



APPENDIX TABLE 5-3

Federally financed higher education R&D expenditures, by federal agency and field: FY 2016

(Thousands of dollars)

| Field <sup>a</sup>  | All federally financed R&D expenditures | DOD       | DOE       | HHS        | NASA      | NSF       | USDA      | Other <sup>b</sup> |
|---|---|-----------|-----------|------------|-----------|-----------|-----------|--------------------|
| All fields  | 38,793,542                              | 5,312,956 | 1,770,809 | 20,658,827 | 1,491,911 | 5,114,206 | 1,208,710 | 3,236,123          |
| Science   | 31,090,354                              | 2,648,073 | 1,066,021 | 19,782,880 | 970,094   | 3,581,173 | 1,101,099 | 1,941,014          |
| Computer and information sciences                         | 1,442,771                               | 604,318   | 58,150    | 80,198     | 16,327    | 590,084   | 3,496     | 90,198             |
| Geosciences, atmospheric sciences, and ocean sciences     | 1,992,990                               | 189,304   | 106,224   | 63,175     | 353,570   | 706,103   | 31,340    | 543,274            |
| Atmospheric science and meteorology                       | 513,275                                 | 37,474    | 26,824    | 1,781      | 136,884   | 92,425    | 3,799     | 214,088            |
| Geological and earth sciences                             | 605,706                                 | 25,904    | 58,235    | 9,169      | 163,906   | 257,077   | 12,633    | 78,782             |
| Ocean sciences and marine sciences                        | 665,121                                 | 106,674   | 6,439     | 9,310      | 36,833    | 292,679   | 1,611     | 211,575            |
| Geosciences, atmospheric sciences, and ocean sciences nec | 208,888                                 | 19,252    | 14,726    | 42,915     | 15,947    | 63,922    | 13,297    | 38,829             |
| Life sciences   | 21,798,334                              | 955,046   | 160,808   | 18,141,167 | 92,066    | 728,589   | 986,257   | 734,401            |
| Agricultural sciences                                     | 976,912                                 | 13,606    | 28,449    | 65,943     | 9,080     | 85,002    | 624,919   | 149,913            |
| Biological and biomedical sciences                        | 7,707,943                               | 264,868   | 82,039    | 6,428,829  | 38,942    | 512,275   | 186,304   | 194,686            |
| Health sciences   | 12,098,295                              | 594,786   | 16,200    | 11,061,478 | 37,114    | 60,005    | 66,019    | 262,693            |
| Natural resources and conservation                        | 315,559                                 | 53,708    | 18,622    | 6,445      | 5,688     | 45,846    | 96,670    | 88,580             |
| Life sciences nec   | 699,625                                 | 28,078    | 15,498    | 578,472    | 1,242     | 25,461    | 12,345    | 38,529             |



| Field <sup>a</sup>                            | All federally financed R&D expenditures | DOD       | DOE     | HHS     | NASA    | NSF       | USDA   | Other <sup>b</sup> |
|---|---|-----------|---------|---------|---------|-----------|--------|--------------------|
| Mathematics and statistics                    | 444,419                                 | 120,513   | 11,666  | 46,674  | 3,146   | 229,704   | 4,891  | 27,825             |
| Physical sciences                             | 3,286,816                               | 525,167   | 701,257 | 518,848 | 468,651 | 979,998   | 6,159  | 86,736             |
| Astronomy and astrophysics                    | 418,147                                 | 9,933     | 9,686   | 620     | 294,358 | 94,380    | 32     | 9,138              |
| Chemistry                                     | 1,097,719                               | 150,657   | 130,043 | 447,291 | 13,096  | 331,876   | 3,653  | 21,103             |
| Materials science                             | 111,802                                 | 37,517    | 25,335  | 7,139   | 3,192   | 30,886    | 290    | 7,443              |
| Physics                                       | 1,523,751                               | 302,844   | 510,994 | 56,065  | 140,224 | 472,743   | 1,929  | 38,952             |
| Physical sciences nec                         | 135,397                                 | 24,216    | 25,199  | 7,733   | 17,781  | 50,113    | 255    | 10,100             |
| Psychology                                    | 761,433                                 | 69,940    | 417     | 500,097 | 21,854  | 71,102    | 6,785  | 91,238             |
| Social sciences                               | 898,576                                 | 76,852    | 10,389  | 323,353 | 7,981   | 145,351   | 50,032 | 284,618            |
| Anthropology                                  | 39,440                                  | 4,506     | 107     | 8,219   | 716     | 17,382    | 1,786  | 6,724              |
| Economics                                     | 112,338                                 | 5,245     | 3,479   | 42,180  | 133     | 19,342    | 19,090 | 22,869             |
| Political science and government              | 103,681                                 | 14,676    | 2,523   | 22,353  | 382     | 24,105    | 3,485  | 36,157             |
| Sociology, demography, and population studies | 269,371                                 | 20,424    | 1,431   | 118,689 | 328     | 33,936    | 11,516 | 83,047             |
| Social sciences nec                           | 373,746                                 | 32,001    | 2,849   | 131,912 | 6,422   | 50,586    | 14,155 | 135,821            |
| Sciences nec                                  | 465,015                                 | 106,933   | 17,110  | 109,368 | 6,499   | 130,242   | 12,139 | 82,724             |
| Engineering                                   | 6,583,476                               | 2,607,806 | 697,799 | 656,987 | 512,511 | 1,270,147 | 66,402 | 771,824            |
| Aerospace, aeronautical and astronautical     | 623,571                                 | 378,104   | 19,222  | 2,196   | 143,403 | 24,306    | 441    | 55,899             |
| Bioengineering and biomedical                 | 650,752                                 | 124,857   | 34,047  | 379,920 | 5,026   | 74,757    | 16,326 | 15,819             |



| Field <sup>a</sup>                              | All federally financed R&D expenditures | DOD     | DOE     | HHS     | NASA    | NSF     | USDA   | Other <sup>b</sup> |
|---|---|---------|---------|---------|---------|---------|--------|--------------------|
| Chemical  | 467,678                                 | 92,231  | 117,223 | 74,069  | 7,536   | 146,370 | 7,640  | 22,609             |
| Civil   | 591,637                                 | 51,065  | 54,350  | 21,447  | 15,132  | 123,543 | 8,844  | 317,256            |
| Electrical, electronic, and communications      | 1,742,632                               | 938,617 | 102,036 | 58,233  | 120,942 | 411,522 | 1,163  | 110,119            |
| Industrial and manufacturing                    | 148,464                                 | 77,883  | 10,294  | 7,973   | 4,295   | 29,799  | 902    | 17,318             |
| Mechanical                                      | 860,745                                 | 369,481 | 118,755 | 46,507  | 66,281  | 187,044 | 2,267  | 70,410             |
| Metallurgical and materials                     | 442,893                                 | 170,380 | 93,971  | 20,192  | 12,318  | 103,752 | 2,342  | 39,938             |
| Engineering nec                                 | 1,055,104                               | 405,188 | 147,901 | 46,450  | 137,578 | 169,054 | 26,477 | 122,456            |
| Non-S&E fields <sup>a</sup>                     | 1,119,712                               | 57,077  | 6,989   | 218,960 | 9,306   | 262,886 | 41,209 | 523,285            |
| Business management and business administration | 71,124                                  | 13,556  | 2,243   | 2,799   | 963     | 18,236  | 1,285  | 32,042             |
| Communications and communications technologies  | 36,732                                  | 2,669   | 42      | 16,052  | 190     | 7,548   | 1,779  | 8,452              |
| Education                                       | 630,205                                 | 9,908   | 2,178   | 62,493  | 6,723   | 185,764 | 2,395  | 360,744            |
| Humanities                                      | 54,957                                  | 6,489   | 599     | 9,079   | 357     | 14,745  | 184    | 23,504             |
| Law   | 28,244                                  | 2,144   | 128     | 5,641   | 4       | 1,840   | 286    | 18,201             |
| Social work                                     | 93,616                                  | 3,899   | 0       | 79,871  | 229     | 910     | 1,058  | 7,649              |
| Visual and performing arts                      | 10,342                                  | 240     | 370     | 2,738   | 61      | 2,132   | 211    | 4,590              |
| Non-S&E nec                                     | 194,492                                 | 18,172  | 1,429   | 40,287  | 779     | 31,711  | 34,011 | 68,103             |

nec = not elsewhere classified.



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 = Department of Agriculture.

<sup>a</sup> As part of the reclassification of disciplines, some R&D field names have changed.

<sup>b</sup> Includes all other agencies reported.

**Source(s)**

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National Science Foundation, National Center for Science and Engineering Statistics, Higher Education Research and Development Survey (HERD), FY 2016.

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