

TABLE 8

U.S. applied research expenditures, by source of funds and performing sectors: 1953–2017

(Millions of current and of constant 2012 dollars)

| Year | All funding sources | | Federal | | | | | | Nonfederal government | | | | | Business | | | | | Higher education | | Other nonprofit organizations | | | | |
|--------------------|---------------------|--------|--------------------|-------|-----------------------|----------|------------------|-----|-----------------------|-------|-----------------------|----------|------------------|----------|-------|----------|------------------|-----|------------------|-------|-------------------------------|----------|------------------|-----|--|
| | All performers | Total | Federal intramural | FFRDC | Nonfederal government | Business | Higher education | ONP | Total | FFRDC | Nonfederal government | Business | Higher education | Total | FFRDC | Business | Higher education | ONP | Higher education | Total | FFRDC | Business | Higher education | ONP | |
| Current \$millions | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1953 | 1,289 | 756 | 347 | 48 | NA | 288 | 59 | 14 | 30 | NA | NA | NA | 30 | 456 | NA | 438 | 7 | 11 | 28 | 20 | NA | NA | 10 | 10 | |
| 1954 | 1,378 | 785 | 330 | 59 | NA | 322 | 60 | 16 | 32 | NA | NA | NA | 32 | 513 | NA | 492 | 8 | 13 | 28 | 21 | NA | NA | 10 | 11 | |
| 1955 | 1,502 | 838 | 333 | 86 | NA | 339 | 63 | 18 | 32 | NA | NA | NA | 32 | 583 | NA | 560 | 9 | 14 | 27 | 22 | NA | NA | 11 | 11 | |
| 1956 | 1,929 | 1,026 | 387 | 125 | NA | 430 | 65 | 20 | 33 | NA | NA | NA | 33 | 818 | NA | 794 | 10 | 14 | 27 | 25 | NA | NA | 11 | 14 | |
| 1957 | 2,413 | 1,304 | 446 | 149 | NA | 624 | 63 | 23 | 34 | NA | NA | NA | 34 | 1,018 | NA | 992 | 12 | 14 | 27 | 31 | NA | NA | 11 | 20 | |
| 1958 | 2,759 | 1,497 | 516 | 156 | NA | 731 | 66 | 29 | 35 | NA | NA | NA | 35 | 1,163 | NA | 1,137 | 12 | 14 | 27 | 37 | NA | NA | 12 | 25 | |
| 1959 | 2,940 | 1,630 | 577 | 179 | NA | 757 | 78 | 40 | 37 | NA | NA | NA | 37 | 1,206 | NA | 1,178 | 13 | 15 | 28 | 39 | NA | NA | 12 | 27 | |
| 1960 | 3,065 | 1,732 | 615 | 201 | NA | 769 | 93 | 54 | 39 | NA | NA | NA | 39 | 1,226 | NA | 1,196 | 13 | 17 | 29 | 40 | NA | NA | 12 | 28 | |
| 1961 | 3,123 | 1,811 | 668 | 240 | NA | 738 | 104 | 62 | 40 | NA | NA | NA | 40 | 1,195 | NA | 1,165 | 13 | 17 | 30 | 48 | NA | NA | 13 | 35 | |
| 1962 | 3,698 | 2,098 | 709 | 249 | NA | 954 | 119 | 68 | 41 | NA | NA | NA | 41 | 1,471 | NA | 1,438 | 14 | 19 | 30 | 58 | NA | NA | 13 | 45 | |
| 1963 | 3,864 | 2,244 | 809 | 275 | NA | 952 | 128 | 82 | 42 | NA | NA | NA | 42 | 1,483 | NA | 1,450 | 14 | 19 | 32 | 63 | NA | NA | 14 | 49 | |
| 1964 | 4,201 | 2,462 | 947 | 313 | NA | 978 | 142 | 82 | 45 | NA | NA | NA | 45 | 1,593 | NA | 1,560 | 14 | 19 | 37 | 65 | NA | NA | 18 | 47 | |
| 1965 | 4,374 | 2,553 | 994 | 294 | NA | 992 | 176 | 98 | 46 | NA | NA | NA | 46 | 1,654 | NA | 1,620 | 13 | 21 | 42 | 79 | NA | NA | 27 | 52 | |
| 1966 | 4,653 | 2,625 | 1,012 | 290 | NA | 986 | 208 | 129 | 47 | NA | NA | NA | 47 | 1,842 | NA | 1,804 | 14 | 24 | 48 | 91 | NA | NA | 34 | 57 | |
| 1967 | 4,848 | 2,763 | 1,069 | 334 | NA | 983 | 238 | 141 | 46 | NA | NA | NA | 46 | 1,890 | NA | 1,849 | 16 | 25 | 54 | 96 | NA | NA | 36 | 60 | |
| 1968 | 5,137 | 2,811 | 1,112 | 334 | NA | 956 | 250 | 160 | 46 | NA | NA | NA | 46 | 2,125 | NA | 2,081 | 16 | 28 | 55 | 101 | NA | NA | 39 | 62 | |
| 1969 | 5,454 | 2,924 | 1,229 | 336 | NA | 920 | 257 | 183 | 48 | NA | NA | NA | 48 | 2,320 | NA | 2,272 | 16 | 32 | 54 | 109 | NA | NA | 43 | 66 | |
| 1970 | 5,752 | 3,100 | 1,334 | 336 | NA | 952 | 280 | 199 | 51 | NA | NA | NA | 51 | 2,429 | NA | 2,378 | 18 | 33 | 56 | 117 | NA | NA | 47 | 70 | |
| 1971 | 5,833 | 3,091 | 1,355 | 312 | NA | 907 | 306 | 212 | 61 | NA | NA | NA | 61 | 2,494 | NA | 2,441 | 19 | 34 | 67 | 121 | NA | NA | 47 | 74 | |
| 1972 | 6,147 | 3,243 | 1,434 | 358 | NA | 845 | 391 | 216 | 74 | NA | NA | NA | 74 | 2,618 | NA | 2,562 | 21 | 35 | 82 | 131 | NA | NA | 52 | 79 | |
| 1973 | 6,655 | 3,429 | 1,527 | 334 | NA | 883 | 450 | 236 | 88 | NA | NA | NA | 88 | 2,894 | NA | 2,832 | 26 | 36 | 100 | 145 | NA | NA | 62 | 83 | |
| 1974 | 7,344 | 3,634 | 1,652 | 335 | NA | 905 | 477 | 266 | 96 | NA | NA | NA | 96 | 3,333 | NA | 3,263 | 32 | 39 | 118 | 163 | NA | NA | 72 | 91 | |
| 1975 | 8,091 | 4,125 | 1,912 | 384 | NA | 991 | 550 | 290 | 113 | NA | NA | NA | 113 | 3,520 | NA | 3,440 | 39 | 42 | 141 | 192 | NA | NA | 92 | 100 | |
| 1976 | 8,976 | 4,464 | 2,068 | 457 | NA | 1,033 | 596 | 310 | 127 | NA | NA | NA | 127 | 4,001 | NA | 3,912 | 45 | 45 | 166 | 218 | NA | NA | 109 | 109 | |
| 1977 | 9,662 | 4,683 | 2,081 | 540 | NA | 1,113 | 626 | 324 | 134 | NA | NA | NA | 134 | 4,410 | NA | 4,311 | 51 | 48 | 194 | 241 | NA | NA | 121 | 120 | |
| 1978 | 10,704 | 5,080 | 2,242 | 597 | NA | 1,195 | 676 | 371 | 151 | NA | NA | NA | 151 | 4,982 | NA | 4,870 | 61 | 52 | 232 | 259 | NA | NA | 128 | 132 | |
| 1979 | 12,097 | 5,602 | 2,415 | 654 | NA | 1,305 | 793 | 436 | 161 | NA | NA | NA | 161 | 5,797 | NA | 5,670 | 71 | 55 | 263 | 273 | NA | NA | 129 | 144 | |
| 1980 | 13,729 | 6,252 | 2,546 | 749 | NA | 1,625 | 912 | 420 | 174 | NA | NA | NA | 174 | 6,698 | NA | 6,550 | 88 | 60 | 308 | 298 | NA | NA | 140 | 158 | |
| 1981 | 16,329 | 6,905 | 2,731 | 788 | NA | 2,042 | 953 | 391 | 199 | NA | NA | NA | 199 | 8,531 | NA | 8,359 | 108 | 64 | 363 | 332 | NA | NA | 159 | 173 | |
| 1982 | 18,218 | 7,689 | 2,802 | 890 | NA | 2,593 | 1,007 | 398 | 207 | NA | NA | NA | 207 | 9,553 | NA | 9,363 | 121 | 69 | 402 | 367 | NA | NA | 178 | 189 | |
| 1983 | 20,298 | 8,738 | 2,991 | 965 | NA | 3,227 | 1,122 | 433 | 215 | NA | NA | NA | 215 | 10,501 | NA | 10,286 | 141 | 74 | 443 | 401 | NA | NA | 194 | 207 | |
| 1984 | 22,451 | 9,499 | 2,961 | 1,176 | NA | 3,677 | 1,226 | 459 | 234 | NA | NA | NA | 234 | 11,788 | NA | 11,541 | 168 | 79 | 491 | 438 | NA | NA | 212 | 226 | |
| 1985 | 25,401 | 10,930 | 3,135 | 1,292 | NA | 4,717 | 1,296 | 490 | 262 | NA | NA | NA | 262 | 13,191 | NA | 12,908 | 198 | 85 | 547 | 471 | NA | NA | 224 | 247 | |
| 1986 | 27,240 | 10,409 | 3,204 | 1,258 | NA | 4,049 | 1,393 | 506 | 298 | NA | NA | NA | 298 | 15,402 | NA | 15,082 | 229 | 91 | 620 | 510 | NA | NA | 240 | 270 | |

TABLE 8

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(Millions of current and of constant 2012 dollars)

| Year | All funding sources | | Federal | | | | | | Nonfederal government | | | | | Business | | | | | Higher education | | Other nonprofit organizations | | | | |
|--------------------------|---------------------|--------|--------------------|-------|-----------------------|----------|------------------|-------|-----------------------|-------|-----------------------|----------|------------------|----------|-------|----------|------------------|-----|------------------|-------|-------------------------------|----------|------------------|-------|--|
| | All performers | Total | Federal intramural | FFRDC | Nonfederal government | Business | Higher education | ONP | Total | FFRDC | Nonfederal government | Business | Higher education | Total | FFRDC | Business | Higher education | ONP | Higher education | Total | FFRDC | Business | Higher education | ONP | |
| 1987 | 27,951 | 10,829 | 3,366 | 1,228 | NA | 4,037 | 1,643 | 555 | 333 | NA | NA | NA | 333 | 15,511 | NA | 15,153 | 260 | 98 | 707 | 571 | NA | NA | 276 | 295 | |
| 1988 | 29,528 | 10,749 | 3,362 | 984 | NA | 3,846 | 1,958 | 599 | 377 | NA | NA | NA | 377 | 16,938 | NA | 16,531 | 302 | 105 | 818 | 647 | NA | NA | 325 | 322 | |
| 1989 | 32,277 | 11,753 | 3,566 | 1,047 | NA | 4,324 | 2,121 | 695 | 417 | NA | NA | NA | 417 | 18,452 | NA | 17,993 | 347 | 112 | 933 | 722 | NA | NA | 370 | 352 | |
| 1990 | 34,897 | 13,695 | 3,652 | 1,156 | NA | 5,967 | 2,140 | 780 | 453 | NA | NA | NA | 453 | 18,930 | NA | 18,432 | 377 | 120 | 1,031 | 788 | NA | NA | 404 | 384 | |
| 1991 | 38,631 | 14,280 | 4,093 | 1,446 | NA | 5,588 | 2,232 | 921 | 468 | NA | NA | NA | 468 | 21,946 | NA | 21,425 | 392 | 129 | 1,091 | 847 | NA | NA | 428 | 419 | |
| 1992 | 37,936 | 13,690 | 4,337 | 1,529 | NA | 4,476 | 2,415 | 933 | 479 | NA | NA | NA | 479 | 21,736 | NA | 21,184 | 414 | 138 | 1,120 | 911 | NA | NA | 454 | 456 | |
| 1993 | 37,283 | 14,075 | 4,838 | 1,500 | NA | 4,295 | 2,542 | 900 | 496 | NA | NA | NA | 496 | 20,547 | NA | 19,956 | 443 | 148 | 1,181 | 984 | NA | NA | 487 | 497 | |
| 1994 | 36,618 | 13,800 | 4,985 | 1,596 | NA | 3,616 | 2,644 | 960 | 517 | NA | NA | NA | 517 | 19,995 | NA | 19,372 | 464 | 158 | 1,256 | 1,049 | NA | NA | 509 | 541 | |
| 1995 | 40,936 | 13,543 | 4,952 | 1,714 | NA | 3,164 | 2,779 | 934 | 559 | NA | NA | NA | 559 | 24,418 | NA | 23,755 | 494 | 170 | 1,311 | 1,104 | NA | NA | 516 | 589 | |
| 1996 | 43,170 | 13,958 | 4,872 | 1,623 | NA | 3,640 | 2,864 | 960 | 584 | NA | NA | NA | 584 | 26,076 | NA | 25,370 | 524 | 182 | 1,390 | 1,162 | NA | NA | 522 | 640 | |
| 1997 | 46,516 | 12,852 | 4,997 | 1,679 | NA | 2,648 | 2,518 | 1,011 | 548 | NA | NA | NA | 548 | 30,502 | NA | 29,782 | 515 | 205 | 1,396 | 1,219 | NA | NA | 508 | 711 | |
| 1998 | 46,247 | 12,751 | 5,146 | 1,725 | NA | 2,632 | 2,189 | 1,060 | 515 | NA | NA | NA | 515 | 30,303 | NA | 29,576 | 509 | 218 | 1,393 | 1,285 | NA | NA | 502 | 784 | |
| 1999 | 51,853 | 13,869 | 5,530 | 1,651 | NA | 2,817 | 2,571 | 1,300 | 533 | NA | NA | NA | 533 | 34,586 | NA | 33,821 | 529 | 236 | 1,480 | 1,385 | NA | NA | 537 | 849 | |
| 2000 | 56,503 | 15,450 | 6,105 | 1,750 | NA | 2,682 | 3,081 | 1,831 | 558 | NA | NA | NA | 558 | 37,293 | NA | 36,494 | 540 | 258 | 1,604 | 1,598 | NA | NA | 578 | 1,021 | |
| 2001 | 63,956 | 18,595 | 7,052 | 2,379 | NA | 3,603 | 3,411 | 2,150 | 590 | 5 | NA | NA | 585 | 41,238 | 33 | 40,409 | 535 | 261 | 1,734 | 1,798 | 52 | NA | 621 | 1,126 | |
| 2002 | 50,521 | 18,987 | 7,487 | 2,905 | NA | 2,452 | 3,877 | 2,267 | 644 | 8 | NA | NA | 636 | 26,899 | 35 | 26,081 | 531 | 253 | 1,937 | 2,053 | 71 | NA | 689 | 1,293 | |
| 2003 | 61,059 | 22,234 | 7,672 | 3,152 | NA | 4,473 | 4,450 | 2,487 | 716 | 9 | NA | NA | 708 | 33,692 | 36 | 32,861 | 537 | 259 | 2,127 | 2,290 | 65 | NA | 739 | 1,486 | |
| 2004 | 69,132 | 22,417 | 7,455 | 3,057 | NA | 4,775 | 4,682 | 2,448 | 742 | 7 | NA | NA | 735 | 41,495 | 30 | 40,657 | 545 | 264 | 2,190 | 2,287 | 40 | NA | 759 | 1,488 | |
| 2005 | 69,653 | 23,329 | 7,557 | 3,241 | NA | 5,289 | 4,810 | 2,432 | 727 | 8 | NA | NA | 719 | 40,867 | 35 | 39,995 | 557 | 280 | 2,283 | 2,447 | 45 | NA | 774 | 1,627 | |
| 2006 | 76,624 | 24,865 | 7,435 | 3,531 | 88 | 6,140 | 5,080 | 2,592 | 890 | 8 | 170 | NA | 712 | 45,952 | 47 | 45,033 | 573 | 300 | 2,368 | 2,549 | 54 | NA | 789 | 1,705 | |
| 2007 | 85,322 | 29,439 | 7,222 | 5,293 | 112 | 8,945 | 5,284 | 2,583 | 970 | 14 | 212 | NA | 745 | 49,627 | 77 | 48,625 | 607 | 318 | 2,461 | 2,824 | 92 | NA | 848 | 1,885 | |
| 2008 | 76,641 | 27,143 | 7,316 | 5,843 | 147 | 5,397 | 5,840 | 2,600 | 1,164 | 15 | 263 | 71 | 815 | 42,385 | 89 | 41,292 | 675 | 330 | 2,682 | 3,268 | 93 | 105 | 951 | 2,119 | |
| 2009 | 74,236 | 32,149 | 7,874 | 5,979 | 187 | 7,797 | 7,263 | 3,049 | 1,324 | 19 | 318 | 38 | 948 | 34,295 | 88 | 33,124 | 764 | 319 | 2,942 | 3,526 | 104 | 96 | 1,021 | 2,305 | |
| 2010 | 79,258 | 29,769 | 8,016 | 5,025 | 221 | 4,705 | 8,762 | 3,041 | 1,421 | 18 | 357 | 32 | 1,015 | 41,153 | 67 | 39,987 | 778 | 321 | 3,141 | 3,774 | 77 | 182 | 1,064 | 2,451 | |
| 2011 | 82,146 | 29,696 | 8,024 | 5,057 | 228 | 4,404 | 9,290 | 2,693 | 1,427 | 13 | 351 | 70 | 994 | 43,805 | 81 | 42,591 | 796 | 338 | 3,416 | 3,802 | 77 | 122 | 1,104 | 2,500 | |
| 2012 | 87,070 | 30,310 | 8,587 | 5,566 | 222 | 4,137 | 9,170 | 2,629 | 1,403 | 19 | 333 | 45 | 1,007 | 47,741 | 81 | 46,436 | 877 | 346 | 3,693 | 3,923 | 76 | 137 | 1,162 | 2,549 | |
| 2013 | 88,335 | 32,531 | 8,309 | 6,639 | 215 | 6,028 | 8,876 | 2,465 | 1,434 | 22 | 303 | 47 | 1,063 | 46,133 | 94 | 44,738 | 935 | 366 | 3,943 | 4,294 | 69 | 200 | 1,296 | 2,730 | |
| 2014 | 91,890 | 33,468 | 8,775 | 6,765 | 201 | 6,445 | 8,708 | 2,574 | 1,405 | 13 | 273 | 35 | 1,085 | 48,174 | 107 | 46,685 | 997 | 385 | 4,214 | 4,629 | 67 | 250 | 1,418 | 2,894 | |
| 2015 | 97,323 | 34,689 | 9,347 | 7,182 | 200 | 6,102 | 9,095 | 2,762 | 1,419 | 9 | 294 | 24 | 1,093 | 51,738 | 96 | 50,137 | 1,107 | 398 | 4,562 | 4,915 | 64 | 209 | 1,606 | 3,036 | |
| 2016 ^a | 104,629 | 35,424 | 9,788 | 7,469 | 201 | 5,181 | 9,805 | 2,981 | 1,534 | 10 | 309 | 36 | 1,179 | 57,299 | 84 | 55,573 | 1,224 | 418 | 4,998 | 5,375 | 65 | 229 | 1,855 | 3,226 | |
| 2017 ^b | 110,352 | 36,520 | 9,805 | 7,803 | 197 | 5,184 | 10,224 | 3,307 | 1,608 | 14 | 308 | 42 | 1,244 | 61,111 | 91 | 59,274 | 1,308 | 437 | 5,357 | 5,757 | 71 | 264 | 2,031 | 3,391 | |
| Constant 2012 \$millions | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1953 | 8,928 | 5,233 | 2,403 | 329 | NA | 1,995 | 409 | 97 | 209 | NA | NA | NA | 209 | 3,155 | NA | 3,034 | 45 | 76 | 193 | 139 | NA | NA | 69 | 69 | |
| 1954 | 9,457 | 5,387 | 2,261 | 401 | NA | 2,210 | 408 | 106 | 216 | NA | NA | NA | 216 | 3,517 | NA | 3,377 | 51 | 89 | 192 | 144 | NA | NA | 69 | 75 | |

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|------|---------------------|--------|--------------------|-------|-----------------------|----------|------------------|-------|-----------------------|-------|-----------------------|----------|------------------|----------|-------|----------|------------------|-----|------------------|-------|-------------------------------|----------|------------------|-----|--|
| | All performers | Total | Federal intramural | FFRDC | Nonfederal government | Business | Higher education | ONP | Total | FFRDC | Nonfederal government | Business | Higher education | Total | FFRDC | Business | Higher education | ONP | Higher education | Total | FFRDC | Business | Higher education | ONP | |
| 1955 | 10,133 | 5,656 | 2,247 | 580 | NA | 2,285 | 425 | 118 | 218 | NA | NA | NA | 218 | 3,931 | NA | 3,779 | 57 | 94 | 183 | 145 | NA | NA | 71 | 74 | |
| 1956 | 12,584 | 6,692 | 2,522 | 812 | NA | 2,803 | 424 | 131 | 216 | NA | NA | NA | 216 | 5,338 | NA | 5,181 | 65 | 91 | 176 | 163 | NA | NA | 72 | 91 | |
| 1957 | 15,243 | 8,235 | 2,814 | 941 | NA | 3,940 | 398 | 142 | 214 | NA | NA | NA | 214 | 6,427 | NA | 6,266 | 73 | 88 | 171 | 196 | NA | NA | 69 | 126 | |
| 1958 | 17,040 | 9,245 | 3,187 | 963 | NA | 4,514 | 405 | 176 | 218 | NA | NA | NA | 218 | 7,183 | NA | 7,022 | 74 | 86 | 168 | 225 | NA | NA | 71 | 154 | |
| 1959 | 17,909 | 9,931 | 3,512 | 1,090 | NA | 4,613 | 472 | 244 | 225 | NA | NA | NA | 225 | 7,344 | NA | 7,176 | 76 | 91 | 171 | 238 | NA | NA | 73 | 164 | |
| 1960 | 18,424 | 10,409 | 3,693 | 1,208 | NA | 4,624 | 559 | 325 | 233 | NA | NA | NA | 233 | 7,369 | NA | 7,188 | 78 | 102 | 173 | 240 | NA | NA | 72 | 168 | |
| 1961 | 18,573 | 10,770 | 3,973 | 1,424 | NA | 4,389 | 616 | 369 | 237 | NA | NA | NA | 237 | 7,107 | NA | 6,928 | 77 | 101 | 176 | 282 | NA | NA | 74 | 208 | |
| 1962 | 21,727 | 12,328 | 4,163 | 1,463 | NA | 5,607 | 696 | 400 | 238 | NA | NA | NA | 238 | 8,640 | NA | 8,449 | 79 | 112 | 179 | 341 | NA | NA | 76 | 264 | |
| 1963 | 22,446 | 13,036 | 4,699 | 1,594 | NA | 5,528 | 741 | 473 | 245 | NA | NA | NA | 245 | 8,614 | NA | 8,422 | 81 | 110 | 188 | 363 | NA | NA | 78 | 285 | |
| 1964 | 24,036 | 14,083 | 5,415 | 1,791 | NA | 5,596 | 812 | 469 | 259 | NA | NA | NA | 259 | 9,111 | NA | 8,925 | 77 | 109 | 213 | 369 | NA | NA | 100 | 269 | |
| 1965 | 24,574 | 14,342 | 5,582 | 1,649 | NA | 5,574 | 986 | 551 | 261 | NA | NA | NA | 261 | 9,293 | NA | 9,102 | 73 | 118 | 237 | 441 | NA | NA | 149 | 292 | |
| 1966 | 25,430 | 14,345 | 5,531 | 1,585 | NA | 5,389 | 1,137 | 702 | 257 | NA | NA | NA | 257 | 10,068 | NA | 9,860 | 77 | 131 | 265 | 495 | NA | NA | 183 | 312 | |
| 1967 | 25,750 | 14,675 | 5,675 | 1,771 | NA | 5,221 | 1,261 | 746 | 242 | NA | NA | NA | 242 | 10,036 | NA | 9,821 | 82 | 133 | 286 | 510 | NA | NA | 191 | 319 | |
| 1968 | 26,170 | 14,318 | 5,662 | 1,702 | NA | 4,870 | 1,271 | 813 | 234 | NA | NA | NA | 234 | 10,826 | NA | 10,601 | 82 | 143 | 280 | 512 | NA | NA | 196 | 316 | |
| 1969 | 26,489 | 14,199 | 5,970 | 1,629 | NA | 4,468 | 1,246 | 886 | 234 | NA | NA | NA | 234 | 11,267 | NA | 11,034 | 78 | 155 | 262 | 527 | NA | NA | 206 | 321 | |
| 1970 | 26,537 | 14,303 | 6,154 | 1,550 | NA | 4,392 | 1,289 | 918 | 236 | NA | NA | NA | 236 | 11,203 | NA | 10,970 | 81 | 152 | 257 | 537 | NA | NA | 215 | 323 | |
| 1971 | 25,609 | 13,570 | 5,949 | 1,368 | NA | 3,982 | 1,343 | 929 | 266 | NA | NA | NA | 266 | 10,947 | NA | 10,717 | 81 | 149 | 294 | 531 | NA | NA | 206 | 325 | |
| 1972 | 25,870 | 13,648 | 6,035 | 1,507 | NA | 3,556 | 1,643 | 907 | 312 | NA | NA | NA | 312 | 11,016 | NA | 10,783 | 86 | 147 | 344 | 549 | NA | NA | 217 | 332 | |
| 1973 | 26,554 | 13,683 | 6,094 | 1,333 | NA | 3,523 | 1,793 | 940 | 350 | NA | NA | NA | 350 | 11,547 | NA | 11,299 | 104 | 144 | 398 | 577 | NA | NA | 245 | 331 | |
| 1974 | 26,884 | 13,304 | 6,048 | 1,225 | NA | 3,313 | 1,744 | 974 | 352 | NA | NA | NA | 352 | 12,202 | NA | 11,945 | 115 | 142 | 432 | 595 | NA | NA | 262 | 333 | |
| 1975 | 27,107 | 13,820 | 6,405 | 1,285 | NA | 3,320 | 1,841 | 970 | 380 | NA | NA | NA | 380 | 11,793 | NA | 11,525 | 129 | 139 | 471 | 643 | NA | NA | 308 | 335 | |
| 1976 | 28,505 | 14,175 | 6,568 | 1,451 | NA | 3,280 | 1,891 | 984 | 404 | NA | NA | NA | 404 | 12,706 | NA | 12,423 | 141 | 142 | 526 | 694 | NA | NA | 346 | 348 | |
| 1977 | 28,888 | 14,002 | 6,220 | 1,614 | NA | 3,328 | 1,870 | 969 | 402 | NA | NA | NA | 402 | 13,185 | NA | 12,889 | 152 | 144 | 580 | 719 | NA | NA | 360 | 359 | |
| 1978 | 29,900 | 14,190 | 6,261 | 1,666 | NA | 3,338 | 1,888 | 1,037 | 422 | NA | NA | NA | 422 | 13,916 | NA | 13,603 | 169 | 144 | 647 | 724 | NA | NA | 356 | 367 | |
| 1979 | 31,202 | 14,450 | 6,229 | 1,687 | NA | 3,366 | 2,044 | 1,124 | 417 | NA | NA | NA | 417 | 14,952 | NA | 14,625 | 184 | 143 | 679 | 704 | NA | NA | 333 | 372 | |
| 1980 | 32,478 | 14,789 | 6,023 | 1,772 | NA | 3,844 | 2,158 | 993 | 411 | NA | NA | NA | 411 | 15,844 | NA | 15,495 | 209 | 141 | 729 | 705 | NA | NA | 332 | 373 | |
| 1981 | 35,289 | 14,923 | 5,903 | 1,703 | NA | 4,413 | 2,059 | 845 | 431 | NA | NA | NA | 431 | 18,436 | NA | 18,065 | 233 | 138 | 784 | 716 | NA | NA | 343 | 373 | |
| 1982 | 37,080 | 15,650 | 5,702 | 1,812 | NA | 5,278 | 2,049 | 810 | 422 | NA | NA | NA | 422 | 19,443 | NA | 19,057 | 246 | 140 | 818 | 747 | NA | NA | 362 | 385 | |
| 1983 | 39,756 | 17,115 | 5,859 | 1,890 | NA | 6,321 | 2,198 | 848 | 421 | NA | NA | NA | 421 | 20,567 | NA | 20,147 | 277 | 144 | 868 | 785 | NA | NA | 380 | 405 | |
| 1984 | 42,442 | 17,957 | 5,597 | 2,223 | NA | 6,951 | 2,318 | 868 | 443 | NA | NA | NA | 443 | 22,284 | NA | 21,817 | 317 | 149 | 929 | 829 | NA | NA | 401 | 428 | |
| 1985 | 46,546 | 20,028 | 5,745 | 2,367 | NA | 8,644 | 2,376 | 897 | 479 | NA | NA | NA | 479 | 24,171 | NA | 23,654 | 362 | 155 | 1,003 | 864 | NA | NA | 411 | 453 | |
| 1986 | 48,931 | 18,698 | 5,755 | 2,260 | NA | 7,273 | 2,502 | 908 | 535 | NA | NA | NA | 535 | 27,667 | NA | 27,092 | 411 | 163 | 1,114 | 916 | NA | NA | 431 | 486 | |
| 1987 | 48,997 | 18,983 | 5,900 | 2,153 | NA | 7,077 | 2,880 | 973 | 584 | NA | NA | NA | 584 | 27,189 | NA | 26,563 | 456 | 171 | 1,240 | 1,001 | NA | NA | 483 | 518 | |
| 1988 | 49,998 | 18,200 | 5,693 | 1,665 | NA | 6,512 | 3,316 | 1,014 | 638 | NA | NA | NA | 638 | 28,679 | NA | 27,991 | 511 | 177 | 1,385 | 1,096 | NA | NA | 550 | 546 | |
| 1989 | 52,590 | 19,150 | 5,811 | 1,705 | NA | 7,045 | 3,456 | 1,132 | 679 | NA | NA | NA | 679 | 30,065 | NA | 29,317 | 565 | 183 | 1,520 | 1,176 | NA | NA | 603 | 573 | |

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(Millions of current and of constant 2012 dollars)

| Year | All funding sources | | Federal | | | | | Nonfederal government | | | | | Business | | | | | Higher education | | Other nonprofit organizations | | | | |
|-------------------|---------------------|--------|--------------------|-------|-----------------------|----------|------------------|-----------------------|-------|-------|-----------------------|----------|------------------|--------|-------|----------|------------------|------------------|------------------|-------------------------------|-------|----------|------------------|-------|
| | All performers | Total | Federal intramural | FFRDC | Nonfederal government | Business | Higher education | ONP | Total | FFRDC | Nonfederal government | Business | Higher education | Total | FFRDC | Business | Higher education | ONP | Higher education | Total | FFRDC | Business | Higher education | ONP |
| 1990 | 54,808 | 21,509 | 5,736 | 1,816 | NA | 9,372 | 3,362 | 1,224 | 711 | NA | NA | NA | 711 | 29,730 | NA | 28,949 | 592 | 189 | 1,619 | 1,238 | NA | NA | 635 | 603 |
| 1991 | 58,689 | 21,694 | 6,219 | 2,196 | NA | 8,489 | 3,390 | 1,399 | 711 | NA | NA | NA | 711 | 33,340 | NA | 32,549 | 595 | 196 | 1,657 | 1,287 | NA | NA | 651 | 636 |
| 1992 | 56,347 | 20,334 | 6,442 | 2,271 | NA | 6,648 | 3,587 | 1,387 | 711 | NA | NA | NA | 711 | 32,286 | NA | 31,466 | 615 | 205 | 1,664 | 1,353 | NA | NA | 675 | 678 |
| 1993 | 54,095 | 20,421 | 7,020 | 2,176 | NA | 6,232 | 3,688 | 1,305 | 719 | NA | NA | NA | 719 | 29,813 | NA | 28,955 | 643 | 215 | 1,714 | 1,428 | NA | NA | 707 | 721 |
| 1994 | 52,020 | 19,605 | 7,082 | 2,267 | NA | 5,137 | 3,756 | 1,363 | 735 | NA | NA | NA | 735 | 28,405 | NA | 27,520 | 660 | 225 | 1,784 | 1,491 | NA | NA | 722 | 769 |
| 1995 | 56,961 | 18,845 | 6,891 | 2,385 | NA | 4,403 | 3,867 | 1,299 | 777 | NA | NA | NA | 777 | 33,977 | NA | 33,054 | 687 | 236 | 1,825 | 1,537 | NA | NA | 718 | 819 |
| 1996 | 58,989 | 19,072 | 6,657 | 2,217 | NA | 4,974 | 3,913 | 1,311 | 798 | NA | NA | NA | 798 | 35,631 | NA | 34,667 | 716 | 248 | 1,900 | 1,588 | NA | NA | 714 | 875 |
| 1997 | 62,483 | 17,264 | 6,712 | 2,255 | NA | 3,557 | 3,382 | 1,358 | 737 | NA | NA | NA | 737 | 40,971 | NA | 40,005 | 691 | 275 | 1,875 | 1,637 | NA | NA | 683 | 954 |
| 1998 | 61,431 | 16,938 | 6,835 | 2,291 | NA | 3,496 | 2,908 | 1,408 | 684 | NA | NA | NA | 684 | 40,252 | NA | 39,286 | 676 | 289 | 1,850 | 1,708 | NA | NA | 667 | 1,041 |
| 1999 | 67,897 | 18,160 | 7,241 | 2,161 | NA | 3,689 | 3,367 | 1,702 | 698 | NA | NA | NA | 698 | 45,287 | NA | 44,285 | 693 | 309 | 1,938 | 1,814 | NA | NA | 703 | 1,111 |
| 2000 | 72,368 | 19,788 | 7,819 | 2,242 | NA | 3,435 | 3,947 | 2,345 | 715 | NA | NA | NA | 715 | 47,764 | NA | 46,741 | 692 | 331 | 2,054 | 2,047 | NA | NA | 740 | 1,307 |
| 2001 | 80,156 | 23,306 | 8,839 | 2,982 | NA | 4,516 | 4,275 | 2,695 | 740 | 7 | NA | NA | 733 | 51,684 | 42 | 50,644 | 671 | 327 | 2,173 | 2,254 | 65 | NA | 778 | 1,411 |
| 2002 | 62,332 | 23,426 | 9,238 | 3,584 | NA | 3,025 | 4,783 | 2,796 | 795 | 10 | NA | NA | 785 | 33,188 | 43 | 32,178 | 655 | 312 | 2,390 | 2,534 | 88 | NA | 851 | 1,595 |
| 2003 | 73,960 | 26,931 | 9,292 | 3,818 | NA | 5,418 | 5,390 | 3,012 | 868 | 10 | NA | NA | 857 | 40,810 | 43 | 39,804 | 650 | 313 | 2,576 | 2,774 | 79 | NA | 895 | 1,800 |
| 2004 | 81,543 | 26,441 | 8,793 | 3,606 | NA | 5,632 | 5,523 | 2,888 | 875 | 9 | NA | NA | 867 | 48,945 | 35 | 47,956 | 642 | 311 | 2,583 | 2,698 | 48 | NA | 895 | 1,755 |
| 2005 | 79,676 | 26,686 | 8,645 | 3,707 | NA | 6,050 | 5,503 | 2,781 | 832 | 9 | NA | NA | 823 | 46,748 | 40 | 45,750 | 637 | 321 | 2,612 | 2,799 | 52 | NA | 886 | 1,861 |
| 2006 | 85,075 | 27,607 | 8,255 | 3,920 | 97 | 6,817 | 5,640 | 2,878 | 989 | 9 | 189 | NA | 791 | 51,021 | 52 | 50,000 | 636 | 333 | 2,629 | 2,830 | 60 | NA | 877 | 1,893 |
| 2007 | 92,254 | 31,831 | 7,808 | 5,723 | 122 | 9,672 | 5,713 | 2,793 | 1,049 | 15 | 229 | NA | 805 | 53,659 | 83 | 52,575 | 656 | 344 | 2,661 | 3,054 | 99 | NA | 917 | 2,038 |
| 2008 | 81,287 | 28,788 | 7,760 | 6,197 | 156 | 5,724 | 6,194 | 2,758 | 1,234 | 16 | 279 | 75 | 864 | 44,955 | 94 | 43,795 | 716 | 350 | 2,844 | 3,466 | 99 | 111 | 1,008 | 2,248 |
| 2009 | 78,140 | 33,840 | 8,288 | 6,294 | 197 | 8,207 | 7,645 | 3,209 | 1,393 | 20 | 335 | 40 | 998 | 36,099 | 92 | 34,866 | 804 | 335 | 3,096 | 3,712 | 109 | 101 | 1,075 | 2,427 |
| 2010 | 82,465 | 30,974 | 8,340 | 5,229 | 230 | 4,895 | 9,116 | 3,164 | 1,479 | 19 | 371 | 33 | 1,056 | 42,818 | 70 | 41,605 | 809 | 334 | 3,268 | 3,927 | 80 | 189 | 1,107 | 2,550 |
| 2011 | 83,722 | 30,265 | 8,178 | 5,154 | 233 | 4,488 | 9,468 | 2,745 | 1,455 | 13 | 358 | 71 | 1,013 | 44,645 | 82 | 43,408 | 811 | 344 | 3,482 | 3,875 | 78 | 124 | 1,125 | 2,548 |
| 2012 | 87,070 | 30,310 | 8,587 | 5,566 | 222 | 4,137 | 9,170 | 2,629 | 1,403 | 19 | 333 | 45 | 1,007 | 47,741 | 81 | 46,436 | 877 | 346 | 3,693 | 3,923 | 76 | 137 | 1,162 | 2,549 |
| 2013 | 86,811 | 31,970 | 8,165 | 6,524 | 211 | 5,924 | 8,723 | 2,423 | 1,409 | 21 | 298 | 46 | 1,044 | 45,337 | 92 | 43,966 | 918 | 360 | 3,875 | 4,220 | 68 | 196 | 1,273 | 2,682 |
| 2014 | 88,629 | 32,280 | 8,464 | 6,525 | 194 | 6,216 | 8,399 | 2,483 | 1,355 | 12 | 263 | 34 | 1,046 | 46,464 | 103 | 45,028 | 961 | 372 | 4,064 | 4,465 | 65 | 241 | 1,368 | 2,791 |
| 2015 | 92,875 | 33,103 | 8,920 | 6,854 | 191 | 5,823 | 8,679 | 2,636 | 1,354 | 9 | 280 | 23 | 1,043 | 49,374 | 91 | 47,846 | 1,056 | 380 | 4,354 | 4,691 | 62 | 199 | 1,533 | 2,897 |
| 2016 ^a | 98,767 | 33,439 | 9,239 | 7,050 | 190 | 4,891 | 9,255 | 2,814 | 1,448 | 10 | 291 | 34 | 1,112 | 54,089 | 79 | 52,460 | 1,155 | 394 | 4,718 | 5,074 | 62 | 216 | 1,751 | 3,045 |
| 2017 ^b | 102,227 | 33,831 | 9,083 | 7,228 | 183 | 4,802 | 9,471 | 3,064 | 1,489 | 13 | 285 | 39 | 1,153 | 56,611 | 85 | 54,910 | 1,212 | 405 | 4,963 | 5,333 | 66 | 244 | 1,881 | 3,142 |

NA = not available.

FFRDC = federally funded research and development center; ONP = other nonprofit organization.

^a Some data for 2016 are preliminary and may later be revised.

^b The data for 2017 are estimates and will later be revised.

Note(s)

TABLE 8

U.S. applied research expenditures, by source of funds and performing sectors: 1953–2017

(Millions of current and of constant 2012 dollars)

This table reaggregates the R&D performer data in table 4 according to major categories of R&D funding: federal government, nonfederal government (state and local), business, higher education, and ONPs. Business sources of R&D funding in this table include the own funds of domestic R&D performing businesses, funds from other domestic businesses, and funds from foreign businesses. For interpretive detail on the R&D performers listed, see table 2, footnotes a–f. Detail may not add to total because of rounding. Constant-dollar estimates are derived from unrounded data. For comparisons, use only the historical data reported in this table because some back-year data may have been revised. Except for the nonprofit sector, data are based on annual reports by performers in the National Science Foundation's annual R&D expenditure surveys: Business Research and Development and Innovation Survey, Higher Education Research and Development Survey, Survey of Federal Funds for Research and Development, FFRDC Research and Development Expenditures Survey, and Survey of State Government Research and Development. R&D expenditures by business performers—and, before 2001, also industry-administered FFRDCs—are collected on a calendar year basis. Expenditures for other performers are calendar year approximations based on fiscal year data. (See also table 4, general notes.) The 1998–2017 data for ONP R&D performance funded by businesses and the nonprofit sector itself are estimated, based on parameters from the 1996–97 Survey of Research and Development Funding and Performance by Nonprofit Organizations. Type-of-R&D data for business R&D in 1998–2007 were revised in response to data quality review considerations and are not directly comparable with the data for 1997 and earlier years. For 2008 and onward, the type-of-R&D splits for other than total, own-funded, and federally funded R&D are estimated. (See also table 2, footnote d.) Type-of-R&D data for FFRDC R&D in 1953–54 include only those of university-administered FFRDCs. Starting in 2001, type-of-R&D data distinguish federally funded from and nonfederally funded FFRDC R&D. (See also table 2, footnote b.) The type-of-R&D estimation procedure for higher education R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years. Furthermore, the type-of-R&D splits for other than total and federally funded are estimated. (See also table 2, footnote e.) Type-of-R&D data for R&D by ONPs in 1998 and later years are estimated, except for those that are federally funded. (See also table 2, footnote f.) Type-of-R&D data for state intramural R&D are not currently collected by the Survey of State Government Research and Development. (See also table 2, footnote c.)

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, National Patterns of R&D Resources (annual series).