

**A Preview Report for
*Congressional Action on Research and Development
in the FY 1998 Budget***

This AAAS R&D Funding Update is a preview of the forthcoming publication *Congressional Action on Research and Development in the FY 1998 Budget*. (Ordering information is on the last page). This report reflects **final FY 1998 appropriations** for research and development.

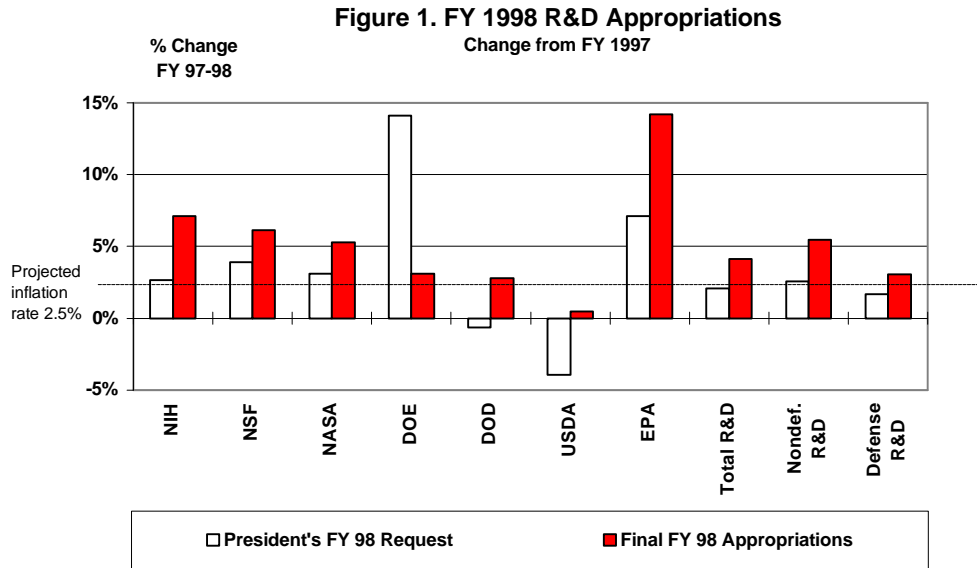
With his last line-item veto on December 2, President Clinton put the final touches on FY 1998 appropriations for the federal investment in research and development (R&D). Although Congress had long since left Washington after adjourning on November 13, the President waited until November 26 to sign the last few appropriations bills into law, and FY 1998 appropriations did not become final until five days later on December 2, the deadline for his use of the line-item veto.

Every year, AAAS analyzes appropriations as signed into law and provides detailed estimates on the federal investment in R&D for the coming fiscal year in the publication *Congressional Action on Research and Development*. The FY 1998 edition will be released in late December. This preview report offers selected highlights from the book.

Highlights

In the FY 1998 budget process, higher-than-expected revenues from continued economic growth resulted in a windfall for discretionary programs. This, combined with renewed support for R&D as a high national priority, allowed federal support for R&D in FY 1998 to receive substantial increases across the board (see Table 1).

- Total federal support for R&D in FY 1998 is \$76.3 billion, \$3.0 billion or 4.1 percent more than FY 1997. Every major R&D funding agency except Transportation and Agriculture received increases well ahead of the expected 2.5 percent inflation rate (see Figure 1).
- The FY 1998 total is \$1.5 billion or 2.0 percent above the President's request. Although the President's request contained nearly \$1 billion for the full construction costs of various R&D facilities, Congress chose to fund only the FY 1998 installments of these costs. Most other agencies received more than requested (see Figure 1).



AAAS - Based on AAAS estimates of R&D in FY 1998 appropriations.

DOE FY 98 Request includes nearly \$1 billion in up-front facilities funding.

- Total defense R&D for FY 1998 is \$41.0 billion, an increase of 3.1 percent, for defense programs in the Department of Defense (DOD) and DOE. The budget request was for a smaller, 0.5 percent increase. After adjusting for inflation, defense R&D has declined 2.7 percent between FY 1994 and FY 1998; however, it still represents 53.8 percent of total R&D.
- The nondefense R&D total of \$35.3 billion for FY 1998 is \$1.8 billion or 5.4 percent more than FY 1997, significantly ahead of the 2.5 percent expected inflation rate in FY 1998. Because of cuts in the previous three years, however, nondefense R&D in FY 1998 is 2.2 percent below FY 1994 in inflation-adjusted terms.
- The Department of Defense (DOD) has an R&D budget of \$38.1 billion in FY 1998, a \$1.0 billion or 2.8 percent increase over last year. This amount is \$1.3 billion more than the President requested, primarily because of a \$704 million supplement to the request for the Ballistic Missile Defense Organization (total \$3.3 billion). Basic research (the "6.1" account) falls 1.2 percent to \$1.1 billion, but applied research, including DOD's expanding effort in medical research, climbs 7.0 percent to \$3.1 billion.
- The National Institutes of Health (NIH) fared especially well because of strong bipartisan support for its efforts in biomedical research. NIH's R&D budget for FY 1998 is \$13.1 billion, a \$871 million or 7.1 percent increase from FY 1997. Most institutes received increases in the 6 to 8 percent range, except for the National Human Genome Research Institute (\$218 million, up 15.2 percent) and

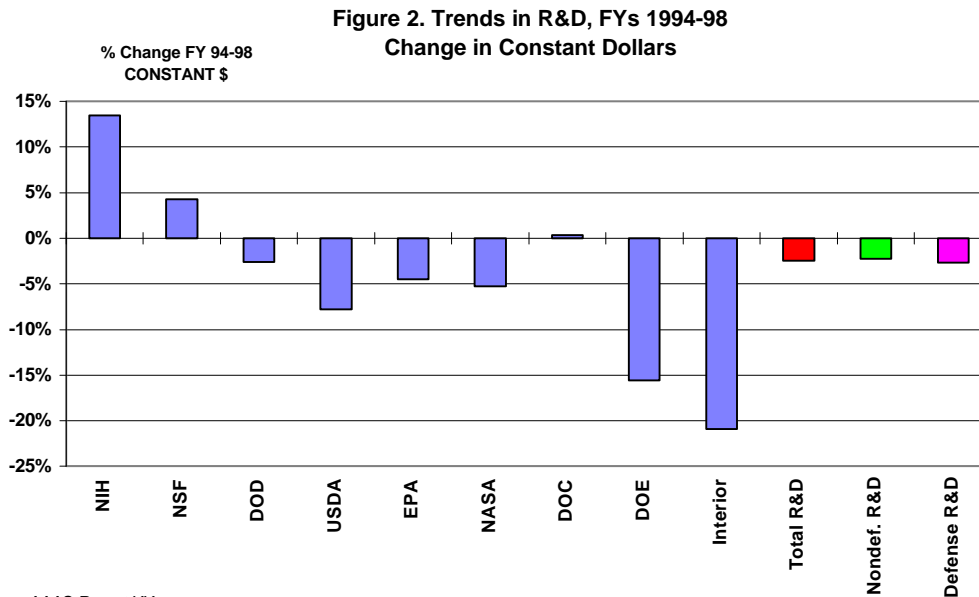
the Office of the Director (\$296 million, up 3.6 percent). Although AIDS research did not receive a separate appropriation, total AIDS research is expected to exceed \$1.6 billion.

- The National Aeronautics and Space Administration (NASA) has an R&D budget of \$9.8 billion (up \$493 million or 5.3 percent) within a total budget of \$13.6 billion. \$203 million of the increase will cover cost overruns on the development phase of the Space Station, for a total of \$2.4 billion. Aeronautics and Space Technology gains 11.3 percent to \$1.5 billion in FY 1998 for development of new launch vehicles.
- The Department of Energy (DOE) has an R&D budget of \$6.3 billion for FY 1998, \$189 million or 3.1 percent more than FY 1997. Much of the increase is due to a 6.4 percent jump in DOE's defense R&D to \$3.0 billion, including a 12.7 percent increase to \$1.9 billion for Stockpile Stewardship. General Science R&D moves up \$15 million or 1.5 percent to \$1.0 billion. Energy R&D declines 0.1 percent to \$2.3 billion. Increases for R&D in programs such as Solar and Renewable Energy (\$276 million, up 15.6 percent) and Energy Conservation (\$356 million, up 10.0 percent) are offset by rescissions in the Clean Coal Technology program.
- The National Science Foundation (NSF) received \$2.6 billion for its R&D in FY 1998. This is \$54 million more than the request and \$149 million or 6.1 percent more than FY 1997. Major Research Equipment received \$109 million, mostly to begin renovation of U.S. research facilities in Antarctica. The core Research and Related Activities account totals \$2.5 billion, an increase of 4.7 percent.
- The Department of Commerce's R&D programs received the largest percentage increase among the agencies: 14.8 percent or \$146 million in FY 1998, for a total of \$1.1 billion. The National Institute of Standards and Technology (NIST) received \$95 million to renovate its aging laboratory facilities, in sharp contrast to a \$16 million rescission last year. The Advanced Technology Program's R&D budget falls to \$182 million from \$203 million. R&D in the NIST labs increases by a modest 1.1 percent or \$2 million to \$227 million. NOAA's natural resources and environment R&D totals \$613 million, a 9.0 percent increase because of increasing concern over ENiño and *pfisteria*.
- The U.S. Department of Agriculture (USDA) received \$1.6 billion for R&D in FY 1998, a slight increase of 0.5 percent. There are sharp cuts in congressionally designated R&D facilities projects, allowing for increases for most research programs.
- The Department of the Interior's (DOI) R&D budget grows by 6.1 percent in FY 1998 to \$616 million. The U.S. Geological Survey received \$538 million for its R&D, \$9 million or 1.7 percent more than FY 1997 because of increases for its

biological research activities. The National Park Service's new initiative on ecosystems research in the Florida Everglades received \$20 million.

- The Environmental Protection Agency (EPA) emerged as a big winner among research agencies this year. EPA's R&D in FY 1998 totals \$618 million, \$77 million or 14.2 percent more than FY 1997. Congress is increasingly concerned that EPA's regulatory activities, especially in particulate matter, be based on sound science.
- Federal support for basic research, most of which is performed at the nation's colleges and universities, is estimated to total \$15.5 billion in FY 1998, 4.6 percent or \$679 million more than FY 1997 and \$235 million more than the request. As a result, increases in federal support for academic R&D should stay ahead of inflation in FY 1998. In the past three years, increases to basic research have kept pace with inflation. The FY 1998 funding level is 3.1 percent above the FY 1994 level after adjusting for inflation.
- The "Federal Science and Technology" (FS&T) budget, an alternative measure for the federal investment in science and technology proposed by the National Academy of Sciences, increases by 5.5 percent in FY 1998 to reach \$41.5 billion. The growth rate in FS&T is nearly the same as in nondefense R&D (5.4 percent), but higher than that of total R&D because defense advanced development, testing and evaluation programs (DOD accounts "6.4" through "6.7" and some DOE work), excluded from the FS&T budget, increase only modestly in FY 1998.
- Most functional categories of R&D see significant gains in R&D, reflecting the importance of R&D to various national missions (see Table 2). Health-related R&D leads the way with \$14.1 billion, up 6.6 percent, because of increases for NIH. Commerce-related R&D sees the biggest percentage gain (up 22.6 percent) because of funds for laboratory construction. Natural resources and environment R&D jumps 8.2 percent to \$2.1 billion because of substantial increases for Interior, EPA, and the National Oceanic and Atmospheric Administration (NOAA).
- Although most agencies received substantial increases in FY 1998, the longer-term trend is still negative. As Figure 2 shows, between FY 1994 and 1998 only NIH, NSF, and Commerce managed to keep their R&D budgets ahead of the rate of inflation. Other agencies suffered large budget cuts in FY 1995 and 1996 and have not recovered lost ground, even after increases in FY 1997 and 1998.

The full report offers 15 detailed funding tables, several charts, a chronology of the events in the FY 1998 budget process, an analysis of funding trends, and analyses of the impacts of the FY 1998 budget on each of the major R&D funding agencies.



Source: AAAS Report XX and AAAS estimates for R&D in FY 1998 appropriations. Adjusted for inflation according to OMB's GDP deflators.

Publication Information

The AAAS publication *Congressional Action on Research and Development in the FY 1998 Budget*, from which this is excerpted, will be available in late December from AAAS. Ordering information is as follows:

Congressional Action on Research and Development in the FY 1998 Budget, Kei Koizumi, Albert H. Teich, Stephen D. Nelson, Joanne Padrón Carney, 1997. AAAS Publication Number 97-20S. \$10.95; \$8.75 to AAAS members.

The report may be ordered from the AAAS Distribution Center. Please add \$4.00 for postage and handling per order. Orders must be prepaid by check or accompanied by purchase order payable to AAAS. 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. Inquiries may be directed to AAAS (see below).

- December 5, 1997
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Table 1. Total R&D by Agency (FINAL)
Congressional Action on R&D in the FY 1998 Budget
(budget authority in millions of dollars)*

	FY 1997 Est. **	FY 1998 Request	FY 1998 FINAL	Action by Congress			
				Chg. from Request		Chg. from FY 1997	
				Amount	Percent	Amount	Percent
Defense (military)	37,026	36,780	38,066	1,285	3.5%	1,040	2.8%
National Aeronautics and Space Admin.	9,315	9,604	9,808	204	2.1%	493	5.3%
Energy	6,103	6,964	6,292	-673	-9.7%	189	3.1%
Health and Human Services	12,935	13,226	13,809	583	4.4%	874	6.8%
<i>National Institutes of Health</i>	<i>12,206</i>	<i>12,531</i>	<i>13,077</i>	<i>546</i>	<i>4.4%</i>	<i>871</i>	<i>7.1%</i>
National Science Foundation	2,424	2,519	2,573	54	2.1%	149	6.1%
Agriculture	1,544	1,483	1,551	68	4.6%	7	0.5%
Interior	581	608	616	8	1.3%	35	6.1%
Transportation	650	684	636	-48	-7.0%	-14	-2.2%
Environmental Protection Agency	541	579	618	38	6.6%	77	14.2%
Commerce	983	1,088	1,128	41	3.8%	146	14.8%
Education	185	210	210	0	-0.1%	25	13.4%
Agency for International Development	169	225	173	-52	-23.1%	4	2.4%
Department of Veterans Affairs	271	243	281	38	15.8%	10	3.8%
All Other	525	551	527	-24	-4.4%	2	0.3%
Total R&D	73,251	74,766	76,288	1,522	2.0%	3,037	4.1%
Defense R&D	39,801	40,457	41,018	561	1.4%	1,217	3.1%
Nondefense R&D	33,450	34,309	35,270	961	2.8%	1,820	5.4%
Basic Research	14,853	15,296	15,531	235	1.5%	679	4.6%
"FS&T"***	43,042	44,572	45,306	734	1.6%	2,264	5.3%

* - Authors' estimates. Includes conduct of R&D and R&D facilities.

** - FY 1997 figures adjusted to reflect rescissions and supplementals enacted in Public Law 105-18.

*** - A new measure of the federal investment in science and technology proposed by the National Academy of Sciences. This figure includes all federal R&D except advanced development, testing and evaluation work in DOD and DOE.

This line corrected on 1/28 from an earlier version of this update.

**Table 2. Major Functional Categories of R&D (FINAL)
Congressional Action on R&D in the FY 1998 Budget
(budget authority in millions)***

	FY 1997 Est. **	FY 1998 Request	FY 1998 Approved	Action by Congress			
				Chg. from Request Amount	Chg. from Request Percent	Chg. from FY 1997 Amount	Chg. from FY 1997 Percent
Defense ¹	39,801	40,457	41,018	561	1.4%	1,217	3.1%
Nondefense ²	33,450	34,309	35,270	961	2.8%	1,820	5.4%
Space	8,032	8,235	8,419	184	2.2%	388	4.8%
Health	13,184	13,434	14,051	617	4.6%	867	6.6%
Energy	2,443	2,410	2,462	52	2.2%	19	0.8%
General Science	3,410	3,522	3,574	52	1.5%	164	4.8%
Natural Resources & Environment	1,912	1,986	2,069	84	4.2%	157	8.2%
Agriculture	1,361	1,300	1,360	60	4.6%	-1	-0.1%
Transportation	1,933	2,053	2,025	-28	-1.4%	92	4.7%
Commerce	419	515	514	0	-0.1%	95	22.6%
International	191	247	195	-52	-21.0%	4	2.1%
All Other	564	607	599	-8	-1.3%	35	6.3%
Total R&D	73,251	74,766	76,288	1,522	2.0%	3,037	4.1%

* Authors' estimates. Includes conduct of R&D and R&D facilities.

** - FY 1997 figures adjusted to reflect rescissions and supplementals enacted in Public Law 105-18.

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).