

TABLE 2. Summary of federal outlays and obligations for research, development, and R&D plant, by character of work, performer, and field of science and engineering: FY 2007–10

(Dollars in millions)

| Character of work, performer, and field | 2007 | 2008 | Preliminary ^a | | | |
|--|-------------|-----------|--------------------------|---------------------|-----------|---------------------|
| | | | 2009 | % change 2008–09 | 2010 | % change 2009–10 |
| Outlays for research and development and R&D plant | 123,998.3 r | 125,125.3 | 114,649.5 | -8.4 | 108,334.2 | -5.5 |
| Research and development | 121,875.1 r | 123,059.1 | 112,249.5 | -8.8 | 105,948.1 | -5.6 |
| R&D plant | 2,123.3 | 2,066.2 | 2,400.0 | 16.2 | 2,386.1 | -0.6 |
| Obligations for research and development and R&D plant | 129,431.2 r | 129,049.5 | 123,243.0 | -4.5 | 118,559.4 | -3.8 |
| Research and development | 127,262.9 r | 127,105.7 | 119,730.6 | -5.8 | 116,274.5 | -2.9 |
| Performer | | | | | | |
| Intramural ^{b,c} | 29,932.5 r | 29,637.9 | 28,354.1 | -4.3 | 29,935.5 | 5.6 |
| Industry ^b | 55,342.3 r | 56,337.6 | 46,444.9 | -17.6 | 42,817.7 | -7.8 |
| Industry FFRDCs ^b | 2,691.6 r | 4,119.9 | 2,572.3 | -37.6 | 2,410.3 | -6.3 |
| Universities and colleges ^b | 25,547.8 r | 26,026.5 | 28,867.1 | 10.9 | 27,810.8 | -3.7 |
| University and college FFRDCs ^b | 4,171.2 r | 1,988.6 | 3,931.1 | 97.7 | 3,910.9 | -0.5 |
| Other nonprofit institutions ^b | 5,984.4 r | 5,965.0 | 6,316.5 | 5.9 | 6,182.1 | -2.1 |
| Nonprofit FFRDCs ^b | 2,520.3 r | 2,083.0 | 2,260.6 | 8.5 | 2,275.7 | 0.7 |
| State and local governments ^b | 362.0 r | 389.0 | 431.9 | 11.0 | 385.7 | -10.7 |
| Foreign ^b | 710.6 r | 558.1 | 551.9 | -1.1 | 545.8 | -1.1 |
| Research | 54,093.6 | 53,893.7 | 59,429.9 | 10.3 | 58,354.8 | -1.8 |
| Performer | | | | | | |
| Intramural ^c | 11,816.4 | 11,921.7 | 12,839.1 | 7.7 | 13,222.5 | 3.0 |
| Industry | 6,074.2 | 5,782.4 | 6,692.9 | 15.7 | 6,164.1 | -7.9 |
| Industry FFRDCs | 1,863.0 | 2,929.7 | 1,591.8 | -50.3 | 1,782.0 | 12.0 |
| Universities and colleges | 23,966.9 | 24,323.2 | 27,231.6 | 12.0 | 26,222.3 | -3.7 |
| University and college FFRDCs | 2,942.4 | 1,623.1 | 3,123.0 | 131.3 | 3,130.9 | 0.3 |
| Other nonprofit institutions | 5,416.7 | 5,397.5 | 5,863.7 | 8.6 | 5,729.5 | -2.3 |
| Nonprofit FFRDCs | 1,283.0 | 1,205.7 | 1,331.1 | 10.4 | 1,370.1 | 2.9 |
| State and local governments | 297.6 | 338.8 | 355.9 | 5.1 | 337.5 | -5.2 |
| Foreign | 433.3 | 371.5 | 400.9 | 7.9 | 396.0 | -1.2 |
| Field of science and engineering | | | | | | |
| Environmental sciences | 3,170.5 | 2,984.6 | 3,646.2 | 22.2 | 3,385.6 | -7.1 |
| Life sciences | 29,463.6 | 28,918.8 | 30,466.4 | 5.4 | 30,636.9 | 0.6 |
| Mathematics and computer sciences | 2,945.7 | 3,047.3 | 3,707.0 | 21.6 | 3,364.1 | -9.2 |
| Physical sciences | 5,136.1 | 5,072.6 | 6,070.9 | 19.7 | 5,788.4 | -4.7 |
| Psychology | 1,837.9 | 1,740.8 | 1,842.3 | 5.8 | 1,875.6 | 1.8 |
| Social sciences | 1,147.1 | 977.0 | 1,260.8 | 29.1 | 1,278.7 | 1.4 |
| Other sciences, nec | 1,403.1 | 2,177.1 | 2,564.0 | 17.8 | 2,436.3 | -5 |
| Engineering | 8,989.7 | 8,975.5 | 9,872.5 | 10.0 | 9,589.1 | -2.9 |
| Basic research | 26,865.8 | 27,154.0 | 30,935.4 | 13.9 | 29,847.6 | -3.5 |
| Performer | | | | | | |
| Intramural ^c | 4,572.2 | 4,767.5 | 5,106.6 | 7.1 | 5,127.4 | 0.4 |
| Industry | 1,736.2 | 1,545.4 | 1,852.5 | 19.9 | 1,712.8 | -7.5 |
| Industry FFRDCs | 341.3 | 574.9 | 507.9 | -52.3 | 574.6 | 13.1 |
| Universities and colleges | 14,220.3 | 14,645.7 | 17,108.1 | 16.8 | 16,118.1 | -5.8 |
| University and college FFRDCs | 1,982.8 | 1,484.3 | 1,786.5 | 79.7 | 1,856.5 | 3.9 |
| Other nonprofit institutions | 2,793.8 | 2,935.2 | 3,237.9 | 10.3 | 3,086.6 | -4.7 |
| Nonprofit FFRDCs | 889.5 | 915.8 | 1,030.6 | 12.5 | 1,075.5 | 4.4 |
| State and local governments | 101.3 | 75.9 | 88.8 | 17.0 | 82.1 | -7.5 |
| Foreign | 228.4 | 209.1 | 216.6 | 3.6 | 214.0 | -1.2 |
| Field of science and engineering | | | | | | |
| Environmental sciences | 1,727.8 | 1,593.1 | 2,128.4 | 33.6 | 1,891.0 | -11.2 |
| Life sciences | 15,643.5 | 15,557.4 | 16,468.3 | 5.9 | 16,454.8 | -0.1 |
| Mathematics and computer sciences | 1,293.5 | 1,407.4 | 1,876.3 | 33.3 | 1,641.4 | -12.5 |
| Physical sciences | 3,544.5 | 3,403.1 | 4,284.4 | 25.9 | 4,024.5 | -6.1 |
| Psychology | 978.8 | 936.0 | 980.3 | 4.7 | 988.6 | 0.8 |

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|--|------------|----------|--------------------------|---------------------|----------|---------------------|
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| Social sciences | 361.3 | 330.0 | 442.1 | 34.0 | 386.8 | -12.5 |
| Other sciences, nec | 686.4 | 1,190.9 | 1,555.2 | 30.6 | 1,433.3 | -7.8 |
| Engineering | 2,629.9 | 2,736.0 | 3,200.4 | 17.0 | 3,027.1 | -5.4 |
| Applied research | 27,227.8 | 26,739.7 | 28,494.5 | 6.6 | 28,507.2 | 0.0 |
| Performer | | | | | | |
| Intramural ^c | 7,244.2 | 7,154.2 | 7,732.5 | 8.1 | 8,095.1 | 4.7 |
| Industry | 4,338.0 | 4,237.0 | 4,840.4 | 14.2 | 4,451.3 | -8 |
| Industry FFRDCs | 1,521.6 | 2,354.8 | 1,083.9 | -49.3 | 1,207.4 | 11.4 |
| Universities and colleges | 9,746.6 | 9,677.5 | 10,123.4 | 4.6 | 10,104.2 | -0.2 |
| University and college FFRDCs | 959.6 | 138.8 | 1,336.5 | 275.3 | 1,274.4 | -4.6 |
| Other nonprofit institutions | 2,622.9 | 2,462.3 | 2,625.8 | 6.6 | 2,642.8 | 0.7 |
| Nonprofit FFRDCs | 393.5 | 289.9 | 300.5 | 3.7 | 294.6 | -2 |
| State and local governments | 196.3 | 262.9 | 267.1 | 1.6 | 255.3 | -4.4 |
| Foreign | 205.0 | 162.4 | 184.3 | 13.5 | 182.1 | -1.2 |
| Field of science and engineering | | | | | | |
| Environmental sciences | 1,442.7 | 1,391.5 | 1,517.8 | 9.1 | 1,494.7 | -1.5 |
| Life sciences | 13,820.1 | 13,361.5 | 13,998.1 | 4.8 | 14,182.1 | 1.3 |
| Mathematics and computer sciences | 1,652.1 | 1,639.8 | 1,830.7 | 11.6 | 1,722.7 | -5.9 |
| Physical sciences | 1,591.6 | 1,669.5 | 1,786.5 | 7.0 | 1,763.9 | -1.3 |
| Psychology | 859.1 | 804.8 | 861.9 | 7.1 | 887.0 | 2.9 |
| Social sciences | 785.9 | 647.0 | 818.7 | 26.5 | 891.9 | 8.9 |
| Other sciences, nec | 716.7 | 986.2 | 1,008.8 | 2.3 | 1,003.0 | -0.6 |
| Engineering | 6,359.8 | 6,239.5 | 6,672.0 | 6.9 | 6,562.0 | -1.6 |
| Development | 73,169.3 r | 73,212.0 | 60,300.7 | -17.6 | 57,919.7 | -3.9 |
| Performer | | | | | | |
| Intramural ^{b,c} | 18,116.1 r | 17,716.1 | 15,515.0 | -12.4 | 16,713.0 | 7.7 |
| Industry ^b | 49,268.1 r | 50,555.2 | 39,752.1 | -21.4 | 36,653.6 | -7.8 |
| Industry FFRDCs ^b | 828.6 r | 1,190.2 | 980.6 | 6.9 | 628.3 | -35.9 |
| Universities and colleges ^b | 1,580.9 r | 1,703.3 | 1,635.6 | -4 | 1,588.6 | -2.9 |
| University and college FFRDCs ^b | 1,228.8 r | 365.5 | 808.2 | 26.6 | 780.0 | -3.5 |
| Other nonprofit institutions ^b | 567.7 r | 567.5 | 452.8 | -20.2 | 452.6 | 0.0 |
| Nonprofit FFRDCs ^b | 1,237.3 r | 877.3 | 929.5 | 5.9 | 905.6 | -2.6 |
| State and local governments ^b | 64.4 r | 50.2 | 76.0 | 51.2 | 48.2 | -36.6 |
| Foreign ^b | 277.3 r | 186.6 | 151.0 | -19.1 | 149.8 | -0.8 |
| R&D plant | 2,168.4 | 1,943.9 | 3,512.4 | 80.7 | 2,284.9 | -34.9 |
| Performer | | | | | | |
| Intramural ^c | 593.4 | 494.0 | 1,070.5 | 116.7 | 642.3 | -40 |
| Industry | 401.4 | 449.0 | 565.1 | 25.9 | 476.5 | -15.7 |
| Industry FFRDCs | 27.6 | 175.6 | 52.8 | -69.9 | 46.9 | -11.2 |
| Universities and colleges | 265.6 | 210.2 | 658.5 | 213.3 | 260.9 | -60.4 |
| University and college FFRDCs | 498.4 | 334.4 | 676.6 | 102.3 | 423.5 | -37.4 |
| Other nonprofit institutions | 79.7 | 23.7 | 69.8 | 194.6 | 26.1 | -62.6 |

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|---|-------|-------|--------------------------|---------------------|-------|---------------------|
| | | | 2009 | % change 2008–09 | 2010 | % change 2009–10 |
| Nonprofit FFRDCs | 296.2 | 253.8 | 410.0 | 61.6 | 405.5 | -1.1 |
| State and local governments | * | * | * | 0.0 | * | -9.5 |
| Foreign | 6.1 | 3.1 | 9.1 | 196.3 | 3.1 | -65.6 |

* = greater than \$0, but less than \$1,000,000. r = data significantly revised; replaces previously published data.

FFRDC = federally funded research and development center; nec = not elsewhere classified.

^a The Department of the Air Force (AF) did not include Budget Activity (BA) 6.7 Operational Systems Development in preliminary FY 2009 and FY 2010 data; therefore these data are not comparable to FY 2007 and FY 2008 (actual) data.

^b Beginning in FY 2000, AF did not report BA 6.7 Operational Systems Development data because the agency misunderstood reporting requirements. During the Volume 57 (FY 2007–09) data collection cycle, AF edited prior year data from FY 2000 to FY 2007 to include BA 6.7 Operational Systems Development data.

^c Includes costs associated with administration of intramural and extramural programs by federal personnel and actual intramural performance. Extramural performers are all performers other than intramural.

NOTES: Because of rounding, detail may not add to total. Percentages are computed using dollars in thousands.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development: FY 2008, 2009, and 2010.