

TABLE A-15

**Imputed amounts for total and federally financed higher education R&D expenditures at institutions in the standard form population, by R&D field: FY 2021**

(Dollars in thousands)

| R&D field   | Total                |                |                              | Federally financed   |                |                              |
|---|----------------------|----------------|------------------------------|----------------------|----------------|------------------------------|
|   | All R&D expenditures | Imputed amount | Imputed amount as % of total | All R&D expenditures | Imputed amount | Imputed amount as % of total |
| All R&D fields  | 89,723,447           | 98,338         | 0.1                          | 49,143,460           | 57,678         | 0.1                          |
| All science and engineering                               | 84,610,017           | 929,401        | 1.1                          | 47,778,518           | 63,504         | 0.1                          |
| Computer and information sciences                         | 2,951,923            | 30,463         | 1.0                          | 1,994,728            | 2,054          | 0.1                          |
| Geosciences, atmospheric sciences, and ocean sciences     | 3,295,883            | 43,670         | 1.3                          | 2,145,163            | 1,875          | 0.1                          |
| Atmospheric science and meteorology                       | 624,579              | 38,133         | 6.1                          | 484,265              | 33,360         | 6.9                          |
| Geological and earth sciences                             | 1,242,339            | 98,875         | 8.0                          | 772,157              | 50,377         | 6.5                          |
| Ocean sciences and marine sciences                        | 1,035,519            | 44,717         | 4.3                          | 640,634              | 37,969         | 5.9                          |
| Geosciences, atmospheric sciences, and ocean sciences nec | 393,446              | 22,004         | 5.6                          | 248,107              | 9,254          | 3.7                          |
| Life sciences   | 52,364,596           | 619,525        | 1.2                          | 28,452,956           | 38,173         | 0.1                          |
| Agricultural sciences                                     | 3,548,896            | 15,881         | 0.4                          | 1,099,585            | 9,926          | 0.9                          |
| Biological and biomedical sciences                        | 16,557,201           | 158,274        | 1.0                          | 10,001,728           | 12,707         | 0.1                          |
| Health sciences   | 29,884,728           | 436,759        | 1.5                          | 16,138,445           | 11,362         | 0.1                          |
| Natural resources and conservation                        | 934,765              | 2,821          | 0.3                          | 429,905              | 776            | 0.2                          |
| Life sciences nec   | 1,439,006            | 5,790          | 0.4                          | 783,293              | 3,402          | 0.4                          |
| Mathematics and statistics                                | 772,935              | 7,963          | 1.0                          | 475,827              | 1,576          | 0.3                          |
| Physical sciences   | 5,740,630            | 90,414         | 1.6                          | 3,852,415            | 6,192          | 0.2                          |
| Astronomy and astrophysics                                | 741,127              | 10,174         | 1.4                          | 509,733              | 373            | 0.1                          |
| Chemistry   | 1,999,546            | 27,849         | 1.4                          | 1,239,825            | 2,828          | 0.2                          |
| Materials science   | 285,931              | 10,652         | 3.7                          | 174,331              | 1              | 0.0                          |
| Physics   | 2,463,331            | 38,371         | 1.6                          | 1,767,740            | 2,235          | 0.1                          |
| Physical sciences nec                                     | 250,695              | 3,368          | 1.3                          | 160,786              | 755            | 0.5                          |
| Psychology  | 1,326,030            | 8,662          | 0.7                          | 812,660              | 710            | 0.1                          |
| Social sciences   | 2,842,033            | 17,277         | 0.6                          | 955,852              | 6,970          | 0.7                          |
| Anthropology  | 109,546              | 876            | 0.8                          | 29,533               | 176            | 0.6                          |
| Economics   | 549,132              | 1,037          | 0.2                          | 137,555              | 78             | 0.1                          |
| Political science and government                          | 425,661              | 1,490          | 0.4                          | 86,443               | 40             | 0.0                          |
| Sociology, demography, and population studies             | 552,551              | 4,520          | 0.8                          | 232,318              | 1,211          | 0.5                          |
| Social sciences nec                                       | 1,205,143            | 9,354          | 0.8                          | 470,003              | 5,465          | 1.2                          |
| Sciences nec  | 1,022,500            | 2,015          | 0.2                          | 374,088              | 114            | 0.0                          |
| Engineering   | 14,293,487           | 109,412        | 0.8                          | 8,714,829            | 5,840          | 0.1                          |
| Aerospace, aeronautical, and astronautical engineering    | 1,451,964            | 7,439          | 0.5                          | 1,110,088            | 2              | 0.0                          |
| Bioengineering and biomedical engineering                 | 1,560,381            | 15,931         | 1.0                          | 960,152              | 249            | 0.0                          |
| Chemical engineering                                      | 1,024,301            | 7,235          | 0.7                          | 572,307              | 258            | 0.0                          |
| Civil engineering   | 1,482,377            | 10,734         | 0.7                          | 664,620              | 642            | 0.1                          |
| Electrical, electronic, and communications engineering    | 3,080,363            | 29,234         | 0.9                          | 2,209,153            | 1,467          | 0.1                          |
| Industrial and manufacturing engineering                  | 573,915              | 3,474          | 0.6                          | 384,142              | 87             | 0.0                          |
| Mechanical engineering                                    | 1,881,551            | 15,271         | 0.8                          | 1,274,012            | 1,521          | 0.1                          |
| Metallurgical and materials engineering                   | 841,196              | 5,018          | 0.6                          | 559,447              | 245            | 0.0                          |
| Engineering nec   | 2,397,439            | 15,591         | 0.7                          | 980,908              | 1,625          | 0.2                          |

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**Imputed amounts for total and federally financed higher education R&D expenditures at institutions in the standard form population, by R&D field: FY 2021**

(Dollars in thousands)

| R&D field                                       | Total                |                |                              | Federally financed   |                |                              |
|---|----------------------|----------------|------------------------------|----------------------|----------------|------------------------------|
|   | All R&D expenditures | Imputed amount | Imputed amount as % of total | All R&D expenditures | Imputed amount | Imputed amount as % of total |
| All non-science and engineering                 | 5,113,430            | 50,871         | 1.0                          | 1,364,942            | 3,887          | 0.3                          |
| Business management and business administration | 934,020              | 4,659          | 0.5                          | 97,277               | 224            | 0.2                          |
| Communication and communications technologies   | 186,003              | 1,265          | 0.7                          | 39,337               | 13             | 0.0                          |
| Education                                       | 1,616,705            | 10,188         | 0.6                          | 701,430              | 2,466          | 0.4                          |
| Humanities                                      | 556,694              | 10,884         | 2.0                          | 56,658               | 251            | 0.4                          |
| Law   | 282,662              | 228            | 0.1                          | 28,777               | 5              | 0.0                          |
| Social work                                     | 319,273              | 1,532          | 0.5                          | 165,278              | 67             | 0.0                          |
| Visual and performing arts                      | 179,563              | 1,486          | 0.8                          | 11,476               | 111            | 1.0                          |
| Non-science and engineering nec                 | 1,038,510            | 20,629         | 2.0                          | 264,709              | 750            | 0.3                          |

nec = not elsewhere classified.

**Note(s):**

Imputation rate at total level is lower than imputation rates at detail levels because some institutions could provide totals but not details. This table includes only institutions reporting \$1 million or more in total R&D expenditures in FY 2020. Institutions reporting less than \$1 million in total R&D expenditures in FY 2020 completed a shorter version of the survey form in FY 2021 that did not include this question.

**Source(s):**

National Center for Science and Engineering Statistics, Higher Education Research and Development Survey, FY 2021.