

TABLE 91

Federal obligations for research, by detailed field of R&D: FYs 2015–24

(Dollars in millions)

| Field | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 (preliminary) |
|---|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------------------|
| All fields | 63,825 | 67,105 | 69,871 | 74,588 | 81,118 | 85,305 | 85,914 | 93,830 | 101,608 | 98,619 |
| Computer and information sciences | NA | NA | NA | NA | NA | NA | 5,350 | 4,854 | 5,136 | 5,326 |
| Computer sciences and mathematics | 3,863 | 4,223 | 3,894 | 4,207 | 4,330 | 5,912 | NA | NA | NA | NA |
| Computer sciences | 2,646 | 2,815 | 2,735 | 2,888 | 2,897 | 4,280 | NA | NA | NA | NA |
| Mathematics | 1,006 | 1,160 | 942 | 1,055 | 1,157 | 681 | NA | NA | NA | NA |
| Other computer sciences and mathematics | 211 | 247 | 218 | 264 | 276 | 950 | NA | NA | NA | NA |
| Geosciences, atmospheric sciences, and ocean sciences (formerly Environmental sciences) | 4,414 | 4,450 | 4,470 | 4,568 | 5,075 | 5,039 | 5,042 | 5,566 | 5,884 | 5,909 |
| Atmospheric science and meteorology (formerly Atmospheric sciences) | 1,568 | 1,597 | 1,651 | 796 | 824 | 908 | 888 | 960 | 1,096 | NA |
| Geological and earth sciences (formerly Geological sciences) | 643 | 562 | 580 | 227 | 239 | 306 | 602 | 622 | 413 | NA |
| Ocean sciences and marine sciences (formerly Oceanography) | 726 | 773 | 774 | 778 | 819 | 946 | 1,096 | 1,127 | 1,120 | NA |
| Other geosciences, atmospheric sciences, and ocean sciences (formerly Other environmental sciences) | 1,477 | 1,518 | 1,464 | 2,766 | 3,192 | 2,879 | 2,456 | 2,857 | 3,255 | NA |
| Life sciences | 30,625 | 32,045 | 34,090 | 36,994 | 38,304 | 42,525 | 38,249 | 41,610 | 43,750 | 40,242 |
| Agricultural sciences | 1,320 | 1,283 | 1,353 | 1,325 | 1,446 | 1,413 | 1,073 | 1,268 | 1,208 | NA |
| Biological and biomedical sciences | NA | NA | NA | NA | NA | NA | 18,228 | 21,327 | 24,791 | NA |
| Biological sciences (excluding environmental biology) | 14,840 | 15,923 | 16,556 | 17,829 | 18,910 | 20,165 | NA | NA | NA | NA |
| Environmental biology | 819 | 788 | 783 | 922 | 924 | 902 | NA | NA | NA | NA |
| Health sciences (formerly Medical sciences) | 11,087 | 11,359 | 12,649 | 13,564 | 13,775 | 16,182 | 15,008 | 14,707 | 13,281 | NA |
| Natural resources and conservation | NA | NA | NA | NA | NA | NA | 227 | 247 | 360 | NA |
| Other life sciences | 2,559 | 2,693 | 2,748 | 3,354 | 3,249 | 3,863 | 3,712 | 4,060 | 4,109 | NA |
| Mathematics and statistics | NA | NA | NA | NA | NA | NA | 715 | 904 | 997 | 987 |
| Physical sciences | 6,510 | 6,706 | 6,581 | 7,881 | 9,816 | 8,420 | 10,048 | 12,099 | 12,703 | 12,940 |
| Astronomy and astrophysics (formerly Astronomy) | 1,230 | 1,247 | 1,292 | 887 | 1,583 | 871 | 964 | 1,113 | 1,340 | NA |
| Chemistry | 968 | 999 | 969 | 1,121 | 1,125 | 1,144 | 1,141 | 2,014 | 1,920 | NA |
| Materials science | NA | NA | NA | NA | NA | NA | 552 | 533 | 594 | NA |
| Physics | 3,040 | 3,732 | 3,676 | 3,541 | 3,446 | 3,577 | 3,156 | 3,677 | 4,275 | NA |
| Other physical sciences | 1,272 | 728 | 644 | 2,332 | 3,661 | 2,828 | 4,235 | 4,762 | 4,575 | NA |
| Psychology | 1,995 | 2,021 | 2,081 | 2,327 | 2,754 | 3,276 | 3,770 | 4,588 | 4,947 | 4,973 |
| Biological aspects | 19 | 20 | 10 | 20 | 18 | 14 | 14 | 29 | 26 | NA |
| Social aspects | 59 | 56 | 56 | 48 | 53 | 42 | 50 | 48 | 35 | NA |
| Other psychological sciences | 1,917 | 1,946 | 2,014 | 2,259 | 2,683 | 3,220 | 3,706 | 4,511 | 4,886 | NA |
| Social sciences | 1,136 | 1,227 | 1,027 | 1,039 | 1,156 | 1,137 | 1,370 | 1,917 | 2,679 | 2,715 |
| Anthropology | 30 | 32 | 32 | 35 | 35 | 19 | 42 | 57 | 39 | NA |
| Economics | 337 | 371 | 294 | 282 | 295 | 203 | 228 | 245 | 298 | NA |
| Political science and government (formerly Political science) | 16 | 15 | 18 | 11 | 14 | 12 | 11 | 8 | 4 | NA |
| Sociology, demography, and population studies (formerly Sociology) | 128 | 197 | 178 | 143 | 224 | 152 | 111 | 102 | 128 | NA |
| Other social sciences ^a | 625 | 612 | 505 | 568 | 588 | 751 | 978 | 1,505 | 2,210 | NA |

TABLE 91

Federal obligations for research, by detailed field of R&D: FYs 2015–24

(Dollars in millions)

| Field | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 (preliminary) |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------------|
| Engineering | 11,984 | 12,972 | 13,207 | 13,759 | 15,279 | 13,222 | 14,650 | 15,497 | 16,024 | 15,430 |
| Aeronautical engineering | 1,825 | 1,836 | 1,892 | 1,118 | 1,199 | 1,093 | NA | NA | NA | NA |
| Aerospace, aeronautical, and astronautical engineering | NA | NA | NA | NA | NA | NA | 2,604 | 2,391 | 1,828 | NA |
| Astronautical engineering | 661 | 651 | 651 | 796 | 830 | 916 | NA | NA | NA | NA |
| Bioengineering and biomedical engineering | NA | NA | NA | NA | NA | NA | 40 | 148 | 162 | NA |
| Chemical engineering | 375 | 373 | 302 | 692 | 454 | 788 | 733 | 749 | 1,021 | NA |
| Civil engineering | 458 | 462 | 606 | 476 | 566 | 476 | 649 | 644 | 682 | NA |
| Electrical, electronics, and communications engineering (formerly Electrical engineering) | 897 | 1,063 | 1,103 | 1,010 | 971 | 881 | 891 | 872 | 1,332 | NA |
| Industrial and manufacturing engineering | NA | NA | NA | NA | NA | NA | 291 | 2,075 | 387 | NA |
| Mechanical engineering | 324 | 374 | 450 | 498 | 630 | 523 | 289 | 429 | 476 | NA |
| Metallurgical and materials engineering (formerly Metallurgy and materials engineering) | 1,757 | 1,975 | 1,941 | 1,915 | 1,843 | 704 | 811 | 546 | 711 | NA |
| Other engineering | 5,688 | 6,237 | 6,262 | 7,253 | 8,787 | 7,841 | 8,343 | 7,642 | 9,424 | NA |
| Other fields | NA | NA | NA | NA | NA | NA | 6,721 | 6,796 | 9,490 | 10,099 |
| Business management and business administration | NA | NA | NA | NA | NA | NA | 120 | 106 | 235 | NA |
| Communication and communications technologies | NA | NA | NA | NA | NA | NA | 12 | 21 | 32 | NA |
| Education research | NA | NA | NA | NA | NA | NA | 987 | 1,063 | 1,084 | NA |
| Humanities, including History | NA | NA | NA | NA | NA | NA | * | * | * | NA |
| Law | NA | NA | NA | NA | NA | NA | 7 | 6 | 6 | NA |
| Social work | NA | NA | NA | NA | NA | NA | 0 | 0 | * | NA |
| Visual and performing arts | NA | NA | NA | NA | NA | NA | 0 | 0 | 0 | NA |
| All other fields | NA | NA | NA | NA | NA | NA | 5,595 | 5,600 | 8,132 | NA |
| Other sciences nec | 3,299 | 3,461 | 4,521 | 3,812 | 4,405 | 5,773 | NA | NA | NA | NA |

* = amount greater than \$0 but less than \$500,000. NA = not available; data were not collected at that level for that fiscal year.

nec = not elsewhere classified.

^a As of volume 71 (FYs 2021–22), Other social sciences no longer includes Education research or Law; those categories were moved to Other fields.**Note(s):**

Because of rounding, detail may not add to total. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.