.8 | 5.9 | 6.1 | 6.2 | 5.9 | 5.6 | 4.8 | 6.5 | 5.5 | 5.3 | 4.8 | 5.5 |
| Atmospheric sciences | 7.7 | 6.6 | 6.6 | 6.0 | 6.1 | 5.4 | 5.0 | 4.2 | 4.1 | 4.2 | 4.4 | 4.8 | 5.5 | 10.8 |
| Earth sciences | 7.2 | 7.7 | 5.9 | 7.0 | 7.8 | 7.3 | 6.3 | 6.6 | 5.3 | 5.1 | 5.8 | 5.2 | 4.8 | 3.8 |
| Oceanography | 6.3 | 5.3 | 5.8 | 5.5 | 5.7 | 6.0 | 6.2 | 5.3 | 5.1 | 10.3 | 6.5 | 5.3 | 4.9 | 5.3 |
| Environmental sciences nec | 6.0 | 8.1 | 5.0 | 4.9 | 4.2 | 5.7 | 5.2 | 5.9 | 3.8 | 3.4 | 3.7 | 6.5 | 3.5 | 2.8 |
| Life sciences | 5.4 | 4.8 | 3.8 | 3.5 | 3.5 | 3.4 | 3.6 | 3.6 | 3.6 | 3.4 | 3.4 | 3.2 | 3.0 | 2.6 |
| Agricultural sciences | 5.2 | 4.0 | 3.5 | 3.3 | 3.5 | 3.8 | 3.6 | 3.5 | 3.6 | 3.0 | 3.1 | 2.9 | 2.7 | 2.7 |
| Biological sciences | 5.9 | 6.0 | 5.0 | 4.6 | 4.7 | 4.2 | 4.9 | 4.8 | 4.8 | 4.5 | 4.6 | 4.3 | 3.7 | 3.3 |
| Medical sciences | 4.9 | 4.3 | 3.1 | 2.9 | 2.9 | 2.8 | 2.8 | 2.9 | 3.0 | 3.0 | 2.9 | 2.7 | 2.5 | 2.2 |
| Life sciences nec | 6.5 | 5.2 | 4.8 | 3.6 | 2.9 | 2.9 | 3.4 | 3.1 | 2.7 | 3.3 | 3.2 | 3.2 | 4.0 | 3.1 |
| Mathematical sciences | 4.7 | 4.6 | 5.2 | 4.6 | 5.3 | 4.7 | 3.7 | 2.9 | 3.2 | 2.6 | 1.8 | 1.8 | 1.8 | 1.6 |
| Physical sciences | 12.4 | 10.6 | 10.6 | 10.4 | 10.3 | 10.2 | 9.5 | 9.2 | 8.6 | 9.1 | 9.1 | 9.5 | 8.8 | 8.6 |
| Astronomy | 7.3 | 7.8 | 7.4 | 7.7 | 9.2 | 8.4 | 7.5 | 6.4 | 3.9 | 4.8 | 4.8 | 5.8 | 5.0 | 4.3 |
| Chemistry | 12.8 | 11.3 | 10.5 | 11.0 | 10.9 | 10.4 | 11.1 | 10.8 | 10.0 | 10.8 | 9.7 | 8.9 | 8.2 | 8.5 |
| Physics | 12.9 | 10.8 | 11.6 | 10.6 | 10.2 | 11.3 | 9.3 | 9.1 | 9.1 | 9.4 | 9.8 | 10.5 | 9.9 | 9.5 |
| Physical sciences nec | 12.0 | 9.5 | 11.3 | 10.1 | 9.3 | 6.9 | 7.5 | 7.9 | 7.2 | 6.2 | 8.4 | 12.7 | 10.7 | 10.7 |
| Psychology | 5.5 | 4.2 | 3.3 | 3.2 | 3.3 | 3.0 | 2.5 | 2.8 | 2.5 | 2.8 | 3.0 | 2.3 | 1.8 | 2.1 |
| Social sciences | 2.6 | 2.1 | 2.6 | 2.3 | 2.1 | 1.9 | 1.4 | 1.5 | 1.1 | 1.1 | 1.1 | 0.9 | 1.0 | 0.7 |
| Economics | 2.3 | 2.0 | 2.9 | 2.4 | 2.0 | 1.5 | 1.4 | 1.2 | 0.8 | 0.9 | 0.9 | 0.6 | 0.7 | 0.5 |
| Political science | 2.0 | 1.3 | 1.8 | 1.9 | 1.9 | 1.9 | 1.0 | 0.7 | 0.7 | 0.7 | 0.8 | 0.6 | 0.5 | 0.3 |
| Sociology | 2.6 | 2.2 | 1.9 | 1.9 | 1.7 | 1.6 | 1.2 | 1.1 | 0.9 | 1.0 | 0.9 | 0.7 | 0.7 | 0.6 |
| Social sciences nec | 3.2 | 2.6 | 3.1 | 2.6 | 2.5 | 2.5 | 1.7 | 2.2 | 1.6 | 1.4 | 1.4 | 1.2 | 1.7 | 1.1 |
| Science nec | 7.9 | 7.5 | 11.9 | 10.8 | 9.4 | 7.2 | 7.1 | 9.4 | 9.3 | 7.7 | 7.1 | 6.9 | 6.8 | 7.5 |
| Engineering | 8.8 | 8.3 | 7.7 | 7.7 | 7.8 | 7.3 | 6.7 | 6.7 | 6.6 | 6.6 | 6.4 | 6.2 | 6.5 | 6.2 |
| Aeronautical/astronautical | 8.2 | 7.7 | 6.9 | 6.9 | 7.8 | 7.8 | 8.3 | 7.8 | 6.9 | 7.0 | 5.5 | 4.9 | 4.4 | 4.9 |
| Bioengineering/biomedical | NA | NA | NA | NA | 4.8 | 6.1 | 5.6 | 7.8 | 7.1 | 6.4 | 6.5 | 5.0 | 7.0 | 5.2 |
| Chemical | 9.8 | 8.3 | 7.4 | 7.6 | 7.4 | 8.7 | 7.8 | 6.9 | 7.5 | 7.0 | 7.0 | 11.1 | 7.3 | 6.9 |
| Civil | 6.8 | 7.1 | 5.2 | 5.7 | 5.9 | 4.3 | 4.4 | 4.8 | 4.9 | 5.9 | 3.9 | 4.3 | 3.7 | 3.1 |
| Electrical | 9.7 | 8.8 | 8.3 | 8.5 | 8.8 | 7.9 | 6.9 | 6.4 | 6.8 | 6.1 | 6.1 | 5.6 | 5.7 | 5.8 |
| Mechanical | 8.4 | 8.3 | 8.0 | 8.2 | 8.8 | 9.0 | 8.1 | 8.6 | 7.0 | 6.9 | 6.7 | 6.3 | 8.1 | 8.0 |
| Metallurgical/materials | NA | 9.9 | 8.5 | 9.1 | 9.3 | 7.4 | 7.4 | 7.5 | 10.9 | 8.7 | 11.1 | 6.8 | 8.3 | 8.5 |
| Engineering nec | 8.8 | 7.7 | 8.4 | 7.3 | 7.1 | 6.7 | 5.9 | 6.1 | 5.1 | 6.2 | 6.1 | 6.7 | 7.3 | 6.5 |

NA= not available; nec = not elsewhere classified

SOURCES: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006; and Integrated Science and Engineering Resources Data System (WebCASPAR), http://webcaspar.nsf.gov.

Appendix table 5-16

**Source of funds for new construction of S&E research space in academic institutions, by year of project start and type of institution: FY 1986–2005**

(Millions of dollars)

| Year of project start/type of institution | All sources | Federal government | State/local government | Institutional/ other[a] |
|---|---|---|---|---|
| 1986 or 1987 | | | | |
| All institutions | 2,050.6 | 145.4 | 779.1 | 1,125.4 |
| Doctorate granting | 1,887.7 | 129.9 | 690.4 | 1,066.7 |
| Nondoctorate granting | 162.9 | 15.5 | 88.7 | 58.8 |
| 1988 or 1989 | | | | |
| All institutions | 2,464.5 | 352.0 | 890.7 | 1,219.9 |
| Doctorate granting | 2,315.0 | 339.0 | 807.3 | 1,166.9 |
| Nondoctorate granting | 149.5 | 13.0 | 83.4 | 53.1 |
| 1990 or 1991 | | | | |
| All institutions | 2,975.6 | 476.3 | 956.6 | 1,542.7 |
| Doctorate granting | 2,847.2 | 465.5 | 947.9 | 1,433.8 |
| Nondoctorate granting | 128.4 | 10.8 | 8.7 | 108.9 |
| 1992 or 1993 | | | | |
| All institutions | 2,811.9 | 459.3 | 968.6 | 1,384.1 |
| Doctorate granting | 2,719.6 | 452.3 | 893.2 | 1,374.2 |
| Nondoctorate granting | 92.2 | 7.0 | 75.4 | 9.9 |
| 1994 or 1995 | | | | |
| All institutions | 2,767.5 | 206.4 | 1,180.9 | 1,380.2 |
| Doctorate granting | 2,436.9 | 201.3 | 890.3 | 1,345.3 |
| Nondoctorate granting | 330.5 | 5.2 | 290.5 | 34.9 |
| 1996 or 1997 | | | | |
| All institutions | 3,110.3 | 270.9 | 966.6 | 1,873.0 |
| Doctorate granting | 2,843.2 | 268.3 | 880.6 | 1,694.4 |
| Nondoctorate granting | 267.1 | 2.5 | 86.0 | 178.6 |
| 1998 or 1999 | | | | |
| All institutions | 2,765.4 | 237.8 | 939.0 | 1,588.6 |
| Doctorate granting | 2,562.5 | 206.0 | 869.1 | 1,487.5 |
| Nondoctorate granting | 202.9 | 31.8 | 70.0 | 101.0 |
| 2002 or 2003 | | | | |
| All institutions | 7,388.7 | 351.3 | 2,364.5 | 4,672.9 |
| Doctorate granting | 7,185.2 | 318.5 | 2,301.4 | 4,565.3 |
| Nondoctorate granting | 203.5 | 32.8 | 63.1 | 107.6 |
| 2004 or 2005 | | | | |
| All institutions | 6,109.9 | 455.2 | 1,413.5 | 4,241.2 |
| Doctorate granting | 5,846.8 | 422.1 | 1,276.6 | 4,148.1 |
| Nondoctorate granting | 263.0 | 33.1 | 136.9 | 93.1 |

[a]Institutional funds and other sources include institution's operating funds, endowments, private donations, tax-exempt bonds and other debt financing, and indirect costs recovered from federal and nonfederal sources.

NOTES: No data for 2001 because question on construction costs not asked on FY 2001 survey. FY 2003 and FY 2005 surveys only reported construction projects costing $250,000 for a single field; construction projects costing $100,000 reported in previous cycles. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Science and Engineering Research Facilities, Fiscal Years 1986–2005.

Appendix table 5-17



**S&E doctorate holders employed in academia, by type of position and degree field: 1973–2006**

(Thousands)

| Position/field | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All positions | | | | | | | | | | | | | | | | | |
| All fields | 118.0 | 134.1 | 145.4 | 155.3 | 167.1 | 176.1 | 190.2 | 195.9 | 206.6 | 210.6 | 213.8 | 217.5 | 232.5 | 240.2 | 245.5 | 259.5 | 274.2 |
| Science | 105.6 | 120.7 | 130.7 | 139.5 | 151.0 | 158.1 | 170.4 | 174.8 | 183.9 | 187.8 | 190.6 | 193.7 | 205.9 | 214.7 | 218.9 | 231.7 | 244.5 |
| Physical sciences | 25.5 | 27.5 | 29.2 | 28.8 | 30.0 | 29.9 | 32.2 | 32.8 | 33.6 | 33.7 | 35.0 | 35.7 | 37.5 | 38.7 | 38.6 | 39.9 | 39.9 |
| Mathematics | 9.7 | 11.0 | 11.7 | 12.2 | 12.4 | 12.9 | 13.6 | 13.8 | 14.5 | 15.2 | 15.5 | 14.6 | 15.6 | 15.2 | 14.9 | 16.7 | 17.4 |
| Computer sciences | NA | NA | NA | 0.1 | 0.3 | 0.5 | 0.8 | 1.1 | 1.5 | 2.0 | 2.5 | 3.1 | 3.3 | 3.7 | 3.8 | 5.2 | 5.8 |
| Life sciences | 34.9 | 39.4 | 42.6 | 47.0 | 51.3 | 54.9 | 58.7 | 61.3 | 64.8 | 66.9 | 68.2 | 71.6 | 77.3 | 81.9 | 84.3 | 90.0 | 96.1 |
| Psychology | 12.2 | 14.8 | 16.2 | 17.7 | 20.1 | 21.0 | 23.1 | 23.7 | 25.0 | 25.2 | 25.0 | 26.1 | 27.3 | 29.0 | 30.4 | 31.8 | 35.3 |
| Social sciences | 23.4 | 28.0 | 31.1 | 33.6 | 36.9 | 38.9 | 42.0 | 42.2 | 44.5 | 44.8 | 44.4 | 42.5 | 44.9 | 46.2 | 46.9 | 48.1 | 50.0 |
| Engineering | 12.4 | 13.4 | 14.8 | 15.8 | 16.1 | 18.1 | 19.9 | 21.2 | 22.9 | 22.8 | 23.1 | 23.8 | 26.6 | 25.5 | 26.6 | 27.8 | 29.7 |
| All full-time faculty | | | | | | | | | | | | | | | | | |
| All fields | 103.3 | 116.4 | 125.6 | 131.2 | 141.9 | 148.4 | 156.9 | 164.4 | 169.8 | 173.1 | 172.4 | 171.4 | 178.4 | 184.0 | 187.4 | 195.0 | 197.7 |
| Science | 92.0 | 104.2 | 112.2 | 116.9 | 127.3 | 132.0 | 139.0 | 145.2 | 149.6 | 153.1 | 152.3 | 151.3 | 156.8 | 163.0 | 165.5 | 172.7 | 175.3 |
| Physical sciences | 20.8 | 22.3 | 23.6 | 23.5 | 24.3 | 24.2 | 25.4 | 26.4 | 26.2 | 26.2 | 25.8 | 25.6 | 26.5 | 27.3 | 27.5 | 28.4 | 27.9 |
| Mathematics | 9.3 | 10.4 | 10.9 | 11.4 | 11.7 | 12.3 | 12.7 | 12.9 | 13.5 | 14.2 | 14.7 | 13.0 | 13.6 | 13.1 | 12.6 | 14.2 | 14.1 |
| Computer sciences | NA | NA | NA | 0.1 | 0.3 | 0.4 | 0.7 | 0.9 | 1.3 | 1.8 | 2.3 | 2.8 | 3.0 | 3.3 | 3.3 | 4.2 | 4.9 |
| Life sciences | 29.5 | 33.1 | 34.9 | 37.3 | 40.9 | 43.5 | 45.6 | 48.1 | 49.3 | 51.1 | 50.8 | 52.8 | 55.2 | 58.1 | 60.4 | 63.7 | 64.8 |
| Psychology | 10.8 | 12.8 | 13.9 | 14.3 | 16.4 | 17.3 | 18.5 | 19.2 | 20.2 | 20.7 | 19.5 | 20.1 | 20.8 | 21.9 | 22.6 | 22.0 | 23.8 |
| Social sciences | 21.6 | 25.5 | 28.8 | 30.4 | 33.7 | 34.4 | 36.1 | 37.7 | 39.0 | 39.0 | 39.2 | 37.1 | 37.7 | 39.2 | 39.2 | 40.1 | 39.8 |
| Engineering | 11.3 | 12.2 | 13.5 | 14.3 | 14.7 | 16.4 | 17.9 | 19.3 | 20.2 | 20.1 | 20.1 | 20.0 | 21.5 | 21.1 | 21.9 | 22.3 | 22.3 |
| Full-time professors | | | | | | | | | | | | | | | | | |
| All fields | 42.6 | 47.9 | 51.0 | 57.5 | 64.4 | 69.9 | 72.8 | 79.1 | 83.1 | 82.5 | 80.0 | 77.7 | 80.9 | 83.1 | 84.8 | 87.7 | 85.4 |
| Science | 37.8 | 42.4 | 44.7 | 50.1 | 56.4 | 60.9 | 63.7 | 68.7 | 72.5 | 72.6 | 69.7 | 68.6 | 70.2 | 72.4 | 74.1 | 76.8 | 74.8 |
| Physical sciences | 9.0 | 10.0 | 10.8 | 11.7 | 13.1 | 13.9 | 14.6 | 15.5 | 15.5 | 14.8 | 14.2 | 13.9 | 13.8 | 14.2 | 14.0 | 14.3 | 13.4 |
| Mathematics | 3.2 | 3.5 | 3.9 | 4.4 | 5.0 | 5.6 | 6.1 | 6.5 | 6.9 | 6.7 | 7.1 | 6.6 | 6.9 | 6.6 | 6.6 | 7.2 | 6.9 |
| Computer sciences | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.3 | 0.3 | 0.7 | 0.8 | 1.2 | 1.6 |
| Life sciences | 12.3 | 13.6 | 13.9 | 15.5 | 17.0 | 19.3 | 19.6 | 21.7 | 22.5 | 22.9 | 21.2 | 22.5 | 22.5 | 23.3 | 24.5 | 25.7 | 25.6 |
| Psychology | 3.9 | 4.6 | 4.8 | 5.6 | 6.5 | 7.0 | 7.6 | 8.3 | 9.1 | 9.5 | 8.7 | 8.7 | 9.5 | 9.4 | 9.9 | 9.8 | 9.8 |
| Social sciences | 9.4 | 10.6 | 11.3 | 12.9 | 14.7 | 15.1 | 15.9 | 16.8 | 18.5 | 18.6 | 18.4 | 16.6 | 17.1 | 18.2 | 18.2 | 18.6 | 17.6 |
| Engineering | 4.7 | 5.6 | 6.4 | 7.4 | 8.0 | 9.0 | 9.2 | 10.4 | 10.6 | 9.9 | 10.3 | 9.1 | 10.7 | 10.6 | 10.7 | 10.9 | 10.6 |
| Full-time associate professors | | | | | | | | | | | | | | | | | |
| All fields | 31.4 | 36.3 | 39.7 | 39.7 | 42.9 | 45.7 | 46.9 | 48.2 | 47.9 | 50.5 | 48.6 | 49.6 | 51.0 | 53.6 | 52.2 | 54.3 | 54.3 |
| Science | 27.4 | 32.2 | 35.3 | 35.5 | 38.5 | 40.9 | 42.2 | 43.3 | 42.6 | 44.7 | 43.3 | 43.5 | 45.2 | 47.6 | 46.1 | 48.4 | 48.7 |
| Physical sciences | 6.2 | 7.1 | 7.2 | 7.1 | 6.6 | 6.3 | 6.3 | 6.1 | 5.8 | 6.3 | 6.4 | 6.1 | 6.5 | 6.6 | 6.7 | 6.9 | 6.9 |
| Mathematics | 2.8 | 3.4 | 3.7 | 3.9 | 4.0 | 4.1 | 4.0 | 4.1 | 4.0 | 5.1 | 4.4 | 4.0 | 3.9 | 4.1 | 3.6 | 4.0 | 3.8 |
| Computer sciences | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.3 | 0.4 | 0.8 | 0.7 | 1.4 | 1.4 | 1.4 | 1.6 | 1.7 | 1.6 |
| Life sciences | 8.6 | 9.8 | 10.7 | 11.5 | 12.5 | 13.4 | 14.1 | 14.1 | 14.0 | 14.6 | 14.6 | 14.7 | 15.8 | 17.3 | 16.7 | 17.7 | 18.2 |
| Psychology | 3.3 | 4.1 | 4.3 | 4.3 | 5.2 | 5.9 | 5.9 | 6.0 | 5.9 | 5.9 | 5.6 | 5.8 | 5.8 | 6.2 | 6.0 | 5.9 | 6.4 |
| Social sciences | 6.5 | 7.9 | 9.4 | 8.8 | 10.2 | 11.2 | 11.8 | 12.7 | 12.6 | 12.0 | 11.6 | 11.5 | 11.7 | 11.9 | 11.4 | 12.1 | 11.8 |
| Engineering | 4.0 | 4.2 | 4.4 | 4.2 | 4.4 | 4.7 | 4.7 | 4.9 | 5.3 | 5.9 | 5.3 | 6.2 | 5.8 | 6.0 | 6.1 | 5.9 | 5.7 |
| Full-time junior faculty | | | | | | | | | | | | | | | | | |
| All fields | 29.3 | 32.1 | 34.9 | 34.0 | 34.6 | 32.8 | 37.2 | 37.2 | 38.7 | 40.1 | 43.8 | 44.0 | 46.4 | 47.4 | 50.5 | 53.0 | 57.9 |

Appendix table 5-17 (Page 2 of 2)

**S&E doctorate holders employed in academia, by type of position and degree field: 1973–2006**

(Thousands)

| Position/field | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Science | 26.7 | 29.6 | 32.2 | 31.3 | 32.3 | 30.2 | 33.1 | 33.2 | 34.4 | 35.8 | 39.3 | 39.3 | 41.5 | 42.9 | 45.4 | 47.5 | 51.8 |
| Physical sciences | 5.6 | 5.2 | 5.7 | 4.7 | 4.6 | 4.0 | 4.6 | 4.7 | 4.8 | 5.0 | 5.2 | 5.6 | 6.1 | 6.6 | 6.7 | 7.2 | 7.6 |
| Mathematics | 3.3 | 3.5 | 3.3 | 3.1 | 2.6 | 2.5 | 2.7 | 2.4 | 2.6 | 2.4 | 3.2 | 2.4 | 2.8 | 2.4 | 2.3 | 3.0 | 3.4 |
| Computer sciences | NA | NA | NA | 0.1 | 0.2 | 0.3 | 0.6 | 0.6 | 0.9 | 1.0 | 1.4 | 1.2 | 1.3 | 1.2 | 0.9 | 1.3 | 1.7 |
| Life sciences | 8.5 | 9.7 | 10.3 | 10.3 | 11.3 | 10.8 | 11.9 | 12.3 | 12.8 | 13.7 | 15.0 | 15.6 | 16.9 | 17.5 | 19.2 | 20.3 | 21.0 |
| Psychology | 3.6 | 4.2 | 4.8 | 4.4 | 4.8 | 4.5 | 5.0 | 4.9 | 5.2 | 5.4 | 5.2 | 5.5 | 5.5 | 6.2 | 6.6 | 6.3 | 7.6 |
| Social sciences | 5.7 | 7.1 | 8.2 | 8.6 | 8.8 | 8.1 | 8.4 | 8.2 | 7.9 | 8.4 | 9.3 | 9.0 | 8.9 | 9.1 | 9.6 | 9.5 | 10.5 |
| Engineering | 2.6 | 2.5 | 2.7 | 2.8 | 2.3 | 2.7 | 4.0 | 4.0 | 4.3 | 4.3 | 4.5 | 4.8 | 5.0 | 4.5 | 5.1 | 5.5 | 6.1 |
| Full-time nonfaculty | | | | | | | | | | | | | | | | | |
| All fields | 7.6 | 8.3 | 8.8 | 11.4 | 12.6 | 13.4 | 18.1 | 16.4 | 19.2 | 20.2 | 22.2 | 23.9 | 26.4 | 29.3 | 31.7 | 35.4 | 37.3 |
| Science | 6.8 | 7.4 | 8.0 | 10.5 | 11.5 | 12.3 | 16.6 | 15.3 | 17.7 | 18.4 | 20.7 | 21.7 | 23.3 | 26.4 | 28.3 | 31.9 | 34.0 |
| Physical sciences | 2.2 | 2.2 | 2.4 | 2.5 | 2.9 | 3.0 | 3.7 | 3.4 | 4.0 | 4.1 | 4.8 | 4.9 | 6.0 | 7.0 | 7.1 | 7.7 | 6.5 |
| Mathematics | 0.2 | 0.3 | 0.4 | 0.4 | 0.4 | 0.3 | 0.5 | 0.4 | 0.5 | 0.6 | 0.5 | 0.6 | 0.8 | 0.8 | 1.0 | 1.2 | 1.1 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.6 | 0.6 |
| Life sciences | 2.5 | 2.4 | 2.8 | 3.9 | 4.0 | 4.6 | 6.2 | 6.0 | 6.7 | 7.2 | 7.7 | 8.4 | 8.4 | 9.5 | 10.5 | 12.2 | 14.0 |
| Psychology | 0.8 | 1.0 | 1.2 | 1.8 | 2.2 | 2.2 | 2.9 | 2.8 | 2.9 | 2.8 | 3.9 | 3.9 | 4.0 | 4.6 | 4.9 | 5.7 | 6.1 |
| Social sciences | 1.0 | 1.5 | 1.2 | 1.9 | 2.0 | 2.2 | 3.2 | 2.6 | 3.5 | 3.5 | 3.7 | 3.6 | 3.9 | 4.3 | 4.5 | 4.4 | 5.6 |
| Engineering | 0.8 | 0.9 | 0.8 | 0.9 | 1.1 | 1.1 | 1.5 | 1.1 | 1.5 | 1.8 | 1.5 | 2.1 | 3.1 | 3.0 | 3.4 | 3.6 | 3.3 |
| Postdocs | | | | | | | | | | | | | | | | | |
| All fields | 4.2 | 6.2 | 7.6 | 8.1 | 8.5 | 8.3 | 8.7 | 9.3 | 11.5 | 9.9 | 13.3 | 16.8 | 18.9 | 18.5 | 17.5 | 15.7 | 23.4 |
| Science | 4.0 | 5.9 | 7.2 | 7.8 | 8.4 | 8.0 | 8.5 | 8.8 | 10.9 | 9.4 | 12.3 | 15.6 | 17.2 | 17.5 | 16.6 | 14.6 | 20.4 |
| Physical sciences | 1.8 | 2.2 | 2.4 | 2.0 | 2.1 | 1.6 | 2.1 | 2.3 | 2.7 | 2.2 | 3.5 | 4.4 | 3.8 | 3.4 | 3.0 | 2.6 | 3.9 |
| Mathematics | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.2 | 0.1 | 0.0 | 0.5 | 0.5 | 0.6 | 0.8 | 0.5 | 1.0 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 |
| Life sciences | 1.9 | 3.0 | 4.0 | 4.7 | 5.2 | 5.1 | 5.2 | 5.6 | 6.8 | 6.4 | 8.2 | 9.2 | 10.8 | 11.7 | 11.0 | 10.0 | 12.9 |
| Psychology | 0.2 | 0.4 | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.5 | 0.4 | 1.1 | 1.3 | 1.2 | 1.2 | 0.9 | 1.7 |
| Social sciences | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.6 | 0.3 | 0.1 | 0.4 | 0.3 | 0.2 | 0.4 | 0.7 | 0.5 | 0.6 | 0.5 | 0.8 |
| Engineering | 0.2 | 0.3 | 0.4 | 0.3 | 0.2 | 0.3 | 0.2 | 0.5 | 0.6 | 0.5 | 1.0 | 1.2 | 1.7 | 1.1 | 0.9 | 1.1 | 3.0 |
| Part-time positions | | | | | | | | | | | | | | | | | |
| All fields | 2.9 | 3.2 | 3.4 | 4.5 | 4.0 | 6.0 | 6.5 | 5.7 | 6.2 | 7.4 | 5.9 | 5.5 | 8.9 | 8.2 | 9.0 | 13.3 | 15.9 |
| Science | 2.8 | 3.1 | 3.2 | 4.3 | 3.9 | 5.7 | 6.2 | 5.4 | 5.6 | 6.9 | 5.4 | 5.1 | 8.6 | 7.9 | 8.5 | 12.5 | 14.8 |
| Physical sciences | 0.7 | 0.7 | 0.7 | 0.8 | 0.7 | 1.1 | 1.1 | 0.8 | 0.7 | 1.2 | 1.0 | 0.9 | 1.2 | 1.0 | 1.0 | 1.1 | 1.6 |
| Mathematics | 0.1 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.5 | 0.7 | 0.7 | 0.6 | 0.9 | 1.2 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 |
| Life sciences | 0.9 | 0.9 | 1.0 | 1.2 | 1.2 | 1.7 | 1.7 | 1.6 | 1.9 | 2.3 | 1.6 | 1.2 | 2.9 | 2.6 | 2.4 | 4.0 | 4.5 |
| Psychology | 0.4 | 0.5 | 0.6 | 1.0 | 0.8 | 1.0 | 1.0 | 1.0 | 1.0 | 1.2 | 1.2 | 1.1 | 1.1 | 1.3 | 1.8 | 3.2 | 3.7 |
| Social sciences | 0.7 | 0.8 | 0.8 | 1.0 | 1.0 | 1.6 | 2.2 | 1.8 | 1.7 | 2.0 | 1.3 | 1.3 | 2.6 | 2.2 | 2.7 | 3.1 | 3.7 |
| Engineering | 0.1 | 0.1 | 0.1 | 0.3 | 0.2 | 0.4 | 0.3 | 0.3 | 0.5 | 0.5 | 0.5 | 0.4 | 0.3 | 0.4 | 0.4 | 0.8 | 1.1 |

NA = not available

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Junior faculty includes assistant professors and instructors. Full-time nonfaculty includes positions such as research associates, adjunct positions, lecturers, and administrative positions. Part-time employment excludes those employed part time because they are students or retired. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

Appendix table 5-18

**S&E doctorate holders employed in academia, by type of position, Carnegie institution type, and administrative control of institution: 2006**

(Thousands)

| Institution type/position | All doctorates | Public | Private |
|---|---|---|---|
| All academic institutions | | | |
| All positions | 274.2 | 176.5 | 86.1 |
| Full-time senior faculty | 139.7 | 93.1 | 41.6 |
| Full-time junior faculty | 57.9 | 37.1 | 18.2 |
| Full-time nonfaculty | 37.3 | 23.4 | 11.8 |
| Postdocs | 23.4 | 13.0 | 9.2 |
| Part-time positions | 15.9 | 9.9 | 5.3 |
| Doctorate-granting universities–very high research activity | | | |
| All positions | 116.8 | 80.5 | 36.2 |
| Full-time senior faculty | 52.2 | 39.2 | 13.0 |
| Full-time junior faculty | 21.5 | 14.6 | 7.0 |
| Full-time nonfaculty | 20.5 | 13.4 | 7.1 |
| Postdocs | 17.8 | 10.0 | 7.8 |
| Part-time positions | 4.8 | 3.4 | 1.4 |
| Other doctorate-granting institutions | | | |
| All positions | 48.3 | 35.5 | 12.5 |
| Full-time senior faculty | 28.4 | 21.2 | 7.1 |
| Full-time junior faculty | 10.7 | 8.2 | 2.5 |
| Full-time nonfaculty | 5.0 | 3.6 | 1.4 |
| Postdocs | 1.7 | 1.2 | 0.3 |
| Part-time positions | 2.5 | 1.3 | 1.2 |
| Master's colleges and universities | | | |
| All positions | 48.3 | 32.9 | 15.3 |
| Full-time senior faculty | 30.2 | 20.7 | 9.5 |
| Full-time junior faculty | 11.5 | 7.8 | 3.7 |
| Full-time nonfaculty | 3.1 | 2.2 | 0.9 |
| Postdocs | 0.4 | 0.3 | 0.1 |
| Part-time positions | 3.1 | 1.8 | 1.2 |
| Medical schools and medical centers | | | |
| All positions | 14.6 | 10.5 | 4.0 |
| Full-time senior faculty | 6.3 | 4.4 | 1.9 |
| Full-time junior faculty | 3.5 | 2.6 | 0.8 |
| Full-time nonfaculty | 2.4 | 1.8 | 0.6 |
| Postdocs | 1.9 | 1.3 | 0.6 |
| Part-time positions | 0.5 | 0.4 | 0.1 |
| Baccalaureate colleges | | | |
| All positions | 21.1 | 6.1 | 14.9 |
| Full-time senior faculty | 12.7 | 3.6 | 9.1 |
| Full-time junior faculty | 5.5 | 1.8 | 3.6 |
| Full-time nonfaculty | 1.3 | 0.2 | 1.1 |
| Postdocs | 0.3 | 0.1 | 0.2 |
| Part-time positions | 1.4 | 0.5 | 0.9 |

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Employment at associate's colleges, other specialized institutions, and institutions without Carnegie code or with unknown administrative control included in total but not shown separately. Freestanding schools of engineering and technology included under master's colleges and universities. Senior faculty includes full and associate professors; junior faculty includes assistant professors and instructors; and full-time nonfaculty includes positions such as research associates, adjunct positions, lecturers, and administrative positions. Part-time employment excludes those employed part time because they are students or retired. Institutions designated by 2005 Carnegie classification code. For information on these institutional categories see chapter 2 sidebar, "Carnegie Classification of Academic Institutions," and Carnegie Foundation for the Advancement of Teaching, http://www.carnegiefoundation.org/classifications/index.asp, accessed 24 May 2007. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, 2006, special tabulations (preliminary data).

Appendix table 5-19



**S&E doctorate holders employed in academia, by type of position, sex, and degree field: 1973–2006**

(Thousands)

| Position/sex/field | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All positions | | | | | | | | | | | | | | | | | |
| Both sexes, all fields | 118.0 | 134.1 | 145.5 | 155.3 | 167.1 | 176.1 | 190.2 | 195.9 | 206.6 | 210.6 | 213.8 | 217.5 | 232.5 | 240.2 | 245.5 | 259.5 | 274.2 |
| Science | 105.6 | 120.7 | 130.7 | 139.5 | 151.0 | 158.1 | 170.4 | 174.8 | 183.9 | 187.8 | 190.6 | 193.7 | 205.9 | 214.7 | 218.9 | 231.7 | 244.5 |
| Physical sciences | 25.5 | 27.5 | 29.2 | 28.8 | 30.0 | 29.9 | 32.2 | 32.8 | 33.6 | 33.7 | 35.0 | 35.7 | 37.5 | 38.7 | 38.6 | 39.9 | 39.9 |
| Mathematics | 9.7 | 11.0 | 11.7 | 12.2 | 12.4 | 12.9 | 13.6 | 13.8 | 14.5 | 15.2 | 15.5 | 14.6 | 15.6 | 15.2 | 14.9 | 16.7 | 17.4 |
| Computer sciences | NA | NA | NA | 0.1 | 0.3 | 0.5 | 0.8 | 1.1 | 1.5 | 2.0 | 2.5 | 3.1 | 3.3 | 3.7 | 3.8 | 5.2 | 5.8 |
| Life sciences | 34.9 | 39.4 | 42.6 | 47.0 | 51.3 | 54.9 | 58.7 | 61.3 | 64.8 | 66.9 | 68.2 | 71.6 | 77.3 | 81.9 | 84.3 | 90.0 | 96.1 |
| Psychology | 12.2 | 14.8 | 16.2 | 17.7 | 20.1 | 21.0 | 23.1 | 23.7 | 25.0 | 25.2 | 25.0 | 26.1 | 27.3 | 29.0 | 30.4 | 31.8 | 35.3 |
| Social sciences | 23.4 | 28.0 | 31.1 | 33.6 | 36.9 | 38.9 | 42.0 | 42.2 | 44.5 | 44.8 | 44.4 | 42.5 | 44.9 | 46.2 | 46.9 | 48.1 | 50.0 |
| Engineering | 12.4 | 13.4 | 14.8 | 15.8 | 16.1 | 18.1 | 19.9 | 21.2 | 22.9 | 22.8 | 23.1 | 23.8 | 26.6 | 25.5 | 26.6 | 27.8 | 29.7 |
| Male, all fields | 107.2 | 120.3 | 129.0 | 136.0 | 144.0 | 149.8 | 159.2 | 162.0 | 168.0 | 168.7 | 166.9 | 165.1 | 173.3 | 175.8 | 175.0 | 180.7 | 183.5 |
| Science | 94.9 | 106.9 | 114.3 | 120.3 | 128.1 | 132.0 | 139.7 | 141.4 | 145.8 | 146.9 | 144.8 | 142.9 | 148.4 | 152.4 | 150.7 | 155.9 | 157.4 |
| Physical sciences | 24.0 | 25.9 | 27.4 | 26.9 | 27.8 | 27.7 | 29.8 | 30.0 | 30.5 | 30.8 | 31.4 | 31.4 | 32.4 | 33.4 | 32.8 | 33.7 | 32.6 |
| Mathematics | 9.0 | 10.3 | 10.8 | 11.3 | 11.3 | 11.8 | 12.3 | 12.5 | 13.0 | 13.9 | 13.7 | 12.8 | 13.5 | 12.9 | 12.6 | 13.8 | 14.1 |
| Computer sciences | NA | NA | NA | 0.1 | 0.3 | 0.4 | 0.7 | 0.9 | 1.3 | 1.6 | 2.1 | 2.5 | 2.6 | 2.9 | 2.9 | 4.3 | 4.5 |
| Life sciences | 30.8 | 34.3 | 36.6 | 40.1 | 42.9 | 44.5 | 46.7 | 47.9 | 49.5 | 50.1 | 49.4 | 50.1 | 52.6 | 55.1 | 54.9 | 56.6 | 58.3 |
| Psychology | 10.0 | 11.8 | 12.6 | 13.5 | 14.9 | 15.1 | 16.0 | 16.2 | 16.5 | 16.0 | 14.7 | 14.7 | 15.4 | 15.6 | 15.7 | 15.6 | 16.1 |
| Social sciences | 21.0 | 24.7 | 26.9 | 28.5 | 30.9 | 32.3 | 34.3 | 33.9 | 35.1 | 34.6 | 33.4 | 31.3 | 31.9 | 32.4 | 31.7 | 32.0 | 31.8 |
| Engineering | 12.3 | 13.3 | 14.7 | 15.7 | 15.9 | 17.8 | 19.5 | 20.6 | 22.2 | 21.8 | 22.1 | 22.3 | 24.8 | 23.4 | 24.3 | 24.8 | 26.1 |
| Female, all fields | 10.7 | 13.8 | 16.5 | 19.4 | 23.1 | 26.5 | 31.1 | 34.0 | 38.7 | 41.9 | 46.9 | 52.4 | 59.2 | 64.4 | 70.5 | 78.7 | 90.7 |
| Science | 10.7 | 13.8 | 16.4 | 19.2 | 22.9 | 26.1 | 30.7 | 33.5 | 38.0 | 40.9 | 45.8 | 50.9 | 57.5 | 62.3 | 68.2 | 75.8 | 87.0 |
| Physical sciences | 1.4 | 1.6 | 1.7 | 1.9 | 2.1 | 2.2 | 2.5 | 2.8 | 3.1 | 3.0 | 3.6 | 4.4 | 5.1 | 5.3 | 5.8 | 6.1 | 7.3 |
| Mathematics | 0.6 | 0.8 | 0.9 | 0.9 | 1.1 | 1.1 | 1.3 | 1.4 | 1.5 | 1.4 | 1.7 | 1.8 | 2.1 | 2.2 | 2.3 | 2.9 | 3.3 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.8 | 1.0 | 1.2 |
| Life sciences | 4.0 | 5.1 | 6.0 | 6.9 | 8.4 | 10.3 | 12.1 | 13.3 | 15.3 | 16.8 | 18.8 | 21.5 | 24.7 | 26.7 | 29.4 | 33.4 | 37.8 |
| Psychology | 2.2 | 3.0 | 3.6 | 4.3 | 5.2 | 5.9 | 7.1 | 7.6 | 8.5 | 9.2 | 10.3 | 11.5 | 11.9 | 13.4 | 14.7 | 16.2 | 19.2 |
| Social sciences | 2.4 | 3.3 | 4.2 | 5.2 | 6.0 | 6.5 | 7.7 | 8.3 | 9.4 | 10.2 | 10.9 | 11.2 | 13.0 | 13.8 | 15.2 | 16.2 | 18.2 |
| Engineering | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.4 | 0.6 | 0.7 | 1.0 | 1.1 | 1.5 | 1.7 | 2.1 | 2.3 | 3.0 | 3.6 |
| Full-time senior faculty | | | | | | | | | | | | | | | | | |
| Both sexes, all fields | 74.0 | 84.3 | 90.7 | 97.2 | 107.3 | 115.6 | 119.7 | 127.3 | 131.0 | 133.0 | 128.6 | 127.3 | 131.9 | 136.7 | 136.9 | 142.0 | 139.7 |
| Science | 65.3 | 74.5 | 80.0 | 85.6 | 94.9 | 101.8 | 105.8 | 112.0 | 115.2 | 117.2 | 113.0 | 112.1 | 115.4 | 120.1 | 120.2 | 125.2 | 123.5 |
| Physical sciences | 15.2 | 17.1 | 18.0 | 18.8 | 19.7 | 20.2 | 20.8 | 21.5 | 21.4 | 21.2 | 20.6 | 20.0 | 20.5 | 20.7 | 20.7 | 21.3 | 20.3 |
| Mathematics | 5.9 | 6.9 | 7.6 | 8.3 | 9.1 | 9.7 | 10.0 | 10.5 | 10.9 | 11.8 | 11.5 | 10.6 | 10.8 | 10.8 | 10.2 | 11.2 | 10.7 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.1 | 0.1 | 0.3 | 0.4 | 0.9 | 0.9 | 1.7 | 1.7 | 2.1 | 2.4 | 2.9 | 3.2 |
| Life sciences | 21.0 | 23.4 | 24.6 | 27.0 | 29.6 | 32.6 | 33.7 | 35.8 | 36.4 | 37.4 | 35.8 | 37.2 | 38.3 | 40.6 | 41.2 | 43.4 | 43.8 |
| Psychology | 7.3 | 8.7 | 9.1 | 9.9 | 11.7 | 12.8 | 13.5 | 14.3 | 15.0 | 15.3 | 14.3 | 14.5 | 15.3 | 15.6 | 15.9 | 15.8 | 16.2 |
| Social sciences | 15.9 | 18.5 | 20.7 | 21.7 | 24.9 | 26.3 | 27.7 | 29.5 | 31.1 | 30.6 | 29.9 | 28.1 | 28.8 | 30.1 | 29.6 | 30.7 | 29.4 |
| Engineering | 8.7 | 9.7 | 10.7 | 11.6 | 12.4 | 13.7 | 13.9 | 15.3 | 15.9 | 15.8 | 15.7 | 15.3 | 16.6 | 16.6 | 16.8 | 16.8 | 16.3 |

Appendix table 5-19



**S&E doctorate holders employed in academia, by type of position, sex, and degree field: 1973–2006**

(Thousands)

| Position/sex/field | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Male, all fields | 69.7 | 78.9 | 84.7 | 90.2 | 98.7 | 104.9 | 107.4 | 113.2 | 115.2 | 115.5 | 110.3 | 107.0 | 109.4 | 110.6 | 108.3 | 109.7 | 104.8 |
| Science | 61.0 | 69.2 | 74.0 | 78.7 | 86.4 | 91.3 | 93.7 | 98.2 | 99.6 | 100.1 | 95.0 | 92.2 | 93.3 | 94.8 | 92.4 | 94.0 | 89.8 |
| Physical sciences | 14.7 | 16.6 | 17.4 | 18.1 | 19.0 | 19.4 | 20.0 | 20.6 | 20.3 | 20.3 | 19.5 | 18.8 | 18.9 | 19.0 | 18.6 | 18.9 | 17.6 |
| Mathematics | 5.6 | 6.5 | 7.2 | 7.9 | 8.6 | 9.1 | 9.3 | 9.8 | 10.0 | 10.8 | 10.5 | 9.8 | 10.0 | 9.7 | 9.1 | 9.9 | 9.2 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.1 | 0.1 | 0.3 | 0.4 | 0.8 | 0.8 | 1.4 | 1.3 | 1.6 | 2.0 | 2.4 | 2.6 |
| Life sciences | 19.5 | 21.6 | 22.7 | 24.8 | 26.9 | 29.1 | 29.4 | 31.0 | 31.0 | 31.4 | 29.3 | 29.3 | 30.0 | 31.1 | 30.4 | 30.9 | 30.5 |
| Psychology | 6.4 | 7.6 | 7.8 | 8.4 | 9.7 | 10.5 | 10.8 | 11.2 | 11.5 | 11.3 | 10.2 | 10.1 | 10.7 | 10.3 | 10.3 | 9.5 | 9.1 |
| Social sciences | 14.7 | 16.9 | 18.8 | 19.5 | 22.3 | 23.2 | 24.1 | 25.3 | 26.4 | 25.5 | 24.7 | 22.8 | 22.4 | 23.2 | 21.9 | 22.4 | 20.7 |
| Engineering | 8.7 | 9.7 | 10.7 | 11.5 | 12.2 | 13.6 | 13.7 | 15.1 | 15.7 | 15.4 | 15.3 | 14.8 | 16.1 | 15.8 | 15.9 | 15.7 | 15.1 |
| Female, all fields | 4.3 | 5.4 | 6.0 | 7.0 | 8.6 | 10.7 | 12.4 | 14.0 | 15.8 | 17.6 | 18.3 | 20.3 | 22.5 | 26.1 | 28.6 | 32.3 | 34.9 |
| Science | 4.3 | 5.4 | 6.0 | 6.9 | 8.5 | 10.5 | 12.2 | 13.8 | 15.6 | 17.1 | 18.0 | 19.8 | 22.0 | 25.3 | 27.8 | 31.2 | 33.7 |
| Physical sciences | 0.5 | 0.5 | 0.6 | 0.7 | 0.7 | 0.8 | 0.9 | 1.0 | 1.1 | 0.9 | 1.1 | 1.2 | 1.5 | 1.9 | 2.1 | 2.4 | 2.7 |
| Mathematics | 0.3 | 0.4 | 0.4 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.0 | 0.8 | 0.8 | 1.1 | 1.1 | 1.3 | 1.4 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 | 0.5 | 0.4 | 0.5 | 0.6 |
| Life sciences | 1.5 | 1.8 | 1.9 | 2.2 | 2.7 | 3.5 | 4.3 | 4.8 | 5.4 | 6.1 | 6.5 | 7.8 | 8.3 | 9.5 | 10.8 | 12.5 | 13.3 |
| Psychology | 0.8 | 1.1 | 1.2 | 1.4 | 2.0 | 2.4 | 2.7 | 3.1 | 3.5 | 4.0 | 4.1 | 4.4 | 4.6 | 5.4 | 5.6 | 6.3 | 7.0 |
| Social sciences | 1.1 | 1.5 | 1.8 | 2.2 | 2.6 | 3.1 | 3.6 | 4.1 | 4.7 | 5.1 | 5.2 | 5.3 | 6.4 | 7.0 | 7.7 | 8.3 | 8.7 |
| Engineering | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 0.3 | 0.5 | 0.5 | 0.8 | 0.9 | 1.1 | 1.2 |
| Full-time junior faculty | | | | | | | | | | | | | | | | | |
| Both sexes, all fields | 29.3 | 32.1 | 34.9 | 34.0 | 34.6 | 32.8 | 37.2 | 37.2 | 38.7 | 40.1 | 43.8 | 44.0 | 46.4 | 47.4 | 50.5 | 53.0 | 57.9 |
| Science | 26.7 | 29.6 | 32.2 | 31.3 | 32.3 | 30.2 | 33.1 | 33.2 | 34.4 | 35.8 | 39.3 | 39.3 | 41.5 | 42.9 | 45.4 | 47.5 | 51.8 |
| Physical sciences | 5.6 | 5.2 | 5.7 | 4.7 | 4.6 | 4.0 | 4.6 | 4.7 | 4.8 | 5.0 | 5.2 | 5.6 | 6.1 | 6.6 | 6.7 | 7.2 | 7.6 |
| Mathematics | 3.3 | 3.5 | 3.3 | 3.1 | 2.6 | 2.5 | 2.7 | 2.4 | 2.6 | 2.4 | 3.2 | 2.4 | 2.8 | 2.4 | 2.3 | 3.0 | 3.4 |
| Computer sciences | NA | NA | NA | 0.1 | 0.2 | 0.3 | 0.6 | 0.6 | 0.9 | 1.0 | 1.4 | 1.2 | 1.3 | 1.2 | 0.9 | 1.3 | 1.7 |
| Life sciences | 8.5 | 9.7 | 10.3 | 10.3 | 11.3 | 10.8 | 11.9 | 12.3 | 12.8 | 13.7 | 15.0 | 15.6 | 16.9 | 17.5 | 19.2 | 20.3 | 21.0 |
| Psychology | 3.6 | 4.2 | 4.8 | 4.4 | 4.8 | 4.5 | 5.0 | 4.9 | 5.2 | 5.4 | 5.2 | 5.5 | 5.5 | 6.2 | 6.6 | 6.3 | 7.6 |
| Social sciences | 5.7 | 7.1 | 8.2 | 8.6 | 8.8 | 8.1 | 8.4 | 8.2 | 7.9 | 8.4 | 9.3 | 9.0 | 8.9 | 9.1 | 9.6 | 9.5 | 10.5 |
| Engineering | 2.6 | 2.5 | 2.7 | 2.8 | 2.3 | 2.7 | 4.0 | 4.0 | 4.3 | 4.3 | 4.5 | 4.8 | 5.0 | 4.5 | 5.1 | 5.5 | 6.1 |
| Male, all fields | 26.0 | 27.5 | 28.9 | 27.3 | 27.1 | 25.2 | 27.8 | 27.2 | 27.6 | 28.1 | 29.7 | 28.5 | 29.5 | 30.1 | 31.0 | 31.5 | 33.4 |
| Science | 23.5 | 25.1 | 26.3 | 24.6 | 24.9 | 22.6 | 23.9 | 23.4 | 23.5 | 24.2 | 25.7 | 24.4 | 25.1 | 26.2 | 26.7 | 27.0 | 28.6 |
| Physical sciences | 5.2 | 4.9 | 5.2 | 4.3 | 4.1 | 3.5 | 3.9 | 4.1 | 4.1 | 4.1 | 4.2 | 4.1 | 4.5 | 5.1 | 5.1 | 5.5 | 5.6 |
| Mathematics | 3.1 | 3.2 | 2.9 | 2.7 | 2.2 | 2.2 | 2.3 | 2.0 | 2.2 | 2.2 | 2.7 | 2.0 | 2.2 | 1.7 | 1.7 | 2.1 | 2.4 |
| Computer sciences | NA | NA | NA | 0.1 | 0.2 | 0.3 | 0.5 | 0.5 | 0.8 | 0.8 | 1.1 | 1.0 | 1.0 | 0.9 | 0.7 | 1.0 | 1.3 |
| Life sciences | 7.5 | 8.1 | 8.4 | 8.1 | 8.9 | 8.1 | 8.5 | 8.5 | 8.4 | 8.8 | 9.5 | 9.5 | 9.8 | 10.4 | 11.0 | 11.2 | 11.2 |
| Psychology | 2.7 | 3.0 | 3.3 | 2.8 | 3.0 | 2.6 | 2.7 | 2.7 | 2.9 | 3.0 | 2.3 | 2.4 | 2.1 | 2.7 | 2.7 | 2.4 | 2.9 |
| Social sciences | 5.0 | 5.9 | 6.5 | 6.6 | 6.5 | 5.9 | 6.0 | 5.6 | 5.2 | 5.3 | 5.9 | 5.5 | 5.5 | 5.4 | 5.5 | 4.9 | 5.3 |
| Engineering | 2.6 | 2.4 | 2.7 | 2.7 | 2.2 | 2.6 | 3.8 | 3.8 | 4.0 | 3.9 | 4.0 | 4.1 | 4.4 | 3.9 | 4.3 | 4.5 | 4.8 |
| Female, all fields | 3.3 | 4.6 | 6.0 | 6.8 | 7.5 | 7.7 | 9.4 | 10.0 | 11.2 | 12.0 | 14.1 | 15.6 | 17.0 | 17.3 | 19.4 | 21.5 | 24.5 |
| Science | 3.3 | 4.6 | 5.9 | 6.7 | 7.4 | 7.6 | 9.2 | 9.7 | 10.8 | 11.6 | 13.6 | 14.9 | 16.4 | 16.7 | 18.7 | 20.5 | 23.2 |

Appendix table 5-19



**S&E doctorate holders employed in academia, by type of position, sex, and degree field: 1973–2006**

(Thousands)

| Position/sex/field | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Physical sciences | 0.3 | 0.3 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.7 | 0.7 | 0.9 | 1.1 | 1.5 | 1.6 | 1.5 | 1.6 | 1.7 | 1.9 |
| Mathematics | 0.2 | 0.3 | 0.4 | 0.4 | 0.4 | 0.3 | 0.4 | 0.4 | 0.4 | 0.3 | 0.5 | 0.5 | 0.6 | 0.7 | 0.6 | 0.9 | 1.1 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 | 0.3 | 0.4 |
| Life sciences | 1.1 | 1.6 | 1.9 | 2.2 | 2.4 | 2.7 | 3.4 | 3.8 | 4.5 | 4.9 | 5.5 | 6.1 | 7.1 | 7.1 | 8.1 | 9.1 | 9.8 |
| Psychology | 0.9 | 1.2 | 1.5 | 1.6 | 1.8 | 1.9 | 2.3 | 2.2 | 2.3 | 2.4 | 2.9 | 3.1 | 3.4 | 3.5 | 3.9 | 3.9 | 4.8 |
| Social sciences | 0.8 | 1.2 | 1.7 | 2.1 | 2.3 | 2.1 | 2.4 | 2.6 | 2.7 | 3.0 | 3.4 | 3.5 | 3.5 | 3.7 | 4.1 | 4.6 | 5.2 |
| Engineering | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.4 | 0.5 | 0.7 | 0.6 | 0.5 | 0.8 | 1.0 | 1.3 |
| Full-time nonfaculty | | | | | | | | | | | | | | | | | |
| Both sexes, all fields | 7.6 | 8.3 | 8.8 | 11.4 | 12.6 | 13.4 | 18.1 | 16.4 | 19.2 | 20.2 | 22.2 | 23.9 | 26.4 | 29.3 | 31.7 | 35.4 | 37.3 |
| Science | 6.8 | 7.4 | 8.0 | 10.5 | 11.5 | 12.4 | 16.6 | 15.3 | 17.7 | 18.4 | 20.8 | 21.6 | 23.3 | 26.4 | 28.3 | 31.9 | 34.0 |
| Physical sciences | 2.2 | 2.2 | 2.4 | 2.5 | 2.9 | 3.0 | 3.7 | 3.4 | 4.0 | 4.1 | 4.8 | 4.9 | 6.0 | 7.0 | 7.1 | 7.7 | 6.5 |
| Mathematics | 0.2 | 0.3 | 0.4 | 0.4 | 0.4 | 0.3 | 0.5 | 0.4 | 0.5 | 0.7 | 0.5 | 0.6 | 0.8 | 0.8 | 1.0 | 1.2 | 1.1 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.6 | 0.6 |
| Life sciences | 2.5 | 2.4 | 2.8 | 3.9 | 4.0 | 4.6 | 6.2 | 6.0 | 6.7 | 7.2 | 7.7 | 8.4 | 8.4 | 9.5 | 10.5 | 12.2 | 14.0 |
| Psychology | 0.8 | 1.0 | 1.2 | 1.8 | 2.2 | 2.2 | 2.9 | 2.8 | 2.9 | 2.8 | 3.9 | 3.9 | 4.0 | 4.6 | 4.9 | 5.7 | 6.1 |
| Social sciences | 1.0 | 1.5 | 1.2 | 1.9 | 2.0 | 2.2 | 3.2 | 2.6 | 3.5 | 3.5 | 3.7 | 3.6 | 3.9 | 4.3 | 4.5 | 4.4 | 5.6 |
| Engineering | 0.8 | 0.9 | 0.8 | 0.9 | 1.1 | 1.1 | 1.5 | 1.1 | 1.5 | 1.8 | 1.5 | 2.1 | 3.1 | 3.0 | 3.4 | 3.6 | 3.3 |
| Male, all fields | 6.5 | 7.2 | 7.4 | 9.4 | 10.0 | 10.3 | 14.3 | 12.0 | 13.9 | 14.4 | 15.4 | 16.1 | 18.0 | 20.5 | 21.4 | 23.7 | 23.7 |
| Science | 5.7 | 6.4 | 6.6 | 8.6 | 8.9 | 9.3 | 12.8 | 10.9 | 12.5 | 12.8 | 13.9 | 14.2 | 15.3 | 17.9 | 18.3 | 20.6 | 20.9 |
| Physical sciences | 2.1 | 2.1 | 2.2 | 2.3 | 2.6 | 2.7 | 3.4 | 2.9 | 3.5 | 3.6 | 4.2 | 4.1 | 5.2 | 6.0 | 6.1 | 6.6 | 5.3 |
| Mathematics | 0.2 | 0.3 | 0.4 | 0.3 | 0.3 | 0.2 | 0.4 | 0.4 | 0.4 | 0.6 | 0.4 | 0.5 | 0.7 | 0.7 | 0.8 | 0.9 | 0.8 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.6 | 0.5 |
| Life sciences | 2.0 | 1.9 | 2.2 | 3.0 | 3.0 | 3.2 | 4.6 | 4.1 | 4.6 | 4.9 | 5.1 | 5.6 | 5.3 | 6.2 | 6.5 | 7.4 | 8.4 |
| Psychology | 0.7 | 0.8 | 0.9 | 1.4 | 1.4 | 1.4 | 1.8 | 1.6 | 1.5 | 1.2 | 1.9 | 1.7 | 1.8 | 2.1 | 2.0 | 2.5 | 2.6 |
| Social sciences | 0.8 | 1.3 | 0.9 | 1.6 | 1.6 | 1.7 | 2.5 | 1.8 | 2.4 | 2.4 | 2.2 | 2.1 | 2.2 | 2.6 | 2.7 | 2.7 | 3.3 |
| Engineering | 0.8 | 0.9 | 0.8 | 0.9 | 1.1 | 1.0 | 1.5 | 1.0 | 1.4 | 1.7 | 1.5 | 2.0 | 2.7 | 2.6 | 3.1 | 3.1 | 2.8 |
| Female, all fields | 1.1 | 1.0 | 1.4 | 2.0 | 2.6 | 3.1 | 3.8 | 4.5 | 5.3 | 5.8 | 6.7 | 7.7 | 8.4 | 8.8 | 10.4 | 11.7 | 13.5 |
| Science | 1.1 | 1.0 | 1.4 | 1.9 | 2.6 | 3.0 | 3.8 | 4.5 | 5.2 | 5.6 | 6.7 | 7.5 | 8.2 | 8.5 | 10.0 | 11.2 | 13.1 |
| Physical sciences | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.5 | 0.5 | 0.5 | 0.6 | 0.8 | 0.9 | 0.8 | 1.0 | 1.1 | 1.2 |
| Mathematics | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 | 0.1 | 0.3 | 0.3 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Life sciences | 0.6 | 0.5 | 0.6 | 0.9 | 1.0 | 1.3 | 1.6 | 1.8 | 2.1 | 2.4 | 2.6 | 2.8 | 3.1 | 3.3 | 4.0 | 4.8 | 5.6 |
| Psychology | 0.2 | 0.2 | 0.3 | 0.5 | 0.8 | 0.8 | 1.1 | 1.3 | 1.4 | 1.6 | 2.0 | 2.2 | 2.2 | 2.5 | 2.9 | 3.1 | 3.5 |
| Social sciences | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | 0.5 | 0.7 | 0.8 | 1.1 | 1.1 | 1.5 | 1.5 | 1.7 | 1.7 | 1.8 | 1.7 | 2.3 |
| Engineering | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 | 0.4 | 0.5 | 0.4 |
| Postdocs | | | | | | | | | | | | | | | | | |
| Both sexes, all fields | 4.2 | 6.2 | 7.6 | 8.1 | 8.5 | 8.3 | 8.7 | 9.3 | 11.5 | 9.9 | 13.3 | 16.8 | 18.9 | 18.5 | 17.5 | 15.7 | 23.4 |
| Science | 4.0 | 5.9 | 7.2 | 7.8 | 8.4 | 8.0 | 8.5 | 8.8 | 10.9 | 9.4 | 12.3 | 15.6 | 17.2 | 17.5 | 16.6 | 14.6 | 20.4 |
| Physical sciences | 1.8 | 2.2 | 2.4 | 2.0 | 2.1 | 1.6 | 2.1 | 2.3 | 2.7 | 2.2 | 3.5 | 4.4 | 3.8 | 3.4 | 3.0 | 2.6 | 3.9 |

Appendix table 5-19



**S&E doctorate holders employed in academia, by type of position, sex, and degree field: 1973–2006**

(Thousands)

| Position/sex/field | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mathematics | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.2 | 0.1 | 0.0 | 0.5 | 0.5 | 0.6 | 0.8 | 0.5 | 1.0 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 |
| Life sciences | 1.9 | 3.0 | 4.0 | 4.7 | 5.2 | 5.1 | 5.2 | 5.6 | 6.8 | 6.4 | 8.2 | 9.2 | 10.8 | 11.7 | 11.0 | 10.0 | 12.9 |
| Psychology | 0.2 | 0.4 | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.5 | 0.4 | 1.1 | 1.3 | 1.2 | 1.2 | 0.9 | 1.7 |
| Social sciences | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.6 | 0.3 | 0.1 | 0.4 | 0.3 | 0.2 | 0.4 | 0.7 | 0.5 | 0.6 | 0.5 | 0.8 |
| Engineering | 0.2 | 0.3 | 0.4 | 0.3 | 0.2 | 0.3 | 0.2 | 0.5 | 0.6 | 0.5 | 1.0 | 1.2 | 1.7 | 1.1 | 0.9 | 1.1 | 3.0 |
| Male, all fields | 3.5 | 4.9 | 6.1 | 6.3 | 6.3 | 5.8 | 6.0 | 6.8 | 8.2 | 6.8 | 9.2 | 11.1 | 12.1 | 11.2 | 10.5 | 9.8 | 13.9 |
| Science | 3.4 | 4.7 | 5.7 | 6.0 | 6.1 | 5.5 | 5.9 | 6.3 | 7.6 | 6.4 | 8.3 | 10.1 | 10.6 | 10.3 | 9.9 | 8.9 | 11.5 |
| Physical sciences | 1.6 | 2.0 | 2.1 | 1.8 | 1.8 | 1.4 | 1.7 | 1.9 | 2.2 | 1.8 | 2.9 | 3.7 | 3.0 | 2.7 | 2.3 | 2.1 | 2.9 |
| Mathematics | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.3 | 0.3 | 0.5 | 0.6 | 0.3 | 0.8 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 |
| Life sciences | 1.5 | 2.2 | 2.9 | 3.5 | 3.6 | 3.3 | 3.4 | 3.8 | 4.7 | 4.1 | 5.2 | 5.5 | 6.2 | 6.6 | 6.2 | 5.7 | 6.7 |
| Psychology | 0.1 | 0.2 | 0.4 | 0.4 | 0.5 | 0.3 | 0.4 | 0.3 | 0.3 | 0.2 | 0.1 | 0.4 | 0.5 | 0.3 | 0.4 | 0.4 | 0.6 |
| Social sciences | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.4 | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.5 | 0.3 | 0.3 | 0.3 | 0.4 |
| Engineering | 0.2 | 0.3 | 0.4 | 0.3 | 0.2 | 0.3 | 0.2 | 0.5 | 0.5 | 0.4 | 0.9 | 1.0 | 1.4 | 0.9 | 0.7 | 0.9 | 2.4 |
| Female, all fields | 0.6 | 1.3 | 1.6 | 1.8 | 2.2 | 2.5 | 2.6 | 2.6 | 3.3 | 3.0 | 4.1 | 5.7 | 6.8 | 7.3 | 6.9 | 6.0 | 9.6 |
| Science | 0.6 | 1.3 | 1.6 | 1.8 | 2.2 | 2.5 | 2.6 | 2.6 | 3.3 | 3.0 | 4.0 | 5.5 | 6.6 | 7.1 | 6.7 | 5.7 | 8.9 |
| Physical sciences | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.3 | 0.7 | 0.7 | 0.7 | 0.8 | 0.7 | 0.5 | 1.0 |
| Mathematics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Life sciences | 0.4 | 0.8 | 1.1 | 1.2 | 1.6 | 1.8 | 1.8 | 1.8 | 2.2 | 2.3 | 3.0 | 3.7 | 4.6 | 5.1 | 4.7 | 4.3 | 6.1 |
| Psychology | 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | 0.5 | 0.3 | 0.3 | 0.7 | 0.8 | 0.9 | 0.8 | 0.5 | 1.1 |
| Social sciences | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.5 |
| Engineering | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.6 |
| Part-time positions | | | | | | | | | | | | | | | | | |
| Both sexes, all fields | 2.9 | 3.2 | 3.4 | 4.5 | 4.0 | 6.0 | 6.5 | 5.7 | 6.2 | 7.4 | 5.9 | 5.5 | 8.9 | 8.2 | 9.0 | 13.3 | 15.9 |
| Science | 2.8 | 3.1 | 3.2 | 4.3 | 3.9 | 5.7 | 6.2 | 5.4 | 5.6 | 6.9 | 5.4 | 5.1 | 8.6 | 7.9 | 8.5 | 12.5 | 14.8 |
| Physical sciences | 0.7 | 0.7 | 0.7 | 0.8 | 0.7 | 1.1 | 1.1 | 0.8 | 0.7 | 1.2 | 1.0 | 0.9 | 1.2 | 1.0 | 1.0 | 1.1 | 1.6 |
| Mathematics | 0.1 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.5 | 0.7 | 0.7 | 0.6 | 0.9 | 1.2 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 |
| Life sciences | 0.9 | 0.9 | 1.0 | 1.2 | 1.2 | 1.7 | 1.7 | 1.6 | 1.9 | 2.3 | 1.6 | 1.2 | 2.9 | 2.6 | 2.4 | 4.0 | 4.5 |
| Psychology | 0.4 | 0.5 | 0.6 | 1.0 | 0.8 | 1.0 | 1.0 | 1.0 | 1.0 | 1.2 | 1.2 | 1.1 | 1.1 | 1.3 | 1.8 | 3.2 | 3.7 |
| Social sciences | 0.7 | 0.8 | 0.8 | 1.0 | 1.0 | 1.6 | 2.2 | 1.8 | 1.7 | 2.0 | 1.3 | 1.3 | 2.6 | 2.2 | 2.7 | 3.1 | 3.7 |
| Engineering | 0.1 | 0.1 | 0.1 | 0.3 | 0.2 | 0.4 | 0.3 | 0.3 | 0.5 | 0.5 | 0.5 | 0.4 | 0.3 | 0.4 | 0.4 | 0.8 | 1.1 |
| Male, all fields | 1.5 | 1.8 | 1.8 | 2.7 | 1.9 | 3.5 | 3.6 | 2.7 | 3.1 | 3.8 | 2.3 | 2.4 | 4.4 | 3.4 | 3.8 | 6.1 | 7.7 |
| Science | 1.4 | 1.7 | 1.6 | 2.4 | 1.7 | 3.2 | 3.3 | 2.5 | 2.6 | 3.4 | 1.9 | 2.0 | 4.1 | 3.2 | 3.5 | 5.4 | 6.7 |
| Physical sciences | 0.4 | 0.4 | 0.5 | 0.6 | 0.4 | 0.9 | 0.7 | 0.5 | 0.4 | 0.8 | 0.7 | 0.7 | 0.8 | 0.7 | 0.6 | 0.7 | 1.1 |
| Mathematics | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.3 | 0.3 | 0.4 | 0.3 | 0.6 | 0.9 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 |

Appendix table 5-19 (Page 5 of 5)

**S&E doctorate holders employed in academia, by type of position, sex, and degree field: 1973–2006**

(Thousands)

| Position/sex/field | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life sciences | 0.4 | 0.5 | 0.4 | 0.5 | 0.4 | 0.7 | 0.7 | 0.5 | 0.8 | 1.0 | 0.4 | 0.3 | 1.3 | 0.8 | 0.7 | 1.3 | 1.5 |
| Psychology | 0.1 | 0.2 | 0.2 | 0.5 | 0.3 | 0.4 | 0.4 | 0.4 | 0.3 | 0.2 | 0.1 | 0.1 | 0.3 | 0.3 | 0.3 | 0.8 | 0.9 |
| Social sciences | 0.4 | 0.5 | 0.4 | 0.6 | 0.5 | 1.1 | 1.4 | 1.0 | 0.8 | 1.2 | 0.5 | 0.7 | 1.4 | 1.0 | 1.4 | 1.7 | 2.2 |
| Engineering | 0.1 | 0.1 | 0.1 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.5 | 0.5 | 0.4 | 0.3 | 0.2 | 0.2 | 0.4 | 0.7 | 1.0 |
| Female, all fields | 1.4 | 1.5 | 1.6 | 1.9 | 2.1 | 2.5 | 2.9 | 3.0 | 3.1 | 3.5 | 3.6 | 3.1 | 4.5 | 4.9 | 5.1 | 7.3 | 8.2 |
| Science | 1.4 | 1.5 | 1.6 | 1.9 | 2.1 | 2.5 | 2.9 | 2.9 | 3.1 | 3.5 | 3.5 | 3.1 | 4.4 | 4.7 | 5.1 | 7.1 | 8.1 |
| Physical sciences | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.3 | 0.4 | 0.3 | 0.2 | 0.4 | 0.4 | 0.3 | 0.4 | 0.5 |
| Mathematics | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.4 | 0.3 | 0.3 | 0.2 | 0.3 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| Life sciences | 0.5 | 0.5 | 0.6 | 0.6 | 0.7 | 0.9 | 1.0 | 1.1 | 1.1 | 1.3 | 1.2 | 0.9 | 1.6 | 1.8 | 1.7 | 2.7 | 3.0 |
| Psychology | 0.3 | 0.3 | 0.4 | 0.5 | 0.5 | 0.6 | 0.7 | 0.7 | 0.7 | 0.9 | 1.1 | 1.0 | 0.8 | 1.0 | 1.5 | 2.4 | 2.8 |
| Social sciences | 0.3 | 0.3 | 0.3 | 0.4 | 0.5 | 0.5 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 1.2 | 1.2 | 1.3 | 1.4 | 1.5 |
| Engineering | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 |

NA = not available

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Senior faculty includes professors and associate professors; junior faculty includes assistant professors and instructors; and full-time nonfaculty includes positions such as research associates, adjunct positions, lecturers, and administrative positions. Part-time employment excludes those employed part-time because they are students or retired. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

*Science and Engineering Indicators 2008*

Appendix table 5-20



**S&E doctorate holders employed in academia, by type of position, degree field, and race/ethnicity: 1973–2006**

(Thousands)

| Position, field, and race/ethnicity | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All positions | 118.0 | 134.1 | 145.4 | 155.3 | 167.1 | 176.1 | 190.2 | 195.9 | 206.6 | 210.6 | 213.8 | 217.5 | 232.5 | 240.2 | 245.5 | 259.5 | 274.2 |
| Science | 105.6 | 120.6 | 130.7 | 139.5 | 150.9 | 157.9 | 170.3 | 174.7 | 183.8 | 187.8 | 190.6 | 193.7 | 205.9 | 214.7 | 218.9 | 231.7 | 244.5 |
| Physical sciences | 25.5 | 27.5 | 29.2 | 28.8 | 29.9 | 29.9 | 32.2 | 32.8 | 33.6 | 33.8 | 35.0 | 35.8 | 37.5 | 38.7 | 38.6 | 39.9 | 39.9 |
| Mathematics | 9.7 | 11.0 | 11.7 | 12.2 | 12.4 | 12.9 | 13.6 | 13.8 | 14.5 | 15.2 | 15.5 | 14.6 | 15.6 | 15.2 | 14.9 | 16.7 | 17.4 |
| Computer sciences | NA | NA | NA | 0.1 | 0.3 | 0.5 | 0.8 | 1.1 | 1.5 | 2.0 | 2.5 | 3.1 | 3.3 | 3.7 | 3.8 | 5.2 | 5.8 |
| Life sciences | 34.9 | 39.4 | 42.6 | 47.0 | 51.3 | 54.8 | 58.7 | 61.2 | 64.8 | 66.9 | 68.2 | 71.6 | 77.3 | 81.9 | 84.3 | 90.0 | 96.1 |
| Psychology | 12.2 | 14.8 | 16.2 | 17.7 | 20.1 | 21.0 | 23.1 | 23.7 | 25.0 | 25.2 | 25.0 | 26.1 | 27.3 | 29.0 | 30.4 | 31.8 | 35.3 |
| Social sciences | 23.4 | 28.0 | 31.1 | 33.6 | 36.9 | 38.8 | 41.9 | 42.1 | 44.5 | 44.8 | 44.4 | 42.5 | 44.9 | 46.2 | 46.9 | 48.1 | 50.0 |
| Engineering | 12.4 | 13.4 | 14.8 | 15.8 | 16.1 | 18.1 | 19.9 | 21.2 | 22.8 | 22.8 | 23.1 | 23.8 | 26.6 | 25.5 | 26.6 | 27.8 | 29.7 |
| White | 107.7 | 121.6 | 131.4 | 140.0 | 149.9 | 157.2 | 168.4 | 172.8 | 181.0 | 183.5 | 181.8 | 182.6 | 193.2 | 198.2 | 201.0 | 204.3 | 213.0 |
| Science | 96.9 | 109.9 | 118.8 | 126.5 | 135.9 | 142.0 | 152.0 | 155.7 | 163.0 | 165.3 | 164.3 | 165.0 | 173.0 | 178.8 | 180.8 | 185.1 | 193.5 |
| Physical sciences | 23.0 | 24.8 | 26.1 | 25.9 | 26.6 | 26.4 | 28.3 | 28.5 | 29.2 | 29.5 | 29.3 | 29.5 | 31.0 | 32.3 | 32.0 | 32.1 | 31.7 |
| Mathematics | 8.8 | 10.0 | 10.6 | 10.8 | 11.0 | 11.5 | 11.9 | 12.2 | 12.6 | 13.0 | 12.9 | 12.0 | 12.6 | 12.3 | 12.1 | 13.0 | 13.1 |
| Computer sciences | NA | NA | NA | 0.1 | 0.2 | 0.4 | 0.6 | 0.9 | 1.1 | 1.4 | 1.6 | 2.1 | 2.2 | 2.7 | 2.7 | 3.4 | 3.7 |
| Life sciences | 32.1 | 35.8 | 38.8 | 42.4 | 46.1 | 49.3 | 52.7 | 54.6 | 57.6 | 59.2 | 59.1 | 61.3 | 64.9 | 67.2 | 68.4 | 70.4 | 74.5 |
| Psychology | 11.6 | 13.9 | 15.2 | 16.8 | 18.8 | 19.6 | 21.3 | 22.0 | 23.2 | 23.2 | 22.9 | 23.6 | 24.4 | 25.5 | 26.6 | 27.1 | 29.8 |
| Social sciences | 21.4 | 25.3 | 28.2 | 30.5 | 33.1 | 34.7 | 37.2 | 37.5 | 39.4 | 39.1 | 38.6 | 36.5 | 38.0 | 38.9 | 39.0 | 39.1 | 40.6 |
| Engineering | 10.8 | 11.6 | 12.6 | 13.5 | 14.0 | 15.2 | 16.4 | 17.2 | 18.1 | 18.2 | 17.5 | 17.6 | 20.2 | 19.4 | 20.2 | 19.2 | 19.6 |
| Asian/Pacific Islander | 5.0 | 6.1 | 6.7 | 9.8 | 10.8 | 11.8 | 14.0 | 15.0 | 16.3 | 16.8 | 20.9 | 22.4 | 25.4 | 26.3 | 27.6 | 34.7 | 38.8 |
| Science | 4.0 | 5.0 | 5.4 | 7.8 | 9.1 | 9.4 | 11.1 | 11.5 | 12.2 | 13.1 | 16.2 | 17.5 | 20.3 | 21.7 | 22.8 | 28.3 | 30.8 |
| Physical sciences | 1.2 | 1.4 | 1.5 | 1.9 | 2.1 | 2.4 | 2.9 | 3.1 | 3.1 | 2.8 | 4.2 | 4.6 | 4.6 | 4.6 | 4.5 | 5.5 | 5.8 |
| Mathematics | 0.4 | 0.5 | 0.5 | 0.9 | 0.9 | 1.0 | 1.1 | 1.1 | 1.3 | 1.6 | 1.9 | 1.8 | 2.2 | 2.1 | 2.0 | 2.8 | 3.1 |
| Computer sciences | NA | NA | NA | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.5 | 0.7 | 0.9 | 0.9 | 0.9 | 0.9 | 1.5 | 1.7 |
| Life sciences | 1.3 | 1.8 | 2.0 | 3.1 | 3.6 | 3.6 | 4.0 | 4.4 | 4.7 | 5.1 | 6.3 | 6.8 | 8.5 | 9.9 | 11.0 | 13.3 | 14.6 |
| Psychology | 0.1 | 0.1 | 0.2 | 0.3 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.1 | 1.5 |
| Social sciences | 1.0 | 1.1 | 1.2 | 1.6 | 2.0 | 2.0 | 2.5 | 2.2 | 2.4 | 2.6 | 2.7 | 2.8 | 3.2 | 3.5 | 3.6 | 4.1 | 4.0 |
| Engineering | 1.1 | 1.1 | 1.3 | 1.9 | 1.8 | 2.4 | 3.0 | 3.5 | 4.1 | 3.7 | 4.7 | 4.9 | 5.2 | 4.6 | 4.8 | 6.4 | 8.0 |
| Underrepresented minority | 2.4 | 3.2 | 3.7 | 4.9 | 5.8 | 6.5 | 7.2 | 7.8 | 9.0 | 9.9 | 10.7 | 12.4 | 13.7 | 15.6 | 16.8 | 20.4 | 22.4 |
| Science | 2.2 | 2.9 | 3.4 | 4.5 | 5.5 | 6.0 | 6.7 | 7.2 | 8.3 | 9.0 | 9.8 | 11.2 | 12.6 | 14.1 | 15.2 | 18.3 | 20.2 |
| Physical sciences | 0.5 | 0.5 | 0.6 | 0.8 | 1.0 | 1.0 | 1.0 | 1.1 | 1.2 | 1.3 | 1.5 | 1.6 | 1.9 | 1.8 | 2.0 | 2.3 | 2.4 |
| Mathematics | 0.2 | 0.2 | 0.3 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.6 | 0.5 | 0.7 | 0.8 | 0.7 | 0.8 | 0.8 | 1.0 | 1.1 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 |
| Life sciences | 0.8 | 1.1 | 1.2 | 1.3 | 1.5 | 1.7 | 1.8 | 2.1 | 2.4 | 2.6 | 2.7 | 3.5 | 3.9 | 4.7 | 4.9 | 6.2 | 7.0 |
| Psychology | 0.3 | 0.4 | 0.6 | 0.5 | 0.8 | 1.0 | 1.2 | 1.2 | 1.3 | 1.5 | 1.6 | 2.0 | 2.3 | 2.7 | 2.9 | 3.6 | 3.9 |
| Social sciences | 0.5 | 0.8 | 0.8 | 1.5 | 1.8 | 2.0 | 2.1 | 2.3 | 2.8 | 3.0 | 3.1 | 3.2 | 3.6 | 3.9 | 4.3 | 4.9 | 5.4 |
| Engineering | 0.2 | 0.2 | 0.3 | 0.4 | 0.3 | 0.5 | 0.5 | 0.5 | 0.7 | 0.9 | 0.9 | 1.2 | 1.2 | 1.5 | 1.6 | 2.1 | 2.2 |
| Full-time faculty | 103.3 | 116.4 | 125.6 | 131.2 | 141.9 | 148.4 | 156.9 | 164.4 | 169.8 | 173.1 | 172.4 | 171.4 | 178.4 | 184.0 | 187.4 | 195.0 | 197.7 |
| Science | 92.0 | 104.2 | 112.2 | 116.9 | 127.2 | 132.0 | 139.0 | 145.1 | 149.5 | 153.1 | 152.2 | 151.3 | 156.8 | 163.0 | 165.5 | 172.7 | 175.3 |

Appendix table 5-20 (Page 2 of 4)

**S&E doctorate holders employed in academia, by type of position, degree field, and race/ethnicity: 1973–2006**

(Thousands)

| Position, field, and race/ethnicity | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Physical sciences | 20.8 | 22.3 | 23.6 | 23.5 | 24.3 | 24.2 | 25.4 | 26.4 | 26.2 | 26.2 | 25.8 | 25.6 | 26.5 | 27.3 | 27.5 | 28.4 | 27.9 |
| Mathematics | 9.3 | 10.4 | 10.9 | 11.4 | 11.7 | 12.3 | 12.7 | 12.9 | 13.5 | 14.2 | 14.7 | 13.0 | 13.6 | 13.1 | 12.6 | 14.2 | 14.1 |
| Computer sciences | NA | NA | NA | 0.1 | 0.3 | 0.4 | 0.7 | 0.9 | 1.3 | 1.8 | 2.3 | 2.8 | 3.0 | 3.3 | 3.3 | 4.2 | 4.9 |
| Life sciences | 29.5 | 33.1 | 34.9 | 37.3 | 40.9 | 43.5 | 45.6 | 48.1 | 49.3 | 51.1 | 50.8 | 52.8 | 55.2 | 58.1 | 60.4 | 63.7 | 64.8 |
| Psychology | 10.8 | 12.8 | 13.9 | 14.3 | 16.4 | 17.3 | 18.5 | 19.2 | 20.2 | 20.7 | 19.5 | 20.1 | 20.8 | 21.9 | 22.6 | 22.0 | 23.8 |
| Social sciences | 21.6 | 25.5 | 28.8 | 30.3 | 33.7 | 34.4 | 36.1 | 37.6 | 39.0 | 39.0 | 39.2 | 37.1 | 37.7 | 39.2 | 39.2 | 40.1 | 39.8 |
| Engineering | 11.3 | 12.2 | 13.5 | 14.3 | 14.7 | 16.4 | 17.9 | 19.3 | 20.2 | 20.1 | 20.1 | 20.0 | 21.5 | 21.1 | 21.9 | 22.3 | 22.3 |
| White | 94.9 | 106.2 | 114.3 | 118.7 | 128.1 | 133.4 | 139.7 | 146.2 | 149.8 | 151.8 | 148.7 | 147.1 | 151.1 | 155.4 | 156.3 | 156.6 | 158.9 |
| Science | 84.9 | 95.6 | 102.6 | 106.5 | 115.4 | 119.4 | 124.9 | 130.3 | 133.6 | 135.7 | 133.1 | 131.7 | 134.5 | 139.3 | 139.8 | 141.1 | 143.4 |
| Physical sciences | 19.0 | 20.5 | 21.5 | 21.3 | 22.1 | 21.6 | 22.8 | 23.4 | 23.3 | 23.2 | 22.2 | 22.1 | 22.6 | 23.4 | 23.2 | 23.6 | 23.4 |
| Mathematics | 8.5 | 9.5 | 9.9 | 10.1 | 10.3 | 10.9 | 11.1 | 11.4 | 11.7 | 12.2 | 12.3 | 10.7 | 11.0 | 10.7 | 10.1 | 11.1 | 10.8 |
| Computer sciences | NA | NA | NA | 0.0 | 0.2 | 0.3 | 0.5 | 0.7 | 1.0 | 1.3 | 1.5 | 1.9 | 2.0 | 2.4 | 2.3 | 2.6 | 3.0 |
| Life sciences | 27.5 | 30.4 | 32.1 | 33.9 | 37.2 | 39.7 | 41.3 | 43.3 | 44.4 | 46.0 | 45.1 | 46.7 | 48.3 | 50.2 | 51.4 | 51.9 | 52.9 |
| Psychology | 10.3 | 12.1 | 13.0 | 13.6 | 15.4 | 16.2 | 17.1 | 17.9 | 18.8 | 19.2 | 18.0 | 18.4 | 18.8 | 19.6 | 20.1 | 19.1 | 20.5 |
| Social sciences | 19.7 | 23.2 | 26.1 | 27.5 | 30.1 | 30.7 | 32.2 | 33.5 | 34.4 | 33.8 | 34.1 | 31.9 | 31.8 | 33.0 | 32.8 | 32.9 | 32.7 |
| Engineering | 10.0 | 10.6 | 11.6 | 12.2 | 12.7 | 14.0 | 14.8 | 15.9 | 16.2 | 16.2 | 15.6 | 15.3 | 16.7 | 16.1 | 16.5 | 15.5 | 15.5 |
| Asian/Pacific Islander | 4.0 | 4.7 | 5.0 | 7.8 | 8.4 | 9.1 | 10.9 | 11.7 | 12.3 | 12.6 | 14.8 | 14.5 | 16.5 | 17.0 | 18.4 | 23.0 | 23.0 |
| Science | 3.0 | 3.7 | 3.9 | 6.0 | 6.7 | 7.2 | 8.2 | 8.7 | 8.9 | 9.5 | 11.1 | 10.9 | 12.7 | 13.2 | 14.4 | 18.1 | 18.0 |
| Physical sciences | 0.7 | 0.8 | 1.0 | 1.4 | 1.3 | 1.6 | 1.7 | 2.0 | 1.9 | 1.8 | 2.4 | 2.3 | 2.4 | 2.5 | 2.6 | 3.1 | 2.9 |
| Mathematics | 0.4 | 0.5 | 0.5 | 0.8 | 0.9 | 1.0 | 1.1 | 1.1 | 1.3 | 1.5 | 1.7 | 1.6 | 2.0 | 1.7 | 1.7 | 2.3 | 2.4 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.3 | 0.5 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 1.4 | 1.5 |
| Life sciences | 0.9 | 1.2 | 1.2 | 2.1 | 2.3 | 2.4 | 2.8 | 3.1 | 3.0 | 3.0 | 3.7 | 3.5 | 4.1 | 4.9 | 5.7 | 7.3 | 7.2 |
| Psychology | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.7 | 1.0 |
| Social sciences | 0.9 | 1.1 | 1.1 | 1.5 | 1.9 | 1.9 | 2.1 | 2.1 | 2.1 | 2.4 | 2.3 | 2.4 | 2.8 | 2.9 | 3.1 | 3.3 | 3.0 |
| Engineering | 0.9 | 1.0 | 1.1 | 1.8 | 1.7 | 1.9 | 2.7 | 3.0 | 3.4 | 3.1 | 3.7 | 3.6 | 3.8 | 3.8 | 4.0 | 5.0 | 5.1 |
| Underrepresented minority | 2.0 | 2.7 | 3.2 | 4.2 | 5.0 | 5.4 | 5.8 | 6.3 | 7.4 | 8.4 | 8.6 | 9.8 | 10.6 | 11.6 | 12.5 | 15.2 | 15.7 |
| Science | 1.9 | 2.5 | 2.9 | 3.9 | 4.8 | 5.0 | 5.4 | 5.9 | 6.8 | 7.6 | 7.8 | 8.7 | 9.6 | 10.4 | 11.2 | 13.5 | 14.0 |
| Physical sciences | 0.4 | 0.4 | 0.4 | 0.7 | 0.9 | 0.9 | 0.8 | 0.9 | 0.9 | 1.1 | 1.2 | 1.1 | 1.4 | 1.5 | 1.6 | 1.7 | 1.6 |
| Mathematics | 0.2 | 0.2 | 0.2 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.6 | 0.7 | 0.6 | 0.7 | 0.7 | 0.8 | 0.9 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 |
| Life sciences | 0.7 | 0.9 | 1.0 | 1.1 | 1.3 | 1.3 | 1.4 | 1.6 | 1.8 | 2.0 | 2.0 | 2.6 | 2.7 | 3.1 | 3.3 | 4.5 | 4.7 |
| Psychology | 0.2 | 0.3 | 0.5 | 0.4 | 0.6 | 0.7 | 0.9 | 0.9 | 1.0 | 1.1 | 1.1 | 1.3 | 1.5 | 1.8 | 2.0 | 2.2 | 2.4 |
| Social sciences | 0.4 | 0.6 | 0.8 | 1.4 | 1.6 | 1.7 | 1.8 | 2.0 | 2.5 | 2.8 | 2.8 | 2.8 | 3.1 | 3.3 | 3.4 | 4.0 | 4.1 |
| Engineering | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.5 | 0.6 | 0.8 | 0.8 | 1.1 | 1.0 | 1.1 | 1.4 | 1.7 | 1.7 |
| Postdocs | 4.2 | 6.2 | 7.6 | 8.1 | 8.5 | 8.3 | 8.7 | 9.3 | 11.5 | 9.9 | 13.3 | 16.8 | 18.9 | 18.5 | 17.5 | 15.7 | 23.4 |
| Science | 4.0 | 5.9 | 7.2 | 7.8 | 8.4 | 8.0 | 8.5 | 8.8 | 10.9 | 9.4 | 12.3 | 15.6 | 17.2 | 17.5 | 16.6 | 14.6 | 20.4 |
| Physical sciences | 1.8 | 2.2 | 2.4 | 2.0 | 2.1 | 1.6 | 2.1 | 2.3 | 2.7 | 2.2 | 3.5 | 4.4 | 3.8 | 3.4 | 3.0 | 2.6 | 3.9 |
| Mathematics | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.2 | 0.1 | 0.0 | 0.5 | 0.5 | 0.6 | 0.8 | 0.5 | 1.0 |

Appendix table 5-20 (Page 3 of 4)

**S&E doctorate holders employed in academia, by type of position, degree field, and race/ethnicity: 1973–2006**

(Thousands)

| Position, field, and race/ethnicity | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 |
| Life sciences | 1.9 | 3.0 | 4.0 | 4.7 | 5.2 | 5.1 | 5.2 | 5.6 | 6.8 | 6.4 | 8.2 | 9.2 | 10.8 | 11.7 | 11.0 | 10.0 | 12.9 |
| Psychology | 0.2 | 0.4 | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.5 | 0.4 | 1.1 | 1.3 | 1.2 | 1.2 | 0.9 | 1.7 |
| Social sciences | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.6 | 0.3 | 0.1 | 0.4 | 0.3 | 0.2 | 0.4 | 0.7 | 0.5 | 0.6 | 0.5 | 0.8 |
| Engineering | 0.2 | 0.3 | 0.4 | 0.3 | 0.2 | 0.3 | 0.2 | 0.5 | 0.6 | 0.5 | 1.0 | 1.2 | 1.7 | 1.1 | 0.9 | 1.1 | 3.0 |
| White | 3.6 | 5.0 | 6.2 | 6.8 | 6.9 | 6.8 | 7.1 | 7.4 | 9.0 | 7.1 | 9.1 | 11.2 | 12.5 | 11.9 | 11.4 | 9.9 | 13.3 |
| Science | 3.4 | 4.8 | 6.0 | 6.7 | 6.7 | 6.8 | 7.0 | 7.2 | 8.7 | 6.9 | 8.8 | 10.7 | 11.6 | 11.2 | 10.9 | 9.3 | 12.2 |
| Physical sciences | 1.5 | 1.8 | 1.8 | 1.6 | 1.5 | 1.4 | 1.4 | 1.5 | 1.8 | 1.4 | 2.4 | 2.6 | 2.5 | 2.3 | 2.2 | 1.5 | 2.4 |
| Mathematics | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 | 0.3 | 0.3 | 0.5 | 0.7 | 0.4 | 0.6 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 |
| Life sciences | 1.7 | 2.4 | 3.3 | 4.1 | 4.4 | 4.3 | 4.5 | 4.7 | 5.6 | 4.8 | 5.9 | 6.5 | 7.0 | 7.2 | 6.7 | 6.4 | 7.2 |
| Psychology | 0.1 | 0.4 | 0.4 | 0.6 | 0.6 | 0.5 | 0.7 | 0.6 | 0.8 | 0.4 | 0.3 | 0.9 | 1.1 | 0.9 | 1.0 | 0.7 | 1.3 |
| Social sciences | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.5 | 0.3 | 0.1 | 0.3 | 0.2 | 0.1 | 0.3 | 0.6 | 0.3 | 0.4 | 0.3 | 0.6 |
| Engineering | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.2 | 0.3 | 0.5 | 0.9 | 0.7 | 0.6 | 0.5 | 1.2 |
| Asian/Pacific Islander | 0.5 | 1.0 | 1.1 | 1.1 | 1.4 | 1.1 | 1.1 | 1.6 | 1.9 | 2.3 | 3.6 | 4.7 | 5.3 | 5.2 | 4.9 | 4.8 | 8.3 |
| Science | 0.4 | 0.9 | 1.0 | 1.0 | 1.4 | 0.9 | 1.1 | 1.3 | 1.6 | 2.0 | 2.9 | 4.0 | 4.7 | 4.9 | 4.6 | 4.3 | 6.6 |
| Physical sciences | 0.2 | 0.4 | 0.4 | 0.4 | 0.6 | 0.2 | 0.5 | 0.6 | 0.7 | 0.7 | 1.0 | 1.5 | 1.2 | 1.1 | 0.8 | 0.9 | 1.3 |
| Mathematics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| Life sciences | 0.2 | 0.5 | 0.5 | 0.5 | 0.8 | 0.6 | 0.6 | 0.6 | 0.9 | 1.3 | 1.9 | 2.2 | 3.2 | 3.6 | 3.6 | 3.0 | 4.6 |
| Psychology | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 |
| Social sciences | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 |
| Engineering | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.3 | 0.3 | 0.7 | 0.7 | 0.7 | 0.2 | 0.3 | 0.5 | 1.8 |
| Underrepresented minority | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.4 | 0.4 | 0.4 | 0.6 | 0.4 | 0.6 | 0.9 | 1.1 | 1.5 | 1.1 | 1.1 | 1.7 |
| Science | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | 0.3 | 0.5 | 0.4 | 0.6 | 0.9 | 1.0 | 1.4 | 1.1 | 1.0 | 1.6 |
| Physical sciences | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 |
| Mathematics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Life sciences | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.4 | 0.5 | 0.6 | 0.8 | 0.6 | 0.6 | 1.0 |
| Psychology | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 |
| Social sciences | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 |
| Engineering | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 0.1 | 0.1 |
| Other positions | 10.5 | 11.5 | 12.2 | 15.9 | 16.6 | 19.4 | 24.6 | 22.1 | 25.4 | 27.6 | 28.1 | 29.4 | 35.3 | 37.5 | 40.7 | 48.7 | 53.1 |
| Science | 9.6 | 10.5 | 11.3 | 14.8 | 15.3 | 18.0 | 22.8 | 20.7 | 23.3 | 25.4 | 26.0 | 26.8 | 31.9 | 34.2 | 36.8 | 44.4 | 48.8 |
| Physical sciences | 2.9 | 2.9 | 3.1 | 3.3 | 3.6 | 4.2 | 4.8 | 4.2 | 4.7 | 5.4 | 5.8 | 5.8 | 7.2 | 8.0 | 8.1 | 8.8 | 8.1 |
| Mathematics | 0.4 | 0.6 | 0.7 | 0.7 | 0.6 | 0.5 | 0.7 | 0.6 | 0.8 | 0.9 | 0.8 | 1.1 | 1.5 | 1.5 | 1.6 | 2.0 | 2.3 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.9 | 0.8 |
| Life sciences | 3.4 | 3.3 | 3.7 | 5.0 | 5.2 | 6.3 | 7.8 | 7.6 | 8.7 | 9.5 | 9.2 | 9.6 | 11.3 | 12.0 | 12.9 | 16.3 | 18.5 |

Appendix table 5-20 (Page 4 of 4)

**S&E doctorate holders employed in academia, by type of position, degree field, and race/ethnicity: 1973–2006**

(Thousands)

| Position, field, and race/ethnicity | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Psychology | 1.2 | 1.5 | 1.8 | 2.8 | 3.0 | 3.1 | 3.9 | 3.8 | 4.0 | 4.0 | 5.1 | 5.0 | 5.2 | 5.9 | 6.6 | 8.9 | 9.8 |
| Social sciences | 1.6 | 2.2 | 1.9 | 2.9 | 2.9 | 3.8 | 5.5 | 4.3 | 5.1 | 5.5 | 5.0 | 5.0 | 6.5 | 6.5 | 7.1 | 7.5 | 9.3 |
| Engineering | 0.9 | 1.0 | 0.9 | 1.2 | 1.3 | 1.4 | 1.8 | 1.4 | 2.0 | 2.2 | 2.0 | 2.5 | 3.4 | 3.3 | 3.9 | 4.3 | 4.4 |
| White | 9.3 | 10.4 | 10.9 | 14.5 | 15.0 | 17.0 | 21.6 | 19.3 | 22.2 | 24.6 | 24.0 | 24.3 | 29.6 | 31.0 | 33.3 | 37.8 | 40.8 |
| Science | 8.6 | 9.5 | 10.1 | 13.4 | 13.7 | 15.8 | 20.0 | 18.2 | 20.6 | 22.8 | 22.4 | 22.5 | 27.0 | 28.3 | 30.1 | 34.7 | 37.9 |
| Physical sciences | 2.5 | 2.7 | 2.8 | 3.1 | 3.2 | 3.6 | 4.1 | 3.6 | 4.0 | 4.8 | 4.8 | 4.8 | 5.9 | 6.6 | 6.8 | 7.0 | 5.9 |
| Mathematics | 0.3 | 0.5 | 0.6 | 0.6 | 0.6 | 0.5 | 0.7 | 0.6 | 0.7 | 0.8 | 0.6 | 0.9 | 1.2 | 1.1 | 1.3 | 1.5 | 1.7 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.4 | 0.7 | 0.6 |
| Life sciences | 3.0 | 2.9 | 3.3 | 4.4 | 4.5 | 5.3 | 6.9 | 6.6 | 7.5 | 8.4 | 8.1 | 8.1 | 9.5 | 9.8 | 10.2 | 12.2 | 14.3 |
| Psychology | 1.1 | 1.5 | 1.7 | 2.6 | 2.8 | 2.9 | 3.5 | 3.5 | 3.6 | 3.6 | 4.5 | 4.3 | 4.5 | 5.0 | 5.6 | 7.4 | 8.0 |
| Social sciences | 1.5 | 2.0 | 1.7 | 2.7 | 2.7 | 3.5 | 4.7 | 3.9 | 4.7 | 5.1 | 4.4 | 4.3 | 5.6 | 5.5 | 5.9 | 5.9 | 7.3 |
| Engineering | 0.7 | 0.9 | 0.8 | 1.1 | 1.2 | 1.1 | 1.6 | 1.1 | 1.6 | 1.8 | 1.6 | 1.8 | 2.7 | 2.6 | 3.1 | 3.1 | 2.9 |
| Asian/Pacific Islander | 0.6 | 0.4 | 0.6 | 0.9 | 1.0 | 1.6 | 2.0 | 1.8 | 2.0 | 1.9 | 2.5 | 3.2 | 3.6 | 4.1 | 4.3 | 6.9 | 7.4 |
| Science | 0.5 | 0.4 | 0.5 | 0.9 | 1.0 | 1.4 | 1.8 | 1.5 | 1.7 | 1.5 | 2.2 | 2.6 | 2.9 | 3.5 | 3.7 | 5.9 | 6.2 |
| Physical sciences | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.5 | 0.6 | 0.6 | 0.5 | 0.4 | 0.8 | 0.8 | 1.1 | 1.0 | 1.0 | 1.4 | 1.7 |
| Mathematics | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.4 | 0.5 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 |
| Life sciences | 0.2 | 0.1 | 0.3 | 0.4 | 0.6 | 0.7 | 0.7 | 0.7 | 0.9 | 0.8 | 0.8 | 1.1 | 1.2 | 1.5 | 1.7 | 3.0 | 2.8 |
| Psychology | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.3 | 0.4 |
| Social sciences | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.4 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 0.5 | 0.7 | 0.9 |
| Engineering | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 | 0.2 | 0.2 | 0.3 | 0.4 | 0.3 | 0.3 | 0.6 | 0.6 | 0.6 | 0.5 | 0.9 | 1.1 |
| Underrepresented minority | 0.3 | 0.4 | 0.3 | 0.5 | 0.5 | 0.8 | 1.0 | 1.1 | 1.1 | 1.1 | 1.5 | 1.8 | 2.1 | 2.5 | 3.1 | 4.1 | 4.9 |
| Science | 0.3 | 0.4 | 0.3 | 0.4 | 0.5 | 0.7 | 0.9 | 1.0 | 1.0 | 1.0 | 1.4 | 1.7 | 2.0 | 2.4 | 2.9 | 3.8 | 4.6 |
| Physical sciences | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 0.5 | 0.5 |
| Mathematics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 |
| Computer sciences | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Life sciences | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.6 | 0.8 | 1.0 | 1.1 | 1.3 |
| Psychology | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.6 | 0.6 | 0.7 | 0.8 | 1.2 | 1.4 |
| Social sciences | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | 0.5 | 0.5 | 0.8 | 0.9 | 1.1 |
| Engineering | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 |

NA = not available

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Full-time faculty includes full, associate, and assistant professors plus instructors. Other positions include full-time nonfaculty appointments such as research associates, adjunct appointments, lecturers, administrative positions, and part-time appointments of all kinds. Part-time employment excludes those employed part time because they are students or retired. Underrepresented minority includes blacks, Hispanics, and American Indians/Alaska Natives. Total includes other and unknown race/ethnicity not shown separately. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

Appendix table 5-21

**Full-time doctoral instructional faculty, by field of teaching, citizenship, and type of institution: Fall 1992 and fall 2003**

(Percent distribution)

| Year/institution type/field of teaching | Doctoral faculty (*n*) | Citizen, born in U.S. | Citizen, foreign born | Noncitizen |
|---|---|---|---|---|
| 1992 | | | | |
| All institutions | 342,100 | 82.6 | 9.2 | 8.3 |
| S&E | 197,500 | 79.2 | 10.7 | 10.1 |
| Agricultural/biological/health sciences | 86,400 | 83.2 | 9.0 | 7.8 |
| Physical sciences/mathematics/computer sciences/engineering | 64,100 | 70.0 | 15.0 | 15.0 |
| Social/behavioral sciences | 47,100 | 84.3 | 7.9 | 7.8 |
| Non-S&E | 140,300 | 87.9 | 6.9 | 5.1 |
| Research institutions | 135,300 | 77.7 | 10.5 | 11.8 |
| S&E | 91,000 | 75.5 | 11.4 | 13.1 |
| Agricultural/biological/health sciences | 45,500 | 80.9 | 8.7 | 10.4 |
| Physical sciences/mathematics/computer sciences/engineering | 28,600 | 62.0 | 19.5 | 18.5 |
| Social/behavioral sciences | 16,900 | 83.8 | 4.8 | 11.4 |
| Non-S&E | 41,600 | 83.9 | 8.7 | 7.3 |
| Other institutions | 206,800 | 85.7 | 8.3 | 6.0 |
| S&E | 106,600 | 82.3 | 10.1 | 7.6 |
| Agricultural/biological/health sciences | 40,800 | 85.7 | 9.4 | 4.9 |
| Physical sciences/mathematics/computer sciences/engineering | 35,500 | 76.4 | 11.4 | 12.2 |
| Social/behavioral sciences | 30,200 | 84.6 | 9.7 | 5.7 |
| Non-S&E | 98,700 | 89.6 | 6.2 | 4.2 |
| 2003 | | | | |
| All institutions | 420,900 | 76.0 | 13.3 | 10.7 |
| S&E | 246,100 | 71.7 | 15.6 | 12.7 |
| Agricultural/biological/health sciences | 106,500 | 74.7 | 14.3 | 11.0 |
| Physical sciences/mathematics/computer sciences/engineering | 85,500 | 61.1 | 21.0 | 17.9 |
| Social/behavioral sciences | 54,100 | 82.7 | 9.6 | 7.7 |
| Non-S&E | 174,800 | 82.0 | 10.0 | 8.0 |
| Research institutions | 168,300 | 70.8 | 14.4 | 14.8 |
| S&E | 115,000 | 67.3 | 16.4 | 16.4 |
| Agricultural/biological/health sciences | 57,900 | 71.9 | 15.5 | 12.6 |
| Physical sciences/mathematics/computer sciences/engineering | 37,000 | 53.2 | 21.9 | 24.9 |
| Social/behavioral sciences | 20,000 | 79.7 | 8.7 | 11.7 |
| Non-S&E | 53,300 | 78.4 | 10.1 | 11.5 |
| Other institutions | 252,600 | 79.4 | 12.6 | 8.0 |
| S&E | 131,100 | 75.7 | 15.0 | 9.4 |
| Agricultural/biological/health sciences | 48,600 | 77.9 | 13.0 | 9.1 |
| Physical sciences/mathematics/computer sciences/engineering | 48,400 | 67.2 | 20.4 | 12.5 |
| Social/behavioral sciences | 34,100 | 84.5 | 10.1 | 5.4 |
| Non-S&E | 121,500 | 83.5 | 10.0 | 6.5 |

NOTES: Physical sciences include earth, atmospheric, and ocean sciences. Institutions designated by 1994 Carnegie classification code. For information on these institutional categories, see Carnegie Foundation for the Advancement of Teaching, *A Classification of Institutions of Higher Education*, Princeton University Press (1994) and chapter 2 sidebar, "Carnegie Classification of Academic Institutions," in National Science Board, *Science and Engineering Indicators 2006*, volume 1, NSB 06-01, National Science Foundation (2006). Total for 1992 includes missing field and missing highest degree not shown separately. Detail may not add to total because of rounding.

SOURCE: National Center for Education Statistics, National Survey of Postsecondary Faculty, 1993 and 2004, special tabulations (2006).

Appendix table 5-22 (Page 1 of 2)

**Age distribution of S&E doctorate holders employed in academia, by type of position: 1973–2006**

| Position | Age (years) | | Age distribution (%) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean | Median | All ages | <35 | 35–44 | 45–54 | 55–64 | ≥65 |
| All positions | | | | | | | | |
| 1973 | 42.0 | 40.0 | 100.0 | 28.3 | 35.2 | 23.3 | 10.9 | 2.2 |
| 1975 | 42.4 | 39.9 | 100.0 | 25.9 | 36.8 | 23.7 | 11.7 | 2.0 |
| 1977 | 42.7 | 40.0 | 100.0 | 22.9 | 38.9 | 23.8 | 12.4 | 2.0 |
| 1979 | 43.3 | 40.7 | 100.0 | 20.1 | 40.3 | 23.8 | 13.6 | 2.2 |
| 1981 | 44.0 | 41.5 | 100.0 | 18.3 | 40.5 | 23.7 | 14.5 | 2.9 |
| 1983 | 44.8 | 42.5 | 100.0 | 14.9 | 40.8 | 25.2 | 15.7 | 3.4 |
| 1985 | 45.2 | 43.2 | 100.0 | 14.2 | 39.2 | 26.8 | 15.9 | 3.8 |
| 1987 | 45.6 | 44.2 | 100.0 | 12.9 | 36.5 | 30.6 | 16.5 | 3.5 |
| 1989 | 46.1 | 45.0 | 100.0 | 12.1 | 34.7 | 32.2 | 16.9 | 4.1 |
| 1991 | 46.3 | 45.3 | 100.0 | 11.5 | 33.7 | 34.2 | 16.9 | 3.8 |
| 1993 | 45.8 | 45.0 | 100.0 | 13.3 | 33.3 | 34.4 | 16.1 | 3.0 |
| 1995 | 46.2 | 45.3 | 100.0 | 12.7 | 32.9 | 33.6 | 17.4 | 3.5 |
| 1997 | 46.6 | 45.8 | 100.0 | 13.3 | 30.7 | 32.8 | 19.6 | 3.6 |
| 1999 | 47.0 | 46.3 | 100.0 | 12.2 | 30.5 | 31.0 | 22.5 | 3.8 |
| 2001 | 47.4 | 46.9 | 100.0 | 12.0 | 29.1 | 31.8 | 23.1 | 4.0 |
| 2003 | 47.9 | 48.0 | 100.0 | 11.3 | 28.7 | 30.8 | 24.5 | 4.8 |
| 2006 | 48.2 | 48.2 | 100.0 | 13.1 | 28.4 | 28.2 | 24.0 | 6.2 |
| Full-time faculty | | | | | | | | |
| 1973 | 42.4 | 41.0 | 100.0 | 25.6 | 36.6 | 24.6 | 11.3 | 2.0 |
| 1975 | 42.8 | 40.6 | 100.0 | 22.9 | 38.2 | 25.1 | 12.0 | 1.8 |
| 1977 | 43.3 | 40.9 | 100.0 | 19.2 | 40.1 | 25.7 | 13.3 | 1.7 |
| 1979 | 44.0 | 41.6 | 100.0 | 16.2 | 41.1 | 25.9 | 14.7 | 2.0 |
| 1981 | 44.7 | 42.4 | 100.0 | 14.7 | 41.2 | 25.8 | 15.7 | 2.7 |
| 1983 | 45.5 | 43.4 | 100.0 | 11.3 | 41.2 | 27.5 | 17.2 | 2.8 |
| 1985 | 45.8 | 43.9 | 100.0 | 10.8 | 39.6 | 29.0 | 17.0 | 3.5 |
| 1987 | 46.6 | 45.1 | 100.0 | 9.2 | 35.9 | 33.2 | 18.1 | 3.5 |
| 1989 | 47.1 | 46.0 | 100.0 | 8.3 | 33.8 | 35.4 | 18.8 | 3.8 |
| 1991 | 47.0 | 46.4 | 100.0 | 8.8 | 32.7 | 36.8 | 18.3 | 3.4 |
| 1993 | 46.9 | 46.0 | 100.0 | 9.3 | 32.4 | 36.9 | 18.0 | 3.3 |
| 1995 | 47.5 | 46.9 | 100.0 | 8.0 | 31.9 | 36.6 | 19.8 | 3.8 |
| 1997 | 48.0 | 47.5 | 100.0 | 8.2 | 29.9 | 35.6 | 22.2 | 4.0 |
| 1999 | 48.5 | 48.0 | 100.0 | 7.3 | 29.4 | 33.3 | 25.7 | 4.3 |
| 2001 | 48.8 | 48.3 | 100.0 | 7.6 | 28.0 | 34.1 | 25.9 | 4.4 |
| 2003 | 49.1 | 49.0 | 100.0 | 7.6 | 27.2 | 32.3 | 27.4 | 5.5 |
| 2006 | 49.8 | 49.8 | 100.0 | 8.1 | 27.2 | 30.5 | 26.9 | 7.3 |
| Postdocs | | | | | | | | |
| 1973 | 32.1 | 31.0 | 100.0 | 81.2 | 15.2 | 3.0 | 0.6 | 0.0 |
| 1975 | 32.7 | 31.2 | 100.0 | 78.0 | 18.7 | 2.0 | 1.1 | 0.2 |
| 1977 | 32.9 | 31.1 | 100.0 | 75.3 | 21.7 | 2.4 | 0.6 | 0.0 |
| 1979 | 33.1 | 31.6 | 100.0 | 71.7 | 25.5 | 2.1 | 0.7 | 0.0 |
| 1981 | 33.1 | 31.6 | 100.0 | 71.9 | 24.6 | 2.6 | 0.6 | 0.3 |
| 1983 | 33.7 | 31.7 | 100.0 | 68.4 | 27.0 | 3.5 | 1.0 | 0.2 |
| 1985 | 33.3 | 31.9 | 100.0 | 70.6 | 27.2 | 2.1 | 0.1 | 0.0 |
| 1987 | 33.8 | 32.0 | 100.0 | 68.4 | 28.3 | 2.4 | 0.5 | 0.4 |
| 1989 | 34.6 | 32.6 | 100.0 | 63.9 | 29.9 | 4.5 | 1.0 | 0.7 |
| 1991 | 34.7 | 33.1 | 100.0 | 57.2 | 39.0 | 2.8 | 1.0 | 0.0 |
| 1993 | 33.9 | 32.7 | 100.0 | 62.3 | 34.7 | 2.5 | 0.5 | 0.0 |
| 1995 | 35.0 | 33.0 | 100.0 | 56.6 | 35.9 | 5.8 | 1.6 | 0.1 |
| 1997 | 35.0 | 33.0 | 100.0 | 60.7 | 32.3 | 4.6 | 2.1 | 0.3 |
| 1999 | 34.5 | 33.0 | 100.0 | 57.6 | 36.8 | 5.3 | 0.3 | 0.0 |
| 2001 | 34.6 | 33.0 | 100.0 | 59.9 | 34.6 | 4.5 | 0.8 | 0.1 |
| 2003 | 35.2 | 34.0 | 100.0 | 56.2 | 36.2 | 6.9 | 0.7 | 0.0 |
| 2006 | 34.7 | 33.6 | 100.0 | 61.9 | 32.9 | 4.6 | 0.6 | 0.0 |
| Other positions | | | | | | | | |
| 1973 | 41.9 | 39.0 | 100.0 | 34.6 | 30.3 | 18.7 | 10.9 | 5.4 |
| 1975 | 43.3 | 40.0 | 100.0 | 27.5 | 32.0 | 21.8 | 13.4 | 5.4 |
| 1977 | 42.5 | 38.3 | 100.0 | 28.4 | 37.4 | 17.5 | 10.6 | 6.1 |
| 1979 | 42.5 | 38.6 | 100.0 | 25.2 | 41.6 | 17.0 | 10.9 | 5.2 |

Appendix table 5-22 (Page 2 of 2)

**Age distribution of S&E doctorate holders employed in academia, by type of position: 1973–2006**

| Position | Age (years) | | Age distribution (%) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean | Median | All ages | <35 | 35–44 | 45–54 | 55–64 | ≥65 |
| 1981 | 43.3 | 39.6 | 100.0 | 21.8 | 43.6 | 17.0 | 11.1 | 6.4 |
| 1983 | 44.1 | 39.9 | 100.0 | 19.3 | 43.6 | 17.5 | 10.6 | 8.9 |
| 1985 | 45.3 | 42.5 | 100.0 | 15.9 | 41.0 | 21.6 | 14.7 | 6.8 |
| 1987 | 43.9 | 41.1 | 100.0 | 16.9 | 43.9 | 23.3 | 10.9 | 5.0 |
| 1989 | 44.9 | 42.2 | 100.0 | 14.2 | 43.3 | 23.5 | 11.2 | 7.8 |
| 1991 | 46.1 | 44.0 | 100.0 | 11.6 | 38.2 | 28.7 | 14.2 | 7.3 |
| 1993 | 44.6 | 43.2 | 100.0 | 14.2 | 37.9 | 33.9 | 11.3 | 2.7 |
| 1995 | 44.8 | 43.5 | 100.0 | 15.0 | 37.0 | 31.7 | 12.4 | 3.8 |
| 1997 | 45.8 | 44.7 | 100.0 | 13.4 | 33.9 | 33.5 | 15.7 | 3.4 |
| 1999 | 46.0 | 45.0 | 100.0 | 13.6 | 33.1 | 32.4 | 17.9 | 3.1 |
| 2001 | 46.8 | 45.6 | 100.0 | 11.5 | 31.8 | 32.6 | 20.2 | 3.9 |
| 2003 | 46.5 | 46.0 | 100.0 | 11.8 | 32.0 | 32.3 | 20.4 | 3.6 |
| 2006 | 48.2 | 48.2 | 100.0 | 9.9 | 31.1 | 30.1 | 23.8 | 5.1 |

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Full-time faculty includes full, associate, and assistant professors plus instructors. Other positions include full-time nonfaculty appointments such as research associates, adjunct appointments, lecturers, administrative positions, and part-time appointments of all kinds. Part-time employment excludes those employed part time because they are students or retired. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

*Science and Engineering Indicators 2008*

Appendix table 5-23

**Age distribution of S&E doctorate holders in full-time faculty positions at research universities and other academic institutions: 2006**

| Institution type | S&E doctorates (thousands) | Age (% distribution) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | All ages | <30 | 30–34 | 35–39 | 40–44 | 45–49 | 50–54 | 55–59 | 60–64 | ≥65 |
| All academic institutions | 197.7 | 100.0 | 0.8 | 7.3 | 13.0 | 14.2 | 15.2 | 15.3 | 15.1 | 11.8 | 7.3 |
| Doctorate-granting universities–very high research activity | 73.7 | 100.0 | 0.8 | 7.9 | 13.5 | 14.2 | 15.5 | 15.1 | 14.6 | 10.5 | 7.8 |
| Other doctorate-granting institutions | 39.1 | 100.0 | 0.7 | 6.4 | 13.3 | 12.5 | 15.1 | 14.3 | 16.2 | 13.8 | 7.7 |
| Master's colleges and universities | 41.7 | 100.0 | 0.8 | 8.0 | 11.6 | 13.7 | 14.5 | 16.3 | 16.3 | 12.6 | 6.2 |
| Medical schools/medical centers | 9.8 | 100.0 | 0.1 | 4.6 | 12.7 | 17.8 | 16.2 | 15.4 | 16.8 | 10.3 | 6.1 |
| Baccalaureate colleges | 18.2 | 100.0 | 1.2 | 8.7 | 15.5 | 17.7 | 14.4 | 14.6 | 11.1 | 10.1 | 6.7 |
| Other | 15.1 | 100.0 | 1.2 | 5.0 | 11.3 | 12.8 | 15.6 | 17.6 | 15.1 | 13.2 | 8.2 |

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Full-time faculty includes full, associate, and assistant professors plus instructors. Institutions designated by 2005 Carnegie classification code. For information on these institutional categories, see chapter 2 sidebar, "Carnegie Classification of Academic Institutions," and The Carnegie Classification of Institutions of Higher Education, http://www.carnegiefoundation.org/classifications/index.asp, accessed 25 May 2007. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, 2006, special tabulations (preliminary data).

*Science and Engineering Indicators 2008*

Appendix table 5-24

**Recent S&E doctorate holders employed in academia, by years since doctorate, type of position, and tenure status: 1973–2006**

(Percent distribution)

| Years since doctorate | Total | Position | | | Tenure track | | | Not tenure tracked |
|---|---|---|---|---|---|---|---|---|
| | | Full-time faculty | Postdocs | Other | Total | Tenured | Untenured | |
| 1–3 years | | | | | | | | |
| 1973 | 100.0 | 73.6 | 13.0 | 13.4 | NA | NA | NA | NA |
| 1975 | 100.0 | 70.4 | 18.3 | 11.3 | NA | NA | NA | NA |
| 1977 | 100.0 | 64.8 | 22.9 | 12.3 | NA | NA | NA | NA |
| 1979 | 100.0 | 59.2 | 25.0 | 15.8 | 45.1 | 7.4 | 37.7 | 54.9 |
| 1981 | 100.0 | 56.9 | 28.4 | 14.7 | 45.0 | 5.2 | 39.8 | 55.0 |
| 1983 | 100.0 | 56.5 | 27.9 | 15.7 | 66.2 | 8.4 | 57.8 | 33.8 |
| 1985 | 100.0 | 54.7 | 27.4 | 17.9 | 49.0 | 4.2 | 44.8 | 51.0 |
| 1987 | 100.0 | 51.8 | 29.8 | 18.5 | 48.6 | 3.8 | 44.8 | 51.4 |
| 1989 | 100.0 | 47.6 | 33.5 | 19.0 | 44.1 | 3.7 | 40.4 | 55.9 |
| 1991 | 100.0 | 55.1 | 27.4 | 17.5 | 65.2 | 4.6 | 60.6 | 34.8 |
| 1993 | 100.0 | 47.6 | 33.4 | 19.0 | 36.3 | 1.9 | 34.4 | 63.7 |
| 1995 | 100.0 | 41.4 | 39.6 | 19.0 | 31.2 | 2.6 | 28.6 | 68.8 |
| 1997 | 100.0 | 40.6 | 41.4 | 18.0 | 32.0 | 2.6 | 29.5 | 68.0 |
| 1999 | 100.0 | 37.3 | 43.1 | 19.5 | 28.8 | 2.0 | 26.8 | 71.2 |
| 2001 | 100.0 | 43.6 | 39.1 | 17.3 | 33.7 | 2.7 | 31.0 | 66.3 |
| 2003 | 100.0 | 44.6 | 33.5 | 21.9 | 36.9 | 2.0 | 34.8 | 63.1 |
| 2006 | 100.0 | 37.6 | 45.5 | 16.9 | 30.9 | 2.1 | 28.7 | 69.1 |
| 4–7 years | | | | | | | | |
| 1973 | 100.0 | 89.2 | 2.3 | 8.4 | NA | NA | NA | NA |
| 1975 | 100.0 | 87.1 | 4.3 | 8.3 | NA | NA | NA | NA |
| 1977 | 100.0 | 85.0 | 5.3 | 9.7 | NA | NA | NA | NA |
| 1979 | 100.0 | 81.2 | 6.1 | 12.9 | 65.7 | 26.3 | 39.4 | 32.8 |
| 1981 | 100.0 | 80.8 | 6.3 | 13.2 | 70.3 | 24.9 | 45.3 | 28.4 |
| 1983 | 100.0 | 76.8 | 5.7 | 17.2 | 65.7 | 23.8 | 42.0 | 26.1 |
| 1985 | 100.0 | 76.9 | 6.9 | 16.4 | 65.2 | 19.4 | 45.8 | 29.0 |
| 1987 | 100.0 | 75.0 | 7.6 | 17.2 | 60.4 | 16.6 | 43.8 | 28.9 |
| 1989 | 100.0 | 73.2 | 9.1 | 17.8 | 59.5 | 12.6 | 46.9 | 30.1 |
| 1991 | 100.0 | 75.0 | 7.1 | 17.6 | 65.1 | 21.2 | 43.9 | 24.7 |
| 1993 | 100.0 | 72.1 | 11.1 | 16.7 | 60.4 | 12.4 | 48.0 | 39.6 |
| 1995 | 100.0 | 70.3 | 12.9 | 16.8 | 59.3 | 12.4 | 46.9 | 40.7 |
| 1997 | 100.0 | 66.3 | 14.8 | 19.0 | 54.1 | 11.6 | 42.5 | 45.9 |
| 1999 | 100.0 | 65.4 | 14.1 | 20.5 | 52.4 | 10.4 | 42.0 | 47.6 |
| 2001 | 100.0 | 63.1 | 13.2 | 23.7 | 49.6 | 9.0 | 40.6 | 50.4 |
| 2003 | 100.0 | 64.8 | 9.7 | 25.5 | 53.5 | 12.5 | 41.0 | 46.5 |
| 2006 | 100.0 | 61.0 | 15.5 | 23.6 | 52.8 | 9.3 | 43.5 | 47.2 |

NA = not available

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Recent doctorate holders earned doctorate within either 3 years or 4–7 years preceding survey. Full-time faculty includes full, associate, and assistant professors plus instructors. Other positions include full-time nonfaculty appointments such as research associates, adjunct appointments, lecturers, administrative positions, and part-time appointments of all kinds. Part-time employment excludes those employed part time because they are students or retired. Detail may not add to total because of rounding and because of unreported position and tenure included in total but not shown separately.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

Appendix table 5-25

**Recent S&E doctorate holders employed in academia, by years since doctorate, Carnegie institution type, type of position, and tenure status: 2006**

(Percent distribution)

| Years since doctorate/institution type | Total | Position | | | Tenure track | | | Not tenure tracked |
|---|---|---|---|---|---|---|---|---|
| | | Full-time faculty | Postdocs | Other | Total | Tenured | Untenured | |
| 1–3 years | | | | | | | | |
| All institutions | 100.0 | 37.6 | 45.5 | 16.9 | 30.9 | 2.1 | 28.7 | 69.1 |
| Doctorate-granting universities—very high research activity | 100.0 | 20.7 | 65.0 | 14.3 | 15.4 | 0.6 | 14.9 | 84.6 |
| Other doctorate-granting institutions | 100.0 | 55.3 | 24.0 | 20.7 | 49.4 | 0.6 | 48.8 | 50.6 |
| Master's colleges and universities | 100.0 | 78.0 | 5.0 | 16.9 | 72.7 | 8.3 | 64.4 | 27.3 |
| Medical schools/medical centers | 100.0 | 15.9 | 63.5 | 20.5 | 7.9 | 0.6 | 7.3 | 92.1 |
| Baccalaureate colleges | 100.0 | 79.8 | 8.5 | 11.7 | 59.8 | 0.6 | 59.2 | 40.2 |
| Other | 100.0 | 42.0 | 30.5 | 27.5 | 32.8 | 6.9 | 25.9 | 67.2 |
| 4–7 years | | | | | | | | |
| All institutions | 100.0 | 61.0 | 15.5 | 23.6 | 52.8 | 9.3 | 43.5 | 47.2 |
| Doctorate-granting universities—very high research activity | 100.0 | 46.8 | 25.5 | 27.7 | 37.7 | 4.0 | 33.7 | 62.3 |
| Other doctorate-granting institutions | 100.0 | 73.4 | 6.1 | 20.5 | 67.0 | 10.8 | 56.2 | 33.0 |
| Master's colleges and universities | 100.0 | 83.8 | 2.1 | 14.1 | 83.9 | 19.9 | 64.0 | 16.1 |
| Medical schools/medical centers | 100.0 | 45.5 | 29.8 | 24.7 | 25.7 | 1.8 | 23.9 | 74.3 |
| Baccalaureate colleges | 100.0 | 86.9 | 2.1 | 11.0 | 77.5 | 17.7 | 59.8 | 22.5 |
| Other | 100.0 | 53.5 | 8.6 | 37.8 | 39.1 | 10.9 | 28.2 | 60.9 |

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Recent doctorate holders earned doctorate within either 3 years or 4–7 years preceding survey. Full-time faculty includes full, associate, and assistant professors plus instructors. Other positions include full-time nonfaculty appointments such as research associates, adjunct appointments, lecturers, administrative positions, and part-time appointments. Part-time employment excludes those employed part time because they are students or retired. Institutions designated by 2005 Carnegie classification code. For information on these institutional categories, see chapter 2 sidebar, "Carnegie Classification of Academic Institutions," and The Carnegie Classification of Institutions of Higher Education, http://www.carnegiefoundation.org/classifications/index.asp, accessed 25 May 2007. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, 2006, special tabulations (preliminary data).

Appendix table 5-26

**S&E doctorate holders employed in academia reporting teaching or research as primary or secondary work activity, by type of position and degree field: 1973–2006**

(Thousands)

| Position/work activity/field | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All positions | | | | | | | | | | | | | | | | | |
| Teaching | | | | | | | | | | | | | | | | | |
| All fields | 94.9 | 110.4 | 110.8 | 115.2 | 125.2 | 131.3 | 138.5 | 151.4 | 155.8 | 160.8 | 145.2 | 147.1 | 153.5 | 158.7 | 160.6 | 160.9 | 164.0 |
| Physical sciences | 20.2 | 22.1 | 21.8 | 21.5 | 22.4 | 22.4 | 23.4 | 25.2 | 24.9 | 25.6 | 22.6 | 23.5 | 23.4 | 25.2 | 24.6 | 23.8 | 24.2 |
| Mathematics | 8.8 | 10.3 | 10.6 | 10.9 | 11.0 | 11.5 | 12.2 | 12.8 | 13.3 | 14.0 | 13.5 | 12.8 | 13.3 | 13.3 | 12.9 | 13.8 | 13.8 |
| Computer sciences | NA | NA | NA | 0.1 | 0.3 | 0.4 | 0.6 | 0.8 | 1.3 | 1.8 | 2.0 | 2.5 | 2.6 | 2.9 | 2.9 | 3.7 | 4.0 |
| Life sciences | 25.3 | 29.6 | 28.3 | 29.8 | 32.9 | 34.6 | 35.0 | 40.5 | 41.4 | 43.3 | 36.5 | 38.6 | 41.6 | 43.6 | 44.4 | 44.0 | 45.8 |
| Psychology | 9.8 | 12.3 | 12.4 | 13.2 | 15.0 | 15.3 | 16.5 | 18.2 | 18.6 | 18.8 | 17.3 | 17.8 | 18.0 | 19.0 | 19.7 | 20.0 | 21.3 |
| Social sciences | 20.2 | 24.7 | 25.9 | 27.6 | 31.0 | 32.8 | 35.2 | 36.7 | 37.6 | 39.0 | 36.5 | 35.2 | 36.6 | 37.2 | 37.9 | 37.5 | 37.8 |
| Engineering | 10.5 | 11.4 | 11.7 | 12.1 | 12.7 | 14.3 | 15.6 | 17.2 | 18.6 | 18.3 | 16.8 | 16.8 | 18.0 | 17.5 | 18.3 | 18.1 | 17.1 |
| Research | | | | | | | | | | | | | | | | | |
| All fields | 82.3 | 90.6 | 85.0 | 90.0 | 100.7 | 104.7 | 115.2 | 144.0 | 151.6 | 156.6 | 150.1 | 153.5 | 164.7 | 168.1 | 172.5 | 179.3 | 184.4 |
| Physical sciences | 18.8 | 19.7 | 19.2 | 18.1 | 19.5 | 19.4 | 21.4 | 24.9 | 25.7 | 25.9 | 25.0 | 25.7 | 27.4 | 27.3 | 27.3 | 28.2 | 27.2 |
| Mathematics | 6.8 | 7.5 | 6.8 | 6.9 | 6.8 | 7.2 | 7.6 | 9.7 | 10.2 | 10.7 | 9.5 | 9.4 | 10.1 | 9.9 | 9.8 | 10.7 | 11.4 |
| Computer sciences | NA | NA | NA | 0.1 | 0.3 | 0.4 | 0.6 | 1.0 | 1.3 | 1.7 | 2.0 | 2.4 | 2.4 | 2.6 | 2.6 | 3.9 | 4.0 |
| Life sciences | 26.0 | 29.0 | 28.7 | 32.1 | 37.1 | 38.3 | 41.4 | 48.8 | 51.8 | 53.3 | 51.8 | 53.8 | 57.9 | 60.8 | 63.1 | 65.6 | 67.1 |
| Psychology | 7.3 | 8.5 | 7.7 | 8.3 | 9.9 | 10.5 | 10.7 | 14.3 | 14.3 | 15.7 | 14.9 | 15.6 | 16.1 | 17.2 | 18.2 | 19.1 | 20.6 |
| Social sciences | 14.3 | 16.9 | 13.8 | 14.7 | 17.6 | 17.8 | 20.9 | 28.5 | 30.5 | 31.1 | 29.3 | 28.1 | 29.8 | 30.9 | 31.4 | 31.5 | 32.7 |
| Engineering | 9.0 | 9.0 | 8.9 | 9.8 | 9.5 | 11.2 | 12.5 | 16.8 | 17.6 | 18.2 | 17.5 | 18.5 | 20.9 | 19.4 | 20.2 | 20.3 | 21.5 |
| Full-time faculty | | | | | | | | | | | | | | | | | |
| Teaching | | | | | | | | | | | | | | | | | |
| All fields | 88.6 | 103.4 | 104.7 | 107.9 | 117.7 | 122.3 | 127.9 | 141.0 | 143.6 | 148.1 | 134.0 | 134.0 | 138.1 | 143.1 | 144.2 | 140.7 | 138.3 |
| Physical sciences | 18.5 | 20.5 | 20.4 | 20.2 | 20.9 | 20.9 | 21.8 | 23.5 | 23.1 | 23.4 | 20.6 | 21.1 | 21.3 | 22.7 | 22.3 | 21.5 | 21.3 |
| Mathematics | 8.5 | 9.9 | 10.1 | 10.5 | 10.6 | 11.1 | 11.7 | 12.3 | 12.7 | 13.3 | 13.1 | 11.8 | 12.0 | 11.8 | 11.4 | 12.1 | 11.7 |
| Computer sciences | NA | NA | NA | 0.1 | 0.3 | 0.3 | 0.6 | 0.8 | 1.3 | 1.7 | 1.9 | 2.4 | 2.4 | 2.9 | 2.7 | 3.3 | 3.6 |
| Life sciences | 23.2 | 27.3 | 26.4 | 27.5 | 30.6 | 31.6 | 31.9 | 36.9 | 37.3 | 38.7 | 32.8 | 34.4 | 36.4 | 38.5 | 39.4 | 37.7 | 37.7 |
| Psychology | 9.1 | 11.4 | 11.6 | 12.0 | 13.7 | 14.1 | 15.1 | 16.7 | 16.9 | 17.5 | 15.4 | 16.0 | 16.1 | 16.9 | 17.4 | 16.2 | 16.7 |
| Social sciences | 19.1 | 23.3 | 24.7 | 26.1 | 29.5 | 30.6 | 32.1 | 34.3 | 34.7 | 36.0 | 34.1 | 32.3 | 32.9 | 33.5 | 33.9 | 33.2 | 31.8 |
| Engineering | 10.1 | 10.9 | 11.4 | 11.5 | 12.2 | 13.7 | 14.8 | 16.5 | 17.6 | 17.5 | 16.1 | 16.0 | 16.9 | 16.8 | 17.1 | 16.6 | 15.4 |
| Research | | | | | | | | | | | | | | | | | |
| All fields | 72.0 | 78.9 | 71.6 | 74.1 | 83.8 | 86.9 | 95.1 | 121.4 | 125.8 | 131.4 | 121.7 | 121.7 | 127.0 | 129.2 | 133.3 | 137.3 | 135.3 |
| Physical sciences | 15.1 | 15.9 | 14.9 | 13.9 | 15.1 | 15.1 | 16.3 | 19.7 | 20.0 | 20.2 | 18.0 | 17.9 | 18.8 | 18.7 | 19.1 | 20.1 | 18.6 |
| Mathematics | 6.6 | 7.1 | 6.4 | 6.4 | 6.5 | 6.9 | 7.3 | 9.1 | 9.8 | 10.2 | 9.1 | 8.4 | 8.9 | 8.5 | 8.3 | 9.3 | 9.6 |
| Computer sciences | NA | NA | NA | 0.0 | 0.2 | 0.3 | 0.5 | 0.8 | 1.2 | 1.6 | 1.8 | 2.2 | 2.2 | 2.4 | 2.3 | 3.3 | 3.6 |
| Life sciences | 21.8 | 24.1 | 22.9 | 24.7 | 28.7 | 29.6 | 31.9 | 38.3 | 39.0 | 41.0 | 38.4 | 39.5 | 41.2 | 42.5 | 44.6 | 46.4 | 45.2 |
| Psychology | 6.6 | 7.5 | 6.7 | 6.6 | 8.0 | 8.8 | 9.0 | 12.1 | 12.2 | 13.9 | 12.6 | 12.9 | 13.3 | 13.9 | 14.6 | 14.7 | 15.1 |
| Social sciences | 13.6 | 15.9 | 12.9 | 13.5 | 16.5 | 16.0 | 18.8 | 26.1 | 27.9 | 28.3 | 26.6 | 25.3 | 25.8 | 27.2 | 27.8 | 27.2 | 27.4 |
| Engineering | 8.2 | 8.3 | 8.0 | 8.9 | 8.8 | 10.2 | 11.4 | 15.2 | 15.7 | 16.2 | 15.1 | 15.5 | 16.7 | 15.9 | 16.6 | 16.3 | 15.8 |

NA = not available

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Full-time faculty includes full, associate, and assistant professors plus instructors. Total excludes those employed part time because they are students or retired. Research includes basic or applied research, development, or design. Because individuals may select both a primary and a secondary work activity, they can be counted in both groups. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

Appendix table 5-27

**S&E doctorate holders employed in research universities and other academic institutions, by position type and primary or secondary work activity: 2006**

(Thousands)

| Position and primary/secondary work activity | All academic institutions | Doctorate-granting universities—very high research activity | Other universities/colleges |
|---|---|---|---|
| All positions | 274.2 | 116.8 | 157.4 |
| Teaching | 164.0 | 51.5 | 112.6 |
| Research | 184.4 | 94.4 | 90.1 |
| Full-time faculty | 197.7 | 73.7 | 123.9 |
| Teaching | 138.3 | 42.4 | 95.9 |
| Research | 135.3 | 61.4 | 73.9 |
| Postdocs | 23.4 | 17.8 | 5.6 |
| Teaching | 2.1 | 1.3 | 0.8 |
| Research | 21.9 | 17.1 | 4.8 |
| Other positions | 53.1 | 25.3 | 27.8 |
| Teaching | 23.7 | 7.8 | 15.9 |
| Research | 27.3 | 15.8 | 11.4 |

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Full-time faculty includes full, associate, and assistant professors plus instructors. Other positions include full-time nonfaculty positions such as research associates, adjunct positions, lecturers, administrative positions, and part-time positions of all kinds. Part-time employment excludes those employed part time because they are students or retired. Institutions designated by 2005 Carnegie classification code. For information on these institutional categories, see chapter 2 sidebar, "Carnegie Classification of Academic Institutions," and The Carnegie Classification of Institutions of Higher Education, http://www.carnegiefoundation.org/classifications/index.asp, accessed 25 May 2007. Research includes basic or applied research, development, or design. Because individuals may select both a primary and a secondary work activity, they can be counted in both groups. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, 2006, special tabulations (preliminary data).

Appendix table 5-28

**Full-time doctoral S&E instructional faculty, by institution type; student level; and average time spent in teaching, research, administration, and other activities: Fall 1992 and fall 2003**

(Percent distribution)

| Year/type of institution/student level | S&E faculty (*n*) | Average time (%) | | | |
|---|---|---|---|---|---|
| | | Teaching | Doing research | Administration | Other activities |
| 1992 | | | | | |
| All institutions | 196,440 | 45.1 | 26.9 | 12.7 | 15.2 |
| Undergraduate only | 92,860 | 56.5 | 19.4 | 12.3 | 11.8 |
| Undergraduate and graduate | 29,280 | 51.5 | 27.2 | 9.8 | 11.6 |
| Graduate only | 44,940 | 33.4 | 34.9 | 14.1 | 17.5 |
| Research institutions | 90,640 | 35.3 | 37.0 | 11.8 | 15.7 |
| Undergraduate only | 28,940 | 43.0 | 31.5 | 12.3 | 13.1 |
| Undergraduate and graduate | 14,500 | 46.6 | 33.0 | 9.2 | 11.1 |
| Graduate only | 28,950 | 32.3 | 39.3 | 13.5 | 14.8 |
| Other institutions | 105,810 | 53.5 | 18.3 | 13.4 | 14.8 |
| Undergraduate only | 63,930 | 62.6 | 13.9 | 12.3 | 11.1 |
| Undergraduate and graduate | 14,780 | 56.3 | 21.4 | 10.3 | 12.0 |
| Graduate only | 15,990 | 35.4 | 26.9 | 15.2 | 22.5 |
| 2003 | | | | | |
| All institutions | 245,810 | 52.2 | 27.4 | NA | 20.4 |
| Undergraduate only | 107,270 | 65.4 | 18.8 | NA | 15.8 |
| Undergraduate and graduate | 35,210 | 59.1 | 27.1 | NA | 13.8 |
| Graduate only | 66,280 | 40.1 | 34.4 | NA | 25.5 |
| Research institutions | 114,800 | 42.1 | 36.1 | NA | 21.8 |
| Undergraduate only | 30,960 | 54.5 | 29.7 | NA | 15.8 |
| Undergraduate and graduate | 15,900 | 52.0 | 34.8 | NA | 13.2 |
| Graduate only | 42,250 | 38.4 | 36.8 | NA | 24.8 |
| Other institutions | 131,010 | 61.0 | 19.7 | NA | 19.3 |
| Undergraduate only | 76,320 | 69.8 | 14.3 | NA | 15.9 |
| Undergraduate and graduate | 19,320 | 65.0 | 20.7 | NA | 14.3 |
| Graduate only | 24,030 | 43.1 | 30.0 | NA | 26.9 |

NA = not available

NOTES: Institutions designated by 1994 Carnegie classification code. For information on these institutional categories, see Carnegie Foundation for the Advancement of Teaching, A Classification of Institutions of Higher Education, Princeton University Press (1994) and chapter 2 sidebar, "Carnegie Classification of Academic Institutions," in National Science Board, *Science and Engineering Indicators 2006*, volume 1, NSB 06-01, National Science Foundation (2006). Detail may not add to total because of rounding and because total includes missing student level not shown separately.

SOURCE: National Center for Education Statistics, National Survey of Postsecondary Faculty, 1993 and 2004, special tabulations (2006).

Appendix table 5-29

**Full-time instructional faculty, by teaching field and primary work activity: Fall 1992 and fall 2003**

(Percent)

| Year/teaching field | Instructional faculty (*n*) | Primary work activity | | |
|---|---|---|---|---|
| | | Teaching | Research | Other |
| 1992 | | | | |
| All faculty | 528,300 | 74.3 | 9.6 | 16.1 |
| S&E | 273,200 | 67.6 | 15.0 | 17.5 |
| Agricultural/biological/health sciences | 122,100 | 54.4 | 19.9 | 25.7 |
| Physical sciences/mathematics/computer sciences/engineering | 92,200 | 78.4 | 12.8 | 8.9 |
| Social/behavioral sciences | 59,000 | 78.1 | 8.1 | 13.9 |
| Non-S&E | 246,100 | 83.1 | 3.2 | 13.7 |
| Doctoral faculty | 342,100 | 69.0 | 14.3 | 16.7 |
| S&E | 197,500 | 60.7 | 20.1 | 19.2 |
| Agricultural/biological/health sciences | 86,400 | 42.9 | 27.5 | 29.7 |
| Physical sciences/mathematics/computer sciences/engineering | 64,100 | 72.5 | 17.8 | 9.8 |
| Social/behavioral sciences | 47,100 | 77.4 | 9.8 | 12.7 |
| Non-S&E | 140,300 | 81.6 | 5.3 | 13.1 |
| Other faculty | 183,000 | 84.2 | 1.0 | 14.8 |
| S&E | 74,900 | 85.6 | 1.5 | 13.0 |
| Agricultural/biological/health sciences | 35,500 | 82.3 | 1.8 | 15.9 |
| Physical sciences/mathematics/computer sciences/engineering | 27,800 | 92.0 | 1.4 | 6.6 |
| Social/behavioral sciences | 11,600 | 80.3 | 1.0 | 18.8 |
| Non-S&E | 103,600 | 85.2 | 0.4 | 14.5 |
| 2003 | | | | |
| All faculty | 619,800 | 67.8 | 12.4 | 19.8 |
| S&E | 323,500 | 59.6 | 19.9 | 20.5 |
| Agricultural/biological/health sciences | 140,700 | 44.4 | 24.4 | 31.2 |
| Physical sciences/mathematics/computer sciences/engineering | 119,600 | 71.8 | 17.9 | 10.3 |
| Social/behavioral sciences | 63,200 | 70.3 | 13.8 | 15.9 |
| Non-S&E | 296,400 | 76.7 | 4.2 | 19.1 |
| Doctoral faculty | 420,900 | 63.2 | 17.9 | 19.0 |
| S&E | 246,100 | 52.8 | 25.8 | 21.4 |
| Agricultural/biological/health sciences | 106,500 | 33.7 | 31.9 | 34.4 |
| Physical sciences/mathematics/computer sciences/engineering | 85,500 | 65.9 | 24.6 | 9.5 |
| Social/behavioral sciences | 54,100 | 69.8 | 15.7 | 14.5 |
| Non-S&E | 174,800 | 77.7 | 6.7 | 15.6 |
| Other faculty | 199,000 | 77.6 | 0.8 | 21.6 |
| S&E | 77,400 | 81.2 | 1.3 | 17.5 |
| Agricultural/biological/health sciences | 34,200 | 77.9 | 1.1 | 21.0 |
| Physical sciences/mathematics/computer sciences/engineering | 34,100 | 86.6 | 1.2 | 12.2 |
| Social/behavioral sciences | 9,100 | 73.3 | 2.3 | 24.3 |
| Non-S&E | 121,600 | 75.3 | 0.5 | 24.2 |

NOTES: Physical sciences include earth, atmospheric, and ocean sciences. Total for 1992 includes missing field and missing highest degree not shown separately. Detail may not add to total because of rounding.

SOURCE: National Center for Education Statistics, National Survey of Postsecondary Faculty, 1993 and 2004, special tabulations (2006).

Appendix table 5-30



**Academic S&E doctorate holders with federal support, by degree field, research activity, and type of position: 1973–2006**

(Percent)

| Field/position | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All fields | 44.5 | 40.5 | 39.7 | 38.2 | 35.5 | 39.8 | 31.4 | 46.5 | 47.9 | 48.5 | 36.1 | 39.4 | 38.6 | 45.7 | 45.1 | 45.9 | 46.9 |
| Research primary/secondary activity | 51.9 | 48.9 | 52.3 | 51.8 | 50.8 | 55.9 | 44.5 | 56.1 | 58.1 | 57.8 | 46.4 | 50.0 | 48.2 | 56.6 | 56.4 | 56.7 | 58.1 |
| Full-time faculty | 42.0 | 39.6 | 38.2 | 36.2 | 38.8 | 41.7 | 34.3 | 45.6 | 46.6 | 48.0 | 32.9 | 35.7 | 34.7 | 43.1 | 43.2 | 44.6 | 45.8 |
| Full-time other | 60.2 | 58.8 | 68.1 | 58.3 | 58.5 | 59.4 | 49.8 | 60.6 | 60.9 | 58.8 | 42.5 | 43.1 | 47.0 | 49.9 | 49.1 | 47.8 | 47.3 |
| Postdocs | 87.7 | 86.3 | 86.0 | 82.1 | 86.3 | 82.2 | 78.5 | 82.1 | 83.5 | 84.5 | 83.1 | 80.1 | 74.1 | 80.3 | 74.3 | 78.1 | 70.7 |
| Physical sciences | 47.3 | 44.0 | 43.8 | 42.8 | 42.1 | 46.5 | 38.2 | 54.1 | 57.9 | 57.0 | 45.7 | 49.3 | 48.6 | 57.0 | 55.3 | 56.5 | 56.3 |
| Research primary/secondary activity | 56.2 | 54.1 | 56.2 | 57.0 | 59.0 | 63.3 | 52.5 | 66.2 | 69.6 | 68.9 | 58.6 | 62.3 | 59.6 | 70.1 | 68.3 | 69.2 | 69.8 |
| Full-time faculty | 42.2 | 38.7 | 38.3 | 37.4 | 37.1 | 42.6 | 33.2 | 49.5 | 53.7 | 53.5 | 38.7 | 42.9 | 41.7 | 52.5 | 50.8 | 54.0 | 53.7 |
| Full-time other | 67.0 | 61.4 | 62.8 | 68.3 | 59.1 | 64.8 | 58.1 | 71.2 | 70.1 | 69.1 | 60.6 | 57.0 | 65.5 | 69.6 | 65.3 | 62.7 | 61.3 |
| Postdocs | 90.3 | 87.4 | 86.3 | 81.9 | 82.5 | 81.9 | 75.4 | 87.9 | 84.6 | 81.2 | 82.0 | 85.3 | 81.2 | 81.3 | 83.0 | 78.8 | 75.8 |
| Mathematics | 26.9 | 19.1 | 19.0 | 21.7 | 21.3 | 30.1 | 21.5 | 31.1 | 33.5 | 34.5 | 18.8 | 22.3 | 20.9 | 29.1 | 31.9 | 31.1 | 34.8 |
| Research primary/secondary activity | 32.4 | 23.6 | 25.0 | 27.0 | 27.0 | 41.3 | 26.4 | 36.9 | 40.8 | 40.6 | 24.8 | 27.0 | 26.9 | 35.3 | 41.7 | 38.6 | 43.6 |
| Full-time faculty | 26.8 | 18.8 | 18.0 | 20.4 | 21.0 | 29.9 | 21.4 | 30.4 | 32.8 | 34.0 | 18.3 | 21.1 | 19.4 | 28.3 | 30.1 | 31.3 | 34.6 |
| Full-time other | 33.6 | 33.5 | 46.9 | 54.6 | 30.1 | 43.4 | 29.1 | 47.8 | 52.8 | 67.2 | 40.6 | 34.6 | 43.9 | 38.4 | 48.0 | 28.2 | 34.9 |
| Postdocs | 48.8 | 35.8 | 55.1 | 43.2 | 56.3 | 66.3 | 48.5 | 34.4 | 53.4 | 80.4 | — | 45.3 | 35.6 | 54.7 | 61.9 | 65.9 | 64.3 |
| Computer sciences | NA | NA | NA | 34.8 | 29.7 | 44.6 | 45.0 | 61.7 | 52.4 | 49.4 | 39.9 | 43.2 | 41.1 | 55.6 | 47.2 | 48.9 | 43.9 |
| Research primary/secondary activity | NA | NA | NA | 34.8 | 26.9 | 44.9 | 36.1 | 55.6 | 52.8 | 54.3 | 41.1 | 46.0 | 46.3 | 59.3 | 57.9 | 54.9 | 54.0 |
| Full-time faculty | NA | NA | NA | 25.0 | 26.6 | 38.1 | 38.0 | 58.1 | 52.8 | 48.2 | 37.7 | 40.7 | 38.8 | 54.1 | 46.8 | 49.7 | 43.3 |
| Full-time other | NA | NA | NA | — | 25.0 | 67.9 | 80.6 | 79.7 | 47.1 | 67.7 | 59.1 | 62.9 | 63.1 | 74.9 | 47.2 | 47.7 | 48.3 |
| Postdocs | NA | NA | NA | 57.1 | 100.0 | 100.0 | — | 88.2 | 100.0 | — | 100.0 | 78.0 | 97.2 | 100.0 | 100.0 | 95.8 | 97.1 |
| Life sciences | 59.3 | 58.9 | 58.1 | 55.3 | 59.6 | 60.0 | 53.5 | 65.3 | 65.1 | 65.5 | 52.2 | 52.5 | 51.0 | 57.9 | 56.6 | 57.2 | 57.9 |
| Research primary/secondary activity | 65.8 | 64.2 | 66.8 | 65.2 | 63.3 | 68.3 | 57.8 | 72.3 | 73.1 | 72.0 | 62.7 | 63.6 | 61.6 | 69.5 | 67.9 | 68.0 | 69.3 |
| Full-time faculty | 57.1 | 56.4 | 54.9 | 51.4 | 55.6 | 57.8 | 50.5 | 63.4 | 62.1 | 63.7 | 48.6 | 49.0 | 47.6 | 55.1 | 55.5 | 56.9 | 57.5 |
| Full-time other | 68.1 | 70.9 | 72.1 | 64.8 | 68.5 | 68.5 | 58.4 | 71.0 | 74.1 | 67.2 | 45.8 | 46.3 | 46.2 | 49.9 | 47.4 | 47.2 | 54.7 |
| Postdocs | 88.8 | 87.7 | 88.4 | 84.6 | 86.0 | 82.6 | 78.3 | 82.1 | 86.8 | 84.4 | 84.1 | 81.9 | 77.7 | 82.6 | 77.6 | 81.3 | 71.5 |
| Psychology | 37.5 | 36.1 | 33.2 | 32.6 | 32.7 | 30.1 | 25.9 | 31.2 | 35.5 | 34.7 | 25.7 | 27.6 | 27.4 | 32.9 | 34.3 | 34.7 | 36.3 |
| Research primary/secondary activity | 45.4 | 41.7 | 41.9 | 42.7 | 41.9 | 42.6 | 36.6 | 39.8 | 46.6 | 43.5 | 37.0 | 39.5 | 40.5 | 46.5 | 48.1 | 48.2 | 52.0 |
| Full-time faculty | 36.4 | 34.1 | 30.6 | 28.3 | 27.5 | 27.3 | 23.6 | 28.3 | 34.0 | 32.9 | 25.2 | 25.1 | 24.9 | 31.5 | 32.9 | 34.4 | 37.3 |
| Full-time other | 48.1 | 41.6 | 65.4 | 46.3 | 52.3 | 40.3 | 32.7 | 37.1 | 39.6 | 36.3 | 23.8 | 30.7 | 28.3 | 30.4 | 38.2 | 36.1 | 31.2 |
| Postdocs | 84.9 | 86.4 | 82.5 | 86.8 | 92.0 | 84.2 | 70.8 | 88.1 | 66.3 | 95.8 | 71.7 | 71.4 | 71.8 | 71.8 | 59.2 | 69.0 | 69.8 |
| Social sciences | 25.5 | 23.7 | 23.3 | 20.4 | 21.8 | 23.7 | 17.2 | 27.2 | 27.7 | 28.4 | 14.2 | 16.1 | 15.2 | 22.9 | 21.5 | 21.8 | 23.1 |
| Research primary/secondary activity | 29.5 | 26.8 | 30.6 | 29.4 | 25.5 | 31.4 | 20.4 | 30.0 | 31.1 | 31.2 | 17.3 | 20.9 | 17.7 | 27.2 | 26.5 | 27.1 | 28.9 |
| Full-time faculty | 25.2 | 23.7 | 22.6 | 19.0 | 21.2 | 22.5 | 16.2 | 27.1 | 27.4 | 27.8 | 13.4 | 15.4 | 14.8 | 22.5 | 21.3 | 21.6 | 23.6 |
| Full-time other | 36.3 | 31.6 | 35.3 | 37.3 | 32.7 | 34.0 | 26.6 | 36.2 | 33.8 | 32.7 | 22.1 | 22.6 | 22.7 | 29.3 | 29.4 | 28.7 | 27.4 |
| Postdocs | 57.6 | 54.6 | 54.7 | 84.9 | 47.9 | 64.6 | 54.7 | 27.4 | 57.6 | 52.5 | 88.1 | 68.5 | 33.9 | 65.0 | 35.8 | 42.9 | 20.2 |

Appendix table 5-30 (Page 2 of 2)

**Academic S&E doctorate holders with federal support, by degree field, research activity, and type of position: 1973–2006**

(Percent)

| Field/position | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Engineering | 53.5 | 50.6 | 51.1 | 49.1 | 51.0 | 54.7 | 43.0 | 57.1 | 56.3 | 63.2 | 42.6 | 49.9 | 49.7 | 56.9 | 56.8 | 57.4 | 58.7 |
| Research primary/secondary activity | 58.4 | 57.3 | 60.5 | 57.5 | 59.2 | 61.5 | 45.0 | 63.1 | 63.8 | 68.3 | 49.5 | 57.9 | 55.4 | 62.5 | 64.1 | 64.7 | 67.1 |
| Full-time faculty | 52.5 | 49.9 | 49.3 | 49.5 | 49.8 | 54.7 | 42.2 | 56.0 | 55.2 | 62.9 | 40.9 | 48.4 | 46.4 | 55.2 | 56.7 | 56.1 | 57.9 |
| Full-time other | 65.5 | 67.3 | 86.6 | 53.0 | 60.7 | 63.1 | 44.3 | 76.4 | 71.2 | 66.8 | 59.5 | 56.7 | 67.9 | 64.2 | 61.8 | 66.8 | 56.2 |
| Postdocs | 84.7 | 84.3 | 74.7 | 51.1 | 98.9 | 82.7 | 91.4 | 74.8 | 76.0 | 90.0 | 65.7 | 72.7 | 62.1 | 80.4 | 56.8 | 73.8 | 76.8 |

— = too few cases; NA = not available

NOTES: 1985 and 1993–97 not comparable with other years and understate degree of federal support by asking whether work performed during week of April 15 supported by government. In other years, question pertains to work conducted over course of year. Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Full-time faculty includes full, associate, and assistant professors plus instructors. Other full-time positions include nonfaculty appointments such as research associates, adjunct appointments, lecturers, and administrative positions. Research includes basic or applied research, development, and design. Total includes part time not shown separately, but excludes those employed part time because they are students or retired.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

*Science and Engineering Indicators 2008*

Appendix table 5-31 (Page 1 of 3)

**S&E doctorate holders employed in academia with federal support, by degree field, years since doctorate, and type of position: 1973–2006**

(Percent)

| Field | 1–3 years since doctorate | | | | 4–7 years since doctorate | | | |
|---|---|---|---|---|---|---|---|---|
| | All positions | Full-time faculty | Other full time | Postdocs | All positions | Full-time faculty | Other full time | Postdocs |
| All fields | | | | | | | | |
| 1973 | 44.1 | 32.9 | 72.5 | 87.1 | 47.1 | 42.3 | 55.3 | 80.8 |
| 1975 | 44.2 | 31.1 | 58.3 | 87.8 | 42.5 | 40.0 | 66.2 | 83.2 |
| 1977 | 44.5 | 28.8 | 61.2 | 87.0 | 42.2 | 37.8 | 71.6 | 85.3 |
| 1979 | 47.2 | 29.6 | 58.9 | 86.6 | 43.0 | 37.4 | 67.3 | 83.1 |
| 1981 | 51.0 | 30.8 | 63.1 | 87.9 | 46.5 | 41.2 | 64.8 | 86.9 |
| 1983 | 50.2 | 33.7 | 59.0 | 86.1 | 50.1 | 45.3 | 68.1 | 84.8 |
| 1985 | 43.2 | 23.9 | 59.3 | 79.1 | 42.4 | 36.2 | 63.3 | 81.0 |
| 1987 | 53.3 | 36.7 | 56.1 | 82.0 | 54.8 | 49.7 | 71.6 | 84.2 |
| 1989 | 57.2 | 38.7 | 58.7 | 84.7 | 57.8 | 53.5 | 70.0 | 89.1 |
| 1991 | 53.6 | 38.3 | 56.6 | 83.8 | 57.4 | 53.4 | 66.6 | 88.7 |
| 1993 | 43.5 | 20.8 | 43.7 | 80.7 | 41.1 | 34.0 | 46.8 | 87.3 |
| 1995 | 47.0 | 23.2 | 40.1 | 78.5 | 43.9 | 36.1 | 52.0 | 86.0 |
| 1997 | 45.3 | 21.0 | 42.4 | 74.1 | 41.9 | 33.7 | 49.6 | 78.5 |
| 1999 | 52.8 | 28.8 | 45.5 | 79.5 | 47.4 | 41.4 | 46.6 | 83.3 |
| 2001 | 48.4 | 29.4 | 45.5 | 73.4 | 46.1 | 39.8 | 50.7 | 78.6 |
| 2003 | 48.4 | 30.5 | 45.9 | 77.3 | 47.5 | 42.3 | 55.3 | 81.1 |
| 2006 | 51.7 | 29.6 | 50.7 | 68.7 | 47.2 | 41.8 | 46.5 | 75.8 |
| Physical sciences | | | | | | | | |
| 1973 | 58.4 | 31.2 | 78.3 | 88.5 | 44.8 | 39.5 | 72.1 | 98.5 |
| 1975 | 64.1 | 27.9 | 60.7 | 93.2 | 43.8 | 36.6 | 77.3 | 85.1 |
| 1977 | 63.2 | 28.9 | 95.7 | 88.5 | 51.6 | 40.5 | 77.5 | 92.4 |
| 1979 | 59.1 | 25.5 | 73.7 | 84.7 | 52.0 | 39.0 | 72.1 | 91.7 |
| 1981 | 69.3 | 25.2 | 94.3 | 88.1 | 57.9 | 49.4 | 84.5 | 97.9 |
| 1983 | 70.4 | 33.8 | 82.7 | 88.2 | 66.2 | 56.3 | 85.3 | 84.8 |
| 1985 | 64.3 | 18.7 | 86.6 | 84.6 | 50.8 | 35.7 | 78.7 | 91.4 |
| 1987 | 80.9 | 66.7 | 69.9 | 90.2 | 68.7 | 56.0 | 97.1 | 93.1 |
| 1989 | 77.9 | 49.2 | 82.1 | 88.0 | 72.4 | 61.9 | 89.0 | 90.6 |
| 1991 | 69.9 | 44.1 | 78.8 | 87.2 | 67.2 | 55.1 | 88.5 | 100.0 |
| 1993 | 63.1 | 21.3 | 64.9 | 84.5 | 58.2 | 43.9 | 70.0 | 94.5 |
| 1995 | 62.8 | 21.0 | 41.9 | 84.1 | 53.9 | 37.8 | 60.2 | 86.7 |
| 1997 | 64.2 | 30.0 | 71.4 | 77.7 | 53.4 | 41.2 | 67.9 | 96.5 |
| 1999 | 68.0 | 39.3 | 69.9 | 80.5 | 57.0 | 46.7 | 65.5 | 89.4 |
| 2001 | 62.2 | 31.0 | 55.4 | 80.9 | 54.1 | 39.4 | 73.9 | 83.7 |
| 2003 | 62.3 | 40.1 | 59.7 | 79.9 | 54.8 | 50.6 | 63.1 | 70.2 |
| 2006 | 67.5 | 29.3 | 66.6 | 76.8 | 57.6 | 52.8 | 64.2 | 72.2 |
| Mathematics | | | | | | | | |
| 1973 | 17.5 | 16.3 | 58.5 | 38.7 | 29.0 | 29.4 | 15.4 | 100.0 |
| 1975 | 14.5 | 13.0 | 37.6 | 28.3 | 18.9 | 18.5 | 31.8 | 57.9 |
| 1977 | 16.2 | 12.2 | 45.9 | 56.4 | 19.2 | 17.6 | 44.0 | 52.2 |
| 1979 | 24.8 | 22.5 | 52.9 | 42.5 | 32.3 | 30.2 | 64.9 | 46.9 |
| 1981 | 10.8 | 9.5 | — | 44.1 | 29.7 | 27.6 | 62.7 | 81.5 |
| 1983 | 31.8 | 29.8 | — | 73.4 | 39.8 | 39.8 | 51.3 | 100.0 |
| 1985 | 14.7 | 14.1 | — | 34.6 | 27.0 | 26.8 | — | 100.0 |
| 1987 | 15.6 | 7.4 | — | 37.6 | 34.9 | 35.5 | 7.3 | — |
| 1989 | 29.1 | 24.9 | — | 52.4 | 39.0 | 39.1 | — | 100.0 |
| 1991 | 39.8 | 35.8 | 54.9 | 80.4 | 28.3 | 28.6 | — | — |
| 1993 | 15.7 | 14.8 | 0.0 | 100.0 | 15.2 | 14.0 | 100.0 | — |
| 1995 | 17.7 | 13.4 | 0.0 | 40.0 | 25.6 | 19.6 | — | 70.6 |
| 1997 | 14.9 | 3.5 | 29.1 | 32.9 | 16.7 | 14.9 | — | 42.2 |
| 1999 | 36.4 | 24.0 | — | 58.7 | 32.2 | 33.5 | — | 47.2 |
| 2001 | 34.6 | 21.6 | 34.6 | 56.3 | 42.2 | 38.6 | 62.4 | 100.0 |
| 2003 | 34.1 | 24.1 | 18.5 | 67.8 | 34.8 | 37.1 | — | 54.4 |
| 2006 | 37.0 | 19.1 | — | 58.1 | 32.0 | 29.7 | 24.8 | 79.3 |
| Computer sciences | | | | | | | | |
| 1973 | NA | NA | NA | NA | NA | NA | NA | NA |
| 1975 | NA | NA | NA | NA | NA | NA | NA | NA |

Appendix table 5-31 (Page 2 of 3)

**S&E doctorate holders employed in academia with federal support, by degree field, years since doctorate, and type of position: 1973–2006**

(Percent)

| Field | 1–3 years since doctorate | | | | 4–7 years since doctorate | | | |
|---|---|---|---|---|---|---|---|---|
| | All positions | Full-time faculty | Other full time | Postdocs | All positions | Full-time faculty | Other full time | Postdocs |
| 1977 | NA | NA | NA | NA | NA | NA | NA | NA |
| 1979 | 34.8 | 25.0 | — | 57.1 | — | — | — | — |
| 1981 | 27.7 | 24.1 | 25.0 | 100.0 | 52.4 | 52.4 | — | — |
| 1983 | 45.7 | 35.1 | 60.0 | 100.0 | 43.5 | 40.4 | 92.3 | — |
| 1985 | 54.1 | 46.4 | 77.2 | — | 36.7 | 31.0 | 100.0 | — |
| 1987 | 47.2 | 46.3 | 42.0 | 100.0 | 73.2 | 66.3 | 100.0 | — |
| 1989 | 33.0 | 29.3 | 50.0 | 100.0 | 70.8 | 78.0 | 35.7 | 100.0 |
| 1991 | 23.1 | 23.1 | 25.1 | — | 66.2 | 63.9 | 100.0 | 100.0 |
| 1993 | 44.7 | 39.5 | 100.0 | 100.0 | 30.7 | 30.9 | 27.3 | 100.0 |
| 1995 | 38.2 | 31.4 | 61.1 | 75.9 | 38.1 | 38.3 | 23.9 | — |
| 1997 | 40.5 | 29.7 | 74.3 | 97.0 | 40.4 | 37.7 | 75.6 | — |
| 1999 | 59.7 | 50.6 | 77.5 | 100.0 | 56.6 | 56.5 | 85.9 | — |
| 2001 | 31.4 | 25.9 | 44.2 | 100.0 | 49.2 | 47.3 | 53.2 | — |
| 2003 | 41.7 | 32.6 | 22.2 | 95.8 | 43.6 | 40.8 | 59.5 | — |
| 2006 | 35.5 | 10.5 | 55.6 | 100.0 | 44.8 | 42.4 | 66.8 | — |
| Life sciences | | | | | | | | |
| 1973 | 60.8 | 48.3 | 77.0 | 89.0 | 59.7 | 57.3 | 75.1 | 89.2 |
| 1975 | 61.8 | 46.4 | 72.5 | 87.6 | 60.1 | 57.6 | 76.2 | 87.5 |
| 1977 | 61.6 | 38.1 | 70.4 | 88.9 | 59.6 | 56.6 | 73.3 | 90.2 |
| 1979 | 65.9 | 40.6 | 75.8 | 85.9 | 57.3 | 51.4 | 76.5 | 84.2 |
| 1981 | 71.8 | 51.7 | 76.5 | 88.1 | 64.0 | 58.8 | 70.8 | 85.7 |
| 1983 | 68.2 | 52.8 | 65.1 | 84.7 | 67.1 | 64.5 | 72.6 | 83.7 |
| 1985 | 59.6 | 34.1 | 67.2 | 78.9 | 61.1 | 55.6 | 72.3 | 81.7 |
| 1987 | 70.2 | 53.5 | 73.8 | 82.1 | 71.4 | 68.3 | 81.0 | 83.0 |
| 1989 | 74.5 | 50.2 | 79.3 | 89.1 | 71.9 | 67.5 | 79.1 | 89.3 |
| 1991 | 68.1 | 49.9 | 60.0 | 83.0 | 70.6 | 66.8 | 79.2 | 86.3 |
| 1993 | 61.2 | 32.2 | 44.8 | 81.9 | 55.7 | 46.4 | 52.0 | 86.7 |
| 1995 | 58.5 | 30.3 | 35.3 | 80.3 | 54.0 | 43.9 | 47.4 | 87.4 |
| 1997 | 58.3 | 23.0 | 42.2 | 77.5 | 52.3 | 42.4 | 48.4 | 78.8 |
| 1999 | 65.0 | 35.0 | 46.2 | 82.4 | 57.2 | 47.2 | 49.3 | 83.0 |
| 2001 | 59.2 | 34.2 | 39.0 | 76.8 | 56.4 | 48.9 | 49.5 | 78.8 |
| 2003 | 62.5 | 37.1 | 51.7 | 81.8 | 57.3 | 50.3 | 56.9 | 83.0 |
| 2006 | 56.6 | 33.5 | 57.7 | 67.1 | 57.5 | 49.7 | 49.6 | 77.0 |
| Psychology | | | | | | | | |
| 1973 | 34.3 | 28.5 | 59.7 | 95.3 | 37.8 | 36.9 | 52.1 | 71.4 |
| 1975 | 35.0 | 25.5 | 53.7 | 88.5 | 35.3 | 34.9 | 32.8 | 71.2 |
| 1977 | 35.3 | 26.8 | 71.7 | 86.0 | 31.5 | 27.9 | 60.5 | 73.0 |
| 1979 | 35.2 | 22.5 | 22.2 | 95.5 | 39.3 | 31.4 | 76.5 | 87.6 |
| 1981 | 46.5 | 33.2 | 41.6 | 93.4 | 34.7 | 28.6 | 54.5 | 88.2 |
| 1983 | 31.2 | 19.8 | 34.2 | 89.3 | 32.3 | 28.2 | 37.1 | 87.2 |
| 1985 | 30.6 | 15.6 | 44.5 | 70.1 | 29.2 | 26.2 | 38.7 | 72.5 |
| 1987 | 37.5 | 28.5 | 28.8 | 82.7 | 33.2 | 25.6 | 40.3 | 97.9 |
| 1989 | 41.7 | 34.6 | 36.1 | 64.9 | 36.1 | 36.7 | 33.1 | 63.1 |
| 1991 | 35.9 | 23.9 | 24.3 | 100.0 | 38.8 | 38.6 | 24.8 | 86.9 |
| 1993 | 21.6 | 12.0 | 27.5 | 61.6 | 23.2 | 24.6 | 15.5 | 48.2 |
| 1995 | 33.5 | 17.5 | 40.6 | 63.5 | 26.1 | 21.8 | 36.0 | 82.1 |
| 1997 | 34.5 | 24.2 | 19.0 | 70.9 | 29.5 | 22.3 | 36.4 | 77.3 |
| 1999 | 33.4 | 22.4 | 29.9 | 63.6 | 35.6 | 34.7 | 23.8 | 100.0 |
| 2001 | 35.5 | 20.0 | 41.7 | 64.1 | 34.9 | 32.6 | 42.7 | 45.6 |
| 2003 | 31.8 | 28.4 | 33.0 | 57.8 | 37.5 | 32.4 | 46.9 | 100.0 |
| 2006 | 52.1 | 42.7 | 35.9 | 70.7 | 35.9 | 37.1 | 23.8 | 88.6 |
| Social sciences | | | | | | | | |
| 1973 | 24.7 | 23.7 | 53.7 | 23.9 | 29.0 | 28.7 | 34.1 | 93.1 |
| 1975 | 23.1 | 22.5 | 29.0 | 61.7 | 26.2 | 26.2 | 42.4 | 39.2 |
| 1977 | 24.8 | 24.2 | 12.3 | 61.4 | 24.6 | 23.2 | 56.3 | 48.0 |
| 1979 | 26.6 | 22.8 | 37.6 | 97.5 | 20.8 | 19.2 | 52.2 | 70.8 |
| 1981 | 20.4 | 16.3 | 48.7 | 56.0 | 24.3 | 24.3 | 25.2 | 60.0 |

Appendix table 5-31 (Page 3 of 3)

**S&E doctorate holders employed in academia with federal support, by degree field, years since doctorate, and type of position: 1973–2006**

(Percent)

| Field | 1–3 years since doctorate | | | | 4–7 years since doctorate | | | |
|---|---|---|---|---|---|---|---|---|
| | All positions | Full-time faculty | Other full time | Postdocs | All positions | Full-time faculty | Other full time | Postdocs |
| 1983 | 28.2 | 23.6 | 49.0 | 77.9 | 28.1 | 23.6 | 57.5 | 93.8 |
| 1985 | 15.6 | 12.3 | 27.8 | 44.4 | 19.3 | 15.7 | 51.0 | 41.0 |
| 1987 | 22.5 | 20.9 | 34.5 | 21.4 | 29.9 | 27.7 | 54.0 | — |
| 1989 | 25.6 | 24.7 | 24.3 | 41.9 | 33.2 | 31.6 | 51.4 | 83.9 |
| 1991 | 21.7 | 19.5 | 38.8 | 31.7 | 36.6 | 33.8 | 44.2 | 100.0 |
| 1993 | 11.2 | 7.2 | 25.4 | 88.2 | 14.9 | 14.4 | 21.9 | 100.0 |
| 1995 | 15.9 | 10.7 | 28.8 | 80.8 | 17.8 | 16.0 | 41.8 | 49.8 |
| 1997 | 14.1 | 10.9 | 26.8 | 33.7 | 17.4 | 15.6 | 26.3 | 57.7 |
| 1999 | 21.1 | 15.2 | 26.1 | 77.1 | 22.8 | 21.7 | 31.3 | 48.1 |
| 2001 | 20.5 | 21.2 | 24.0 | 41.8 | 21.2 | 20.3 | 28.0 | 63.3 |
| 2003 | 18.5 | 14.7 | 36.9 | 38.5 | 22.5 | 22.1 | 32.0 | 55.9 |
| 2006 | 19.4 | 15.9 | 37.1 | 22.4 | 21.5 | 21.8 | 26.8 | 4.8 |
| Engineering | | | | | | | | |
| 1973 | 50.8 | 45.2 | 74.2 | 87.1 | 50.7 | 49.9 | 78.6 | — |
| 1975 | 53.7 | 48.9 | 65.8 | 83.8 | 54.4 | 53.1 | 82.3 | — |
| 1977 | 55.2 | 47.2 | 84.8 | 72.9 | 52.9 | 52.3 | 64.8 | 64.9 |
| 1979 | 55.5 | 48.5 | 71.9 | 99.4 | 55.1 | 58.8 | 33.8 | 16.9 |
| 1981 | 54.4 | 43.2 | 100.0 | 100.0 | 65.6 | 61.9 | 83.9 | — |
| 1983 | 47.1 | 36.7 | 58.2 | 98.3 | 64.3 | 62.2 | 99.0 | — |
| 1985 | 43.9 | 37.8 | 66.1 | 94.5 | 47.6 | 46.3 | 66.4 | — |
| 1987 | 53.3 | 43.7 | 79.2 | 75.7 | 65.5 | 64.2 | 97.6 | 100.0 |
| 1989 | 56.0 | 48.9 | 71.9 | 73.3 | 70.8 | 68.6 | 91.8 | 100.0 |
| 1991 | 66.6 | 62.1 | 67.7 | 89.9 | 73.2 | 73.0 | 79.7 | — |
| 1993 | 43.4 | 32.1 | 65.1 | 68.7 | 51.2 | 49.4 | 65.9 | 70.3 |
| 1995 | 51.1 | 38.5 | 50.3 | 72.6 | 62.1 | 60.3 | 72.5 | 86.5 |
| 1997 | 50.0 | 35.5 | 66.4 | 66.3 | 51.3 | 48.4 | 62.5 | 60.5 |
| 1999 | 58.5 | 40.0 | 70.9 | 78.1 | 55.5 | 56.4 | 44.8 | 94.2 |
| 2001 | 54.9 | 49.1 | 77.0 | 57.1 | 58.3 | 59.2 | 54.9 | 74.2 |
| 2003 | 56.4 | 48.2 | 60.6 | 71.2 | 63.2 | 60.2 | 72.8 | 100.0 |
| 2006 | 61.2 | 45.5 | 47.4 | 73.4 | 63.7 | 61.3 | 64.6 | 87.8 |

— = too few cases; NA = not available

NOTES: 1985 and 1993–97 not comparable with other years and understate degree of federal support by asking whether work performed during week of April 15 was supported by government. In other years, question pertains to work conducted over course of year. Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Recent doctorate holders earned doctorate within either 3 years or 4–7 years preceding survey. Full-time faculty includes full, associate, and assistant professors plus instructors. Other full-time positions include nonfaculty appointments such as research associates, adjunct appointments, lecturers, and administrative positions. Total excludes those employed part time because they are students or retired.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

Appendix table 5-32
**Fields and subfields of S&E publications data**

- Engineering
  - Aerospace engineering
  - Chemical engineering
  - Civil engineering
  - Electrical engineering
  - Mechanical engineering
  - Metals and metallurgy
  - Materials engineering
  - Industrial engineering
  - Operations research and management
  - Biomedical engineering
  - Nuclear technology
  - General engineering
  - Miscellaneous engineering and technology
- Astronomy
- Chemistry
  - Analytical chemistry
  - Organic chemistry
  - Physical chemistry
  - Polymers
  - General chemistry
  - Applied chemistry
  - Inorganic and nuclear chemistry
- Physics
  - Acoustics
  - Chemical physics
  - Nuclear and particle physics
  - Optics
  - Solid state physics
  - Applied physics
  - Fluids and plasmas
  - General physics
  - Miscellaneous physics
- Geosciences
  - Meteorology and atmospheric sciences
  - Geology
  - Earth and planetary sciences
  - Oceanography and limnology
  - Marine biology and hydrobiology
  - Environmental sciences
- Mathematics
  - Applied mathematics
  - Probability and statistics
  - General mathematics
  - Miscellaneous mathematics
- Computer sciences
- Agricultural sciences
  - Dairy and animal sciences
  - Agricultural and food sciences
- Biological sciences
  - General biomedical research
  - Miscellaneous biomedical research
  - Biophysics
  - Botany
  - Anatomy and morphology
  - Cell biology, cytology, and histology
  - Ecology
  - Entomology
  - Immunology
  - Microbiology
  - Nutrition and dietetics
  - Parasitology
  - Genetics and heredity
  - Pathology
  - Pharmacology
  - Physiology
  - General zoology
  - Miscellaneous zoology
  - General biology
  - Miscellaneous biology
  - Biochemistry and molecular biology
  - Virology
- Medical sciences
  - Endocrinology
  - Neurology and neurosurgery
  - Dentistry
  - Environmental and occupational health
  - Public health
  - Surgery
  - General and internal medicine
  - Ophthalmology
  - Pharmacy
  - Veterinary medicine
  - Miscellaneous clinical medicine
  - Anesthesiology
  - Cardiovascular system
  - Cancer
  - Gastroenterology
  - Hematology
  - Obstetrics and gynecology
  - Otorhinolaryngology
  - Pediatrics
  - Psychiatry
  - Radiology and nuclear medicine
  - Dermatology and venereal disease
  - Orthopedics
  - Arthritis and rheumatism
  - Respiratory system
- Medical sciences (continued)
  - Urology
  - Nephrology
  - Allergy
  - Fertility
  - Geriatrics
  - Embryology
  - Tropical medicine
  - Addictive diseases
  - Microscopy
- Other life sciences
  - Speech/language pathology and audiology
  - Nursing
  - Rehabilitation
  - Health policy and services
- Psychology
  - Clinical psychology
  - Behavioral and comparative psychology
  - Developmental and child psychology
  - Experimental psychology
  - Human factors
  - Social psychology
  - General psychology
  - Miscellaneous psychology
  - Psychoanalysis
- Social sciences
  - Economics
  - International relations
  - Political science and public administration
  - Demography
  - Sociology
  - Anthropology and archaeology
  - Area studies
  - Criminology
  - Geography and regional sciences
  - Planning and urban studies
  - General social sciences
  - Miscellaneous social sciences
  - Science studies
  - Gerontology and aging
  - Social studies of medicine

SOURCES: Thomson Scientific, Science Citation Index and Social Sciences Citation Index, http://scientific.thomson.com/products/categories/citation/; ipIQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, Integrated Science and Engineering Resources Data System (WebCASPAR) database system, http://webcaspar.nsf.gov.

Appendix table 5-33
**Regions and countries/economies in S&E publications data**

United States
European Union
- Austria
- Belgium
- Bulgaria
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain
- Sweden
- United Kingdom

Other Western Europe
- Albania
- Andorra
- Bosnia and Herzegovina
- Croatia
- Iceland
- Liechtenstein
- Macedonia
- Monaco
- Norway
- San Marino
- Switzerland
- Turkey
- Vatican City
- Yugoslavia

Asia-10
- China (includes Hong Kong)
- India
- Indonesia
- Japan
- Malaysia
- Philippines
- Singapore
- South Korea
- Taiwan
- Thailand

Other Asia
- Afghanistan
- Bangladesh
- Bhutan
- Brunei
- Cambodia
- Laos
- Maldives
- Mongolia
- Myanmar
- Nepal
- North Korea
- Pakistan
- Sri Lanka
- Vietnam

Other former USSR
- Armenia
- Azerbaijan
- Belarus
- Georgia
- Kazakhstan
- Kyrgyzstan
- Moldova
- Russia
- Tajikistan
- Turkmenistan
- Ukraine
- Uzbekistan

Near East/North Africa
- Algeria
- Bahrain
- Egypt
- Iran
- Iraq
- Israel
- Jordan
- Kuwait
- Lebanon
- Libya
- Morocco
- North Yemen
- Oman
- Qatar
- Saudi Arabia
- South Yemen
- Syria
- Tunisia
- United Arab Emirates
- Yemen

Central/South America
- Antigua and Barbuda
- Argentina
- Bahamas
- Barbados
- Belize
- Bolivia
- Brazil
- Chile
- Colombia
- Costa Rica
- Cuba
- Dominica
- Dominican Republic
- Ecuador
- El Salvador
- Grenada
- Guatemala
- Guyana
- Haiti
- Honduras
- Jamaica
- Mexico
- Nicaragua
- Panama
- Paraguay
- Peru
- St Kitts and Nevis
- St Lucia
- St Vincent
- Suriname
- Trinidad and Tobago
- Uruguay
- Venezuela
- West Indies Assoc States

Sub-Saharan Africa
- Angola
- Benin
- Botswana
- Burkina Faso
- Burundi
- Cameroon
- Cape Verde
- Central African Republic
- Chad
- Comoros
- Congo (Brazzaville)
- Congo (Kinshasa)
- Côte d'Ivoire
- Djibouti
- Equatorial Guinea

Sub-Saharan Africa (continued)
- Eritrea
- Ethiopia
- Gabon
- Gambia
- Ghana
- Guinea
- Guinea-Bissau
- Kenya
- Lesotho
- Liberia
- Madagascar
- Malawi
- Mali
- Mauritania
- Mauritius
- Mozambique
- Namibia
- Niger
- Nigeria
- Rwanda
- São Tomé & Príncipe
- Senegal
- Senegambia
- Seychelles
- Sierra Leone
- Somalia
- South Africa
- Sudan
- Swaziland
- Tanzania
- Togo
- Uganda
- Zambia
- Zimbabwe

Other
- Australia
- Canada
- Fiji
- Kiribati
- Marshall Islands
- Micronesia
- Nauru
- New Zealand
- Palau
- Papua New Guinea
- Solomon Islands
- Tonga
- Tuvalu
- Vanuatu
- Western Samoa

USSR = Union of Soviet Socialist Republics

SOURCES: Thomson Scientific, Science Citation Index and Social Sciences Citation Index, http://scientific.thomson.com/products/categories/citation/; iplQ, Inc.; and National Science Foundation, Division of Science Resources Statistics.

Appendix table 5-34



**S&E articles in all fields, by region/country/economy: 1995–2005**

| Region/country/economy | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | Average annual change (%) 1995–2000 | 2000–2005 | 1995–2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| World | 564,645 | 581,751 | 588,488 | 602,381 | 610,203 | 630,452 | 629,353 | 638,378 | 661,708 | 688,615 | 709,541 | 2.2 | 2.4 | 2.3 |
| United States | 193,337 | 193,153 | 189,752 | 190,395 | 188,004 | 192,743 | 190,592 | 190,495 | 196,427 | 202,075 | 205,320 | –0.1 | 1.3 | 0.6 |
| European Union | 195,897 | 203,947 | 208,900 | 214,755 | 217,186 | 222,688 | 220,406 | 221,719 | 224,834 | 230,464 | 234,868 | 2.6 | 1.1 | 1.8 |
| Austria | 3,425 | 3,646 | 3,947 | 4,074 | 4,158 | 4,257 | 4,480 | 4,460 | 4,692 | 4,716 | 4,566 | 4.4 | 1.4 | 2.9 |
| Belgium | 5,172 | 5,554 | 5,532 | 5,688 | 5,713 | 5,735 | 5,827 | 6,037 | 6,302 | 6,625 | 6,841 | 2.1 | 3.6 | 2.8 |
| Bulgaria | 959 | 954 | 985 | 929 | 867 | 909 | 746 | 815 | 775 | 808 | 764 | –1.1 | –3.4 | –2.2 |
| Cyprus | 43 | 45 | 57 | 55 | 49 | 59 | 68 | 78 | 76 | 87 | 90 | 6.5 | 8.9 | 7.7 |
| Czech Republic | 1,955 | 2,185 | 2,304 | 2,264 | 2,360 | 2,481 | 2,571 | 2,747 | 2,820 | 3,178 | 3,169 | 4.9 | 5.0 | 5.0 |
| Denmark | 4,330 | 4,369 | 4,597 | 4,717 | 4,783 | 4,883 | 4,915 | 4,761 | 5,006 | 5,009 | 5,040 | 2.4 | 0.6 | 1.5 |
| Estonia | 215 | 270 | 230 | 305 | 341 | 328 | 346 | 321 | 355 | 389 | 439 | 8.8 | 6.0 | 7.4 |
| Finland | 4,077 | 4,330 | 4,452 | 4,513 | 4,719 | 4,844 | 4,930 | 4,904 | 4,898 | 5,018 | 4,811 | 3.5 | –0.1 | 1.7 |
| France | 28,847 | 29,746 | 30,322 | 31,392 | 31,345 | 31,427 | 30,598 | 30,531 | 30,302 | 29,891 | 30,309 | 1.7 | –0.7 | 0.5 |
| Germany | 37,645 | 39,213 | 41,415 | 42,953 | 42,963 | 43,509 | 42,674 | 42,436 | 42,228 | 43,009 | 44,145 | 2.9 | 0.3 | 1.6 |
| Greece | 2,058 | 2,249 | 2,434 | 2,611 | 2,626 | 2,976 | 3,204 | 3,447 | 3,587 | 3,928 | 4,291 | 7.7 | 7.6 | 7.6 |
| Hungary | 1,764 | 1,813 | 1,992 | 2,202 | 2,200 | 2,358 | 2,397 | 2,323 | 2,451 | 2,409 | 2,614 | 6.0 | 2.1 | 4.0 |
| Ireland | 1,218 | 1,254 | 1,331 | 1,520 | 1,459 | 1,581 | 1,588 | 1,629 | 1,681 | 1,935 | 2,120 | 5.4 | 6.0 | 5.7 |
| Italy | 17,880 | 19,234 | 19,402 | 20,056 | 20,327 | 21,409 | 22,090 | 22,483 | 23,765 | 24,759 | 24,645 | 3.7 | 2.9 | 3.3 |
| Latvia | 163 | 144 | 159 | 162 | 179 | 150 | 164 | 175 | 133 | 157 | 134 | –1.7 | –2.2 | –1.9 |
| Lithuania | 179 | 189 | 216 | 257 | 274 | 262 | 283 | 335 | 308 | 404 | 406 | 7.9 | 9.2 | 8.5 |
| Luxembourg | 28 | 18 | 34 | 32 | 29 | 40 | 46 | 39 | 38 | 62 | 59 | 7.6 | 8.0 | 7.8 |
| Malta | 18 | 12 | 23 | 20 | 19 | 18 | 21 | 23 | 39 | 21 | 23 | –0.6 | 5.8 | 2.6 |
| Netherlands | 12,089 | 12,413 | 12,444 | 12,500 | 12,168 | 12,341 | 12,117 | 12,481 | 12,657 | 13,240 | 13,885 | 0.4 | 2.4 | 1.4 |
| Poland | 4,549 | 4,507 | 4,565 | 4,786 | 5,100 | 5,506 | 5,629 | 6,019 | 6,582 | 6,672 | 6,844 | 3.9 | 4.4 | 4.2 |
| Portugal | 990 | 1,097 | 1,255 | 1,418 | 1,711 | 1,880 | 2,081 | 2,331 | 2,423 | 2,853 | 2,910 | 13.7 | 9.1 | 11.4 |
| Romania | 678 | 823 | 917 | 847 | 917 | 971 | 927 | 965 | 875 | 938 | 887 | 7.4 | –1.8 | 2.7 |
| Slovakia | 1,079 | 1,140 | 1,070 | 1,140 | 979 | 978 | 923 | 954 | 898 | 1,070 | 919 | –2.0 | –1.2 | –1.6 |
| Slovenia | 434 | 477 | 603 | 623 | 708 | 892 | 851 | 848 | 951 | 929 | 1,035 | 15.5 | 3.0 | 9.1 |
| Spain | 11,316 | 12,495 | 13,075 | 13,719 | 14,514 | 14,795 | 15,323 | 16,062 | 16,099 | 17,025 | 18,336 | 5.5 | 4.4 | 4.9 |
| Sweden | 9,287 | 9,558 | 9,655 | 9,835 | 9,890 | 9,883 | 10,022 | 9,872 | 9,677 | 9,853 | 10,012 | 1.3 | 0.3 | 0.8 |
| United Kingdom | 45,498 | 46,213 | 45,884 | 46,138 | 46,788 | 48,216 | 45,587 | 44,642 | 45,218 | 45,479 | 45,572 | 1.2 | –1.1 | 0.0 |
| Other Western Europe | 13,199 | 14,172 | 14,731 | 15,315 | 15,928 | 16,590 | 16,811 | 17,706 | 19,005 | 21,426 | 22,333 | 4.7 | 6.1 | 5.4 |
| Croatia | 600 | 640 | 580 | 625 | 647 | 678 | 696 | 719 | 798 | 868 | 953 | 2.5 | 7.0 | 4.7 |
| Iceland | 156 | 145 | 143 | 174 | 143 | 150 | 177 | 195 | 195 | 191 | 206 | –0.7 | 6.5 | 2.8 |
| Norway | 2,920 | 2,932 | 2,965 | 3,038 | 3,043 | 3,136 | 3,215 | 3,100 | 3,130 | 3,370 | 3,644 | 1.4 | 3.0 | 2.2 |
| Switzerland | 7,220 | 7,568 | 7,864 | 7,984 | 8,195 | 8,504 | 7,950 | 7,879 | 8,134 | 8,674 | 8,749 | 3.3 | 0.6 | 1.9 |
| Turkey | 1,715 | 2,228 | 2,481 | 2,795 | 3,223 | 3,484 | 4,151 | 5,226 | 6,039 | 7,434 | 7,815 | 15.2 | 17.5 | 16.4 |
| Yugoslavia | 504 | 563 | 595 | 607 | 563 | 542 | 500 | 480 | 584 | 772 | 849 | 1.4 | 9.4 | 5.4 |
| All others | 84 | 95 | 104 | 93 | 115 | 96 | 123 | 107 | 125 | 117 | 118 | 2.7 | 4.2 | 3.4 |
| Other former USSR | 22,871 | 22,537 | 21,927 | 20,919 | 20,920 | 20,882 | 19,160 | 19,333 | 18,473 | 18,256 | 17,822 | –1.8 | –3.1 | –2.5 |
| Armenia | 166 | 198 | 172 | 166 | 164 | 175 | 157 | 173 | 184 | 191 | 180 | 1.1 | 0.5 | 0.8 |
| Azerbaijan | 139 | 118 | 86 | 92 | 66 | 79 | 68 | 78 | 110 | 110 | 116 | –10.8 | 8.1 | –1.8 |
| Belarus | 650 | 568 | 596 | 583 | 579 | 572 | 502 | 492 | 521 | 497 | 490 | –2.5 | –3.1 | –2.8 |

Appendix table 5-34
**S&E articles in all fields, by region/country/economy: 1995–2005**



| Region/country/economy | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | Average annual change (%) 1995–2000 | 2000–2005 | 1995–2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Georgia | 118 | 127 | 136 | 128 | 132 | 134 | 116 | 128 | 112 | 150 | 145 | 2.6 | 1.5 | 2.0 |
| Kazakhstan | 158 | 141 | 115 | 129 | 105 | 113 | 114 | 123 | 119 | 105 | 96 | –6.5 | –3.2 | –4.8 |
| Moldova | 137 | 119 | 108 | 92 | 93 | 99 | 73 | 74 | 83 | 68 | 89 | –6.4 | –2.0 | –4.2 |
| Russia | 18,603 | 18,553 | 18,133 | 17,166 | 17,145 | 17,180 | 15,658 | 15,847 | 15,146 | 14,921 | 14,412 | –1.6 | –3.5 | –2.5 |
| Ukraine | 2,516 | 2,420 | 2,265 | 2,284 | 2,355 | 2,268 | 2,237 | 2,183 | 1,992 | 2,012 | 2,105 | –2.1 | –1.5 | –1.8 |
| Uzbekistan | 327 | 250 | 269 | 244 | 241 | 223 | 195 | 184 | 174 | 170 | 157 | –7.4 | –6.7 | –7.1 |
| All others | 56 | 42 | 46 | 36 | 41 | 40 | 41 | 53 | 32 | 32 | 32 | –6.9 | –3.9 | –5.4 |
| Asia-10 | 76,182 | 83,285 | 87,479 | 93,796 | 99,556 | 106,468 | 110,899 | 115,458 | 125,564 | 135,581 | 144,767 | 6.9 | 6.3 | 6.6 |
| China | 9,061 | 10,526 | 12,172 | 13,781 | 15,715 | 18,479 | 21,134 | 23,269 | 28,768 | 34,846 | 41,596 | 15.3 | 17.6 | 16.5 |
| India | 9,370 | 9,753 | 9,618 | 9,945 | 10,190 | 10,276 | 10,801 | 11,665 | 12,461 | 13,367 | 14,608 | 1.9 | 7.3 | 4.5 |
| Indonesia | 129 | 141 | 146 | 136 | 163 | 182 | 189 | 178 | 157 | 182 | 205 | 7.0 | 2.5 | 4.7 |
| Japan | 47,068 | 50,345 | 51,462 | 53,838 | 55,274 | 57,101 | 56,082 | 56,346 | 57,228 | 56,534 | 55,471 | 3.9 | –0.6 | 1.7 |
| Malaysia | 366 | 362 | 349 | 387 | 471 | 460 | 472 | 494 | 479 | 586 | 615 | 4.7 | 6.0 | 5.3 |
| Philippines | 145 | 158 | 170 | 171 | 176 | 185 | 141 | 182 | 184 | 163 | 178 | 5.0 | –0.7 | 2.1 |
| Singapore | 1,141 | 1,141 | 1,339 | 1,584 | 1,897 | 2,361 | 2,434 | 2,632 | 2,939 | 3,384 | 3,609 | 15.6 | 8.9 | 12.2 |
| South Korea | 3,803 | 4,771 | 5,802 | 7,057 | 8,478 | 9,572 | 11,007 | 11,735 | 13,401 | 15,255 | 16,396 | 20.3 | 11.4 | 15.7 |
| Taiwan | 4,759 | 5,701 | 6,016 | 6,355 | 6,643 | 7,190 | 7,912 | 8,123 | 8,929 | 10,133 | 10,841 | 8.6 | 8.6 | 8.6 |
| Thailand | 340 | 387 | 405 | 541 | 549 | 663 | 727 | 834 | 1,019 | 1,131 | 1,249 | 14.3 | 13.5 | 13.9 |
| Other Asia | 740 | 666 | 665 | 674 | 760 | 765 | 782 | 837 | 1,035 | 1,041 | 1,194 | 0.7 | 9.3 | 4.9 |
| Bangladesh | 162 | 156 | 136 | 141 | 167 | 155 | 181 | 151 | 200 | 187 | 193 | –0.9 | 4.5 | 1.8 |
| Pakistan | 313 | 255 | 268 | 268 | 296 | 267 | 279 | 343 | 360 | 413 | 492 | –3.1 | 13.0 | 4.6 |
| Sri Lanka | 85 | 71 | 62 | 83 | 87 | 98 | 73 | 103 | 141 | 119 | 136 | 2.7 | 6.8 | 4.7 |
| Vietnam | 103 | 117 | 121 | 100 | 111 | 147 | 155 | 144 | 205 | 167 | 221 | 7.2 | 8.5 | 7.9 |
| All others | 76 | 67 | 78 | 82 | 100 | 98 | 93 | 96 | 129 | 155 | 152 | 5.4 | 9.1 | 7.2 |
| Near East/North Africa | 9,476 | 9,489 | 9,989 | 10,227 | 10,408 | 11,136 | 11,430 | 11,935 | 12,863 | 13,265 | 13,839 | 3.3 | 4.4 | 3.9 |
| Algeria | 146 | 156 | 160 | 156 | 185 | 211 | 220 | 230 | 281 | 344 | 350 | 7.6 | 10.6 | 9.1 |
| Egypt | 1,388 | 1,292 | 1,266 | 1,275 | 1,293 | 1,433 | 1,463 | 1,564 | 1,717 | 1,661 | 1,658 | 0.6 | 3.0 | 1.8 |
| Iran | 279 | 318 | 391 | 541 | 665 | 841 | 1,035 | 1,314 | 1,790 | 2,116 | 2,635 | 24.7 | 25.7 | 25.2 |
| Israel | 5,741 | 5,751 | 6,047 | 6,018 | 5,929 | 6,290 | 6,232 | 6,381 | 6,524 | 6,461 | 6,309 | 1.8 | 0.1 | 0.9 |
| Jordan | 154 | 163 | 200 | 220 | 230 | 247 | 232 | 242 | 251 | 281 | 275 | 9.9 | 2.2 | 6.0 |
| Kuwait | 189 | 209 | 224 | 235 | 296 | 238 | 245 | 228 | 230 | 244 | 233 | 4.7 | –0.4 | 2.1 |
| Lebanon | 55 | 63 | 103 | 103 | 124 | 144 | 195 | 159 | 211 | 198 | 234 | 21.3 | 10.2 | 15.6 |
| Morocco | 240 | 274 | 297 | 376 | 438 | 466 | 458 | 466 | 400 | 417 | 443 | 14.2 | –1.0 | 6.3 |
| Oman | 57 | 52 | 63 | 80 | 89 | 92 | 101 | 113 | 108 | 99 | 111 | 10.1 | 3.7 | 6.9 |
| Saudi Arabia | 753 | 734 | 676 | 683 | 605 | 590 | 565 | 583 | 549 | 551 | 575 | –4.8 | –0.5 | –2.7 |
| Syria | 51 | 45 | 60 | 44 | 58 | 55 | 63 | 49 | 68 | 79 | 77 | 1.4 | 7.1 | 4.2 |
| Tunisia | 143 | 160 | 220 | 227 | 257 | 292 | 351 | 355 | 436 | 455 | 571 | 15.4 | 14.3 | 14.9 |
| United Arab Emirates | 120 | 143 | 152 | 156 | 130 | 145 | 156 | 163 | 178 | 210 | 229 | 3.8 | 9.6 | 6.7 |
| All others | 160 | 129 | 129 | 113 | 109 | 93 | 114 | 88 | 119 | 149 | 139 | –10.3 | 8.4 | –1.4 |
| Central/South America | 9,521 | 10,506 | 11,696 | 13,008 | 13,994 | 15,062 | 16,078 | 17,462 | 18,225 | 19,712 | 20,395 | 9.6 | 6.2 | 7.9 |
| Argentina | 1,967 | 2,287 | 2,451 | 2,551 | 2,636 | 2,846 | 2,931 | 3,178 | 2,919 | 2,982 | 3,058 | 7.7 | 1.4 | 4.5 |
| Brazil | 3,436 | 3,813 | 4,498 | 5,234 | 5,859 | 6,407 | 7,052 | 7,881 | 8,330 | 9,573 | 9,889 | 13.3 | 9.1 | 11.1 |

Appendix table 5-34 (Page 3 of 3)

**S&E articles in all fields, by region/country/economy: 1995–2005**

| Region/country/economy | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | Average annual change (%) 1995–2000 | 2000–2005 | 1995–2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chile | 889 | 920 | 954 | 992 | 1,059 | 1,115 | 1,159 | 1,311 | 1,406 | 1,464 | 1,559 | 4.6 | 6.9 | 5.8 |
| Colombia | 162 | 195 | 235 | 248 | 240 | 332 | 316 | 356 | 325 | 358 | 400 | 15.4 | 3.8 | 9.4 |
| Costa Rica | 66 | 75 | 77 | 73 | 69 | 80 | 90 | 89 | 89 | 85 | 105 | 4.0 | 5.5 | 4.7 |
| Cuba | 168 | 206 | 167 | 236 | 257 | 284 | 272 | 206 | 268 | 254 | 261 | 11.1 | –1.7 | 4.5 |
| Mexico | 1,937 | 2,124 | 2,302 | 2,659 | 2,884 | 2,971 | 3,203 | 3,320 | 3,659 | 3,870 | 3,902 | 8.9 | 5.6 | 7.3 |
| Peru | 65 | 70 | 75 | 66 | 62 | 79 | 94 | 88 | 130 | 106 | 133 | 4.0 | 10.9 | 7.4 |
| Uruguay | 103 | 111 | 141 | 141 | 150 | 156 | 149 | 161 | 186 | 194 | 204 | 8.5 | 5.6 | 7.1 |
| Venezuela | 437 | 426 | 488 | 534 | 498 | 516 | 510 | 536 | 577 | 475 | 534 | 3.4 | 0.7 | 2.0 |
| All others | 290 | 278 | 310 | 276 | 281 | 277 | 301 | 335 | 335 | 351 | 351 | –0.9 | 4.8 | 1.9 |
| Sub-Saharan Africa | 4,052 | 3,909 | 3,972 | 3,930 | 4,002 | 3,927 | 3,860 | 4,050 | 3,947 | 4,098 | 4,178 | –0.6 | 1.2 | 0.3 |
| Cameroon | 66 | 60 | 83 | 74 | 71 | 73 | 76 | 107 | 120 | 127 | 131 | 2.1 | 12.3 | 7.1 |
| Ethiopia | 94 | 97 | 95 | 79 | 110 | 90 | 78 | 102 | 92 | 106 | 88 | –0.8 | –0.5 | –0.7 |
| Ghana | 58 | 72 | 82 | 71 | 74 | 92 | 79 | 79 | 76 | 86 | 81 | 9.6 | –2.5 | 3.4 |
| Kenya | 287 | 274 | 272 | 265 | 243 | 232 | 228 | 242 | 239 | 225 | 226 | –4.2 | –0.5 | –2.4 |
| Nigeria | 450 | 435 | 437 | 402 | 417 | 400 | 304 | 363 | 358 | 381 | 362 | –2.3 | –2.0 | –2.1 |
| Senegal Republic | 68 | 70 | 62 | 67 | 76 | 74 | 59 | 51 | 77 | 63 | 83 | 1.6 | 2.4 | 2.0 |
| South Africa | 2,351 | 2,216 | 2,223 | 2,225 | 2,303 | 2,221 | 2,291 | 2,328 | 2,205 | 2,320 | 2,392 | –1.1 | 1.5 | 0.2 |
| Tanzania | 97 | 103 | 98 | 96 | 87 | 95 | 81 | 93 | 76 | 89 | 107 | –0.3 | 2.3 | 1.0 |
| Uganda | 42 | 51 | 51 | 64 | 71 | 78 | 83 | 73 | 88 | 120 | 93 | 13.2 | 3.8 | 8.4 |
| All others | 540 | 532 | 568 | 586 | 552 | 572 | 581 | 612 | 616 | 582 | 615 | 1.2 | 1.4 | 1.3 |
| Other | 39,371 | 40,088 | 39,377 | 39,363 | 39,445 | 40,192 | 39,335 | 39,384 | 41,335 | 42,696 | 44,826 | 0.4 | 2.2 | 1.3 |
| Australia | 13,125 | 13,623 | 13,816 | 14,307 | 14,341 | 14,589 | 14,484 | 14,255 | 14,934 | 15,586 | 15,957 | 2.1 | 1.8 | 2.0 |
| Canada | 23,740 | 23,842 | 22,781 | 22,201 | 22,125 | 22,701 | 21,945 | 22,342 | 23,552 | 24,230 | 25,836 | –0.9 | 2.6 | 0.8 |
| New Zealand | 2,442 | 2,575 | 2,726 | 2,802 | 2,915 | 2,851 | 2,851 | 2,740 | 2,800 | 2,825 | 2,983 | 3.1 | 0.9 | 2.0 |
| All others | 63 | 47 | 54 | 53 | 63 | 51 | 55 | 48 | 49 | 55 | 49 | –4.1 | –0.7 | –2.5 |

USSR = Union of Soviet Socialist Republics

NOTES: Article counts from set of journals covered by Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles classified by year of publication and assigned to region/country/economy on basis of institutional address(es) listed on article. Articles on fractional-count basis, i.e., for articles with collaborating institutions from multiple countries/economies, each country/economy receives fractional credit on basis of proportion of its participating institutions. Countries with article output <0.01% of world output in 2005 grouped in All others; see appendix table 5-33 for countries/economies included in each region. Detail may not add to total because of rounding.

SOURCES: Thomson Scientific, SCI and SSCI, http://scientific.thomson.com/products/categories/citation/; iplQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

*Science and Engineering Indicators 2008*

Appendix table 5-35 (Page 1 of 3)

**Internationally coauthored S&E articles, by selected country/economy pairs: 2005**

| Country/economy | World | United States | Austria | Belgium | Czech Republic | Denmark | Finland | France | Germany | Greece | Hungary | Ireland | Italy | Netherlands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| World | 151,815 | 66,274 | 4,268 | 6,409 | 2,598 | 4,235 | 3,401 | 21,932 | 29,751 | 2,283 | 2,308 | 1,662 | 14,421 | 9,934 |
| United States | 66,274 | na | 995 | 1,474 | 542 | 1,196 | 908 | 5,635 | 8,941 | 751 | 643 | 417 | 4,761 | 3,023 |
| Austria | 4,268 | 995 | na | 174 | 160 | 127 | 108 | 498 | 1,591 | 72 | 148 | 26 | 502 | 269 |
| Belgium | 6,409 | 1,474 | 174 | na | 163 | 213 | 146 | 1,456 | 1,093 | 120 | 156 | 77 | 675 | 1,056 |
| Czech Republic | 2,598 | 542 | 160 | 163 | na | 66 | 81 | 477 | 669 | 71 | 83 | 64 | 270 | 185 |
| Denmark | 4,235 | 1,196 | 127 | 213 | 66 | na | 219 | 453 | 774 | 80 | 46 | 59 | 391 | 396 |
| Finland | 3,401 | 908 | 108 | 146 | 81 | 219 | na | 351 | 648 | 58 | 91 | 55 | 305 | 322 |
| France | 21,932 | 5,635 | 498 | 1,456 | 477 | 453 | 351 | na | 3,713 | 339 | 310 | 218 | 2,605 | 1,392 |
| Germany | 29,751 | 8,941 | 1,591 | 1,093 | 669 | 774 | 648 | 3,713 | na | 397 | 555 | 270 | 2,679 | 2,322 |
| Greece | 2,283 | 751 | 72 | 120 | 71 | 80 | 58 | 339 | 397 | na | 44 | 23 | 271 | 151 |
| Hungary | 2,308 | 643 | 148 | 156 | 83 | 46 | 91 | 310 | 555 | 44 | na | 25 | 224 | 136 |
| Ireland | 1,662 | 417 | 26 | 77 | 64 | 59 | 55 | 218 | 270 | 23 | 25 | na | 141 | 149 |
| Italy | 14,421 | 4,761 | 502 | 675 | 270 | 391 | 305 | 2,605 | 2,679 | 271 | 224 | 141 | na | 1,122 |
| Netherlands | 9,934 | 3,023 | 269 | 1,056 | 185 | 396 | 322 | 1,392 | 2,322 | 151 | 136 | 149 | 1,122 | na |
| Poland | 4,782 | 1,289 | 215 | 261 | 227 | 143 | 118 | 763 | 1,193 | 105 | 91 | 33 | 486 | 250 |
| Portugal | 2,344 | 448 | 97 | 131 | 60 | 78 | 84 | 397 | 342 | 42 | 45 | 22 | 226 | 158 |
| Spain | 10,379 | 2,757 | 264 | 502 | 160 | 311 | 238 | 1,909 | 1,697 | 194 | 143 | 113 | 1,583 | 762 |
| Sweden | 7,531 | 2,094 | 187 | 305 | 160 | 731 | 648 | 838 | 1,293 | 105 | 137 | 98 | 642 | 544 |
| United Kingdom | 28,209 | 8,880 | 564 | 1,119 | 390 | 877 | 683 | 3,369 | 4,350 | 509 | 337 | 652 | 2,668 | 2,197 |
| Norway | 2,837 | 873 | 87 | 111 | 60 | 367 | 240 | 375 | 448 | 58 | 30 | 45 | 280 | 327 |
| Switzerland | 8,667 | 2,655 | 424 | 427 | 192 | 233 | 236 | 1,632 | 2,591 | 147 | 108 | 67 | 1,147 | 664 |
| Turkey | 1,706 | 764 | 28 | 38 | 15 | 15 | 30 | 90 | 212 | 30 | 20 | 6 | 117 | 57 |
| China | 12,435 | 4,967 | 125 | 194 | 95 | 119 | 86 | 773 | 1,218 | 41 | 60 | 79 | 353 | 353 |
| India | 3,876 | 1,404 | 75 | 60 | 89 | 48 | 31 | 383 | 669 | 21 | 70 | 60 | 187 | 138 |
| Japan | 15,212 | 6,050 | 212 | 241 | 159 | 153 | 186 | 1,061 | 1,508 | 73 | 141 | 57 | 601 | 374 |
| Singapore | 1,940 | 596 | 14 | 18 | 6 | 14 | 16 | 55 | 111 | 1 | 2 | 9 | 43 | 31 |
| South Korea | 5,624 | 3,076 | 70 | 49 | 52 | 25 | 51 | 254 | 386 | 17 | 54 | 54 | 171 | 104 |
| Taiwan | 2,649 | 1,471 | 60 | 20 | 6 | 5 | 33 | 128 | 209 | 5 | 32 | 16 | 76 | 41 |
| Russia | 8,463 | 2,336 | 230 | 277 | 276 | 124 | 282 | 1,221 | 2,391 | 120 | 131 | 116 | 781 | 475 |
| Ukraine | 1,656 | 332 | 41 | 45 | 41 | 18 | 18 | 157 | 392 | 26 | 27 | 3 | 99 | 45 |
| Israel | 3,850 | 2,020 | 67 | 106 | 45 | 82 | 57 | 438 | 633 | 59 | 75 | 16 | 294 | 204 |
| Argentina | 2,059 | 695 | 27 | 31 | 41 | 23 | 12 | 230 | 253 | 7 | 19 | 34 | 142 | 79 |
| Brazil | 4,371 | 1,702 | 55 | 99 | 79 | 49 | 31 | 609 | 558 | 22 | 33 | 36 | 300 | 187 |
| Mexico | 2,528 | 1,082 | 15 | 54 | 50 | 15 | 12 | 282 | 212 | 28 | 17 | 40 | 133 | 88 |
| South Africa | 1,744 | 603 | 40 | 79 | 29 | 41 | 20 | 178 | 227 | 6 | 26 | 27 | 71 | 121 |
| Australia | 9,029 | 3,176 | 193 | 193 | 73 | 206 | 115 | 631 | 968 | 43 | 55 | 84 | 395 | 348 |
| Canada | 15,162 | 7,892 | 189 | 352 | 124 | 241 | 235 | 1,435 | 1,509 | 98 | 115 | 132 | 758 | 613 |
| New Zealand | 2,109 | 692 | 23 | 40 | 6 | 62 | 20 | 130 | 174 | 10 | 10 | 34 | 85 | 82 |

Appendix table 5-35



**Internationally coauthored S&E articles, by selected country/economy pairs: 2005**

| Country/economy | World | Poland | Portugal | Spain | Sweden | United Kingdom | Norway | Switzerland | Turkey | China | India | Japan | Singapore |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| World | 151,815 | 4,782 | 2,344 | 10,379 | 7,531 | 28,209 | 2,837 | 8,667 | 1,706 | 12,435 | 3,876 | 15,212 | 1,940 |
| United States | 66,274 | 1,289 | 448 | 2,757 | 2,094 | 8,880 | 873 | 2,655 | 764 | 4,967 | 1,404 | 6,050 | 596 |
| Austria | 4,268 | 215 | 97 | 264 | 187 | 564 | 87 | 424 | 28 | 125 | 75 | 212 | 14 |
| Belgium | 6,409 | 261 | 131 | 502 | 305 | 1,119 | 111 | 427 | 38 | 194 | 60 | 241 | 18 |
| Czech Republic | 2,598 | 227 | 60 | 160 | 160 | 390 | 60 | 192 | 15 | 95 | 89 | 159 | 6 |
| Denmark | 4,235 | 143 | 78 | 311 | 731 | 877 | 367 | 233 | 15 | 119 | 48 | 153 | 14 |
| Finland | 3,401 | 118 | 84 | 238 | 648 | 683 | 240 | 236 | 30 | 86 | 31 | 186 | 16 |
| France | 21,932 | 763 | 397 | 1,909 | 838 | 3,369 | 375 | 1,632 | 90 | 773 | 383 | 1,061 | 55 |
| Germany | 29,751 | 1,193 | 342 | 1,697 | 1,293 | 4,350 | 448 | 2,591 | 212 | 1,218 | 669 | 1,508 | 111 |
| Greece | 2,283 | 105 | 42 | 194 | 105 | 509 | 58 | 147 | 30 | 41 | 21 | 73 | 1 |
| Hungary | 2,308 | 91 | 45 | 143 | 137 | 337 | 30 | 108 | 20 | 60 | 70 | 141 | 2 |
| Ireland | 1,662 | 33 | 22 | 113 | 98 | 652 | 45 | 67 | 6 | 79 | 60 | 57 | 9 |
| Italy | 14,421 | 486 | 226 | 1,583 | 642 | 2,668 | 280 | 1,147 | 117 | 353 | 187 | 601 | 43 |
| Netherlands | 9,934 | 250 | 158 | 762 | 544 | 2,197 | 327 | 664 | 57 | 353 | 138 | 374 | 31 |
| Poland | 4,782 | na | 71 | 290 | 269 | 566 | 114 | 300 | 22 | 136 | 126 | 328 | 18 |
| Portugal | 2,344 | 71 | na | 442 | 115 | 469 | 50 | 136 | 13 | 57 | 30 | 73 | 3 |
| Spain | 10,379 | 290 | 442 | na | 407 | 1,922 | 240 | 553 | 34 | 209 | 132 | 332 | 23 |
| Sweden | 7,531 | 269 | 115 | 407 | na | 1,391 | 514 | 365 | 37 | 351 | 106 | 366 | 43 |
| United Kingdom | 28,209 | 566 | 469 | 1,922 | 1,391 | na | 663 | 1,405 | 237 | 1,302 | 459 | 1,334 | 211 |
| Norway | 2,837 | 114 | 50 | 240 | 514 | 663 | na | 136 | 14 | 124 | 17 | 74 | 11 |
| Switzerland | 8,667 | 300 | 136 | 553 | 365 | 1,405 | 136 | na | 48 | 210 | 158 | 399 | 20 |
| Turkey | 1,706 | 22 | 13 | 34 | 37 | 237 | 14 | 48 | na | 30 | 6 | 96 | 4 |
| China | 12,435 | 136 | 57 | 209 | 351 | 1,302 | 124 | 210 | 30 | na | 268 | 1,948 | 601 |
| India | 3,876 | 126 | 30 | 132 | 106 | 459 | 17 | 158 | 6 | 268 | na | 508 | 57 |
| Japan | 15,212 | 328 | 73 | 332 | 366 | 1,334 | 74 | 399 | 96 | 1,948 | 508 | na | 107 |
| Singapore | 1,940 | 18 | 3 | 23 | 43 | 211 | 11 | 20 | 4 | 601 | 57 | 107 | na |
| South Korea | 5,624 | 111 | 15 | 111 | 93 | 377 | 13 | 158 | 16 | 556 | 264 | 1,138 | 34 |
| Taiwan | 2,649 | 81 | 5 | 70 | 46 | 187 | 5 | 128 | 6 | 405 | 176 | 442 | 63 |
| Russia | 8,463 | 508 | 130 | 429 | 426 | 995 | 204 | 465 | 48 | 361 | 195 | 749 | 12 |
| Ukraine | 1,656 | 226 | 17 | 77 | 63 | 134 | 11 | 46 | 18 | 15 | 14 | 77 | 6 |
| Israel | 3,850 | 84 | 33 | 167 | 110 | 381 | 51 | 147 | 56 | 116 | 65 | 155 | 14 |
| Argentina | 2,059 | 17 | 34 | 403 | 48 | 176 | 12 | 34 | 5 | 46 | 43 | 41 | 4 |
| Brazil | 4,371 | 63 | 157 | 260 | 126 | 583 | 31 | 121 | 22 | 140 | 133 | 183 | 13 |
| Mexico | 2,528 | 47 | 20 | 352 | 72 | 246 | 7 | 50 | 9 | 74 | 72 | 65 | 7 |
| South Africa | 1,744 | 49 | 14 | 61 | 61 | 378 | 31 | 68 | 7 | 53 | 39 | 48 | 7 |
| Australia | 9,029 | 139 | 45 | 258 | 336 | 1,874 | 106 | 336 | 31 | 791 | 180 | 612 | 199 |
| Canada | 15,162 | 220 | 69 | 549 | 463 | 2,025 | 271 | 482 | 53 | 921 | 198 | 789 | 101 |
| New Zealand | 2,109 | 21 | 11 | 53 | 63 | 526 | 32 | 52 | 8 | 80 | 15 | 107 | 31 |

Appendix table 5-35 (Page 3 of 3)

**Internationally coauthored S&E articles, by selected country/economy pairs: 2005**

| Country/economy | World | South Korea | Taiwan | Russia | Ukraine | Israel | Argentina | Brazil | Mexico | South Africa | Australia | Canada | New Zealand |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| World | 151,815 | 5,624 | 2,649 | 8,463 | 1,656 | 3,850 | 2,059 | 4,371 | 2,528 | 1,744 | 9,029 | 15,162 | 2,109 |
| United States | 66,274 | 3,076 | 1,471 | 2,336 | 332 | 2,020 | 695 | 1,702 | 1,082 | 603 | 3,176 | 7,892 | 692 |
| Austria | 4,268 | 70 | 60 | 230 | 41 | 67 | 27 | 55 | 15 | 40 | 193 | 189 | 23 |
| Belgium | 6,409 | 49 | 20 | 277 | 45 | 106 | 31 | 99 | 54 | 79 | 193 | 352 | 40 |
| Czech Republic | 2,598 | 52 | 6 | 276 | 41 | 45 | 41 | 79 | 50 | 29 | 73 | 124 | 6 |
| Denmark | 4,235 | 25 | 5 | 124 | 18 | 82 | 23 | 49 | 15 | 41 | 206 | 241 | 62 |
| Finland | 3,401 | 51 | 33 | 282 | 18 | 57 | 12 | 31 | 12 | 20 | 115 | 235 | 20 |
| France | 21,932 | 254 | 128 | 1,221 | 157 | 438 | 230 | 609 | 282 | 178 | 631 | 1,435 | 130 |
| Germany | 29,751 | 386 | 209 | 2,391 | 392 | 633 | 253 | 558 | 212 | 227 | 968 | 1,509 | 174 |
| Greece | 2,283 | 17 | 5 | 120 | 26 | 59 | 7 | 22 | 28 | 6 | 43 | 98 | 10 |
| Hungary | 2,308 | 54 | 32 | 131 | 27 | 75 | 19 | 33 | 17 | 26 | 55 | 115 | 10 |
| Ireland | 1,662 | 54 | 16 | 116 | 3 | 16 | 34 | 36 | 40 | 27 | 84 | 132 | 34 |
| Italy | 14,421 | 171 | 76 | 781 | 99 | 294 | 142 | 300 | 133 | 71 | 395 | 758 | 85 |
| Netherlands | 9,934 | 104 | 41 | 475 | 45 | 204 | 79 | 187 | 88 | 121 | 348 | 613 | 82 |
| Poland | 4,782 | 111 | 81 | 508 | 226 | 84 | 17 | 63 | 47 | 49 | 139 | 220 | 21 |
| Portugal | 2,344 | 15 | 5 | 130 | 17 | 33 | 34 | 157 | 20 | 14 | 45 | 69 | 11 |
| Spain | 10,379 | 111 | 70 | 429 | 77 | 167 | 403 | 260 | 352 | 61 | 258 | 549 | 53 |
| Sweden | 7,531 | 93 | 46 | 426 | 63 | 110 | 48 | 126 | 72 | 61 | 336 | 463 | 63 |
| United Kingdom | 28,209 | 377 | 187 | 995 | 134 | 381 | 176 | 583 | 246 | 378 | 1,874 | 2,025 | 526 |
| Norway | 2,837 | 13 | 5 | 204 | 11 | 51 | 12 | 31 | 7 | 31 | 106 | 271 | 32 |
| Switzerland | 8,667 | 158 | 128 | 465 | 46 | 147 | 34 | 121 | 50 | 68 | 336 | 482 | 52 |
| Turkey | 1,706 | 16 | 6 | 48 | 18 | 56 | 5 | 22 | 9 | 7 | 31 | 53 | 8 |
| China | 12,435 | 556 | 405 | 361 | 15 | 116 | 46 | 140 | 74 | 53 | 791 | 921 | 80 |
| India | 3,876 | 264 | 176 | 195 | 14 | 65 | 43 | 133 | 72 | 39 | 180 | 198 | 15 |
| Japan | 15,212 | 1,138 | 442 | 749 | 77 | 155 | 41 | 183 | 65 | 48 | 612 | 789 | 107 |
| Singapore | 1,940 | 34 | 63 | 12 | 6 | 14 | 4 | 13 | 7 | 7 | 199 | 101 | 31 |
| South Korea | 5,624 | na | 190 | 369 | 34 | 67 | 33 | 75 | 62 | 14 | 171 | 332 | 33 |
| Taiwan | 2,649 | 190 | na | 170 | 7 | 35 | 2 | 36 | 16 | 7 | 132 | 176 | 16 |
| Russia | 8,463 | 369 | 170 | na | 267 | 189 | 45 | 175 | 127 | 22 | 183 | 442 | 21 |
| Ukraine | 1,656 | 34 | 7 | 267 | na | 49 | 3 | 22 | 29 | 2 | 26 | 45 | 1 |
| Israel | 3,850 | 67 | 35 | 189 | 49 | na | 23 | 62 | 37 | 25 | 127 | 247 | 34 |
| Argentina | 2,059 | 33 | 2 | 45 | 3 | 23 | na | 297 | 105 | 24 | 48 | 125 | 14 |
| Brazil | 4,371 | 75 | 36 | 175 | 22 | 62 | 297 | na | 133 | 37 | 134 | 312 | 25 |
| Mexico | 2,528 | 62 | 16 | 127 | 29 | 37 | 105 | 133 | na | 16 | 63 | 194 | 12 |
| South Africa | 1,744 | 14 | 7 | 22 | 2 | 25 | 24 | 37 | 16 | na | 171 | 133 | 34 |
| Australia | 9,029 | 171 | 132 | 183 | 26 | 127 | 48 | 134 | 63 | 171 | na | 745 | 530 |
| Canada | 15,162 | 332 | 176 | 442 | 45 | 247 | 125 | 312 | 194 | 133 | 745 | na | 158 |
| New Zealand | 2,109 | 33 | 16 | 21 | 1 | 34 | 14 | 25 | 12 | 34 | 530 | 158 | na |

na = not applicable

NOTES: Each country in matrix accounts for 1% or more of internationally coauthored articles in 2005. Article counts from set of journals covered by Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles classified by year they entered database, rather than year of publication, and assigned to region/country/economy on basis of institutional address(es) listed on article. Articles on whole count basis, i.e., each collaborating country/economy credited one count. Detail adds to more than world total because of articles with three or more country coauthors.

SOURCES: Thomson Scientific, SCI and SSCI, http://scientific.thomson.com/products/categories/citation/; iplQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 5-36 (Page 1 of 3)

**U.S. S&E articles, by field and sector: 1995–2005**

| Field/sector | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All fields | 194,255 | 192,790 | 189,477 | 189,813 | 190,390 | 188,125 | 193,066 | 187,400 | 202,475 | 192,913 | 214,557 |
| FFRDCs | 5,383 | 5,105 | 5,184 | 5,069 | 5,181 | 5,009 | 5,204 | 4,840 | 5,692 | 5,328 | 5,969 |
| Federal government | 15,287 | 14,745 | 14,093 | 13,942 | 13,734 | 13,573 | 13,822 | 13,253 | 13,989 | 13,313 | 14,418 |
| State/local government | 1,883 | 1,810 | 1,794 | 1,835 | 1,798 | 1,755 | 1,873 | 1,803 | 1,814 | 1,756 | 1,968 |
| Academic institutions | 139,168 | 139,379 | 137,668 | 138,206 | 138,472 | 137,105 | 140,885 | 137,388 | 148,758 | 142,382 | 159,972 |
| Industry | 15,671 | 14,822 | 13,988 | 13,894 | 14,030 | 13,644 | 13,839 | 13,287 | 14,184 | 12,988 | 13,489 |
| Private nonprofit | 15,302 | 15,082 | 14,910 | 14,907 | 15,231 | 15,497 | 15,903 | 15,121 | 16,221 | 15,653 | 16,980 |
| Joint sectors | 228 | 248 | 251 | 200 | 331 | 337 | 353 | 390 | 396 | 461 | 509 |
| Unknown sector | 1,333 | 1,600 | 1,589 | 1,760 | 1,613 | 1,206 | 1,188 | 1,318 | 1,420 | 1,033 | 1,252 |
| | | | | | | | | | | | |
| Engineering | 12,636 | 11,702 | 11,760 | 11,815 | 12,312 | 11,637 | 12,560 | 12,475 | 13,467 | 12,671 | 14,455 |
| FFRDCs | 737 | 695 | 884 | 803 | 778 | 754 | 906 | 726 | 887 | 814 | 928 |
| Federal government | 1,025 | 845 | 908 | 860 | 893 | 814 | 886 | 843 | 885 | 828 | 955 |
| State/local government | 45 | 33 | 36 | 35 | 96 | 33 | 31 | 161 | 91 | 58 | 86 |
| Academic institutions | 7,869 | 7,451 | 7,296 | 7,452 | 7,821 | 7,426 | 8,212 | 8,265 | 8,927 | 8,789 | 10,124 |
| Industry | 2,664 | 2,405 | 2,342 | 2,355 | 2,404 | 2,307 | 2,280 | 2,222 | 2,378 | 1,909 | 2,080 |
| Private nonprofit | 215 | 159 | 168 | 177 | 181 | 190 | 154 | 142 | 160 | 173 | 158 |
| Joint sectors | 3 | 3 | 12 | 6 | 11 | 22 | 9 | 15 | 17 | 30 | 27 |
| Unknown sector | 77 | 112 | 115 | 128 | 129 | 92 | 82 | 100 | 122 | 69 | 98 |
| Astronomy | 2,483 | 2,651 | 2,557 | 1,932 | 2,829 | 2,566 | 2,697 | 2,996 | 2,719 | 2,874 | 2,853 |
| FFRDCs | 245 | 284 | 235 | 183 | 264 | 271 | 273 | 281 | 268 | 303 | 308 |
| Federal government | 256 | 271 | 296 | 208 | 308 | 264 | 253 | 230 | 191 | 220 | 209 |
| State/local government | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Academic institutions | 1,612 | 1,700 | 1,655 | 1,256 | 1,809 | 1,601 | 1,748 | 1,948 | 1,812 | 1,875 | 1,850 |
| Industry | 64 | 48 | 51 | 54 | 57 | 57 | 53 | 68 | 55 | 38 | 46 |
| Private nonprofit | 160 | 187 | 161 | 120 | 169 | 172 | 166 | 224 | 156 | 191 | 185 |
| Joint sectors | 129 | 145 | 146 | 102 | 198 | 173 | 182 | 215 | 207 | 214 | 223 |
| Unknown sector | 16 | 15 | 14 | 9 | 25 | 27 | 22 | 30 | 30 | 31 | 32 |
| Chemistry | 14,915 | 15,219 | 14,375 | 14,414 | 14,491 | 14,560 | 14,342 | 14,043 | 15,763 | 15,110 | 17,138 |
| FFRDCs | 612 | 661 | 625 | 619 | 664 | 697 | 687 | 626 | 736 | 760 | 974 |
| Federal government | 766 | 764 | 698 | 649 | 607 | 613 | 655 | 647 | 673 | 690 | 731 |
| State/local government | 26 | 27 | 29 | 27 | 27 | 35 | 25 | 21 | 26 | 23 | 22 |
| Academic institutions | 10,778 | 11,076 | 10,705 | 10,930 | 10,861 | 11,015 | 10,872 | 10,578 | 11,834 | 11,173 | 13,117 |
| Industry | 2,423 | 2,341 | 2,012 | 1,842 | 1,948 | 1,806 | 1,749 | 1,828 | 2,123 | 2,100 | 1,940 |
| Private nonprofit | 275 | 294 | 269 | 281 | 324 | 343 | 306 | 299 | 316 | 307 | 294 |
| Joint sectors | 1 | 3 | 2 | 4 | 4 | 5 | 6 | 7 | 4 | 12 | 12 |
| Unknown sector | 34 | 53 | 36 | 61 | 56 | 47 | 42 | 37 | 53 | 44 | 48 |
| Physics | 19,709 | 18,906 | 18,048 | 17,966 | 18,074 | 16,897 | 17,385 | 17,301 | 18,657 | 17,653 | 20,551 |
| FFRDCs | 2,330 | 2,033 | 2,014 | 2,078 | 2,150 | 1,982 | 2,048 | 2,036 | 2,383 | 2,120 | 2,358 |
| Federal government | 1,193 | 1,024 | 991 | 993 | 1,071 | 884 | 942 | 903 | 978 | 977 | 959 |
| State/local government | 5 | 6 | 7 | 5 | 4 | 2 | 6 | 2 | 1 | 7 | 4 |
| Academic institutions | 13,662 | 13,363 | 12,936 | 12,743 | 12,759 | 12,115 | 12,345 | 12,436 | 13,250 | 12,734 | 15,390 |
| Industry | 2,237 | 2,184 | 1,815 | 1,884 | 1,806 | 1,678 | 1,810 | 1,648 | 1,771 | 1,581 | 1,565 |
| Private nonprofit | 180 | 174 | 161 | 124 | 147 | 144 | 127 | 146 | 153 | 128 | 170 |
| Joint sectors | 36 | 55 | 41 | 38 | 51 | 49 | 59 | 62 | 59 | 53 | 56 |
| Unknown sector | 65 | 67 | 83 | 101 | 86 | 44 | 49 | 68 | 62 | 54 | 49 |
| Geosciences | 9,821 | 9,904 | 9,214 | 9,820 | 9,873 | 9,779 | 10,065 | 9,204 | 11,486 | 10,436 | 11,112 |
| FFRDCs | 504 | 505 | 482 | 507 | 515 | 495 | 498 | 412 | 631 | 498 | 497 |
| Federal government | 1,510 | 1,472 | 1,287 | 1,411 | 1,404 | 1,397 | 1,399 | 1,355 | 1,621 | 1,439 | 1,511 |
| State/local government | 208 | 192 | 175 | 210 | 207 | 220 | 256 | 218 | 256 | 223 | 224 |
| Academic institutions | 6,394 | 6,596 | 6,166 | 6,520 | 6,549 | 6,583 | 6,702 | 6,155 | 7,826 | 7,170 | 7,756 |
| Industry | 681 | 610 | 636 | 610 | 638 | 552 | 657 | 556 | 570 | 556 | 556 |
| Private nonprofit | 443 | 423 | 375 | 449 | 455 | 450 | 478 | 427 | 481 | 481 | 473 |
| Joint sectors | 17 | 12 | 15 | 13 | 18 | 21 | 20 | 20 | 24 | 20 | 31 |
| Unknown sector | 64 | 95 | 77 | 101 | 87 | 61 | 54 | 60 | 75 | 50 | 64 |
| Mathematics | 3,190 | 3,272 | 3,051 | 3,483 | 3,561 | 3,758 | 3,657 | 3,556 | 3,760 | 3,562 | 3,922 |
| FFRDCs | 32 | 41 | 41 | 41 | 38 | 66 | 35 | 36 | 39 | 53 | 61 |
| Federal government | 55 | 51 | 45 | 55 | 68 | 59 | 48 | 54 | 47 | 60 | 67 |
| State/local government | 1 | 4 | 3 | 2 | 4 | 2 | 1 | 1 | 1 | 1 | 1 |
| Academic institutions | 2,952 | 3,033 | 2,830 | 3,210 | 3,265 | 3,450 | 3,393 | 3,306 | 3,525 | 3,319 | 3,662 |
| Industry | 104 | 100 | 89 | 126 | 126 | 121 | 125 | 114 | 106 | 88 | 88 |

Appendix table 5-36 (Page 2 of 3)

**U.S. S&E articles, by field and sector: 1995–2005**

| Field/sector | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Private nonprofit | 37 | 35 | 37 | 43 | 46 | 50 | 44 | 36 | 28 | 33 | 33 |
| Joint sectors | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 |
| Unknown sector | 8 | 9 | 6 | 7 | 11 | 9 | 9 | 9 | 12 | 7 | 8 |
| Computer sciences | 1,914 | 1,923 | 1,929 | 1,952 | 2,008 | 2,075 | 2,083 | 1,999 | 2,254 | 2,173 | 2,390 |
| FFRDCs | 27 | 27 | 42 | 47 | 51 | 30 | 44 | 31 | 36 | 38 | 41 |
| Federal government | 41 | 44 | 50 | 49 | 62 | 41 | 44 | 41 | 35 | 35 | 44 |
| State/local government | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 1 |
| Academic institutions | 1,398 | 1,412 | 1,352 | 1,364 | 1,397 | 1,475 | 1,482 | 1,455 | 1,736 | 1,730 | 1,912 |
| Industry | 399 | 390 | 433 | 445 | 448 | 481 | 461 | 442 | 409 | 342 | 365 |
| Private nonprofit | 30 | 23 | 28 | 23 | 27 | 32 | 31 | 19 | 22 | 17 | 20 |
| Joint sectors | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 1 | 2 | 1 | 2 |
| Unknown sector | 17 | 25 | 24 | 24 | 23 | 14 | 18 | 11 | 12 | 9 | 6 |
| Agricultural sciences | 3,648 | 3,346 | 3,605 | 3,464 | 2,804 | 3,640 | 3,203 | 3,924 | 3,903 | 3,526 | 3,561 |
| FFRDCs | 19 | 17 | 16 | 12 | 8 | 12 | 8 | 9 | 20 | 11 | 17 |
| Federal government | 635 | 531 | 610 | 586 | 464 | 656 | 548 | 628 | 669 | 627 | 649 |
| State/local government | 30 | 28 | 34 | 24 | 19 | 18 | 50 | 27 | 19 | 22 | 17 |
| Academic institutions | 2,598 | 2,454 | 2,612 | 2,531 | 2,043 | 2,639 | 2,258 | 2,926 | 2,888 | 2,584 | 2,593 |
| Industry | 289 | 228 | 240 | 234 | 199 | 251 | 261 | 260 | 231 | 220 | 219 |
| Private nonprofit | 55 | 49 | 52 | 38 | 40 | 44 | 48 | 43 | 52 | 47 | 48 |
| Joint sectors | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 1 | 0 | 4 | 3 |
| Unknown sector | 23 | 39 | 40 | 38 | 32 | 20 | 28 | 28 | 23 | 13 | 16 |
| Biological sciences | 54,076 | 53,301 | 51,718 | 52,076 | 51,443 | 50,997 | 52,696 | 50,108 | 52,981 | 51,502 | 55,502 |
| FFRDCs | 649 | 629 | 634 | 568 | 550 | 543 | 549 | 539 | 537 | 582 | 620 |
| Federal government | 5,088 | 4,872 | 4,638 | 4,579 | 4,505 | 4,475 | 4,521 | 4,263 | 4,411 | 4,258 | 4,555 |
| State/local government | 542 | 536 | 505 | 513 | 483 | 514 | 531 | 501 | 506 | 529 | 557 |
| Academic institutions | 38,685 | 38,554 | 37,508 | 38,017 | 37,607 | 37,187 | 38,673 | 36,902 | 39,164 | 38,263 | 41,441 |
| Industry | 4,228 | 3,893 | 3,656 | 3,626 | 3,600 | 3,583 | 3,518 | 3,279 | 3,498 | 3,145 | 3,306 |
| Private nonprofit | 4,656 | 4,586 | 4,529 | 4,481 | 4,435 | 4,484 | 4,667 | 4,391 | 4,579 | 4,489 | 4,717 |
| Joint sectors | 16 | 12 | 11 | 13 | 15 | 20 | 36 | 29 | 41 | 74 | 74 |
| Unknown sector | 211 | 221 | 238 | 278 | 249 | 190 | 202 | 204 | 246 | 164 | 232 |
| Medical sciences | 51,943 | 51,404 | 52,146 | 52,402 | 52,550 | 51,886 | 53,437 | 51,384 | 56,128 | 53,541 | 60,130 |
| FFRDCs | 188 | 185 | 182 | 183 | 147 | 137 | 127 | 125 | 137 | 126 | 144 |
| Federal government | 3,892 | 4,037 | 3,797 | 3,860 | 3,640 | 3,630 | 3,784 | 3,548 | 3,769 | 3,529 | 3,859 |
| State/local government | 814 | 745 | 768 | 786 | 775 | 751 | 806 | 706 | 755 | 733 | 904 |
| Academic institutions | 36,547 | 36,010 | 36,922 | 36,833 | 36,968 | 36,272 | 37,221 | 35,964 | 39,331 | 37,522 | 42,330 |
| Industry | 2,078 | 2,077 | 2,130 | 2,220 | 2,282 | 2,314 | 2,428 | 2,433 | 2,607 | 2,601 | 2,820 |
| Private nonprofit | 7,906 | 7,741 | 7,754 | 7,877 | 8,098 | 8,285 | 8,601 | 8,067 | 8,949 | 8,555 | 9,525 |
| Joint sectors | 23 | 16 | 19 | 17 | 26 | 37 | 31 | 33 | 35 | 48 | 66 |
| Unknown sector | 495 | 593 | 573 | 627 | 615 | 460 | 440 | 508 | 545 | 427 | 481 |
| Other life sciences | 2,338 | 2,811 | 3,009 | 3,009 | 2,876 | 2,942 | 3,146 | 2,958 | 2,964 | 2,699 | 3,670 |
| FFRDCs | 2 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 0 | 1 |
| Federal government | 121 | 129 | 140 | 123 | 116 | 136 | 170 | 143 | 135 | 115 | 239 |
| State/local government | 44 | 75 | 47 | 73 | 51 | 54 | 59 | 56 | 49 | 42 | 50 |
| Academic institutions | 1,606 | 2,038 | 2,181 | 2,181 | 2,081 | 2,151 | 2,337 | 2,121 | 2,208 | 2,019 | 2,686 |
| Industry | 112 | 105 | 151 | 150 | 156 | 141 | 148 | 154 | 145 | 136 | 188 |
| Private nonprofit | 369 | 369 | 369 | 361 | 380 | 378 | 359 | 400 | 355 | 344 | 435 |
| Joint sectors | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 3 | 2 | 2 | 5 |
| Unknown sector | 84 | 95 | 120 | 120 | 91 | 81 | 70 | 78 | 68 | 41 | 66 |
| Psychology | 7,830 | 8,258 | 8,130 | 7,736 | 7,806 | 7,499 | 7,809 | 7,691 | 7,892 | 7,410 | 8,482 |
| FFRDCs | 5 | 0 | 2 | 4 | 2 | 1 | 0 | 2 | 1 | 0 | 1 |
| Federal government | 223 | 280 | 246 | 225 | 241 | 237 | 220 | 217 | 218 | 208 | 235 |
| State/local government | 109 | 114 | 115 | 105 | 83 | 70 | 67 | 66 | 59 | 71 | 63 |
| Academic institutions | 6,858 | 7,116 | 7,049 | 6,754 | 6,850 | 6,575 | 6,869 | 6,794 | 7,056 | 6,613 | 7,582 |
| Industry | 170 | 190 | 166 | 145 | 168 | 163 | 177 | 143 | 132 | 130 | 168 |
| Private nonprofit | 317 | 390 | 386 | 349 | 345 | 353 | 375 | 358 | 336 | 326 | 349 |
| Joint sectors | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 3 | 4 | 2 | 4 |
| Unknown sector | 146 | 167 | 163 | 154 | 116 | 99 | 101 | 108 | 85 | 59 | 79 |
| Social sciences | 9,751 | 10,094 | 9,935 | 9,745 | 9,763 | 9,888 | 9,985 | 9,763 | 10,501 | 9,754 | 10,790 |
| FFRDCs | 32 | 29 | 26 | 25 | 15 | 20 | 28 | 14 | 16 | 23 | 19 |
| Federal government | 481 | 425 | 386 | 344 | 354 | 368 | 353 | 381 | 358 | 326 | 406 |
| State/local government | 58 | 51 | 74 | 55 | 47 | 56 | 42 | 44 | 48 | 45 | 41 |

Appendix table 5-36 (Page 3 of 3)

**U.S. S&E articles, by field and sector: 1995–2005**

| Field/sector | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Academic institutions | 8,208 | 8,577 | 8,456 | 8,416 | 8,462 | 8,616 | 8,774 | 8,539 | 9,200 | 8,591 | 9,529 |
| Industry | 221 | 252 | 269 | 204 | 201 | 190 | 170 | 139 | 158 | 142 | 149 |
| Private nonprofit | 658 | 652 | 623 | 585 | 586 | 574 | 546 | 568 | 633 | 562 | 572 |
| Joint sectors | 1 | 1 | 1 | 4 | 4 | 3 | 2 | 1 | 1 | 1 | 2 |
| Unknown sector | 93 | 109 | 101 | 113 | 93 | 62 | 70 | 78 | 87 | 65 | 73 |

FFRDC = federally funded research and development center

NOTES: Article counts from set of journals covered by Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles classified by year they entered database, rather than year of publication, and assigned to sector on basis of institutional address(es) listed on article. Articles on fractional-count basis, i.e., for articles with collaborating institutions from multiple sectors, each sector receives fractional credit on basis of proportion of its participating institutions. Detail may not add to total because of rounding.

SOURCES: Thomson Scientific, SCI and SSCI, http://scientific.thomson.com/products/categories/citation/; iplQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

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**U.S. S&E articles with foreign coauthors, by field and U.S. sector: 1995 and 2005**

| Field/sector | 1995 | | | 2005 | | | 1995–2005 change (percentage points) |
|---|---|---|---|---|---|---|---|
| | All articles | Articles with foreign coauthors | | All articles | Articles with foreign coauthors | | |
| | | Number | Percent | | Number | Percent | |
| All fields | 212,456 | 36,361 | 17.1 | 249,152 | 66,274 | 26.6 | 9.5 |
| FFRDCs | 9,140 | 2,577 | 28.2 | 11,778 | 4,509 | 38.3 | 10.1 |
| Federal government | 25,558 | 4,133 | 16.2 | 28,304 | 7,145 | 25.2 | 9.1 |
| State/local government | 3,653 | 361 | 9.9 | 4,484 | 688 | 15.3 | 5.5 |
| Academic institutions | 170,462 | 28,312 | 16.6 | 208,441 | 53,367 | 25.6 | 9.0 |
| Industry | 24,142 | 3,883 | 16.1 | 25,148 | 6,618 | 26.3 | 10.2 |
| Private nonprofit | 25,603 | 3,689 | 14.4 | 32,788 | 7,992 | 24.4 | 10.0 |
| Agricultural sciences | 3,867 | 451 | 11.7 | 4,046 | 950 | 23.5 | 11.8 |
| FFRDCs | 31 | 4 | 12.9 | 37 | 8 | 21.6 | 8.7 |
| Federal government | 888 | 60 | 6.8 | 1,048 | 167 | 15.9 | 9.2 |
| State/local government | 47 | 1 | 2.1 | 40 | 5 | 12.5 | 10.4 |
| Academic institutions | 3,080 | 378 | 12.3 | 3,383 | 786 | 23.2 | 11.0 |
| Industry | 432 | 46 | 10.6 | 410 | 81 | 19.8 | 9.1 |
| Private nonprofit | 84 | 10 | 11.9 | 96 | 18 | 18.8 | 6.8 |
| Astronomy | 3,156 | 1,331 | 42.2 | 4,172 | 2,435 | 58.4 | 16.2 |
| FFRDCs | 549 | 246 | 44.8 | 853 | 528 | 61.9 | 17.1 |
| Federal government | 547 | 227 | 41.5 | 607 | 363 | 59.8 | 18.3 |
| State/local government | 0 | 0 | 0.0 | 0 | 0 | 0.0 | 0.0 |
| Academic institutions | 2,403 | 947 | 39.4 | 3,253 | 1,866 | 57.4 | 18.0 |
| Industry | 163 | 79 | 48.5 | 129 | 62 | 48.1 | –0.4 |
| Private nonprofit | 394 | 191 | 48.5 | 635 | 429 | 67.6 | 19.1 |
| Biological sciences | 59,390 | 10,792 | 18.2 | 64,825 | 18,112 | 27.9 | 9.8 |
| FFRDCs | 1,198 | 310 | 25.9 | 1,343 | 434 | 32.3 | 6.4 |
| Federal government | 8,464 | 1,576 | 18.6 | 8,797 | 2,441 | 27.7 | 9.1 |
| State/local government | 1,063 | 154 | 14.5 | 1,247 | 224 | 18.0 | 3.5 |
| Academic institutions | 47,511 | 8,159 | 17.2 | 54,012 | 14,372 | 26.6 | 9.4 |
| Industry | 6,654 | 1,202 | 18.1 | 6,043 | 1,729 | 28.6 | 10.5 |
| Private nonprofit | 8,309 | 1,588 | 19.1 | 9,612 | 2,927 | 30.5 | 11.3 |
| Chemistry | 16,223 | 2,593 | 16.0 | 19,521 | 4,525 | 23.2 | 7.2 |
| FFRDCs | 943 | 164 | 17.4 | 1,633 | 378 | 23.1 | 5.8 |
| Federal government | 1,071 | 159 | 14.8 | 1,201 | 257 | 21.4 | 6.6 |
| State/local government | 44 | 3 | 6.8 | 44 | 12 | 27.3 | 20.5 |
| Academic institutions | 12,582 | 2,012 | 16.0 | 15,961 | 3,613 | 22.6 | 6.6 |
| Industry | 3,147 | 454 | 14.4 | 2,743 | 572 | 20.9 | 6.4 |
| Private nonprofit | 407 | 62 | 15.2 | 454 | 101 | 22.2 | 7.0 |
| Computer sciences | 2,125 | 432 | 20.3 | 2,783 | 788 | 28.3 | 8.0 |
| FFRDCs | 47 | 5 | 10.6 | 64 | 9 | 14.1 | 3.4 |
| Federal government | 61 | 2 | 3.3 | 85 | 18 | 21.2 | 17.9 |
| State/local government | 1 | 0 | 0.0 | 3 | 0 | 0.0 | 0.0 |
| Academic institutions | 1,726 | 367 | 21.3 | 2,418 | 663 | 27.4 | 6.2 |
| Industry | 581 | 93 | 16.0 | 617 | 177 | 28.7 | 12.7 |
| Private nonprofit | 42 | 6 | 14.3 | 43 | 11 | 25.6 | 11.3 |
| Engineering | 13,694 | 2,105 | 15.4 | 16,707 | 4,324 | 25.9 | 10.5 |
| FFRDCs | 1,099 | 228 | 20.7 | 1,533 | 400 | 26.1 | 5.3 |
| Federal government | 1,564 | 182 | 11.6 | 1,645 | 307 | 18.7 | 7.0 |
| State/local government | 76 | 7 | 9.2 | 158 | 13 | 8.2 | –1.0 |
| Academic institutions | 9,637 | 1,521 | 15.8 | 13,244 | 3,313 | 25.0 | 9.2 |
| Industry | 3,629 | 390 | 10.7 | 3,458 | 746 | 21.6 | 10.8 |
| Private nonprofit | 358 | 47 | 13.1 | 320 | 85 | 26.6 | 13.4 |
| Geosciences | 10,912 | 2,189 | 20.1 | 13,454 | 4,489 | 33.4 | 13.3 |
| FFRDCs | 843 | 218 | 25.9 | 1,066 | 383 | 35.9 | 10.1 |
| Federal government | 2,416 | 425 | 17.6 | 2,922 | 844 | 28.9 | 11.3 |
| State/local government | 341 | 25 | 7.3 | 468 | 77 | 16.5 | 9.1 |
| Academic institutions | 8,196 | 1,655 | 20.2 | 11,022 | 3,590 | 32.6 | 12.4 |
| Industry | 1,160 | 184 | 15.9 | 1,193 | 323 | 27.1 | 11.2 |
| Private nonprofit | 754 | 153 | 20.3 | 1,019 | 376 | 36.9 | 16.6 |

Appendix table 5-37 (Page 2 of 2)

**U.S. S&E articles with foreign coauthors, by field and U.S. sector: 1995 and 2005**

| Field/sector | 1995 | | | 2005 | | | 1995–2005 change (percentage points) |
|---|---|---|---|---|---|---|---|
| | All articles | Articles with foreign coauthors | | All articles | Articles with foreign coauthors | | |
| | | Number | Percent | | Number | Percent | |
| Mathematics | 3,646 | 904 | 24.8 | 4,840 | 1,787 | 36.9 | 12.1 |
| FFRDCs | 53 | 7 | 13.2 | 105 | 37 | 35.2 | 22.0 |
| Federal government | 82 | 9 | 11.0 | 118 | 30 | 25.4 | 14.4 |
| State/local government | 3 | 0 | 0.0 | 2 | 1 | 50.0 | 50.0 |
| Academic institutions | 3,484 | 879 | 25.2 | 4,643 | 1,702 | 36.7 | 11.4 |
| Industry | 164 | 21 | 12.8 | 175 | 72 | 41.1 | 28.3 |
| Private nonprofit | 65 | 8 | 12.3 | 65 | 14 | 21.5 | 9.2 |
| Medical sciences | 55,602 | 7,351 | 13.2 | 68,305 | 15,693 | 23.0 | 9.8 |
| FFRDCs | 347 | 70 | 20.2 | 326 | 85 | 26.1 | 5.9 |
| Federal government | 7,337 | 1,078 | 14.7 | 8,521 | 1,997 | 23.4 | 8.7 |
| State/local government | 1,703 | 149 | 8.7 | 2,170 | 330 | 15.2 | 6.5 |
| Academic institutions | 45,541 | 5,715 | 12.5 | 56,490 | 12,361 | 21.9 | 9.3 |
| Industry | 4,028 | 706 | 17.5 | 6,687 | 1,964 | 29.4 | 11.8 |
| Private nonprofit | 12,807 | 1,370 | 10.7 | 17,705 | 3,530 | 19.9 | 9.2 |
| Other life sciences | 2,394 | 121 | 5.1 | 3,851 | 359 | 9.3 | 4.3 |
| FFRDCs | 2 | 0 | 0.0 | 1 | 0 | 0.0 | 0.0 |
| Federal government | 192 | 9 | 4.7 | 445 | 30 | 6.7 | 2.1 |
| State/local government | 79 | 3 | 3.8 | 117 | 5 | 4.3 | 0.5 |
| Academic institutions | 1,887 | 111 | 5.9 | 3,265 | 322 | 9.9 | 4.0 |
| Industry | 163 | 6 | 3.7 | 361 | 44 | 12.2 | 8.5 |
| Private nonprofit | 554 | 22 | 4.0 | 776 | 58 | 7.5 | 3.5 |
| Physics | 23,062 | 6,467 | 28.0 | 25,945 | 9,969 | 38.4 | 10.4 |
| FFRDCs | 3,975 | 1,316 | 33.1 | 4,784 | 2,244 | 46.9 | 13.8 |
| Federal government | 1,908 | 343 | 18.0 | 1,806 | 561 | 31.1 | 13.1 |
| State/local government | 14 | 3 | 21.4 | 9 | 1 | 11.1 | –10.3 |
| Academic institutions | 17,884 | 5,114 | 28.6 | 21,476 | 8,201 | 38.2 | 9.6 |
| Industry | 3,456 | 674 | 19.5 | 2,736 | 761 | 27.8 | 8.3 |
| Private nonprofit | 329 | 79 | 24.0 | 371 | 142 | 38.3 | 14.3 |
| Psychology | 8,137 | 627 | 7.7 | 9,111 | 1,241 | 13.6 | 5.9 |
| FFRDCs | 7 | 1 | 14.3 | 3 | 0 | 0.0 | –14.3 |
| Federal government | 399 | 30 | 7.5 | 486 | 58 | 11.9 | 4.4 |
| State/local government | 189 | 11 | 5.8 | 151 | 13 | 8.6 | 2.8 |
| Academic institutions | 7,531 | 585 | 7.8 | 8,618 | 1,147 | 13.3 | 5.5 |
| Industry | 256 | 10 | 3.9 | 340 | 51 | 15.0 | 11.1 |
| Private nonprofit | 549 | 31 | 5.6 | 692 | 74 | 10.7 | 5.1 |
| Social sciences | 10,248 | 998 | 9.7 | 11,592 | 1,602 | 13.8 | 4.1 |
| FFRDCs | 46 | 8 | 17.4 | 30 | 3 | 10.0 | –7.4 |
| Federal government | 629 | 33 | 5.2 | 623 | 72 | 11.6 | 6.3 |
| State/local government | 93 | 5 | 5.4 | 75 | 7 | 9.3 | 4.0 |
| Academic institutions | 9,000 | 869 | 9.7 | 10,656 | 1,431 | 13.4 | 3.8 |
| Industry | 309 | 18 | 5.8 | 256 | 36 | 14.1 | 8.2 |
| Private nonprofit | 951 | 122 | 12.8 | 1,000 | 227 | 22.7 | 9.9 |

FFRDC = federally funded research and development center

NOTES: Article counts from set of journals covered by Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles classified by year they entered the database, rather than year of publication, and assigned to sector on basis of institutional address(es) listed on article. Articles on whole-count basis, i.e., each collaborating country or sector credited one count. Detail may add to more than total because articles may have authors from more than one U.S. sector. Articles from joint or unknown sectors omitted from detail but included in total.

SOURCES: Thomson Scientific, SCI and SSCI, http://scientific.thomson.com/products/categories/citation/; ipIQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 5-38 (Page 1 of 6)

**S&E articles, by field, citation percentile, and region/country of institutional author: 1995, 2000, and 2005**

| Field/percentile | Citations (*n*) | Articles (*n*) | U.S. | EU | Other Western Europe | Asia-10 | Other Asia | Other former USSR | Near East/ North Africa | Central/ South America | Sub-Saharan Africa | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1991–93 articles cited by 1995 articles (%) | | | | | | | | | |
| All fields | na | 1,566,024 | 36.0 | 32.8 | 2.2 | 12.5 | 0.1 | 5.6 | 1.6 | 1.5 | 0.8 | 7.0 |
| 99th | ≥21 | 14,514 | 62.3 | 24.7 | 2.6 | 4.9 | * | 0.3 | 0.6 | 0.2 | 0.1 | 4.4 |
| 95th | 9–20 | 57,132 | 55.8 | 28.4 | 2.4 | 6.1 | * | 0.4 | 0.7 | 0.4 | 0.2 | 5.7 |
| 90th | 6–8 | 67,786 | 49.7 | 31.8 | 2.3 | 7.4 | * | 0.6 | 0.9 | 0.5 | 0.3 | 6.6 |
| 75th | 3–5 | 213,207 | 43.4 | 33.8 | 2.2 | 9.8 | * | 1.2 | 1.0 | 0.8 | 0.4 | 7.3 |
| 50th | 2 | 173,411 | 38.8 | 34.4 | 2.2 | 11.7 | 0.1 | 1.9 | 1.3 | 1.2 | 0.6 | 7.6 |
| <50th | 0–1 | 1,039,974 | 31.6 | 32.7 | 2.2 | 14.0 | 0.2 | 7.8 | 1.9 | 1.8 | 1.0 | 6.9 |
| Engineering | na | 112,876 | 33.1 | 29.0 | 1.9 | 21.3 | 0.1 | 4.5 | 2.0 | 1.0 | 0.5 | 6.8 |
| 99th | ≥8 | 854 | 56.5 | 25.4 | 2.2 | 10.6 | 0.0 | 0.7 | 0.5 | 0.2 | 0.3 | 3.6 |
| 95th | 4–7 | 4,129 | 45.3 | 31.0 | 1.5 | 13.9 | * | 0.8 | 0.5 | 0.5 | 0.1 | 6.4 |
| 90th | 3 | 4,062 | 41.0 | 30.3 | 1.6 | 17.7 | * | 1.0 | 0.9 | 0.6 | 0.3 | 6.6 |
| 75th | 2 | 8,774 | 37.9 | 29.0 | 2.2 | 19.3 | * | 1.4 | 1.3 | 0.9 | 0.4 | 7.7 |
| 50th | 1 | 22,013 | 34.8 | 30.0 | 1.9 | 20.6 | 0.1 | 2.2 | 1.9 | 1.0 | 0.4 | 7.1 |
| <50th | 0 | 73,044 | 30.6 | 28.5 | 1.8 | 22.4 | 0.1 | 6.0 | 2.2 | 1.1 | 0.5 | 6.6 |
| Astronomy | na | 16,991 | 35.5 | 35.1 | 1.5 | 8.4 | * | 7.3 | 1.1 | 4.3 | 0.7 | 6.2 |
| 99th | ≥20 | 165 | 56.4 | 25.4 | 4.1 | 2.3 | 0.0 | 0.0 | 0.9 | 2.5 | 0.2 | 8.1 |
| 95th | 11–19 | 657 | 60.9 | 26.4 | 1.7 | 2.1 | 0.0 | 0.7 | 0.7 | 1.5 | 0.2 | 5.8 |
| 90th | 7–10 | 794 | 54.5 | 30.5 | 1.2 | 3.3 | 0.0 | 1.1 | 0.4 | 1.9 | 0.5 | 6.8 |
| 75th | 4–6 | 2,127 | 49.4 | 33.8 | 1.3 | 4.1 | 0.0 | 1.7 | 0.7 | 2.3 | 0.9 | 5.9 |
| 50th | 2–3 | 3,475 | 41.2 | 37.5 | 1.1 | 6.4 | 0.0 | 2.9 | 0.6 | 3.1 | 1.0 | 6.1 |
| <50th | 0–1 | 9,773 | 26.8 | 35.6 | 1.6 | 10.9 | * | 11.1 | 1.5 | 5.5 | 0.7 | 6.2 |
| Chemistry | na | 194,636 | 22.8 | 36.2 | 2.3 | 18.6 | 0.2 | 11.7 | 1.8 | 1.3 | 0.5 | 4.5 |
| 99th | ≥13 | 1,842 | 55.6 | 27.0 | 2.6 | 8.2 | 0.0 | 0.4 | 0.5 | 0.2 | 0.1 | 5.2 |
| 95th | 7–12 | 6,432 | 45.3 | 32.7 | 2.2 | 11.8 | 0.0 | 0.7 | 0.8 | 0.5 | 0.2 | 5.8 |
| 90th | 5–6 | 8,007 | 38.5 | 35.7 | 2.4 | 14.5 | * | 1.2 | 0.7 | 0.5 | 0.3 | 6.1 |
| 75th | 3–4 | 20,729 | 31.6 | 38.9 | 2.3 | 17.0 | * | 2.2 | 1.0 | 0.9 | 0.3 | 5.9 |
| 50th | 2 | 22,469 | 26.3 | 40.4 | 2.3 | 18.8 | 0.1 | 3.5 | 1.2 | 1.2 | 0.5 | 5.6 |
| <50th | 0–1 | 135,157 | 18.5 | 35.4 | 2.2 | 19.6 | 0.3 | 15.9 | 2.1 | 1.5 | 0.6 | 4.0 |
| Physics | na | 219,159 | 27.5 | 32.5 | 2.2 | 17.6 | 0.1 | 12.6 | 1.4 | 1.8 | 0.3 | 4.0 |
| 99th | ≥15 | 2,186 | 52.8 | 30.0 | 3.9 | 7.7 | 0.0 | 1.7 | 1.0 | 0.7 | 0.0 | 2.3 |
| 95th | 8–14 | 6,452 | 46.8 | 33.1 | 3.0 | 9.6 | * | 2.1 | 1.1 | 0.5 | 0.1 | 3.7 |
| 90th | 5–13 | 11,695 | 41.2 | 35.4 | 2.7 | 12.1 | * | 2.8 | 1.2 | 0.8 | 0.1 | 3.8 |
| 75th | 3–4 | 21,907 | 35.7 | 36.3 | 2.5 | 14.2 | 0.1 | 4.3 | 1.4 | 1.1 | 0.2 | 4.3 |
| 50th | 2 | 23,394 | 31.8 | 35.9 | 2.3 | 16.3 | 0.1 | 5.8 | 1.3 | 1.6 | 0.2 | 4.6 |
| <50th | 0–1 | 153,525 | 23.5 | 31.3 | 2.0 | 19.2 | 0.2 | 16.1 | 1.5 | 2.0 | 0.3 | 3.9 |
| Geosciences | na | 70,976 | 37.2 | 28.7 | 3.0 | 8.8 | 0.1 | 5.4 | 1.6 | 1.6 | 1.4 | 12.2 |
| 99th | ≥13 | 578 | 67.2 | 16.7 | 2.6 | 1.4 | 0.0 | 0.3 | 0.0 | 0.3 | 0.1 | 11.4 |
| 95th | 7–12 | 2,391 | 59.4 | 23.3 | 2.1 | 2.1 | * | 0.6 | 0.3 | 0.3 | 0.6 | 11.3 |
| 90th | 5–6 | 3,155 | 53.6 | 26.5 | 2.7 | 3.0 | * | 0.5 | 0.4 | 0.6 | 0.5 | 12.1 |
| 75th | 3–4 | 8,081 | 46.7 | 29.4 | 3.0 | 4.5 | * | 1.1 | 0.9 | 0.9 | 0.9 | 12.6 |
| 50th | 2 | 8,653 | 41.8 | 29.8 | 3.3 | 6.3 | * | 1.6 | 1.1 | 1.2 | 1.2 | 13.7 |
| <50th | 0–1 | 48,118 | 32.2 | 28.9 | 3.1 | 10.7 | 0.2 | 7.4 | 2.0 | 1.9 | 1.7 | 12.0 |
| Mathematics | na | 26,826 | 38.7 | 34.6 | 1.6 | 9.6 | 0.2 | 4.0 | 2.2 | 1.7 | 0.4 | 7.0 |
| 99th | ≥6 | 210 | 56.1 | 28.5 | 1.3 | 3.9 | 0.2 | 2.9 | 0.9 | 1.6 | 0.5 | 4.1 |
| 95th | 3–5 | 1,023 | 50.8 | 31.5 | 2.4 | 5.5 | * | 0.8 | 1.4 | 1.2 | 0.2 | 6.2 |
| 90th | na | 0.0 | na | na | na | na | na | na | na | na | na | na |
| 75th | 2 | 1,607 | 46.2 | 35.5 | 1.8 | 6.6 | 0.3 | 1.1 | 1.4 | 1.6 | 0.3 | 5.1 |
| 50th | 1 | 4,929 | 42.9 | 34.5 | 1.6 | 8.0 | 0.2 | 1.9 | 1.9 | 1.6 | 0.2 | 7.1 |
| <50th | 0 | 19,057 | 36.1 | 34.8 | 1.6 | 10.5 | 0.2 | 4.9 | 2.4 | 1.8 | 0.5 | 7.2 |
| Computer sciences | na | 9,879 | 53.9 | 22.4 | 1.7 | 11.7 | 0.1 | 0.6 | 2.5 | 0.4 | 0.4 | 6.2 |
| 99th | ≥7 | 68 | 72.6 | 12.3 | 0.5 | 4.4 | 0.0 | 0.0 | 1.6 | 0.7 | 0.0 | 7.9 |
| 95th | 4–6 | 244 | 66.1 | 20.4 | 0.4 | 4.0 | 0.0 | 0.8 | 2.7 | 0.0 | 0.0 | 5.5 |
| 90th | 3 | 276 | 59.2 | 22.0 | 0.9 | 7.3 | 0.0 | 0.8 | 3.0 | 0.5 | 0.4 | 5.9 |
| 75th | 2 | 670 | 59.1 | 21.6 | 1.1 | 8.8 | 0.0 | 0.4 | 1.8 | 0.6 | 0.4 | 6.2 |
| 50th | 1 | 1,784 | 55.1 | 21.1 | 1.7 | 10.7 | 0.1 | 0.5 | 2.8 | 0.7 | 0.5 | 6.9 |
| <50th | 0 | 6,837 | 52.3 | 23.0 | 1.8 | 12.8 | 0.2 | 0.7 | 2.5 | 0.4 | 0.5 | 6.0 |

Appendix table 5-38 (Page 2 of 6)

**S&E articles, by field, citation percentile, and region/country of institutional author: 1995, 2000, and 2005**

| Field/percentile | Citations (*n*) | Articles (*n*) | U.S. | EU | Other Western Europe | Asia-10 | Other Asia | Other former USSR | Near East/ North Africa | Central/ South America | Sub-Saharan Africa | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agricultural sciences | na | 33,904 | 36.0 | 26.2 | 1.2 | 12.3 | 0.3 | 1.2 | 2.1 | 1.8 | 2.2 | 16.6 |
| 99th | ≥8 | 265 | 46.2 | 27.1 | 0.9 | 4.1 | 0.1 | 0.0 | 1.0 | 0.9 | 1.1 | 18.4 |
| 95th | 5–7 | 819 | 43.0 | 30.0 | 0.7 | 8.5 | 0.0 | 0.1 | 0.8 | 0.7 | 0.9 | 15.2 |
| 90th | 4 | 928 | 41.9 | 28.4 | 0.8 | 8.7 | 0.1 | 0.1 | 1.9 | 1.4 | 0.5 | 16.2 |
| 75th | 2–3 | 5,262 | 40.0 | 27.4 | 1.2 | 10.6 | 0.2 | 0.1 | 1.5 | 1.4 | 1.3 | 16.3 |
| 50th | 1 | 7,819 | 37.2 | 25.8 | 1.3 | 12.5 | 0.2 | 0.2 | 1.8 | 1.9 | 1.6 | 17.5 |
| <50th | 0 | 18,811 | 33.6 | 25.7 | 1.3 | 13.2 | 0.4 | 2.1 | 2.5 | 2.0 | 2.9 | 16.4 |
| Biological sciences | na | 399,358 | 38.6 | 32.8 | 2.2 | 10.7 | 0.1 | 4.2 | 1.3 | 1.7 | 0.9 | 7.5 |
| 99th | ≥33 | 3,985 | 66.2 | 22.8 | 2.3 | 4.6 | 0.0 | 0.1 | 0.7 | 0.1 | 0.1 | 3.2 |
| 95th | 14–31 | 14,159 | 60.5 | 25.7 | 2.7 | 5.0 | * | 0.3 | 0.7 | 0.2 | 0.1 | 4.8 |
| 90th | 9–13 | 17,991 | 55.1 | 28.6 | 2.6 | 6.1 | * | 0.3 | 0.7 | 0.4 | 0.1 | 6.0 |
| 75th | 5–8 | 42,831 | 49.4 | 32.0 | 2.4 | 7.2 | * | 0.5 | 0.9 | 0.6 | 0.3 | 6.9 |
| 50th | 2–4 | 103,715 | 41.5 | 34.2 | 2.2 | 9.8 | 0.1 | 1.1 | 1.2 | 1.2 | 0.6 | 8.1 |
| <50th | 0–1 | 216,677 | 31.8 | 33.4 | 2.0 | 12.6 | 0.2 | 7.1 | 1.6 | 2.3 | 1.3 | 7.7 |
| Medical sciences | na | 379,563 | 39.1 | 36.1 | 2.6 | 9.4 | 0.1 | 1.9 | 1.7 | 1.3 | 1.1 | 6.8 |
| 99th | ≥21 | 3,487 | 60.7 | 26.3 | 2.2 | 4.5 | * | * | 0.6 | 0.2 | 0.1 | 5.4 |
| 95th | 10–20 | 12,588 | 57.4 | 28.8 | 1.8 | 5.3 | * | 0.1 | 0.6 | 0.3 | 0.2 | 5.6 |
| 90th | 7–9 | 14,000 | 52.8 | 30.9 | 2.2 | 5.6 | * | 0.1 | 0.8 | 0.4 | 0.2 | 7.0 |
| 75th | 4–6 | 38,231 | 48.4 | 33.6 | 2.0 | 6.9 | * | 0.1 | 0.9 | 0.6 | 0.4 | 7.2 |
| 50th | 2–3 | 72,678 | 43.2 | 35.4 | 2.3 | 8.9 | * | 0.2 | 1.3 | 0.8 | 0.6 | 7.2 |
| <50th | 0–1 | 238,579 | 34.3 | 37.5 | 2.9 | 10.5 | 0.1 | 3.0 | 2.1 | 1.6 | 1.4 | 6.7 |
| Other life sciences | na | 8,844 | 69.4 | 18.3 | 0.5 | 1.2 | * | 0.1 | 0.7 | 0.6 | 0.4 | 8.8 |
| 99th | ≥8 | 58 | 88.5 | 6.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 2.9 |
| 95th | 5–7 | 220 | 70.2 | 18.1 | 0.2 | 0.2 | 0.0 | 0.2 | 0.5 | 0.0 | 0.1 | 10.5 |
| 90th | 3–4 | 540 | 74.2 | 17.3 | 0.0 | 0.7 | 0.0 | 0.1 | 0.2 | 0.0 | 0.3 | 7.1 |
| 75th | 2 | 789 | 69.6 | 17.5 | 0.8 | 0.9 | 0.0 | 0.0 | 0.5 | * | 0.1 | 10.6 |
| 50th | 1 | 1,787 | 65.9 | 21.5 | 0.5 | 0.8 | * | 0.2 | 0.6 | 0.3 | 0.1 | 10.0 |
| <50th | 0 | 5,450 | 69.8 | 17.6 | 0.6 | 1.4 | * | 0.1 | 0.8 | 0.9 | 0.5 | 8.2 |
| Psychology | na | 36,525 | 59.7 | 21.7 | 1.3 | 2.5 | * | 1.2 | 1.4 | 0.7 | 0.5 | 10.9 |
| 99th | ≥12 | 307 | 76.7 | 10.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.4 | 0.3 | 0.1 | 11.1 |
| 95th | 6–11 | 1,390 | 69.4 | 17.1 | 0.8 | 0.4 | 0.0 | 0.0 | 1.1 | 0.3 | 0.3 | 10.8 |
| 90th | 5 | 774 | 66.0 | 21.5 | 0.7 | 0.9 | 0.0 | * | 0.3 | 0.5 | 0.1 | 10.0 |
| 75th | 3–4 | 3,258 | 63.6 | 20.9 | 1.2 | 1.1 | * | 0.2 | 0.6 | 0.3 | 0.2 | 11.9 |
| 50th | 1–2 | 11,469 | 61.0 | 21.4 | 1.3 | 1.9 | * | 0.5 | 1.5 | 0.6 | 0.5 | 11.3 |
| <50th | 0 | 19,327 | 57.0 | 22.4 | 1.3 | 3.4 | * | 2.0 | 1.7 | 0.9 | 0.6 | 10.6 |
| Social sciences | na | 56,487 | 54.0 | 25.2 | 1.5 | 4.0 | 0.2 | 1.6 | 1.4 | 1.0 | 1.3 | 9.7 |
| 99th | ≥7 | 485 | 77.3 | 15.6 | 1.3 | 0.9 | 0.0 | 0.0 | 0.7 | 0.2 | 0.0 | 4.1 |
| 95th | 4–6 | 1,391 | 72.1 | 17.8 | 0.8 | 1.0 | 0.1 | * | 0.8 | 0.2 | 0.7 | 6.5 |
| 90th | 3 | 1,502 | 68.0 | 17.3 | 0.7 | 1.6 | 0.1 | 0.5 | 1.1 | 0.5 | 0.6 | 9.6 |
| 75th | 2 | 3,480 | 63.5 | 20.9 | 1.1 | 1.7 | 0.2 | 0.3 | 1.1 | 0.7 | 1.0 | 9.5 |
| 50th | 1 | 9,720 | 59.1 | 23.4 | 1.3 | 2.6 | 0.2 | 0.5 | 1.3 | 0.6 | 1.0 | 9.9 |
| <50th | 0 | 39,909 | 50.5 | 26.7 | 1.7 | 4.8 | 0.2 | 2.2 | 1.5 | 1.1 | 1.5 | 9.8 |
| | | | 1996–98 articles cited by 2000 articles (%) | | | | | | | | | |
| All fields | na | 1,767,041 | 32.4 | 35.4 | 2.5 | 14.9 | 0.1 | 3.8 | 1.7 | 2.0 | 0.7 | 6.7 |
| 99th | ≥20 | 17,418 | 59.9 | 25.9 | 2.6 | 5.6 | * | 0.3 | 0.8 | 0.3 | 0.1 | 4.7 |
| 95th | 9–19 | 64,946 | 50.8 | 31.6 | 2.5 | 7.2 | * | 0.5 | 0.9 | 0.5 | 0.2 | 5.9 |
| 90th | 6–8 | 81,981 | 44.6 | 34.8 | 2.4 | 9.0 | * | 0.7 | 1.0 | 0.8 | 0.2 | 6.5 |
| 75th | 3–5 | 255,995 | 38.5 | 36.7 | 2.4 | 11.6 | * | 1.1 | 1.1 | 1.3 | 0.4 | 6.9 |
| 50th | 2 | 206,180 | 33.9 | 37.1 | 2.4 | 13.8 | 0.1 | 1.8 | 1.4 | 1.8 | 0.5 | 7.2 |
| <50th | 0–1 | 1,140,521 | 28.4 | 35.2 | 2.5 | 16.8 | 0.2 | 5.2 | 2.0 | 2.3 | 0.8 | 6.7 |
| Engineering | na | 130,082 | 27.1 | 30.8 | 2.2 | 25.4 | 0.1 | 4.3 | 2.1 | 1.6 | 0.4 | 6.1 |
| 99th | ≥8 | 1,028 | 45.3 | 29.5 | 2.6 | 15.3 | 0.0 | 0.9 | 1.1 | 0.6 | 0.0 | 4.8 |
| 95th | 4–7 | 4,973 | 36.2 | 33.5 | 2.4 | 18.8 | * | 1.2 | 1.1 | 1.0 | 0.1 | 5.6 |
| 90th | 3 | 5,039 | 33.6 | 32.8 | 2.3 | 21.1 | * | 1.6 | 1.4 | 1.1 | 0.3 | 5.8 |
| 75th | 2 | 10,871 | 29.6 | 33.9 | 2.3 | 23.1 | * | 2.0 | 1.4 | 1.4 | 0.3 | 6.1 |
| 50th | 1 | 27,082 | 28.0 | 32.0 | 2.2 | 25.1 | 0.1 | 2.2 | 2.2 | 1.8 | 0.4 | 6.2 |
| <50th | 0 | 81,089 | 25.3 | 29.8 | 2.2 | 26.6 | 0.1 | 5.7 | 2.2 | 1.6 | 0.4 | 6.1 |

Appendix table 5-38 (Page 3 of 6)

**S&E articles, by field, citation percentile, and region/country of institutional author: 1995, 2000, and 2005**

| Field/percentile | Citations (*n*) | Articles (*n*) | U.S. | EU | Other Western Europe | Asia-10 | Other Asia | Other former USSR | Near East/ North Africa | Central/ South America | Sub-Saharan Africa | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Astronomy | na | 20,959 | 34.1 | 40.3 | 1.4 | 8.5 | * | 6.0 | 0.8 | 3.5 | 0.6 | 4.9 |
| 99th | ≥23 | 200 | 53.2 | 35.2 | 0.8 | 4.6 | 0.0 | 0.7 | 0.7 | 1.2 | 0.0 | 3.6 |
| 95th | 11–22 | 758 | 51.0 | 34.4 | 1.3 | 4.7 | 0.0 | 0.4 | 1.2 | 2.8 | 0.2 | 4.2 |
| 90th | 8–10 | 734 | 48.9 | 35.2 | 1.6 | 4.8 | 0.0 | 1.1 | 1.0 | 2.3 | 0.4 | 4.8 |
| 75th | 5–7 | 3,148 | 43.3 | 38.2 | 1.3 | 6.5 | 0.0 | 1.9 | 0.7 | 2.9 | 0.4 | 4.8 |
| 50th | 2–4 | 4,443 | 37.1 | 42.3 | 1.2 | 6.6 | 0.0 | 3.2 | 0.6 | 3.2 | 0.6 | 5.2 |
| <50th | 0–1 | 11,676 | 28.1 | 40.9 | 1.5 | 10.3 | * | 9.0 | 0.9 | 3.9 | 0.6 | 4.8 |
| Chemistry | na | 216,747 | 20.3 | 38.7 | 2.6 | 22.0 | 0.1 | 7.4 | 1.9 | 2.0 | 0.4 | 4.6 |
| 99th | ≥15 | 1,841 | 48.6 | 30.2 | 2.4 | 11.5 | * | 0.5 | 1.0 | 0.3 | 0.1 | 5.4 |
| 95th | 8–14 | 6,481 | 38.2 | 36.2 | 2.9 | 14.5 | 0.0 | 0.8 | 0.9 | 0.5 | 0.1 | 5.8 |
| 90th | 5–7 | 13,054 | 31.0 | 39.3 | 2.6 | 18.1 | * | 1.2 | 1.1 | 1.1 | 0.1 | 5.5 |
| 75th | 3–4 | 25,733 | 25.4 | 41.6 | 2.8 | 20.2 | * | 1.8 | 1.3 | 1.5 | 0.3 | 5.2 |
| 50th | 2 | 26,815 | 22.4 | 41.0 | 2.6 | 21.9 | 0.1 | 3.1 | 1.5 | 2.0 | 0.3 | 5.0 |
| <50th | 0–1 | 142,823 | 16.8 | 38.0 | 2.6 | 23.1 | 0.2 | 10.2 | 2.1 | 2.3 | 0.5 | 4.2 |
| Physics | na | 251,890 | 21.8 | 35.8 | 2.3 | 22.0 | 0.1 | 9.9 | 1.8 | 2.6 | 0.2 | 3.6 |
| 99th | ≥15 | 2,241 | 43.6 | 35.5 | 3.1 | 11.4 | 0.0 | 2.1 | 1.1 | 0.5 | * | 2.6 |
| 95th | 7–14 | 9,299 | 36.4 | 39.5 | 3.1 | 12.4 | * | 2.9 | 1.4 | 0.9 | 0.1 | 3.3 |
| 90th | 5–6 | 9,731 | 31.8 | 40.7 | 2.7 | 14.6 | 0.1 | 3.6 | 1.6 | 1.4 | 0.1 | 3.5 |
| 75th | 3–4 | 24,046 | 28.6 | 39.9 | 2.4 | 17.5 | * | 4.1 | 1.7 | 2.0 | 0.1 | 3.7 |
| 50th | 1–2 | 78,691 | 22.9 | 37.6 | 2.4 | 21.5 | 0.1 | 7.0 | 1.8 | 2.7 | 0.2 | 3.8 |
| <50th | 0 | 127,882 | 17.7 | 33.3 | 2.2 | 24.5 | 0.2 | 13.8 | 1.8 | 2.8 | 0.3 | 3.5 |
| Geosciences | na | 85,824 | 33.7 | 33.6 | 3.4 | 9.9 | 0.1 | 2.7 | 1.4 | 2.2 | 1.1 | 11.8 |
| 99th | ≥12 | 819 | 56.6 | 26.2 | 2.8 | 3.3 | 0.1 | 0.8 | 0.2 | 0.4 | 0.3 | 9.4 |
| 95th | 7–11 | 2,827 | 50.1 | 29.9 | 3.2 | 3.5 | 0.1 | 0.7 | 0.3 | 0.7 | 0.3 | 11.2 |
| 90th | 5–6 | 4,166 | 44.4 | 32.7 | 3.7 | 4.4 | * | 1.0 | 0.5 | 1.0 | 0.7 | 11.5 |
| 75th | 3–4 | 10,603 | 40.9 | 33.7 | 3.2 | 5.9 | * | 1.2 | 0.7 | 1.3 | 0.7 | 12.3 |
| 50th | 2 | 11,539 | 35.7 | 35.4 | 3.3 | 7.5 | 0.1 | 1.5 | 1.0 | 1.7 | 0.8 | 13.0 |
| <50th | 0–1 | 55,870 | 30.0 | 33.6 | 3.5 | 12.1 | 0.2 | 3.5 | 1.7 | 2.6 | 1.3 | 11.6 |
| Mathematics | na | 31,139 | 31.5 | 38.9 | 1.8 | 12.0 | 0.3 | 3.6 | 3.0 | 2.1 | 0.4 | 6.5 |
| 99th | ≥7 | 220 | 57.6 | 28.6 | 1.7 | 2.6 | 0.0 | 0.7 | 1.9 | 0.9 | 0.0 | 6.0 |
| 95th | 4–6 | 744 | 44.5 | 35.6 | 1.1 | 8.7 | 0.0 | 1.6 | 1.6 | 0.9 | 0.3 | 5.7 |
| 90th | 3 | 981 | 38.6 | 39.9 | 1.3 | 7.9 | 0.0 | 2.2 | 2.7 | 1.5 | 0.4 | 5.6 |
| 75th | 2 | 2,368 | 37.5 | 38.9 | 1.2 | 10.0 | 0.1 | 1.9 | 2.4 | 2.1 | 0.3 | 5.6 |
| 50th | 1 | 6,311 | 32.2 | 41.0 | 1.8 | 10.7 | 0.1 | 2.5 | 2.6 | 2.2 | 0.2 | 6.7 |
| <50th | 0 | 20,515 | 29.5 | 38.5 | 1.9 | 13.0 | 0.3 | 4.3 | 3.2 | 2.1 | 0.4 | 6.7 |
| Computer sciences | na | 13,342 | 43.5 | 27.4 | 1.9 | 15.6 | 0.1 | 0.8 | 3.4 | 0.8 | 0.1 | 6.4 |
| 99th | ≥6 | 111 | 58.5 | 27.9 | 2.1 | 3.5 | 0.0 | 0.0 | 1.8 | 0.5 | 0.0 | 5.7 |
| 95th | 4–5 | 217 | 61.6 | 22.0 | 2.1 | 7.3 | 0.0 | 0.8 | 2.6 | 0.0 | 0.0 | 3.6 |
| 90th | 3 | 357 | 47.7 | 33.6 | 1.6 | 7.2 | 0.0 | 0.8 | 2.0 | 0.4 | 0.0 | 6.6 |
| 75th | 2 | 858 | 48.9 | 28.8 | 2.2 | 10.3 | 0.0 | 0.4 | 2.8 | 0.6 | 0.1 | 5.9 |
| 50th | 1 | 2,586 | 43.1 | 28.2 | 1.5 | 15.4 | 0.1 | 0.6 | 3.3 | 0.7 | 0.2 | 7.0 |
| <50th | 0 | 9,213 | 42.3 | 27.0 | 2.0 | 16.8 | 0.1 | 1.0 | 3.5 | 0.8 | 0.1 | 6.3 |
| Agricultural sciences | na | 36,002 | 28.9 | 32.9 | 1.9 | 12.2 | 0.3 | 2.3 | 1.8 | 2.8 | 2.2 | 14.6 |
| 99th | ≥9 | 310 | 38.7 | 38.0 | 2.0 | 4.8 | 0.0 | 0.4 | 0.6 | 0.7 | 0.5 | 14.5 |
| 95th | 5–8 | 1,327 | 37.6 | 38.0 | 2.1 | 6.6 | * | 0.3 | 0.7 | 0.8 | 0.3 | 13.4 |
| 90th | 4 | 1,175 | 34.2 | 39.5 | 1.4 | 8.0 | * | 0.1 | 1.2 | 2.0 | 0.8 | 12.8 |
| 75th | 2–3 | 2,123 | 34.4 | 38.1 | 1.6 | 8.8 | 0.1 | 0.1 | 1.0 | 2.3 | 0.6 | 13.0 |
| 50th | 1 | 12,607 | 30.4 | 34.1 | 2.0 | 11.7 | 0.3 | 0.4 | 1.7 | 3.0 | 1.7 | 14.8 |
| <50th | 0 | 18,460 | 26.2 | 30.6 | 1.8 | 13.8 | 0.5 | 4.2 | 2.2 | 3.0 | 2.9 | 14.8 |
| Biological sciences | na | 429,989 | 36.5 | 34.5 | 2.3 | 12.3 | 0.1 | 2.5 | 1.3 | 2.3 | 0.8 | 7.2 |
| 99th | ≥32 | 4,132 | 63.3 | 22.7 | 3.0 | 5.5 | 0.0 | 0.1 | 0.9 | 0.1 | * | 4.3 |
| 95th | 14–31 | 15,148 | 59.1 | 26.5 | 2.6 | 5.7 | * | 0.2 | 0.8 | 0.3 | 0.1 | 4.8 |
| 90th | 9–13 | 20,257 | 52.6 | 30.6 | 2.7 | 6.2 | * | 0.3 | 0.9 | 0.6 | 0.2 | 6.0 |
| 75th | 5–8 | 49,259 | 46.4 | 33.8 | 2.6 | 8.0 | * | 0.4 | 0.9 | 0.9 | 0.3 | 6.7 |
| 50th | 2–4 | 118,078 | 38.6 | 36.1 | 2.3 | 11.0 | 0.1 | 0.9 | 1.1 | 1.8 | 0.6 | 7.7 |
| <50th | 0–1 | 223,115 | 29.8 | 35.0 | 2.2 | 15.1 | 0.2 | 4.3 | 1.6 | 3.3 | 1.2 | 7.4 |

Appendix table 5-38 (Page 4 of 6)

**S&E articles, by field, citation percentile, and region/country of institutional author: 1995, 2000, and 2005**

| Field/percentile | Citations (*n*) | Articles (*n*) | U.S. | EU | Other Western Europe | Asia-10 | Other Asia | Other former USSR | Near East/ North Africa | Central/ South America | Sub-Saharan Africa | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Medical sciences | na | 432,954 | 36.0 | 38.3 | 3.0 | 11.3 | 0.1 | 0.5 | 1.7 | 1.5 | 0.8 | 6.7 |
| 99th | ≥21 | 3,926 | 60.6 | 26.5 | 2.0 | 3.9 | 0.0 | 0.1 | 0.5 | 0.4 | 0.1 | 5.9 |
| 95th | 10–20 | 15,430 | 52.1 | 32.4 | 2.1 | 5.9 | * | * | 0.7 | 0.3 | 0.2 | 6.3 |
| 90th | 7–9 | 17,902 | 47.8 | 34.4 | 2.1 | 7.1 | * | 0.1 | 0.9 | 0.5 | 0.2 | 7.0 |
| 75th | 4–6 | 47,987 | 43.2 | 36.5 | 2.2 | 8.7 | * | 0.1 | 1.0 | 0.8 | 0.3 | 7.1 |
| 50th | 2–3 | 88,374 | 38.2 | 38.0 | 2.7 | 10.8 | 0.1 | 0.2 | 1.3 | 1.1 | 0.5 | 7.1 |
| <50th | 0–1 | 259,335 | 31.8 | 39.6 | 3.4 | 12.7 | 0.1 | 0.8 | 2.2 | 1.9 | 1.0 | 6.5 |
| Other life sciences | na | 14,577 | 60.6 | 22.8 | 0.8 | 1.6 | * | 0.1 | 1.0 | 1.5 | 0.4 | 11.0 |
| 99th | ≥7 | 139 | 76.4 | 17.8 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.6 |
| 95th | 4–6 | 548 | 61.7 | 23.7 | 0.7 | 0.3 | 0.0 | 0.0 | 0.4 | 0.5 | 0.0 | 12.8 |
| 90th | 3–4 | 647 | 59.0 | 26.7 | 1.4 | 1.2 | 0.0 | 0.0 | 0.5 | 0.5 | 0.5 | 10.0 |
| 75th | 2 | 1,444 | 58.2 | 24.9 | 0.8 | 1.6 | * | 0.1 | 0.6 | 1.0 | 0.2 | 12.7 |
| 50th | 1 | 3,117 | 57.2 | 25.6 | 0.8 | 1.6 | 0.0 | * | 1.2 | 1.0 | 0.4 | 12.1 |
| <50th | 0 | 8,682 | 62.0 | 21.2 | 0.8 | 1.8 | 0.1 | 0.1 | 1.2 | 1.9 | 0.5 | 10.4 |
| Psychology | na | 43,264 | 55.8 | 25.0 | 1.5 | 3.2 | * | 1.0 | 1.4 | 0.8 | 0.6 | 10.7 |
| 99th | ≥12 | 429 | 70.2 | 17.8 | 0.7 | 0.2 | 0.0 | 0.0 | 0.5 | 0.2 | 0.0 | 10.5 |
| 95th | 7–11 | 1,167 | 67.0 | 19.2 | 1.1 | 0.9 | 0.0 | 0.0 | 1.0 | 0.1 | 0.0 | 10.7 |
| 90th | 5–6 | 1,662 | 64.8 | 22.1 | 0.5 | 1.0 | * | 0.1 | 0.9 | 0.2 | 0.3 | 10.0 |
| 75th | 3–4 | 4,427 | 60.9 | 24.0 | 1.3 | 1.4 | * | 0.1 | 1.1 | 0.7 | 0.2 | 10.3 |
| 50th | 2 | 4,932 | 58.7 | 24.0 | 1.3 | 2.1 | * | 0.2 | 1.3 | 0.6 | 0.2 | 11.6 |
| <50th | 0–1 | 30,647 | 53.4 | 25.8 | 1.7 | 3.9 | * | 1.3 | 1.5 | 1.0 | 0.8 | 10.6 |
| Social sciences | na | 60,272 | 49.4 | 29.1 | 2.2 | 4.0 | 0.2 | 1.2 | 1.6 | 1.0 | 1.1 | 10.2 |
| 99th | ≥8 | 484 | 69.7 | 22.5 | 0.5 | 1.3 | 0.1 | 0.3 | 0.8 | 0.2 | 0.4 | 4.1 |
| 95th | 4–7 | 2,042 | 63.9 | 24.9 | 1.0 | 1.9 | 0.1 | 0.1 | 0.7 | 0.4 | 0.3 | 6.7 |
| 90th | 3 | 2,002 | 60.3 | 26.3 | 1.4 | 1.8 | * | 0.2 | 0.9 | 0.7 | 0.6 | 7.7 |
| 75th | 2 | 4,199 | 56.7 | 27.4 | 1.8 | 2.8 | 0.2 | 0.1 | 1.2 | 0.7 | 0.8 | 8.4 |
| 50th | 1 | 11,522 | 52.2 | 28.7 | 2.1 | 3.0 | 0.2 | 0.4 | 1.4 | 0.8 | 0.9 | 10.1 |
| <50th | 0 | 40,023 | 46.3 | 29.8 | 2.3 | 4.7 | 0.3 | 1.6 | 1.8 | 1.2 | 1.3 | 10.8 |
| | | | 2001–03 articles cited by 2005 articles (%) | | | | | | | | | |
| All fields | na | 1,948,584 | 29.9 | 34.6 | 2.8 | 18.2 | 0.1 | 3.0 | 1.9 | 2.7 | 0.6 | 6.2 |
| 99th | ≥22 | 18,649 | 54.6 | 29.0 | 2.3 | 7.5 | * | 0.3 | 0.8 | 0.5 | 0.1 | 4.8 |
| 95th | 10–21 | 74,268 | 47.0 | 32.4 | 2.5 | 9.9 | * | 0.4 | 0.9 | 0.8 | 0.2 | 5.9 |
| 90th | 7–9 | 82,762 | 41.7 | 34.3 | 2.4 | 12.0 | * | 0.5 | 1.1 | 1.2 | 0.3 | 6.3 |
| 75th | 4–5 | 221,813 | 36.7 | 35.7 | 2.6 | 14.1 | 0.1 | 0.8 | 1.3 | 1.7 | 0.4 | 6.6 |
| 50th | 2–3 | 394,110 | 31.4 | 36.1 | 2.7 | 17.0 | 0.1 | 1.4 | 1.6 | 2.5 | 0.5 | 6.7 |
| <50th | 0–1 | 1,156,982 | 25.8 | 34.2 | 2.9 | 20.6 | 0.2 | 4.3 | 2.2 | 3.2 | 0.8 | 6.0 |
| Engineering | na | 172,182 | 22.4 | 30.9 | 2.6 | 30.6 | 0.1 | 3.3 | 2.3 | 2.5 | 0.4 | 5.1 |
| 99th | ≥11 | 1,473 | 42.0 | 28.4 | 2.9 | 20.2 | 0.0 | 0.6 | 1.4 | 0.7 | 0.0 | 3.8 |
| 95th | 5–10 | 4,584 | 32.5 | 31.0 | 2.8 | 24.8 | 0.1 | 1.0 | 1.4 | 1.2 | 0.1 | 5.1 |
| 90th | 4 | 7,697 | 28.3 | 32.6 | 2.7 | 26.4 | * | 1.5 | 1.5 | 1.9 | 0.1 | 5.0 |
| 75th | 2–3 | 26,148 | 24.9 | 31.9 | 2.6 | 28.8 | 0.1 | 1.8 | 2.0 | 2.4 | 0.3 | 5.2 |
| 50th | 1 | 37,208 | 22.0 | 31.3 | 2.6 | 31.1 | 0.1 | 2.3 | 2.2 | 2.7 | 0.4 | 5.2 |
| <50th | 0 | 95,072 | 20.5 | 30.3 | 2.5 | 31.7 | 0.1 | 4.4 | 2.5 | 2.6 | 0.4 | 5.0 |
| Astronomy | na | 25,865 | 32.5 | 40.5 | 1.7 | 9.9 | * | 5.2 | 1.0 | 4.1 | 0.6 | 4.5 |
| 99th | ≥27 | 244 | 52.4 | 36.3 | 1.3 | 2.7 | 0.0 | 0.3 | 0.5 | 1.9 | 0.0 | 4.5 |
| 95th | 13–26 | 938 | 53.1 | 34.0 | 1.2 | 4.0 | 0.0 | 0.8 | 1.0 | 1.5 | * | 4.2 |
| 90th | 9–12 | 1,166 | 45.8 | 38.5 | 1.5 | 5.4 | 0.0 | 0.9 | 0.8 | 2.4 | 0.3 | 4.5 |
| 75th | 5–8 | 3,320 | 43.8 | 38.9 | 1.5 | 5.4 | 0.0 | 1.8 | 0.8 | 3.0 | 0.2 | 4.7 |
| 50th | 2–4 | 7,239 | 34.8 | 41.0 | 1.5 | 9.2 | * | 3.3 | 1.0 | 4.0 | 0.5 | 4.6 |
| <50th | 0–1 | 12,958 | 25.3 | 41.4 | 1.9 | 12.4 | * | 7.9 | 1.1 | 4.8 | 0.7 | 4.5 |
| Chemistry | na | 236,953 | 18.6 | 35.0 | 2.7 | 27.6 | 0.1 | 6.5 | 2.5 | 2.8 | 0.4 | 3.8 |
| 99th | ≥20 | 2,135 | 42.3 | 31.1 | 2.3 | 17.8 | * | 0.4 | 0.7 | 0.8 | * | 4.6 |
| 95th | 10–19 | 8,311 | 34.7 | 33.8 | 2.8 | 21.8 | * | 0.6 | 1.2 | 0.8 | 0.2 | 4.1 |
| 90th | 7–9 | 10,639 | 30.1 | 35.5 | 2.5 | 23.3 | * | 0.9 | 1.9 | 1.4 | 0.2 | 4.3 |
| 75th | 4–6 | 29,753 | 24.7 | 37.6 | 2.5 | 25.2 | 0.1 | 1.3 | 1.8 | 2.1 | 0.2 | 4.4 |
| 50th | 2–3 | 52,418 | 19.7 | 38.5 | 2.6 | 26.8 | 0.1 | 2.4 | 2.2 | 2.9 | 0.3 | 4.5 |
| <50th | 0–1 | 133,697 | 14.6 | 33.1 | 2.7 | 29.3 | 0.2 | 10.2 | 2.9 | 3.2 | 0.4 | 3.4 |

Appendix table 5-38 (Page 5 of 6)

**S&E articles, by field, citation percentile, and region/country of institutional author: 1995, 2000, and 2005**

| Field/percentile | Citations (*n*) | Articles (*n*) | U.S. | EU | Other Western Europe | Asia-10 | Other Asia | Other former USSR | Near East/ North Africa | Central/ South America | Sub-Saharan Africa | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Physics | na | 272,123 | 19.6 | 34.7 | 2.2 | 26.8 | 0.2 | 7.8 | 2.0 | 3.3 | 0.2 | 3.1 |
| 99th | ≥17 | 2,423 | 38.9 | 33.3 | 2.9 | 17.5 | * | 2.0 | 1.4 | 1.0 | 0.1 | 2.9 |
| 95th | 8–16 | 8,478 | 31.7 | 37.3 | 2.6 | 19.6 | 0.1 | 2.4 | 1.3 | 1.5 | 0.1 | 3.5 |
| 90th | 5–7 | 13,591 | 27.3 | 38.1 | 2.1 | 22.5 | 0.1 | 3.2 | 1.4 | 2.0 | 0.1 | 3.2 |
| 75th | 3–4 | 25,208 | 23.4 | 37.7 | 2.5 | 24.2 | 0.2 | 4.2 | 1.7 | 2.6 | 0.1 | 3.4 |
| 50th | 1–2 | 78,084 | 19.1 | 35.6 | 2.2 | 27.7 | 0.2 | 6.6 | 2.0 | 3.3 | 0.2 | 3.3 |
| <50th | 0 | 144,339 | 17.5 | 33.2 | 2.1 | 27.8 | 0.2 | 10.0 | 2.2 | 3.8 | 0.3 | 2.9 |
| Geosciences | na | 100,670 | 30.5 | 33.2 | 3.8 | 13.2 | 0.2 | 3.1 | 1.3 | 3.2 | 1.0 | 10.5 |
| 99th | ≥14 | 887 | 48.3 | 30.0 | 4.1 | 6.3 | 0.3 | 0.3 | 0.3 | 0.5 | 0.1 | 9.9 |
| 95th | 8–13 | 3,212 | 43.1 | 31.8 | 4.1 | 7.8 | 0.1 | 0.5 | 0.6 | 1.2 | 0.5 | 10.5 |
| 90th | 6–7 | 3,864 | 39.2 | 33.8 | 3.7 | 8.8 | 0.1 | 0.8 | 0.7 | 1.5 | 0.6 | 10.8 |
| 75th | 4–5 | 9,291 | 36.3 | 34.8 | 4.2 | 9.9 | 0.1 | 0.9 | 0.7 | 1.9 | 0.7 | 10.5 |
| 50th | 2–3 | 22,979 | 32.3 | 35.4 | 3.8 | 11.2 | 0.1 | 1.3 | 1.0 | 2.7 | 0.8 | 11.3 |
| <50th | 0–1 | 60,437 | 27.5 | 32.1 | 3.7 | 15.1 | 0.2 | 4.4 | 1.6 | 3.8 | 1.2 | 10.2 |
| Mathematics | na | 42,850 | 25.6 | 40.5 | 2.0 | 15.6 | 0.2 | 4.6 | 3.1 | 2.9 | 0.4 | 5.1 |
| 99th | ≥7 | 297 | 45.9 | 32.7 | 2.3 | 12.3 | 0.0 | 0.3 | 0.6 | 1.2 | 0.2 | 4.5 |
| 95th | 4–6 | 1,156 | 35.5 | 42.1 | 1.8 | 11.6 | 0.0 | 1.0 | 1.3 | 1.8 | 0.0 | 4.8 |
| 90th | 3 | 1,342 | 31.3 | 41.6 | 2.2 | 13.3 | * | 2.2 | 2.2 | 2.4 | * | 4.9 |
| 75th | 2 | 3,209 | 29.0 | 42.9 | 2.1 | 13.9 | 0.1 | 1.6 | 2.7 | 2.5 | 0.2 | 4.9 |
| 50th | 1 | 9,066 | 27.1 | 41.4 | 1.9 | 15.0 | 0.3 | 3.0 | 2.9 | 3.0 | 0.3 | 5.2 |
| <50th | 0 | 27,780 | 23.8 | 39.9 | 2.0 | 16.3 | 0.2 | 5.8 | 3.4 | 3.0 | 0.5 | 5.1 |
| Computer sciences | na | 17,554 | 36.1 | 31.6 | 2.0 | 18.5 | 0.1 | 0.8 | 3.0 | 1.3 | 0.3 | 6.3 |
| 99th | ≥9 | 154 | 69.3 | 16.6 | 2.6 | 5.8 | 0.0 | 0.0 | 2.2 | 0.2 | 0.0 | 3.2 |
| 95th | 4–8 | 649 | 50.2 | 24.5 | 2.7 | 13.8 | 0.0 | 0.1 | 3.3 | 1.0 | 0.0 | 4.4 |
| 90th | 3 | 588 | 45.5 | 27.9 | 2.4 | 14.8 | 0.0 | * | 4.1 | 0.4 | 0.2 | 4.8 |
| 75th | 2 | 1,383 | 40.6 | 29.4 | 1.9 | 18.0 | 0.0 | 0.2 | 3.0 | 1.2 | 0.2 | 5.6 |
| 50th | 1 | 3,583 | 35.0 | 32.4 | 2.3 | 19.2 | * | 0.5 | 2.7 | 1.3 | 0.2 | 6.5 |
| <50th | 0 | 11,197 | 34.1 | 32.5 | 1.9 | 19.0 | 0.1 | 1.1 | 3.0 | 1.4 | 0.3 | 6.5 |
| Agricultural sciences | na | 40,943 | 26.9 | 33.3 | 3.0 | 15.5 | 0.4 | 1.0 | 1.9 | 4.1 | 2.0 | 11.8 |
| 99th | ≥11 | 353 | 39.6 | 34.6 | 2.3 | 8.7 | 0.0 | 0.1 | 1.0 | 2.2 | 1.2 | 10.4 |
| 95th | 6–10 | 1,681 | 30.8 | 41.2 | 3.1 | 8.8 | 0.2 | 0.1 | 1.6 | 2.5 | 0.8 | 11.0 |
| 90th | 5 | 1,088 | 28.3 | 42.0 | 3.0 | 9.6 | 0.2 | 0.3 | 1.4 | 3.1 | 0.6 | 11.4 |
| 75th | 3–4 | 4,991 | 28.6 | 37.1 | 2.8 | 13.2 | 0.3 | 0.1 | 1.5 | 3.4 | 1.2 | 11.8 |
| 50th | 2 | 5,568 | 27.7 | 36.1 | 3.1 | 14.8 | 0.3 | 0.2 | 1.7 | 3.9 | 1.5 | 10.8 |
| <50th | 0–1 | 27,262 | 26.0 | 31.2 | 3.1 | 16.8 | 0.5 | 1.5 | 2.1 | 4.4 | 2.4 | 12.1 |
| Biological sciences | na | 445,376 | 35.0 | 33.8 | 2.5 | 14.8 | 0.1 | 1.2 | 1.6 | 3.1 | 0.9 | 7.0 |
| 99th | ≥32 | 4,338 | 60.2 | 25.8 | 2.6 | 5.9 | * | 0.2 | 1.0 | 0.3 | * | 4.0 |
| 95th | 14–31 | 17,636 | 53.3 | 30.5 | 2.5 | 6.7 | * | 0.2 | 0.9 | 0.5 | 0.2 | 5.2 |
| 90th | 10–13 | 17,815 | 48.8 | 31.7 | 2.5 | 8.4 | * | 0.3 | 0.9 | 0.9 | 0.3 | 6.3 |
| 75th | 5–9 | 69,911 | 43.1 | 33.8 | 2.5 | 10.4 | * | 0.4 | 1.1 | 1.4 | 0.4 | 6.9 |
| 50th | 3–4 | 74,798 | 37.4 | 35.0 | 2.5 | 13.1 | 0.1 | 0.5 | 1.3 | 2.3 | 0.6 | 7.2 |
| <50th | 0–2 | 260,878 | 29.5 | 34.0 | 2.6 | 17.5 | 0.2 | 1.8 | 1.9 | 4.2 | 1.2 | 7.2 |
| Medical sciences | na | 467,806 | 34.4 | 37.7 | 3.5 | 13.0 | 0.1 | 0.4 | 1.8 | 2.0 | 0.6 | 6.6 |
| 99th | ≥23 | 4,635 | 57.1 | 29.8 | 1.7 | 4.5 | * | 0.1 | 0.7 | 0.4 | 0.1 | 5.6 |
| 95th | 11–22 | 18,052 | 50.7 | 32.7 | 2.2 | 6.0 | * | 0.1 | 0.7 | 0.6 | 0.2 | 6.8 |
| 90th | 8–10 | 18,225 | 46.0 | 34.9 | 2.2 | 7.7 | * | 0.1 | 1.0 | 0.8 | 0.2 | 7.1 |
| 75th | 4–7 | 73,306 | 40.9 | 36.5 | 2.6 | 10.0 | 0.1 | 0.1 | 1.2 | 1.2 | 0.3 | 7.1 |
| 50th | 2–3 | 104,629 | 35.2 | 37.9 | 3.2 | 12.7 | 0.1 | 0.2 | 1.5 | 1.8 | 0.5 | 6.9 |
| <50th | 0–1 | 248,959 | 29.7 | 38.7 | 4.1 | 15.0 | 0.1 | 0.6 | 2.2 | 2.5 | 0.7 | 6.3 |
| Other life sciences | na | 16,169 | 56.1 | 24.3 | 1.7 | 3.9 | 0.1 | 0.1 | 1.3 | 1.5 | 0.7 | 10.5 |
| 99th | ≥9 | 160 | 78.4 | 14.6 | 0.6 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.9 |
| 95th | 5–8 | 540 | 62.5 | 20.9 | 1.2 | 2.0 | * | 0.0 | 0.0 | 0.2 | 0.3 | 12.7 |
| 90th | 4 | 437 | 62.9 | 20.0 | 1.0 | 2.8 | 0.0 | 0.0 | 0.2 | 0.2 | 0.3 | 12.5 |
| 75th | 2–3 | 2,679 | 56.4 | 24.7 | 2.0 | 3.2 | 0.1 | * | 0.6 | 0.9 | 0.8 | 11.4 |
| 50th | 1 | 3,887 | 51.8 | 27.4 | 1.7 | 4.2 | 0.1 | * | 1.3 | 1.5 | 0.8 | 11.2 |
| <50th | 0 | 8,466 | 56.8 | 23.3 | 1.6 | 4.2 | 0.1 | 0.1 | 1.7 | 1.9 | 0.6 | 9.8 |

Appendix table 5-38 (Page 6 of 6)

**S&E articles, by field, citation percentile, and region/country of institutional author: 1995, 2000, and 2005**

| Field/percentile | Citations (*n*) | Articles (*n*) | U.S. | EU | Other Western Europe | Asia-10 | Other Asia | Other former USSR | Near East/ North Africa | Central/ South America | Sub-Saharan Africa | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Psychology | na | 44,787 | 52.2 | 27.5 | 1.8 | 3.4 | * | 0.8 | 1.6 | 0.9 | 0.5 | 11.1 |
| 99th | ≥15 | 409 | 68.4 | 20.9 | 0.8 | 0.3 | 0.0 | 0.0 | 0.7 | 0.3 | 0.1 | 8.5 |
| 95th | 8–14 | 1,545 | 63.5 | 25.1 | 0.8 | 0.7 | 0.0 | 0.1 | 0.8 | 0.1 | 0.2 | 8.8 |
| 90th | 6–7 | 1,615 | 57.7 | 26.8 | 1.1 | 1.3 | 0.0 | 0.1 | 1.3 | 0.5 | 0.3 | 11.0 |
| 75th | 3–5 | 7,175 | 54.9 | 28.2 | 1.6 | 1.9 | 0.0 | 0.1 | 1.2 | 0.8 | 0.2 | 11.1 |
| 50th | 2 | 5,862 | 53.4 | 27.2 | 1.7 | 2.7 | * | 0.2 | 1.6 | 0.7 | 0.3 | 12.2 |
| <50th | 0–1 | 28,181 | 50.2 | 27.7 | 2.0 | 4.3 | * | 1.2 | 1.8 | 1.1 | 0.7 | 11.0 |
| Social sciences | na | 65,306 | 46.3 | 31.2 | 2.7 | 5.0 | 0.2 | 1.2 | 1.5 | 1.3 | 1.3 | 9.4 |
| 99th | ≥9 | 486 | 67.1 | 21.2 | 1.5 | 1.4 | 0.0 | 0.1 | 0.7 | 0.6 | 0.8 | 6.7 |
| 95th | 5–8 | 1,654 | 60.5 | 27.4 | 1.5 | 1.7 | 0.1 | * | 0.4 | 0.7 | 0.9 | 6.8 |
| 90th | 3–4 | 3,890 | 55.7 | 28.8 | 2.1 | 3.0 | 0.2 | 0.1 | 0.8 | 0.8 | 0.8 | 7.4 |
| 75th | 2 | 5,531 | 51.1 | 30.8 | 2.6 | 3.1 | 0.2 | 0.2 | 1.1 | 0.9 | 1.3 | 8.8 |
| 50th | 1 | 13,589 | 48.0 | 31.1 | 2.7 | 4.6 | 0.2 | 0.3 | 1.4 | 0.9 | 1.3 | 9.5 |
| <50th | 0 | 40,156 | 43.3 | 31.8 | 2.9 | 5.8 | 0.2 | 1.7 | 1.6 | 1.5 | 1.3 | 9.8 |

* = value rounds to zero; na = not applicable

EU = European Union

NOTES: Article counts from set of journals covered by Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles classified by year they entered database, rather than year of publication, and assigned to region/country/economy on basis of institutional address(es) listed on article. Articles on fractional-count basis, i.e., for articles with collaborating institutions from multiple countries/economies, each country/economy receives fractional credit on basis of proportion of its participating institutions. See appendix table 5-33 for countries/economies included in each region. Percentiles approximate because of method of counting citations and always higher than stated. Detail may not add to total because of rounding.

SOURCES: Thomson Scientific, SCI and SSCI, http://scientific.thomson.com/products/categories/citation/; iplQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 5-39 (Page 1 of 2)

**World share of all S&E articles and top 1% of cited articles and index of highly cited articles, by field and selected region/country: 1995, 2000, and 2005**

(Percent)

| Field/citation period | Share all articles | | | Share top 1% cited articles | | | Index of highly cited articles | | |
|---|---|---|---|---|---|---|---|---|---|
| | U.S. | EU | Asia-10 | U.S. | EU | Asia-10 | U.S. | EU | Asia-10 |
| All fields | | | | | | | | | |
| 1995 | 36.0 | 32.8 | 12.5 | 62.3 | 24.7 | 4.9 | 1.73 | 0.75 | 0.39 |
| 2000 | 32.4 | 35.4 | 14.9 | 59.9 | 25.9 | 5.6 | 1.85 | 0.73 | 0.38 |
| 2005 | 29.9 | 34.6 | 18.2 | 54.6 | 29.0 | 7.5 | 1.83 | 0.84 | 0.41 |
| Engineering | | | | | | | | | |
| 1995 | 33.1 | 29.0 | 21.3 | 56.5 | 25.4 | 10.6 | 1.71 | 0.88 | 0.50 |
| 2000 | 27.1 | 30.8 | 25.4 | 45.3 | 29.5 | 15.3 | 1.67 | 0.96 | 0.60 |
| 2005 | 22.4 | 30.9 | 30.6 | 42.0 | 28.4 | 20.2 | 1.88 | 0.92 | 0.66 |
| Astronomy | | | | | | | | | |
| 1995 | 35.5 | 35.1 | 8.4 | 56.4 | 25.4 | 2.3 | 1.59 | 0.72 | 0.28 |
| 2000 | 34.1 | 40.3 | 8.5 | 53.2 | 35.2 | 4.6 | 1.56 | 0.87 | 0.55 |
| 2005 | 32.5 | 40.5 | 9.9 | 52.4 | 36.3 | 2.7 | 1.61 | 0.90 | 0.28 |
| Chemistry | | | | | | | | | |
| 1995 | 22.8 | 36.2 | 18.6 | 55.6 | 27.0 | 8.2 | 2.44 | 0.75 | 0.44 |
| 2000 | 20.3 | 38.7 | 22.0 | 48.6 | 30.2 | 11.5 | 2.39 | 0.78 | 0.52 |
| 2005 | 18.6 | 35.0 | 27.6 | 42.3 | 31.1 | 17.8 | 2.27 | 0.89 | 0.65 |
| Physics | | | | | | | | | |
| 1995 | 27.5 | 32.5 | 17.6 | 52.8 | 30.0 | 7.7 | 1.92 | 0.92 | 0.44 |
| 2000 | 21.8 | 35.8 | 22.0 | 43.6 | 35.5 | 11.4 | 2.00 | 0.99 | 0.52 |
| 2005 | 19.6 | 34.7 | 26.8 | 38.9 | 33.3 | 17.5 | 1.98 | 0.96 | 0.65 |
| Geosciences | | | | | | | | | |
| 1995 | 37.2 | 28.7 | 8.8 | 67.2 | 16.7 | 1.4 | 1.81 | 0.58 | 0.16 |
| 2000 | 33.7 | 33.6 | 9.9 | 56.6 | 26.2 | 3.3 | 1.68 | 0.78 | 0.33 |
| 2005 | 30.5 | 33.2 | 13.2 | 48.3 | 30.0 | 6.3 | 1.58 | 0.91 | 0.48 |
| Mathematics | | | | | | | | | |
| 1995 | 38.7 | 34.6 | 9.6 | 56.1 | 28.5 | 3.9 | 1.45 | 0.82 | 0.41 |
| 2000 | 31.5 | 38.9 | 12.0 | 57.6 | 28.6 | 2.6 | 1.83 | 0.74 | 0.22 |
| 2005 | 25.6 | 40.5 | 15.6 | 45.9 | 32.7 | 12.3 | 1.79 | 0.81 | 0.79 |
| Computer sciences | | | | | | | | | |
| 1995 | 53.9 | 22.4 | 11.7 | 72.6 | 12.3 | 4.4 | 1.35 | 0.55 | 0.38 |
| 2000 | 43.5 | 27.4 | 15.6 | 58.5 | 27.9 | 3.5 | 1.34 | 1.02 | 0.23 |
| 2005 | 36.1 | 31.6 | 18.5 | 69.3 | 16.6 | 5.8 | 1.92 | 0.53 | 0.32 |
| Agricultural sciences | | | | | | | | | |
| 1995 | 36.0 | 26.2 | 12.3 | 46.2 | 27.1 | 4.1 | 1.28 | 1.04 | 0.33 |
| 2000 | 28.9 | 32.9 | 12.2 | 38.7 | 38.0 | 4.8 | 1.34 | 1.15 | 0.39 |
| 2005 | 26.9 | 33.3 | 15.5 | 39.6 | 34.6 | 8.7 | 1.47 | 1.04 | 0.56 |
| Biological sciences | | | | | | | | | |
| 1995 | 38.6 | 32.8 | 10.7 | 66.2 | 22.8 | 4.6 | 1.72 | 0.69 | 0.43 |
| 2000 | 36.5 | 34.5 | 12.3 | 63.3 | 22.7 | 5.5 | 1.73 | 0.66 | 0.45 |
| 2005 | 35.0 | 33.8 | 14.8 | 60.2 | 25.8 | 5.9 | 1.72 | 0.76 | 0.40 |
| Medical sciences | | | | | | | | | |
| 1995 | 39.1 | 36.1 | 9.4 | 60.7 | 26.3 | 4.5 | 1.55 | 0.73 | 0.48 |
| 2000 | 36.0 | 38.3 | 11.3 | 60.6 | 26.5 | 3.9 | 1.68 | 0.69 | 0.34 |
| 2005 | 34.4 | 37.7 | 13.0 | 57.1 | 29.8 | 4.5 | 1.66 | 0.79 | 0.35 |
| Other life sciences | | | | | | | | | |
| 1995 | 69.4 | 18.3 | 1.2 | 88.5 | 6.9 | 0.0 | 1.28 | 0.38 | 0.00 |
| 2000 | 60.6 | 22.8 | 1.6 | 76.4 | 17.8 | 0.1 | 1.26 | 0.78 | 0.05 |
| 2005 | 56.1 | 24.3 | 3.9 | 78.4 | 14.6 | 1.5 | 1.40 | 0.60 | 0.38 |
| Psychology | | | | | | | | | |
| 1995 | 59.7 | 21.7 | 2.5 | 76.7 | 10.7 | 0.0 | 1.28 | 0.50 | 0.00 |
| 2000 | 55.8 | 25.0 | 3.2 | 70.2 | 17.8 | 0.2 | 1.26 | 0.71 | 0.05 |
| 2005 | 52.2 | 27.5 | 3.4 | 68.4 | 20.9 | 0.3 | 1.31 | 0.76 | 0.09 |

Appendix table 5-39 (Page 2 of 2)

**World share of all S&E articles and top 1% of cited articles and index of highly cited articles, by field and selected region/country: 1995, 2000, and 2005**

(Percent)

| Field/citation period | Share all articles | | | Share top 1% cited articles | | | Index of highly cited articles | | |
|---|---|---|---|---|---|---|---|---|---|
| | U.S. | EU | Asia-10 | U.S. | EU | Asia-10 | U.S. | EU | Asia-10 |
| Social sciences | | | | | | | | | |
| 1995 | 54.0 | 25.2 | 4.0 | 77.3 | 15.6 | 0.9 | 1.43 | 0.62 | 0.21 |
| 2000 | 49.4 | 29.1 | 4.0 | 69.7 | 22.5 | 1.3 | 1.41 | 0.77 | 0.33 |
| 2005 | 46.3 | 31.2 | 5.0 | 67.1 | 21.2 | 1.4 | 1.45 | 0.68 | 0.27 |

EU = European Union

NOTES: Share of all articles based on a 3-year period. Article counts from set of journals covered by Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles classified by year they entered database and assigned to region/country/economy on basis of institutional address(es) listed on article. Articles on fractional-count basis, i.e., for articles with collaborating institutions from multiple countries/economies, each country/economy receives fractional credit on basis of proportion of its participating institutions. Citation data based on year article entered database. Citation counts based on 3-year period with 2-year lag, e.g., citations for 1995 are references made in articles in 1995 data tape to articles in 1991–93 data tapes. Index of highly cited articles is share of world's top 1% cited articles divided by share of world articles in cited year window. See appendix table 5-33 for countries/economies included in EU and Asia-10.

SOURCES: Thomson Scientific, SCI and SSCI, http://scientific.thomson.com/products/categories/citation/; iplQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 5-40

(Page 1 of 4)

**U.S. utility patent awards, by selected characteristics of patent owner: 1995–2005**

| Characteristic | 1995–2005 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Patents granted | 1,592,031 | 101,419 | 109,645 | 111,984 | 147,518 | 153,485 | 157,494 | 166,035 | 167,331 | 169,023 | 164,291 | 143,806 |
| Patents granted to U.S. owners | 876,005 | 57,951 | 63,395 | 64,079 | 83,847 | 87,071 | 87,944 | 90,489 | 89,183 | 89,747 | 86,036 | 76,263 |
| Patents granted to U.S. nongovernment owners | 711,370 | 44,038 | 48,742 | 50,221 | 66,052 | 69,389 | 70,887 | 74,329 | 74,154 | 75,329 | 73,022 | 65,207 |
| Patents granted to U.S. universities | 31,705 | 1,880 | 2,160 | 2,447 | 3,173 | 3,363 | 3,109 | 3,224 | 3,291 | 3,276 | 3,057 | 2,725 |
| Top 200 R&D institutions in 2004 | 30,086 | 1,766 | 2,038 | 2,317 | 3,047 | 3,206 | 2,981 | 3,065 | 3,112 | 3,113 | 2,864 | 2,577 |
| Public universities | | | | | | | | | | | | |
| University of California | 4,109 | 213 | 266 | 277 | 395 | 437 | 435 | 402 | 431 | 439 | 424 | 390 |
| University of Texas | 1,009 | 90 | 88 | 81 | 97 | 93 | 90 | 89 | 93 | 97 | 101 | 90 |
| University of Wisconsin | 785 | 48 | 64 | 62 | 83 | 87 | 64 | 72 | 80 | 84 | 64 | 77 |
| University of Michigan | 577 | 30 | 25 | 53 | 50 | 51 | 69 | 51 | 47 | 63 | 67 | 71 |
| University of Florida | 536 | 31 | 36 | 43 | 53 | 50 | 66 | 51 | 42 | 59 | 41 | 64 |
| State University of New York | 464 | 31 | 37 | 45 | 51 | 54 | 54 | 41 | 55 | 35 | 37 | 24 |
| Michigan State University | 431 | 15 | 32 | 41 | 59 | 53 | 42 | 39 | 49 | 49 | 28 | 24 |
| University of Minnesota | 423 | 25 | 31 | 32 | 43 | 49 | 46 | 38 | 41 | 39 | 43 | 36 |
| University of Washington | 416 | 17 | 26 | 37 | 47 | 47 | 59 | 43 | 41 | 36 | 31 | 32 |
| Georgia Institute of Technology | 383 | 21 | 26 | 19 | 26 | 38 | 41 | 38 | 48 | 46 | 37 | 43 |
| Pennsylvania State University | 378 | 18 | 20 | 19 | 26 | 36 | 37 | 52 | 50 | 52 | 39 | 29 |
| Iowa State University | 356 | 37 | 38 | 36 | 53 | 45 | 34 | 29 | 19 | 27 | 25 | 13 |
| North Carolina State University | 343 | 31 | 26 | 24 | 26 | 23 | 24 | 31 | 33 | 44 | 42 | 39 |
| University of North Carolina | 322 | 21 | 22 | 39 | 29 | 43 | 27 | 36 | 22 | 29 | 24 | 30 |
| University of Maryland | 320 | 21 | 21 | 18 | 25 | 37 | 26 | 33 | 32 | 45 | 35 | 27 |
| University of Illinois | 317 | 12 | 16 | 17 | 21 | 29 | 26 | 34 | 31 | 39 | 58 | 34 |
| University of Utah | 306 | 17 | 32 | 31 | 37 | 35 | 20 | 43 | 29 | 20 | 24 | 18 |
| University of Alabama | 290 | 9 | 13 | 19 | 27 | 37 | 26 | 32 | 29 | 42 | 39 | 17 |
| University of Pittsburgh | 275 | 13 | 12 | 17 | 32 | 39 | 38 | 38 | 22 | 22 | 24 | 18 |
| Rutgers University | 260 | 20 | 18 | 21 | 26 | 31 | 25 | 21 | 35 | 24 | 21 | 18 |
| Ohio State University | 259 | 17 | 22 | 27 | 24 | 22 | 26 | 20 | 19 | 19 | 34 | 29 |
| University of Nebraska | 241 | 21 | 29 | 24 | 25 | 23 | 27 | 18 | 24 | 18 | 20 | 12 |
| University of Iowa | 241 | 17 | 11 | 14 | 25 | 30 | 17 | 38 | 25 | 31 | 17 | 16 |
| Louisiana State University | 241 | 14 | 16 | 22 | 38 | 15 | 21 | 35 | 26 | 22 | 15 | 17 |
| Texas A&M University | 229 | 16 | 15 | 14 | 21 | 23 | 19 | 25 | 29 | 19 | 24 | 24 |
| University of Kentucky | 226 | 11 | 14 | 14 | 21 | 29 | 25 | 20 | 32 | 23 | 17 | 20 |
| University of Massachusetts | 221 | 12 | 15 | 15 | 24 | 52 | 21 | 18 | 15 | 17 | 19 | 13 |
| University of Colorado | 213 | 18 | 16 | 23 | 30 | 26 | 19 | 20 | 17 | 18 | 14 | 12 |
| Purdue University | 204 | 10 | 12 | 24 | 22 | 19 | 11 | 13 | 23 | 22 | 23 | 25 |
| University of Arkansas | 183 | 5 | 6 | 8 | 9 | 31 | 18 | 28 | 17 | 26 | 16 | 19 |
| University of South Florida | 182 | 6 | 13 | 14 | 18 | 18 | 20 | 15 | 19 | 11 | 30 | 18 |
| University of Central Florida | 179 | 6 | 9 | 14 | 12 | 14 | 11 | 19 | 16 | 26 | 29 | 23 |
| University of New Mexico | 164 | 15 | 8 | 14 | 12 | 15 | 23 | 13 | 18 | 19 | 14 | 13 |
| City University of New York | 162 | 6 | 9 | 17 | 21 | 19 | 12 | 13 | 14 | 30 | 9 | 12 |
| University of Tennessee | 150 | 14 | 8 | 13 | 9 | 12 | 16 | 22 | 32 | 8 | 8 | 8 |
| University of Virginia | 148 | 10 | 13 | 13 | 20 | 15 | 14 | 18 | 9 | 21 | 6 | 9 |
| Virginia Polytechnic Institute | 148 | 6 | 14 | 17 | 16 | 21 | 14 | 9 | 11 | 13 | 15 | 12 |

Appendix table 5-40 (Page 2 of 4)

**U.S. utility patent awards, by selected characteristics of patent owner: 1995–2005**

| Characteristic | 1995–2005 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| University of Georgia | 148 | 10 | 12 | 11 | 18 | 10 | 18 | 18 | 20 | 12 | 8 | 11 |
| Oregon Health Sciences University | 145 | 10 | 13 | 19 | 13 | 16 | 22 | 13 | 14 | 8 | 11 | 6 |
| University of Missouri | 138 | 10 | 8 | 16 | 13 | 16 | 6 | 12 | 14 | 17 | 18 | 8 |
| Florida State University | 136 | 10 | 8 | 6 | 13 | 9 | 14 | 7 | 20 | 18 | 15 | 16 |
| University of Connecticut | 134 | 8 | 9 | 13 | 11 | 17 | 13 | 7 | 14 | 13 | 11 | 18 |
| University of Oklahoma | 124 | 11 | 9 | 16 | 9 | 15 | 17 | 20 | 8 | 10 | 3 | 6 |
| Clemson University | 105 | 8 | 7 | 9 | 8 | 2 | 4 | 7 | 21 | 17 | 11 | 11 |
| University of Cincinnati | 103 | 8 | 7 | 10 | 5 | 5 | 16 | 16 | 12 | 9 | 8 | 7 |
| Wayne State University | 95 | 9 | 8 | 8 | 10 | 10 | 8 | 12 | 11 | 5 | 6 | 8 |
| Virginia Commonwealth University | 89 | 2 | 4 | 7 | 6 | 18 | 18 | 9 | 9 | 11 | 4 | 1 |
| University of Medicine and Dentistry of New Jersey | 88 | 5 | 3 | 7 | 15 | 9 | 5 | 14 | 6 | 12 | 8 | 4 |
| University of Kansas | 87 | 2 | 6 | 3 | 6 | 11 | 5 | 9 | 21 | 9 | 11 | 4 |
| Kansas State University | 86 | 11 | 9 | 4 | 7 | 12 | 8 | 9 | 8 | 7 | 9 | 2 |
| Temple University | 81 | 11 | 7 | 9 | 6 | 5 | 4 | 6 | 8 | 12 | 8 | 5 |
| Washington State University | 78 | 4 | 2 | 5 | 5 | 10 | 12 | 13 | 7 | 7 | 6 | 7 |
| University of Houston | 73 | 8 | 6 | 4 | 5 | 5 | 10 | 8 | 6 | 13 | 3 | 5 |
| Auburn University | 70 | 2 | 1 | 3 | 6 | 9 | 8 | 8 | 8 | 5 | 9 | 11 |
| University of Hawaii | 69 | 7 | 6 | 6 | 6 | 8 | 10 | 4 | 6 | 6 | 4 | 6 |
| University of Arizona | 65 | 4 | 4 | 9 | 8 | 7 | 5 | 3 | 6 | 10 | 6 | 3 |
| Indiana University | 63 | 6 | 8 | 12 | 12 | 5 | 7 | 2 | 2 | 1 | 0 | 8 |
| Oregon State University | 63 | 6 | 3 | 7 | 8 | 3 | 2 | 8 | 6 | 5 | 9 | 6 |
| Arizona State University | 63 | 6 | 14 | 8 | 1 | 4 | 4 | 6 | 6 | 5 | 2 | 7 |
| University of Delaware | 63 | 5 | 5 | 4 | 6 | 2 | 3 | 5 | 9 | 7 | 10 | 7 |
| Mississippi State University | 55 | 2 | 5 | 3 | 3 | 5 | 5 | 5 | 9 | 5 | 6 | 7 |
| New Jersey Institute of Technology | 55 | 2 | 2 | 6 | 6 | 8 | 9 | 4 | 6 | 5 | 7 | 0 |
| Colorado State University | 52 | 1 | 6 | 2 | 8 | 5 | 4 | 4 | 11 | 5 | 4 | 2 |
| Utah State University | 44 | 8 | 6 | 2 | 5 | 5 | 4 | 2 | 2 | 4 | 1 | 5 |
| Ohio University | 42 | 5 | 3 | 2 | 8 | 3 | 3 | 2 | 3 | 7 | 3 | 3 |
| University of Wyoming | 42 | 2 | 1 | 4 | 7 | 4 | 0 | 3 | 6 | 4 | 6 | 5 |
| Oklahoma State University | 39 | 3 | 2 | 0 | 2 | 5 | 3 | 1 | 5 | 4 | 7 | 7 |
| Medical University of South Carolina | 38 | 2 | 1 | 1 | 5 | 5 | 6 | 2 | 5 | 3 | 3 | 5 |
| North Dakota State University | 38 | 5 | 4 | 5 | 1 | 4 | 5 | 4 | 2 | 3 | 2 | 3 |
| Texas Tech University | 38 | 1 | 0 | 2 | 2 | 1 | 2 | 6 | 13 | 2 | 4 | 5 |
| University of South Carolina | 37 | 0 | 3 | 4 | 1 | 4 | 1 | 5 | 4 | 8 | 5 | 2 |
| University of Vermont | 37 | 1 | 1 | 3 | 2 | 6 | 2 | 3 | 7 | 5 | 3 | 4 |
| University of Southern Mississippi | 34 | 1 | 1 | 1 | 1 | 6 | 5 | 5 | 1 | 3 | 3 | 7 |
| University of Mississippi | 32 | 2 | 4 | 2 | 0 | 3 | 6 | 2 | 4 | 3 | 3 | 3 |
| West Virginia University | 29 | 2 | 1 | 2 | 0 | 1 | 0 | 4 | 4 | 12 | 3 | 0 |
| New Mexico State University | 27 | 0 | 1 | 3 | 2 | 5 | 3 | 2 | 2 | 5 | 3 | 1 |
| Michigan Technological University | 27 | 2 | 3 | 0 | 0 | 2 | 3 | 1 | 3 | 2 | 5 | 6 |
| Southern Illinois University | 26 | 0 | 0 | 0 | 0 | 4 | 2 | 7 | 2 | 4 | 6 | 1 |
| University of Oregon | 23 | 2 | 4 | 0 | 4 | 2 | 1 | 2 | 2 | 2 | 2 | 2 |
| Montana State University | 21 | 2 | 3 | 1 | 1 | 5 | 2 | 1 | 2 | 2 | 1 | 1 |

Appendix table 5-40



**U.S. utility patent awards, by selected characteristics of patent owner: 1995–2005**

| Characteristic | 1995–2005 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| University of Puerto Rico | 21 | 4 | 1 | 0 | 1 | 0 | 0 | 5 | 2 | 7 | 1 | 0 |
| University of Montana | 20 | 2 | 0 | 3 | 2 | 3 | 1 | 3 | 0 | 2 | 0 | 4 |
| Medical College of Georgia | 19 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 11 | 1 | 2 | 2 |
| San Diego State University | 19 | 0 | 1 | 2 | 1 | 1 | 1 | 2 | 3 | 3 | 2 | 3 |
| University of Louisville | 17 | 2 | 0 | 2 | 0 | 2 | 0 | 0 | 1 | 3 | 4 | 3 |
| George Mason University | 17 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 4 | 3 | 3 | 3 |
| California State University | 15 | 4 | 2 | 0 | 2 | 0 | 3 | 1 | 0 | 1 | 0 | 2 |
| University of Maine | 14 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 1 | 2 | 5 | 1 |
| University of New Hampshire | 13 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 3 | 0 | 2 | 3 |
| University of Alaska | 11 | 2 | 3 | 2 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 |
| University of North Dakota | 11 | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 3 | 1 | 1 | 0 |
| University of Nevada | 11 | 0 | 1 | 0 | 0 | 1 | 1 | 2 | 2 | 1 | 2 | 1 |
| Wright State University | 9 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 2 |
| Georgia State University | 8 | 1 | 0 | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| Old Dominion University | 7 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Florida International University | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 1 | 0 |
| College of William and Mary | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 1 |
| University of Memphis | 3 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wichita State University | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Desert Research Institute | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| Jackson State University | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| San Jose State University | 3 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| University of Louisiana | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| South Dakota State University | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Florida Agricultural and Mechanical University | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Uniformed Services University of The Health Sciences | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Private universities | | | | | | | | | | | | |
| Massachusetts Institute of Technology | 1,373 | 104 | 119 | 102 | 138 | 142 | 113 | 125 | 135 | 127 | 132 | 136 |
| California Institute of Technology | 1,012 | 38 | 24 | 46 | 93 | 99 | 103 | 124 | 110 | 139 | 135 | 101 |
| Stanford University | 876 | 54 | 55 | 64 | 79 | 83 | 103 | 84 | 104 | 85 | 75 | 90 |
| Johns Hopkins University | 747 | 28 | 27 | 48 | 79 | 97 | 72 | 80 | 81 | 70 | 94 | 71 |
| Cornell University | 552 | 36 | 52 | 50 | 65 | 64 | 49 | 61 | 35 | 59 | 40 | 41 |
| Columbia University | 521 | 18 | 33 | 35 | 55 | 55 | 51 | 58 | 46 | 61 | 52 | 57 |
| University of Pennsylvania | 485 | 25 | 45 | 55 | 69 | 59 | 31 | 52 | 45 | 29 | 32 | 43 |
| Harvard University | 377 | 14 | 32 | 28 | 49 | 41 | 26 | 32 | 48 | 40 | 41 | 26 |
| Duke University | 364 | 20 | 37 | 21 | 30 | 36 | 33 | 57 | 39 | 40 | 26 | 25 |
| Washington University | 302 | 21 | 18 | 22 | 41 | 50 | 36 | 37 | 20 | 22 | 20 | 15 |
| Princeton University | 282 | 12 | 13 | 16 | 24 | 30 | 28 | 39 | 36 | 31 | 21 | 32 |
| University of Chicago | 272 | 18 | 14 | 25 | 22 | 25 | 16 | 27 | 30 | 29 | 42 | 24 |
| Yale University | 258 | 16 | 7 | 20 | 34 | 28 | 29 | 29 | 25 | 28 | 19 | 23 |
| New York University | 248 | 15 | 19 | 23 | 23 | 27 | 26 | 33 | 21 | 22 | 25 | 14 |
| Northwestern University | 248 | 18 | 10 | 27 | 35 | 24 | 17 | 33 | 27 | 21 | 18 | 18 |
| Thomas Jefferson University | 239 | 14 | 15 | 25 | 29 | 26 | 26 | 36 | 29 | 21 | 10 | 8 |

Appendix table 5-40 (Page 4 of 4)

**U.S. utility patent awards, by selected characteristics of patent owner: 1995–2005**

| Characteristic | 1995–2005 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rockefeller University | 238 | 9 | 8 | 20 | 35 | 34 | 42 | 25 | 32 | 13 | 15 | 5 |
| University of Southern California | 227 | 6 | 15 | 18 | 16 | 13 | 15 | 20 | 31 | 29 | 33 | 31 |
| Emory University | 212 | 11 | 12 | 12 | 35 | 26 | 20 | 18 | 28 | 22 | 17 | 11 |
| Carnegie-Mellon University | 206 | 10 | 13 | 9 | 26 | 27 | 33 | 12 | 19 | 25 | 25 | 7 |
| Baylor University | 195 | 7 | 18 | 18 | 27 | 22 | 29 | 15 | 18 | 16 | 16 | 9 |
| Vanderbilt University | 175 | 9 | 6 | 11 | 16 | 14 | 21 | 20 | 20 | 21 | 21 | 16 |
| Boston University | 167 | 14 | 16 | 20 | 19 | 15 | 16 | 18 | 14 | 15 | 10 | 10 |
| Case Western Reserve University | 159 | 8 | 6 | 9 | 15 | 28 | 18 | 18 | 22 | 14 | 10 | 11 |
| University of Rochester | 131 | 6 | 3 | 5 | 15 | 7 | 12 | 16 | 19 | 18 | 15 | 15 |
| Brown University | 128 | 6 | 6 | 9 | 18 | 19 | 12 | 19 | 7 | 13 | 8 | 11 |
| Yeshiva University | 127 | 3 | 11 | 6 | 14 | 10 | 17 | 17 | 15 | 11 | 14 | 9 |
| Northeastern University | 102 | 16 | 11 | 12 | 11 | 9 | 15 | 6 | 4 | 2 | 8 | 8 |
| Rensselear Polytechnic Institute | 98 | 7 | 12 | 6 | 4 | 5 | 9 | 8 | 6 | 14 | 13 | 14 |
| Tufts University | 95 | 3 | 8 | 4 | 11 | 6 | 9 | 12 | 12 | 11 | 11 | 8 |
| Georgetown University | 91 | 6 | 7 | 8 | 11 | 8 | 13 | 8 | 8 | 12 | 9 | 1 |
| Wake Forest University | 82 | 1 | 6 | 6 | 6 | 9 | 11 | 12 | 6 | 9 | 13 | 3 |
| Dartmouth College | 78 | 3 | 4 | 2 | 9 | 8 | 11 | 7 | 8 | 9 | 10 | 7 |
| Drexel University | 62 | 5 | 2 | 2 | 8 | 7 | 6 | 7 | 10 | 5 | 7 | 3 |
| Loma Linda University | 57 | 8 | 5 | 1 | 6 | 6 | 4 | 5 | 5 | 7 | 7 | 3 |
| University of Miami | 55 | 5 | 5 | 14 | 3 | 2 | 3 | 3 | 6 | 8 | 3 | 3 |
| Tulane University | 55 | 5 | 7 | 4 | 9 | 2 | 6 | 6 | 7 | 7 | 2 | 0 |
| Brandeis University | 49 | 3 | 6 | 4 | 9 | 6 | 4 | 1 | 2 | 9 | 4 | 1 |
| University of Dayton | 47 | 4 | 4 | 2 | 7 | 7 | 5 | 5 | 6 | 2 | 4 | 1 |
| St. Louis University | 47 | 1 | 1 | 2 | 4 | 11 | 3 | 6 | 7 | 4 | 3 | 5 |
| George Washington University | 32 | 0 | 3 | 3 | 3 | 2 | 7 | 3 | 7 | 3 | 0 | 1 |
| Syracuse University | 31 | 1 | 2 | 9 | 7 | 4 | 3 | 0 | 2 | 1 | 1 | 1 |
| Loyola University of Chicago | 25 | 2 | 2 | 4 | 2 | 4 | 3 | 3 | 1 | 3 | 0 | 1 |
| Lehigh University | 24 | 1 | 1 | 0 | 2 | 2 | 4 | 3 | 3 | 4 | 1 | 3 |
| University of Notre Dame | 22 | 0 | 2 | 2 | 4 | 0 | 1 | 2 | 3 | 1 | 2 | 5 |
| Eastern Virginia Medical School | 19 | 1 | 4 | 6 | 3 | 1 | 1 | 2 | 0 | 1 | 0 | 0 |
| Medical College of Wisconsin | 16 | 4 | 2 | 2 | 3 | 0 | 2 | 0 | 3 | 0 | 0 | 0 |
| Woods Hole Oceanographic Institution | 10 | 1 | 2 | 2 | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| Howard University | 10 | 3 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| New York Medical College | 9 | 0 | 1 | 0 | 2 | 1 | 1 | 1 | 1 | 2 | 0 | 0 |
| Boston College | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 |
| Hampton University | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| Rush University | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |

NOTES: Data include institutions affiliated with academic institutions, such as university and alumni organizations, federally funded research and development centers, foundations, and university associations. Fewer than 200 institutions shown because data for certain institutions are for entire university system and incorporate data from various campuses. Top 200 R&D institutions ranked by sum of their patents from 1995 through 2005.

SOURCES: U.S. Patent and Trademark Office, U.S. Colleges and Universities Utility Patent Grants, Calendar Years 1969–2005 (2007); and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 5-41
**Academic patents awarded, by patent class: 2005**

| Patent class | Patent class | Patents granted | Percentage of total | Cumulative percentage |
|---|---|---|---|---|
| All academic patents | na | 2,725 | 100.00 | na |
| Drug, bio-affecting and body treating compositions (includes class 514) | 424 | 419 | 15.38 | 15.38 |
| Chemistry: Molecular biology and microbiology | 435 | 376 | 13.80 | 29.17 |
| Organic compounds (includes classes 532–570) | 532 | 152 | 5.58 | 34.75 |
| Surgery (includes class 600) | 128 | 85 | 3.12 | 37.87 |
| Radiant energy | 250 | 74 | 2.72 | 40.59 |
| Chemistry: Natural resins or derivatives; peptides or proteins; lignins or reaction products thereof | 530 | 68 | 2.50 | 43.08 |
| Stock material or miscellaneous articles | 428 | 64 | 2.35 | 45.43 |
| Active solid-state devices (e.g., transistors, solid-state diodes) | 257 | 64 | 2.35 | 47.78 |
| Synthetic resins or natural rubbers (includes classes 520–528) | 520 | 54 | 1.98 | 49.76 |
| Semiconductor device manufacturing: process | 438 | 54 | 1.98 | 51.74 |
| Multicellular living organisms and unmodified parts thereof and related processes | 800 | 53 | 1.94 | 53.69 |
| Optical waveguides | 385 | 51 | 1.87 | 55.56 |
| Measuring and testing | 73 | 49 | 1.80 | 57.36 |
| Optics: Systems and elements | 359 | 48 | 1.76 | 59.12 |
| Dp: Measuring, calibrating, or testing (data processing) | 702 | 47 | 1.72 | 60.84 |
| Optics: Measuring and testing | 356 | 43 | 1.58 | 62.42 |
| Chemistry: Analytical and immunological testing | 436 | 37 | 1.36 | 63.78 |
| Electricity: Measuring and testing | 324 | 35 | 1.28 | 65.06 |
| Image analysis | 382 | 29 | 1.06 | 66.13 |
| Chemistry: Electrical and wave energy | 204 | 28 | 1.03 | 67.16 |
| Chemistry of inorganic compounds | 423 | 28 | 1.03 | 68.18 |
| Coating processes | 427 | 26 | 0.95 | 69.14 |
| Liquid purification or separation | 210 | 25 | 0.92 | 70.06 |
| Coherent light generators | 372 | 22 | 0.81 | 70.86 |
| Surgery (instruments) | 606 | 21 | 0.77 | 71.63 |
| Chemistry: Electrical current producing apparatus, product, and process | 429 | 21 | 0.77 | 72.40 |
| Surgery (medicators and receptors) | 604 | 20 | 0.73 | 73.14 |
| X-ray or gamma ray systems or devices | 378 | 20 | 0.73 | 73.87 |
| Catalyst, solid sorbent, or support therefor: product or process of making | 502 | 18 | 0.66 | 74.53 |
| Chemical apparatus and process disinfecting, deodorizing, preserving, or sterilizing | 422 | 16 | 0.59 | 75.12 |
| Surgery: Light, thermal, and electrical application | 607 | 16 | 0.59 | 75.71 |
| Electrical generator or motor structure | 310 | 16 | 0.59 | 76.29 |
| Radiation imagery chemistry: process, composition, or product thereof | 430 | 16 | 0.59 | 76.88 |

na = not applicable

NOTES: Data include institutions affiliated with academic institutions, such as university and alumni organizations, federally funded research and development centers, foundations, and university associations.

SOURCES: U.S.Patent and Trademark Office, U.S. Colleges and Universities Utility Patent Grants, Calendar Years 1969–2005 (2007); and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 5-42

**Academic patenting and licensing activities: 1991–2005**

| Activity indicator | 1991 (98) | 1992 (98) | 1993 (117) | 1994 (120) | 1995 (127) | 1996 (131) | 1997 (132) | 1998 (132) | 1999 (139) | 2000 (142) | 2001 (139) | 2002 (156) | 2003 (165) | 2004 (164) | 2005 (158) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Millions of dollars | | | | | | | | | | | | | | |
| Net royalties[a] | NA | NA | 195.0 | 217.4 | 239.1 | 290.1 | 391.1 | 517.3 | 583.0 | 1,012.0 | 753.9 | 868.9 | 866.8 | 924.8 | 1,588.1 |
| Gross royalties[a] | 130.0 | 172.4 | 242.3 | 265.9 | 299.1 | 365.2 | 482.8 | 613.6 | 675.5 | 1,108.9 | 868.3 | 997.8 | 1,033.6 | 1,088.4 | 1,775.0 |
| Royalties paid to others | NA | NA | 19.5 | 20.8 | 25.6 | 28.6 | 36.2 | 36.7 | 34.5 | 32.7 | 41.0 | 38.8 | 65.5 | 54.4 | 67.8 |
| Unreimbursed legal fees expended | 19.3 | 22.2 | 27.8 | 27.7 | 34.4 | 46.5 | 55.5 | 59.6 | 58.0 | 64.2 | 73.4 | 90.1 | 101.3 | 109.2 | 119.1 |
| | Number | | | | | | | | | | | | | | |
| Invention disclosures received | 4,880 | 5,700 | 6,598 | 6,697 | 7,427 | 8,119 | 9,051 | 9,555 | 10,052 | 10,802 | 11,259 | 12,638 | 13,718 | 15,002 | 15,371 |
| New U.S. patent applications filed | 1,335 | 1,608 | 1,993 | 2,015 | 2,373 | 2,734 | 3,644 | 4,140 | 4,871 | 5,623 | 5,784 | 6,509 | 7,203 | 9,462 | 9,306 |
| U.S. patents granted | NA | NA | 1,307 | 1,596 | 1,550 | 1,776 | 2,239 | 2,681 | 3,079 | 3,272 | 3,179 | 3,109 | 3,450 | 3,268 | 2,944 |
| Startup companies formed | NA | NA | NA | 175 | 169 | 184 | 258 | 279 | 275 | 368 | 402 | 364 | 348 | 425 | 418 |
| Revenue-generating licenses/options | 2,210 | 2,809 | 3,413 | 3,560 | 4,272 | 4,958 | 5,659 | 6,006 | 6,663 | 7,562 | 7,715 | 8,490 | 8,976 | 9,543 | 10,251 |
| New licenses/options executed[b] | 1,079 | 1,461 | 1,737 | 2,049 | 2,142 | 2,209 | 2,707 | 3,078 | 3,295 | 3,569 | 3,300 | 3,660 | 3,855 | 4,087 | 4,201 |
| Equity licenses/options | NA | NA | NA | NA | 99 | 113 | 203 | 210 | 181 | 296 | 328 | 373 | 316 | 318 | 278 |

NA = not available

[a]One-year spikes in royalty data reflect extraordinary one-time payments.

[b]Data prior to 2004 may not be comparable with data for 2004 and beyond due to change in survey wording.

NOTES: Number of institutions reporting given in parentheses. Data from nonuniversity hospitals and medical institutes not included.

SOURCE: Association of University Technology Managers, AUTM Licensing Survey (various years).

*Science and Engineering Indicators 2008*