

Final FY 2000 Appropriations:

**A Preview Report for
*Congressional Action on Research and Development
in the FY 2000 Budget***

This Preview Report is a summary of **final FY 2000 appropriations** for federal R&D. This is a preview of the forthcoming publication *Congressional Action on Research and Development in the FY 2000 Budget*. (Ordering information is on the last page). This report provides AAAS estimates and analyses of **final approved FY 2000 appropriations** for research and development.

On November 18, nearly two months into fiscal year (FY) 2000, President Clinton and Congress reached a final agreement on FY 2000 appropriations, including federal support for R&D. The House approved the agreement that day and the Senate approved it the following day, and both chambers adjourned for the year. President Clinton will sign the agreement into law this week. The final omnibus appropriations bill is a compilation of five out of the 13 annual appropriations bills and unrelated legislation, and contains a **0.38 percent across-the-board cut** for all appropriated programs to keep FY 2000 spending from dipping into a projected Social Security surplus. Eight FY 2000 appropriations bills were enacted separately earlier; the across-the-board cut applies to programs in these bills. **Together, these FY 2000 bills provide increases for most federal R&D programs, including substantial increases for the National Institutes of Health and the Department of Defense.**

Every year, AAAS analyzes appropriations as signed into law and provides detailed estimates on the federal investment in R&D for the new fiscal year in the publication *Congressional Action on Research and Development*. The FY 2000 printed edition will be published in mid-December; the full text will be available on line on the AAAS R&D Web site (www.aaas.org/spp/R&D) on November 26. Detailed information on the largest R&D funding agencies, historical tables, and other supplementary materials will also be available on the AAAS R&D Web site. This preview report offers selected highlights from the book.

Highlights

Going into the FY 2000 budget process, it was expected that tight statutory caps on discretionary spending would result in flat or declining funding for discretionary programs, including R&D. But Congress and President Clinton, while technically sticking to the caps, in practice obliterated them through numerous budgetary tricks and accounting devices that allow FY 2000 discretionary spending to far exceed the caps. The final budget agreement includes billions of dollars in emergency spending, advance appropriations of FY 2001 funds, delayed obligations, "directed scorekeeping," revenue offsets, and even an across-the-board cut of 0.38 percent in all appropriations to keep spending technically under the caps while also appearing to preserve a projected Social Security surplus for FY 2000. Discretionary budget authority is capped in FY 2000

at \$538 billion, far less than FY 1999, but final FY 2000 discretionary budget authority (including new advanced FY 2001 funding) is expected to exceed \$580 billion.¹

As a result, **Congress and the President are able to award large increases for federal R&D.** Most areas of federal support of R&D receive modest increases in FY 2000, even after adjusting for the across-the-board cut, but selected high-priority areas receive large increases, resulting in another year of favorable appropriations for federal R&D (see Table 1; all figures in the tables are adjusted to reflect the across-the-board cut):

- Total federal support for R&D in FY 2000 increases substantially to \$83.3 billion, \$4.0 billion or 5.0 percent more than FY 1999,** primarily because of large increases for the Department of Defense (DOD) and the National Institutes of Health (NIH). There are increases in R&D funding for most agencies, but some agencies receive increases less than the rate of inflation or even cuts in their R&D programs (see Figure 1 and Table 1). The National Institutes of Health (NIH) receives the largest dollar increase in history, a nearly \$2.2 billion or 14.4 percent increase in its R&D budget to \$17.1 billion, but \$3 billion of the total NIH budget is withheld until the end of September 2000. Department of Defense (DOD) R&D totals \$39.1 billion, an increase of \$1.1 billion or 3.0 percent, including a 11.0 percent increase to \$8.7 billion for DOD's "S&T" programs ("6.1" through "6.3").

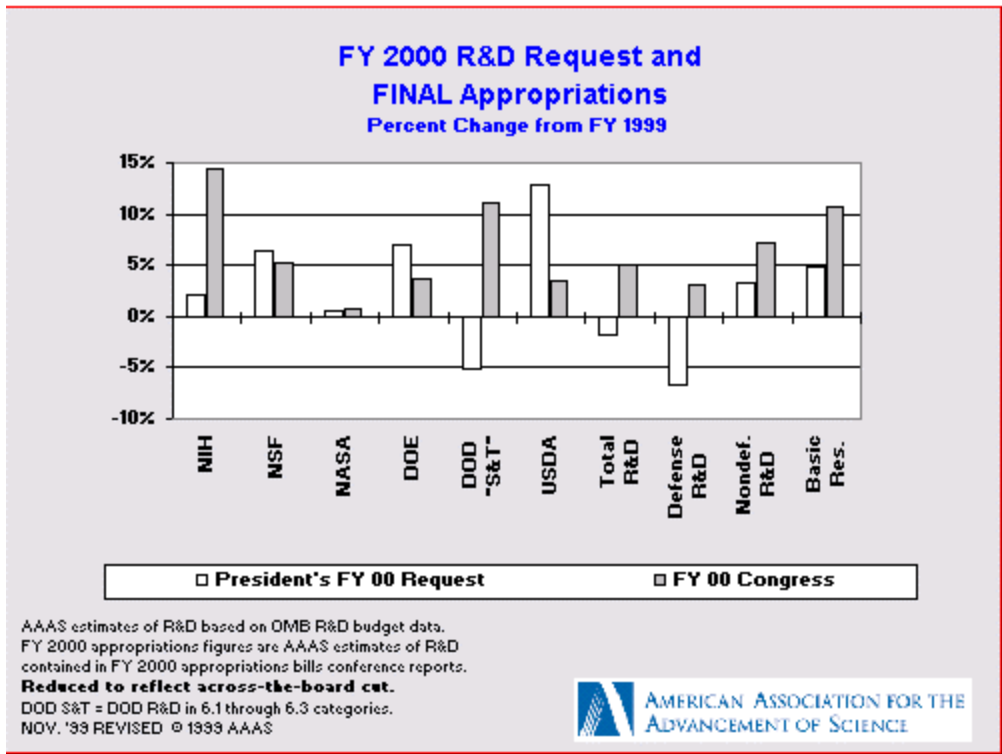


Figure 1.

¹ More than \$20 billion in new FY 2001 advance funding is included in the appropriations bills (funding in addition to renewed FY 2000 advance funding). The totals do not include spending from the transportation trust funds, which does not count as budget authority. Discretionary transportation trust fund spending is expected to total \$32 billion in FY 2000.

- The FY 2000 R&D total is \$5.4 billion above the President's request.** Final FY 2000 appropriations for DOD's R&D exceed the request by more than \$4.0 billion because of strong congressional support for increased defense spending after more than a decade of cuts. Congress awarded NIH \$1.8 billion more for its R&D than it had requested. Most other agencies receive less for their R&D programs than requested (see Figure 1).
- Nondefense R&D totals \$40.9 billion, an increase of 7.1 percent or \$2.7 billion over FY 1999,** the first time the federal civilian investment exceeds \$40 billion. Nearly all of the substantial increase is due to a \$2.2 billion or 14.4 percent boost for NIH R&D. **Excluding NIH, however, nondefense R&D rises only 2.4 percent or \$555 million to \$23.7 billion,** barely ahead of the expected inflation rate of 2.0 percent (see Table 1). Funding for nondefense R&D in FY 2000 is 12.1 percent higher than the FY 1994 level in inflation-adjusted terms (see Figure 2), but this is due primarily to increases for NIH. Figure 2 also shows that if NIH is excluded, nondefense R&D is 4.4 percent below the FY 1994 level in inflation-adjusted terms because most non-NIH civilian R&D funding agencies (except for the National Science Foundation (NSF)) have less in FY 2000 than they did in FY 1994.

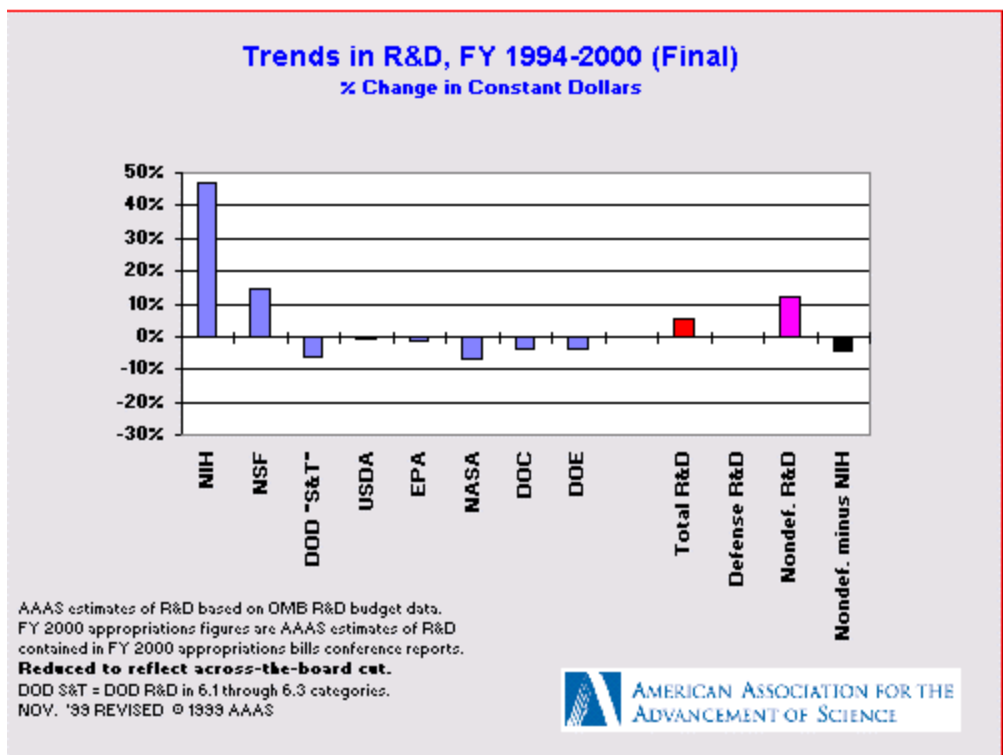


Figure 2.

- After a decade of cuts or only modest increases, **total defense R&D increases \$1.3 billion or 3.1 percent to \$42.5 billion** because of large increases in DOD and Department of Energy (DOE) defense spending. The **"Science and Technology" portion of DOD's budget** (encompassing basic and applied research plus exploratory technology development) **increases by 11.0 percent** to \$8.7 billion, including \$274 million for congressionally designated medical research. The FY 2000 increase begins to reverse years of decline in DOD S&T, which provides significant portions of total federal support

for engineering and physical sciences research. DOD requested a cut for S&T and total R&D, but appropriators added more than \$4 billion to the request for DOD.

- **Basic research** is a high priority in FY 2000 appropriations. Table 2 shows that federal support for basic research is expected to total \$19.1 billion in FY 2000, an increase of \$1.8 billion or 10.6 percent. The increases, however, go mostly to life sciences and medical research funded by NIH. Although the total for basic research is \$1.0 billion higher than the request, the President's request would have spread increases more evenly among the agencies. Nevertheless, the National Science Foundation (NSF), the second-largest supporter of basic research and the largest supporter of most non-life sciences disciplines, sees its basic research increase by 6.0 percent to \$2.5 billion. The National Aeronautics and Space Administration's (NASA) basic research increases by 18.0 percent to \$2.5 billion, but mostly because of a reclassification of existing work from applied to basic research. DOD, the primary supporter of basic research in engineering, mathematics, and computer sciences, sees its basic research ("6.1") rise by 5.4 percent to \$1.2 billion.
- In FY 2000, **NIH funds, for the first time, a majority of federal support for basic research.** NIH also funds two-thirds of all federal support for R&D at colleges and universities, a proportion that will almost certainly increase in FY 2000.
- FY 2000 appropriations show a clear priority for **health-related R&D** when the total federal R&D portfolio is considered by **national mission** (see Table 3). Health R&D surges by 14.1 percent to \$18.7 billion because of large increases not only for NIH but for other R&D funding agencies in the Department of Health and Human Services (HHS). Defense-related R&D increases by \$1.3 billion or 3.1 percent to \$42.5 billion; once again, it accounts for a majority of the federal R&D portfolio, although the Clinton Administration's FY 2000 request would have made nondefense R&D a majority of the portfolio for the first time since FY 1980. Energy-related R&D increases significantly by 9.3 percent to \$1.3 billion because of last-minute boosts to DOE support of fossil energy and energy conservation R&D. Other mission areas receive modest increases or cuts; natural resources and environment R&D declines 0.9 percent to \$2.1 billion because of cuts in R&D funding in the Environmental Protection Agency (EPA) and the Department of the Interior.
- The Clinton Administration presented a "**21st Century Research Fund**" in the FY 2000 request, as it did in FY 1999, to highlight programs that it considers important to the nation's science and technology enterprise. The Fund highlights both R&D and non-R&D items while excluding large parts of the nation's R&D portfolio (primarily in development). Table 4 summarizes appropriations for the Fund, which total \$39.9 billion in FY 2000, 7.9 percent or \$2.9 billion more than FY 1999. Congress cut the Administration's request for most nondefense R&D programs in the Fund, but balanced it by providing nearly \$2 billion more than the request for NIH and nearly \$500 million more than the request for DOD's basic and applied research. "FS&T," another alternative measure of the federal investment in science and technology developed by the National Academy of Sciences, totals \$52.1 billion (up 7.7 percent; see Table 1).
- Information technology (IT) research was a high priority for the Clinton Administration in the FY 2000 request. The Administration proposed \$366 million for a new six-agency Information Technology for the 21st Century (IT²) initiative to support long-term fundamental research in IT. Though not labeled as **IT², new fundamental IT research**

activities receive **\$235 million**, including \$126 million for NSF and \$60 million for DOD. DOE did not receive any funds for new IT activities, though it requested \$70 million.

R&D Appropriations for Key Agencies

Full information on final funding levels and program details for individual agencies can be found in revised AAAS R&D Funding Updates on the AAAS R&D Web site. (The on-line version of this document features links to the agency updates). Please see also the agency sections in *Congressional Action on R&D in the FY 2000 Budget*.

- **Department of Defense (DOD)** R&D totals \$39.1 billion, \$4.0 billion more than the request and \$1.1 billion or 3.0 percent more than FY 1999. **DOD funding of basic and applied research is well above both the request and the FY 1999 funding level.** DOD's basic research ("6.1") totals \$1.2 billion, 5.4 percent above FY 1999, while applied research ("6.2") totals \$3.4 billion, 7.5 percent above FY 1999. Including DOD's medical research programs, **DOD S&T** ("6.1" through "6.3" programs, representing DOD's investments in basic and applied research and technology development) **increases by 11.0 percent to \$8.7 billion**, though even this increase leaves DOD S&T 6.1 percent below the FY 1994 level after adjusting for inflation (see Figure 2). The final Defense bill contains substantial increases for the overall DOD budget as well as for R&D programs, after a decade-long post-Cold War decline. The Defense Advanced Research Projects Agency (DARPA) budget declines by \$82 million or 4.2 percent to \$1.8 billion. DOD receives \$60 million of a requested \$100 million for the multi-agency IT² initiative.
- **The National Institutes of Health (NIH)** is once again the beneficiary of strong support for biomedical research from both branches of government. **The NIH budget of \$17.8 billion represents a \$2.2 billion or 14.3 percent increase over FY 1999**, keeping NIH on the second year of a course toward doubling its budget in five years.² However, **\$3 billion of the budget is withheld until September 29, 2000**, a day before the end of FY 2000, in order to shift spending to FY 2001. For all practical purposes, then, NIH will have to operate for nearly all of FY 2000 on less than its FY 1999 budget. Every institute receives an increase greater than 12 percent, and five receive increases greater than 20 percent. In addition to the regular NIH budget, there is an additional \$20 million from the HHS Secretary's office to fund cooperative R&D between NIH and the biotechnology, pharmaceutical, and medical device industries. Because of steady increases every year, the NIH R&D budget is now 47 percent larger in inflation-adjusted terms than it was in FY 1994 (see Figure 2).
- The **National Aeronautics and Space Administration's (NASA)** total budget is \$13.6 billion in FY 2000, 0.5 percent less than FY 1999. Total NASA R&D, which excludes the Space Shuttle and its mission support costs, increases slightly by 0.6 percent to \$9.8 billion. The Science, Aeronautics, and Technology (SAT) account receives \$5.6 billion, a reduction of 1.2 percent from FY 1999 but \$161 million more than the request. **Space Science** has 2.7 percent more than FY 1999 for a total of \$2.2 billion; there is reduced funding for future Discovery and Explorer missions, which could result in fewer spacecraft launches over the next few years than NASA had planned; funding is also reduced for the Mars missions in response to the recent loss of a Mars spacecraft. **Life and Microgravity Sciences and Applications (LMSA)** receives \$275 million, an increase of 4.3 percent; much

² NIH's R&D as shown in the Tables is slightly less than the total NIH budget after subtracting overhead and research training costs.

of the increase is for a dedicated shuttle science mission by 2001. NASA receives \$2.3 billion for continued development and construction of the International Space Station, \$70 million or 3.1 percent more than FY 1999 but \$161 million less than the request.

- In the wake of congressional anger over allegations of security breaches and mismanagement at **Department of Energy (DOE)** weapons laboratories, Congress recently moved DOE's weapons-related activities to a new semi-autonomous agency within DOE called the **National Nuclear Security Administration (NNSA)**. Meanwhile, DOE has an R&D budget of \$7.2 billion for FY 2000, \$258 million or 3.7 percent more than FY 1999. The Science account totals \$2.6 billion for R&D, a slight decline of 0.3 percent. Fusion Energy Sciences receives a boost of 11.2 percent to \$246 million, while Nuclear Physics increases 3.9 percent to \$347 million. The final budget denies funding for the proposed Scientific Simulation Initiative, part of the proposed IT² initiative. Congress reduces funding for the Spallation Neutron Source to \$117 million, down from a requested \$214 million. In DOE's investments in energy R&D, nuclear energy R&D (\$91 million, up 19.3 percent), fossil energy R&D (\$330 million, up 11.9 percent), and energy conservation R&D (\$440 million, up 10.0 percent) all receive substantial increases. In defense R&D, the Stockpile Stewardship program is funded at \$2.2 billion, \$126 million or 5.9 percent more than last year despite the controversies over the weapons labs.
- The **National Science Foundation (NSF)** receives \$3.9 billion for its total budget in FY 2000, an increase of 5.0 percent. **NSF's R&D** funding, which excludes NSF's education and training activities and overhead costs, totals \$2.9 billion (up 5.2 percent). **NSF receives \$126 million out of a requested \$146 million for new fundamental information technology (IT) research activities in FY 2000**, most of which comes from the \$390 million budget for the Directorate of Computer and Information Science and Engineering (up 30.6 percent). Although growth in the NSF budget stagnated somewhat in the mid-1990s, in the last few years it has received significant funding increases. NSF's R&D is 14.4 percent higher in inflation-adjusted terms compared to FY 1994 (see Figure 2), one of only two major R&D funding agencies to receive increased funding over this time period.
- Funding for the **Department of Commerce's** R&D programs increases slightly in FY 2000. The National Institute of Standards and Technology (NIST) sees its R&D budget rise modestly by 1.0 percent or \$5 million to \$473 million. Within NIST, the Advanced Technology Program (ATP) receives \$130 million for R&D activities, a cut of 27.0 percent, but this is balanced by a near-doubling to \$108 million for the mostly intramural Construction of Research Facilities program. The National Oceanic and Atmospheric Administration's (NOAA) programs for natural resources and environment R&D increase by \$17 million or 2.8 percent to \$617 million. Total Commerce R&D is \$1.1 billion (up 2.0 percent).
- The **U.S. Department of Agriculture (USDA)** has an R&D budget of \$1.7 billion in FY 1999, an increase of \$56 million (up 3.4 percent). This amount, though an increase, is still far below the request of \$1.85 billion because the final bill blocks a non-appropriated competitive agricultural research grants program from spending a planned \$120 million in FY 2000. The existing competitive grants program, the National Research Initiative, receives \$119 million, the same as last year but far less than the request of \$200 million. Special Research Grants receives \$63 million, \$58 million more than the request, for 142 separate grants, all but six of them to congressionally designated performers. The

Agricultural Research Service (ARS) receives \$903 million in FY 2000, an increase of \$36 million or 4.2 percent.

- The **Department of the Interior's (DOI)** R&D budget declines by 0.9 percent in FY 2000 to \$562 million. The U.S. Geological Survey receives \$496 million for its R&D, 0.2 percent less than FY 1999, partially because of a major restructuring of USGS activities. Because of severe cutbacks in recent years, Interior's R&D is now nearly 30 percent less than the FY 1994 funding level in inflation-adjusted terms.
- The **Environmental Protection Agency (EPA)** has an FY 2000 R&D budget of \$645 million, \$23 million or 3.5 percent less than FY 1999 but the same funding level as the request. In order to make room for congressionally designated projects, Congress trimmed the request for R&D related to the Climate Change Technology Initiative and other R&D programs.
- The **Department of Transportation's (DOT)** R&D budget of \$643 million (up 6.7 percent or \$40 million) is a small part of the total DOT budget. Because of a multi-year reauthorization of transportation programs in May 1998 that significantly boosted funding for highways and other surface transportation programs, the total DOT budget climbs \$2.1 billion to \$50.1 billion; DOT R&D shares in these gains.

The full report offers 17 detailed funding tables, several charts, a chronology of the events in the FY 2000 budget process, an analysis of funding trends, and analyses of the impacts of the FY 2000 budget on each of the major R&D funding agencies. Individual agency analyses, historical tables, agency funding tables, and charts of recent funding trends are also available on the AAAS R&D Web site in the "FY 2000 R&D" section (URL at the end of this report).

Total U.S. R&D Funding in 1999 and Other Funding Trends

The mostly good news for federal R&D in FY 2000 follows the good budget news of FY 1999, when the federal government recorded its largest budget surplus in history and came tantalizingly close to achieving the first non-Social Security surplus in 40 years. The **final FY 1999 surplus** was \$123 billion, up substantially from the \$69 billion surplus in FY 1998.³ The off-budget (Social Security) surplus in FY 1999 was \$124 billion, meaning that the non-Social Security or on-budget deficit was only \$1 billion, narrowly missing the first non-Social Security surplus since FY 1960. As a result of two years in a row of budget surpluses, the federal government has been paying off the national debt to the public for the past two years, and as a percentage of the economy the national debt is shrinking dramatically. Recent budget projections show an even larger (unified) surplus in FY 2000 and a small non-Social Security surplus, but in wrapping up the FY 2000 appropriations process Congress and the President spent all of the projected non-Social Security surplus and perhaps more. In order to keep their pledge of not touching the Social Security surplus in FY 2000, both sides are counting on economic conditions and government revenues to improve over the coming year.

As the federal investment in R&D and the federal budget surplus expand, and the national debt shrinks, there is also good news from U.S. industry. Once again, the **total U.S. R&D** enterprise

³ These figures represent the unified surplus. The Social Security trust funds and the U.S. Postal Service are officially classified as off-budget, so there are separate on-budget (all federal government revenues and programs except SS and USPS) and off-budget accounts.

continues to grow. Recently, the National Science Foundation (NSF) released its preliminary projections for total U.S. R&D in 1998 and 1999, including industry-funded R&D. NSF estimates that the total U.S. R&D effort in (calendar year) 1999 is \$247 billion (see Figure 3 and Table 5). This represents an 8.8 percent or \$20 billion increase over the \$227 billion total in 1998, which itself was a 7.3 percent increase over 1997.

As shown in Figure 3, since 1994 total U.S. R&D has expanded dramatically due almost entirely to substantial increases in R&D funding from industrial firms. In 1999, U.S. industry is expected to spend \$169 billion on R&D with its own funds, an increase of 12 percent, far outstripping the more modest growth in federal R&D. As Figure 3 shows, industry has consistently expanded its share of total U.S. R&D over the past four decades, and now funds two-thirds of total U.S. R&D.⁴ Other funding sources for R&D, though far smaller in dollar terms, are also expected to increase their R&D spending.

These increases in U.S. R&D spending are for all character of work categories. Despite worries in the mid 1990s that industry would cut back on its support of basic research, in 1999 industrial firms are expected to fund \$12.7 billion of basic research, an increase of 11.6 percent. This increase is far higher than the increase in federal support of basic research (up 4.1 percent), although the federal government continues to be the majority sponsor of basic research in the U.S. with \$21.0 billion. Total applied research and total development in the U.S. are also expected to grow.

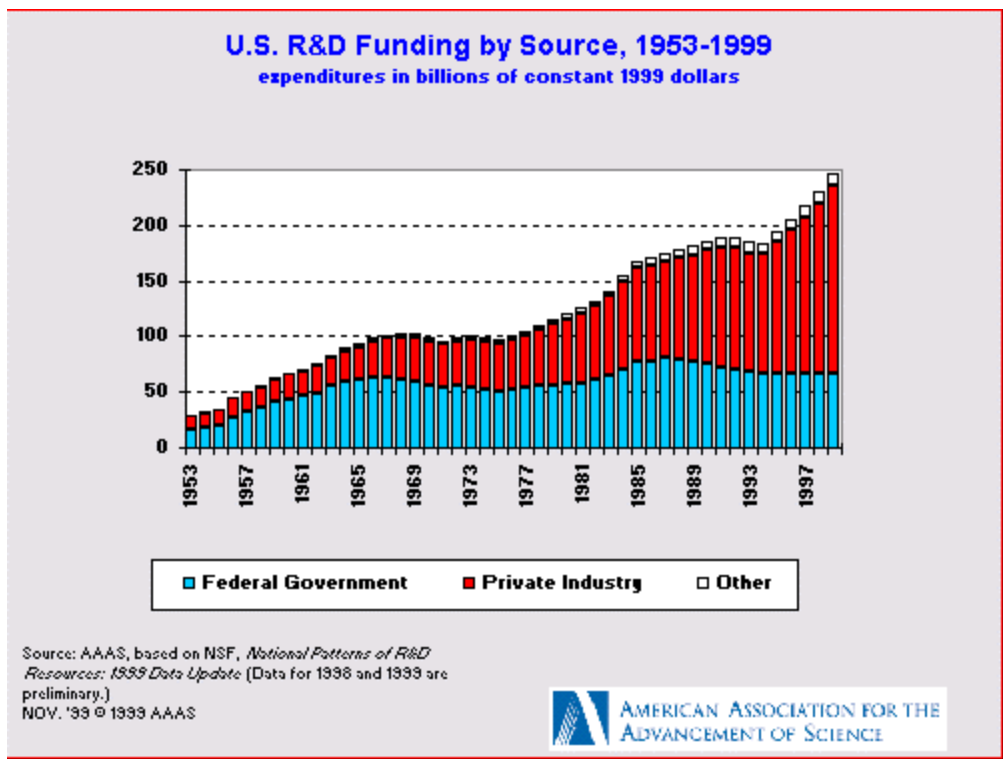


Figure 3.

⁴ The complete NSF data are available on the NSF Science Resources Studies Web site at <http://www.nsf.gov/sbe/srs/stats.htm>

Because growth in total R&D is expected to exceed growth in the U.S. economy as a whole as measured by the Gross Domestic Product (GDP), NSF estimates that total U.S. R&D will reach 2.79 percent of GDP in 1999, up from 2.67 percent in 1998 and the highest share since 1967.

If R&D continues to grow faster than the economy as a whole, as it has since 1994, in 2000 the U.S. R&D/GDP ratio could exceed the all-time high ratio of 2.87 percent in 1964. A survey by the Industrial Research Institute (IRI), an organization whose members include the largest R&D performing companies, indicates that industry plans to increase its R&D spending in 2000, though at a slower rate than in the past three years.

Publication Information

The AAAS publication *Congressional Action on Research and Development in the FY 2000 Budget*, from which this preview report is excerpted, will be available in mid-December from AAAS. **The full report, and supplementary material including detailed agency funding analyses, historical tables, and charts illustrating recent R&D funding trends, will be available on-line on November 26.** Ordering information is as follows:

Congressional Action on Research and Development in the FY 2000 Budget,
Kei Koizumi, Albert H. Teich, Stephen D. Nelson, Joanne Padrón Carney, 1999.
\$10.95; \$8.75 to AAAS members.

We are accepting advance orders for the report. Please send a check or purchase order and mailing information directly to AAAS Science and Policy Programs, 1200 New York Ave., NW #823, Washington, DC 20005 to receive the report as soon as it is published. The publication will be mailed automatically to all participants in the 24th Annual AAAS Colloquium on Science and Technology Policy (April 1999). After publication, the report may be ordered from the AAAS Distribution Center. Address: AAAS Distribution Center, P.O. Box 521, Annapolis Junction, MD 20701. For VISA / Mastercard orders call 1-800-222-7809 (8:30 AM - 5:00 PM ET). Fax orders to 301-206-9789. For shipments to CA and DC, add applicable sales tax. For shipments to Canada, add the GST. Please allow 2-3 weeks for delivery. Please add \$4.00 for postage and handling per order. Orders must be prepaid by check or accompanied by purchase order payable to AAAS. Inquiries may be directed to AAAS (see below).

- November 22, 1999

AAAS R&D Budget and Policy Program
1200 New York Ave., NW
Washington, DC 20005
phone (202) 326-6607; -6600
fax (202) 289-4950
science_policy@aaas.org
AAAS R&D Web site: <http://www.aaas.org/spp/R&D>

Table 1. R&D by Agency in FY 2000 Appropriations - FINAL

Table 1. Total R&D by Agency
Congressional Action on R&D in the FY 2000 Budget (FINAL)
(budget authority in millions of dollars)

	FY 1999 Est.	FY 2000 Request	FY 2000 FINAL	Action by Congress			
				Chg. from Amount	Request Percent	Chg. from Amount	FY 1999 Percent
Defense (military)	37,975	35,065	39,109	4,044	11.5%	1,134	3.0%
("S&T" 6.1,6.2,6.3 + Medical)	7,791	7,386	8,652	1,265	17.1%	861	11.0%
(All Other DOD R&D)	30,184	27,679	30,457	2,778	10.0%	274	0.9%
National Aeronautics & Space Admin.	9,715	9,770	9,778	8	0.1%	63	0.6%
Energy	6,974	7,467	7,232	-235	-3.1%	258	3.7%
Health and Human Services	15,750	16,047	18,094	2,047	12.8%	2,344	14.9%
(National Institutes of Health)	14,971	15,289	17,125	1,835	12.0%	2,153	14.4%
National Science Foundation	2,714	2,890	2,854	-36	-1.2%	140	5.2%
Agriculture	1,638	1,850	1,693	-156	-8.5%	56	3.4%
Interior	567	584	562	-22	-3.8%	-5	-0.9%
Transportation	603	836	643	-193	-23.1%	40	6.7%
Environmental Protection Agency	669	645	645	1	0.1%	-23	-3.5%
Commerce	1,075	1,172	1,096	-76	-6.5%	21	2.0%
(NOAA)	600	600	617	17	2.8%	17	2.8%
(NIST)	468	565	473	-92	-16.3%	5	1.0%
Education	224	276	246	-30	-10.7%	22	10.0%
Agency for Int'l Development	143	94	143	49	51.9%	0	-0.1%
Department of Veterans Affairs	674	663	665	2	0.4%	-9	-1.3%
Nuclear Regulatory Commission	49	47	47	0	-0.5%	-2	-4.5%
Smithsonian	138	146	143	-3	-2.2%	5	3.5%
All Other	443	353	395	42	11.9%	-48	-10.8%
Total R&D	79,350	77,904	83,346	5,442	7.0%	3,996	5.0%
Defense R&D	41,208	38,483	42,497	4,014	10.4%	1,288	3.1%
Nondefense R&D	38,142	39,422	40,850	1,428	3.6%	2,708	7.1%
Nondefense R&D minus NIH	23,171	24,133	23,725	-407	-1.7%	555	2.4%
Basic Research	17,276	18,101	19,112	1,011	5.6%	1,836	10.6%
Applied Research	16,640	16,642	17,534	892	5.4%	894	5.4%
Total Research	33,916	34,742	36,646	1,903	5.5%	2,730	8.0%
"21st Century Research Fund"	36,943	38,111	39,854	1,743	4.6%	2,910	7.9%
"FS&T"	48,326	49,404	52,058	2,654	5.4%	3,732	7.7%

AAAS estimates. Includes conduct of R&D and R&D facilities. Includes rescissions and emergency appropriations.

All figures are rounded to the nearest million. Changes calculated from unrounded figures.

FY 2000 FINAL figures are AAAS estimates of R&D funding contained in FY 2000 appropriations bills conference reports. These figures are reduced to reflect a 0.38 percent cut to all discretionary programs.

Nov. 22, 1999 - FINAL

Table 2. Basic and Applied Research in FY 2000 Appropriations - FINAL

**Table 2. Estimated Research by Agency
Congressional Action on R&D in the FY 2000 Budget (FINAL)
(budget authority in millions of dollars)**

	FY 1999 Est.	FY 2000 Request	Action by Congress				
			FY 2000 FINAL	Chg. from Request Amount	Percent	Chg. from FY 1999 Amount	Percent
Basic Research:							
Health and Human Services	8,429	8,590	9,623	1,033	12.0%	1,194	14.2%
<i>National Institutes of Health</i>	8,427	8,588	9,619	1,031	12.0%	1,192	14.1%
National Science Foundation	2,333	2,514	2,473	-40	-1.6%	141	6.0%
Department of Defense	1,108	1,113	1,167	54	4.9%	59	5.4%
Department of Energy	2,225	2,281	2,253	-28	-1.2%	28	1.2%
National Aeronautics & Space Admin.	2,140	2,466	2,526	60	2.5%	386	18.0%
Department of Agriculture	677	776	710	-66	-8.5%	33	4.8%
Department of the Interior	51	53	53	0	0.7%	2	4.3%
Smithsonian	128	136	133	-3	-2.4%	5	3.7%
Environmental Protection Agency	83	79	79	0	0.1%	-4	-4.7%
Department of Commerce	36	38	38	-1	-2.1%	2	4.2%
All Other	65	55	56	1	1.0%	-9	-13.9%
Total Est. Basic Research	17,276	18,101	19,112	1,011	5.6%	1,836	10.6%
RESEARCH (basic and applied):							
Health and Human Services	13,657	13,899	15,664	1,765	12.7%	2,007	14.7%
<i>National Institutes of Health</i>	12,915	13,171	14,750	1,579	12.0%	1,835	14.2%
National Science Foundation	2,513	2,699	2,655	-43	-1.6%	142	5.7%
Department of Defense	4,259	4,072	4,555	483	11.9%	297	7.0%
Department of Energy	4,103	4,379	4,252	-127	-2.9%	149	3.6%
National Aeronautics & Space Admin.	4,468	4,424	4,568	144	3.2%	99	2.2%
Department of Agriculture	1,416	1,643	1,485	-157	-9.6%	69	4.9%
Department of the Interior	536	551	536	-15	-2.8%	0	0.1%
Environmental Protection Agency	470	447	447	1	0.1%	-23	-4.8%
Department of Commerce	846	878	845	-33	-3.8%	-1	-0.2%
NOAA	544	543	558	15	2.8%	14	2.6%
NIST	296	329	281	-48	-14.7%	-15	-5.1%
Department of Transportation	397	576	448	-127	-22.1%	51	12.9%
Department of Veterans Affairs	608	597	599	2	0.4%	-9	-1.4%
Department of Education	157	174	155	-19	-10.7%	-2	-1.0%
All Other	485	403	435	32	7.9%	-50	-10.4%
TOTAL EST. RESEARCH	33,916	34,742	36,646	1,903	5.5%	2,730	8.0%

AAAS estimates of basic and applied research in FY 2000 appropriations bills.

All figures are rounded to the nearest million. Changes calculated from unrounded figures.

FY 2000 FINAL figures are AAAS estimates of R&D funding contained in FY 2000 appropriations bills conference reports. These figures are reduced to reflect a 0.38 percent cut to all discretionary programs.

Nov. 22, 1999 - FINAL

Table 3. Major Functional Categories of R&D in FY 2000 Appropriations - FINAL

**Table 3. Major Functional Categories of R&D
Congressional Action on R&D in the FY 2000 Budget (FINAL)
(budget authority in millions of dollars)**

	FY 1999 Est.	FY 2000 Request	Action by Congress				
			FY 2000 FINAL	Chg. from Request Amount	Chg. from Request Percent	Chg. from FY 1999 Amount	Chg. from FY 1999 Percent
Defense ¹	41,208	38,483	42,497	4,014	10.4%	1,288	3.1%
Nondefense ²	38,142	39,422	40,850	1,428	3.6%	2,708	7.1%
Space	8,518	8,704	8,606	-98	-1.1%	88	1.0%
Health	16,379	16,664	18,689	2,025	12.2%	2,310	14.1%
Energy	1,173	1,353	1,282	-71	-5.2%	109	9.3%
General Science	5,365	5,668	5,498	-170	-3.0%	133	2.5%
Natural Resources & Environment	2,088	2,104	2,070	-34	-1.6%	-18	-0.9%
Agriculture	1,427	1,608	1,479	-128	-8.0%	53	3.7%
Transportation	1,799	1,902	1,815	-87	-4.6%	15	0.8%
Commerce	474	571	479	-92	-16.2%	5	1.0%
International	194	123	172	49	39.7%	-22	-11.4%
All Other	724	725	760	35	4.8%	36	5.0%
Total R&D	79,350	77,904	83,346	5,442	7.0%	3,996	5.0%

AAAS estimates of R&D in FY 2000 appropriations bills. Includes conduct of R&D and R&D facilities.

All figures are rounded to the nearest million. Changes calculated from unrounded figures.

Classifications generally follow the government's budget function categories except health (which here includes health R&D in HHS and VA).

¹ Includes DOD R&D and atomic energy defense R&D in DOE.

² Includes all R&D not in defense (domestic and international discretionary programs).

FY 2000 FINAL figures are AAAS estimates of R&D funding contained in FY 2000 appropriations bills conference reports. These figures are reduced to reflect a 0.38 percent cut to all discretionary programs.

Nov. 22, 1999 - FINAL

Table 4. "21st Century Research Fund" in FY 2000 Appropriations - FINAL

**Table 4. "21st Century Research Fund" by Agency
Congressional Action on R&D in the FY 2000 Budget (FINAL)
(budget authority in millions of dollars)**

	FY 1999 Est.	FY 2000 Request	FY 2000 FINAL	Action by Congress			
				Chg. from Request		Chg. from FY 1999	
				Amount	Percent	Amount	Percent
Health and Human Services	15,612	15,933	17,845	1,913	12.0%	2,233	14.3%
<i>(National Institutes of Health)</i>	<i>15,612</i>	<i>15,933</i>	<i>17,845</i>	<i>1,913</i>	<i>12.0%</i>	<i>2,233</i>	<i>14.3%</i>
National Science Foundation	3,671	3,921	3,897	-24	-0.6%	226	6.2%
Department of Energy	3,560	3,880	3,674	-206	-5.3%	115	3.2%
National Aeronautics & Space Admin.	4,995	4,786	4,911	125	2.6%	-84	-1.7%
Department of Defense	4,259	4,072	4,555	483	11.9%	297	7.0%
<i>(Basic Research)</i>	<i>1,108</i>	<i>1,113</i>	<i>1,167</i>	<i>54</i>	<i>4.9%</i>	<i>59</i>	<i>5.4%</i>
<i>(Applied Research)</i>	<i>3,151</i>	<i>2,959</i>	<i>3,388</i>	<i>429</i>	<i>14.5%</i>	<i>237</i>	<i>7.5%</i>
Agriculture	1,535	1,596	1,582	-14	-0.9%	47	3.1%
Commerce	828	918	831	-87	-9.4%	3	0.4%
Interior	798	838	821	-18	-2.1%	23	2.9%
Environmental Protection Agency	672	751	638	-113	-15.0%	-33	-5.0%
Veterans Affairs	316	316	320	4	1.2%	4	1.2%
Education	210	265	235	-30	-11.5%	25	11.7%
Transportation	489	834	544	-290	-34.8%	55	11.3%
Total "21st Century Fund"	36,943	38,111	39,854	1,743	4.6%	2,910	7.9%

AAAS estimates. Definitions for the 21st Century Research Fund do not correspond to definitions of R&D.

The Fund contains both R&D and non-R&D programs.

FY 2000 FINAL figures are AAAS estimates of R&D funding contained in FY 2000 appropriations bills conference reports. These figures are reduced to reflect a 0.38 percent cut to all discretionary programs.

Nov. 22, 1999 - FINAL

Table 5. Total U.S. R&D, 1997-1999

Table 5. Total U.S. R&D, 1997-1999
(expenditures in millions of dollars)

(calendar years)	1997	1998	1999	% Change
	Actual	Preliminary	Preliminary	1998-99
U.S. R&D by funding source:				
Federal Government	65,016	64,853	65,853	1.5%
Industry	136,394	151,105	169,312	12.0%
Universities and Colleges	4,842	5,366	5,838	8.8%
Nonprofits	3,436	3,686	3,913	6.2%
Nonfederal Government	1,898	1,974	2,085	5.6%
Total U.S. R&D	211,586	226,984	247,000	8.8%
U.S. R&D by performer:				
Federal Government	16,814	17,189	17,362	1.0%
Industry	155,409	168,291	185,892	10.5%
Universities and Colleges	25,136	26,684	28,256	5.9%
FFRDCs *	8,562	8,715	9,171	5.2%
Nonprofits	5,665	6,105	6,319	3.5%
Total U.S. R&D	211,586	226,984	247,000	8.8%
U.S. R&D by character of work:				
Basic Research	35,495	37,695	40,224	6.7%
(from federal sources)	19,328	20,186	21,020	4.1%
(from industry sources)	10,315	11,373	12,689	11.6%
Applied Research	47,453	51,722	56,462	9.2%
Development	128,638	137,566	150,315	9.3%
Total U.S. R&D	211,586	226,984	247,000	8.8%
U.S. GDP** (billions of dollars)	8,111	8,509	8,849	4.0%
U.S. R&D / GDP	2.61%	2.67%	2.79%	

Source: National Science Foundation, *National Patterns of R&D Resources 1999 Data Update*. The complete data are available at <http://www.nsf.gov/sbe/srs/stats.htm>.

* Federally Funded Research and Development Centers.

** Gross Domestic Product.

These data are based on performer surveys of expenditures for calendar years, and thus differ from data presented elsewhere in this report (agency budget authority data by fiscal year). These data also exclude R&D facilities.