

Senate Proposes Record Federal R&D Spending; DOD, NIH, NSF R&D Hit New Highs

(This analysis is a progress report on FY 2003 House and Senate appropriations so far in the budget process, and summarizes the AAAS R&D Funding Updates released so far. The complete series of AAAS R&D Funding Updates, including continually updated analyses of R&D by agency in FY 2003 appropriations, is available on the AAAS R&D Web Site (<http://www.aaas.org/spp/rd>) in the "FY 2003 R&D" or the "What's New" sections.)

Congress returns next month from its August recess to confront a slow-moving FY 2003 appropriations process with just four weeks before the start of the new fiscal year. Before leaving Washington, Congress made some progress on FY 2003 appropriations for discretionary programs. The House drafted 6 out of the 13 appropriations bills, but left the largest and most difficult bills for the fall. The Senate managed to draft all 13 appropriations bills and approved 3 of them. Yet none of the appropriations bills has been signed into law. The task of getting even 2 or 3 of the 13 appropriations bills signed into law before the October 1 start of FY 2003 may prove impossible to accomplish, especially since the House and the Senate are still working from discretionary spending totals that are \$10 billion apart, making agreement on a final total for any bill difficult.

FY 2003 R&D in Senate and House Appropriations

Although the House has drafted 6 appropriations bills, the bills containing funding for most of the large domestic R&D funding agencies have not yet been written. The Senate, however, has drafted all 13 appropriations bills and thus has acted on the entire federal R&D portfolio. This analysis focuses mostly on Senate action on R&D appropriations, and the tables in this analysis provide details of Senate R&D appropriations.

- **The Senate would provide a record increase to the federal R&D portfolio and would bring federal R&D to an all-time high of \$116.0 billion in FY 2003** (see Table 1). The Senate proposal would be \$12.8 billion (or 12.4 percent) more than the \$103.2 billion FY 2002 total (see Figure 1). The \$116.0 billion total would be a record R&D portfolio in both current and inflation-adjusted dollars. The Senate would provide \$4.7 billion more than the Bush Administration's request of \$111.3 billion, which would also be the largest R&D budget in history.

- **The lion's share of the Senate increase would go to defense R&D and the National Institutes of Health (NIH).** The Senate would boost Department of Defense (DOD) R&D by \$7.8 billion or 15.7 percent for a total of \$57.7 billion, bringing **DOD R&D above its FY 1987 peak Cold War funding level to a new all-time high.** DOD weapons systems development would account for nearly all of the increase (up \$7.0 billion to \$46.5 billion), leaving an \$819 million or 8.0 percent increase for DOD's "S&T" activities to \$11.1 billion. The **Senate would complete NIH's five-year doubling plan** with a 16 percent boost to \$27.3 billion for the NIH budget (\$26.4 billion for NIH R&D), slightly more than the request; the R&D increase would be \$3.7 billion or 16.3 percent.

- **The remaining agencies in the federal R&D portfolio would receive smaller increases.** The Senate would provide \$1.1 billion more than FY 2002 for a total of \$27.9 billion for nondefense R&D excluding NIH, a 4.1 percent increase. While the increase would be small, it would be an improvement over the Bush Administration request, which would have cut nondefense R&D excluding NIH below FY 2002. **The Senate would start the National Science Foundation's (NSF) R&D on a five-year doubling track** with an 11.9 percent increase to \$3.9 billion. Most of the other R&D funding agencies would receive increases; the exceptions (Department of Transportation, U.S. Department of Agriculture, and the National Institute of

Standards and Technology in Commerce) are because these agencies' FY 2002 R&D budgets are inflated with one-time emergency appropriations to respond to last year's terrorist attacks.

- **The Senate would provide large increases for basic and applied research in FY 2003.** The Senate would provide \$53.3 billion for research (basic and applied), an increase of \$4.7 billion or 9.8 percent that would represent a record federal research investment (see Table 2). The percentage increase would be smaller than the 12.4 percent increase to total R&D because the Senate would go along with the Administration request to provide even larger percentage increases to DOD development. Nearly two-thirds of the research increase would go to NIH research (up \$3.2 billion or 14.4 percent to \$25.5 billion). NIH would make up 48 percent of the total federal research portfolio, a proportion that has been increasing over the years. **NSF research would increase 14.9 percent to \$3.7 billion** in what could be the first year of a five-year doubling plan to match the NIH doubling plan, though only NSF's research and not its education and R&D facilities activities would benefit in the Senate plan. Most of the other R&D funding agencies would also receive increases in research funding. For basic research alone, the Senate would provide an estimated \$26.1 billion (up 10.7 percent); NIH would make up a majority (55 percent) of federal basic research.

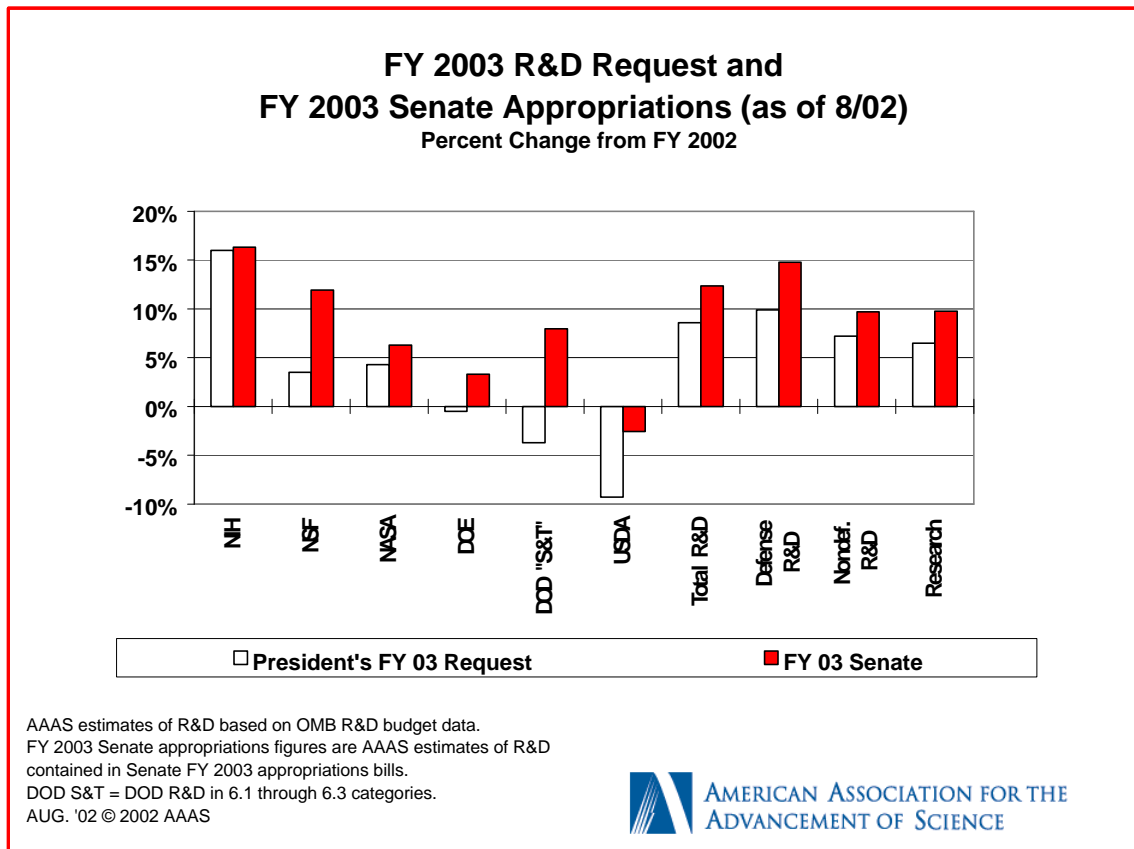


Figure 1. (click on the image to view or download a color full-page PDF version of the chart)

- **The Senate would provide large increases for health and defense R&D, and smaller increases for most of the other national missions** (see Table 3). Defense R&D (including DOD and the Department of Energy's defense activities) would rise \$8.0 billion or 14.8 percent to \$61.7 billion for a record total surpassing the inflation-adjusted Cold War peak of FY 1987. After several years of near-parity between defense and nondefense R&D, defense R&D would pull ahead to 53 percent of total federal R&D. Health R&D, mostly in NIH and its sister agencies in the Department of Health and Human Services (HHS) would jump 14.9 percent to \$28.3 billion to make up nearly a quarter (24.4 percent) of the federal R&D portfolio. Because of the tremendous growth in defense and health R&D over the past few years, R&D for all other

national missions has steadily shrunk to less than a quarter of the federal R&D portfolio and would total just 22.4 percent in the Senate plan despite increases for most missions in FY 2003. **For the first time, spending on health R&D would exceed R&D investments in all other nondefense missions** (space, energy, general science, etc.) combined.

- **The “FS&T budget” would increase by \$6.1 billion or 11.5 percent to \$58.7 billion** (see Table 4). The Federal Science and Technology (FS&T) budget is a collection of selected R&D and non-R&D programs that emphasize basic and applied research and the creation of new knowledge or technologies. The Office of Management and Budget (OMB) created the FS&T budget as a tracking device to more easily track the federal S&T investment through the budget process compared to R&D, and to exclude the large DOD weapons systems development investment. As with the R&D portfolio, most agencies’ FS&T programs would receive increases in the Senate plan except for agencies with large FY 2002 emergency appropriations.

- **The House has drafted FY 2003 appropriations for only three of the major R&D funding agencies.** The House would exceed both the Administration and Senate funding levels for DOD R&D with \$58.8 billion, a \$9.0 billion or 18.1 percent increase. The House would provide \$11.7 billion for DOD “S&T”, a 13.7 percent increase in sharp contrast to a requested cut. The House would provide similar priorities but slightly less money than the Senate for R&D in the U.S. Department of Agriculture (down 7.6 percent to \$2.1 billion) and the Department of the Interior (up 3.1 percent to \$681 million). (For details of House appropriations for R&D in these agencies, see the AAAS R&D Web site’s “FY 2003 R&D” section.)

- **Proposals for a new Department of Homeland Security (DHS) would rearrange the federal R&D portfolio in FY 2003.** Congress and the President are nearly certain to consolidate federal government counter-terrorism and homeland security agencies into a new DHS this fall. The proposed DHS could have a large R&D portfolio of up to \$2.3 billion in FY 2003 as proposed by the Bush Administration. **The House and the Senate, however, would keep \$2.0 billion in FY 2003 bioterrorism R&D funding within NIH and the Centers for Disease Control and Prevention (CDC)** rather than transferring these programs to DHS as proposed. Without these transfers, DHS would take in only small R&D programs currently located in USDA, the Department of Transportation (DOT), the Department of Energy (DOE), and the Department of Commerce. The current Senate proposal would create a new Security Advanced Research Projects Agency (SARPA) and an “Acceleration Fund” for homeland security technologies within DHS. (Details of R&D in the proposed DHS can be found in a separate DHS analysis on the AAAS R&D web site.)

Agency Highlights in FY 2003 Senate R&D Appropriations

(For details on individual agency appropriations, please see the agency R&D Funding Updates on the AAAS R&D Web site. (The on-line version of this document contains links.) Updates are available for all 10 major R&D funding agencies for the Senate, and for DOD, USDA, and Interior for the House. Some figures in these earlier analyses may differ from the figures presented in this document; on August 2, \$510 million in FY 2002 supplemental R&D appropriations were enacted. These supplementals and some other minor adjustments are incorporated in the FY 2002 figures throughout this analysis, but were not included in earlier Updates. An analysis of R&D in the FY 2002 supplemental bill is on the AAAS R&D Web site.)

- The Senate would complete the five-year campaign to double the **National Institutes of Health (NIH)** budget. The Senate would appropriate \$27.3 billion in FY 2003 for the NIH budget, of which \$26.4 billion would be R&D. The Senate increase would be slightly above the Administration requested increase (see Figure 1). NIH support of bioterrorism R&D would increase five-fold to reach \$1.5 billion in FY 2003, up from \$275 million, and would stay in NIH rather than be transferred to the new DHS as proposed by the Administration. Most of the new bioterrorism funds would go to the National Institute of Allergy and Infectious Diseases (NIAID), which would receive a boost of 47.1 percent in its budget to \$3.7 billion. The Senate would more than double Buildings and Facilities to \$633 million, including funds for bioterrorism-related security improvements. Most institutes would receive increases between 8 and 12 percent.

- The Senate would provide \$57.7 billion for **Department of Defense (DOD)** R&D in FY 2003, an increase of \$7.8 billion or 15.7 percent that would bring DOD R&D to an all-time in both current and inflation-adjusted dollars. The House would go even higher at \$58.8 billion. The previous peak was in FY 1987 at \$54 billion in today's dollars. DOD basic research ("6.1"; \$1.5 billion, up 7.6 percent) and applied research ("6.2"; \$4.3 billion, up 4.8 percent) would receive significant boosts in the Senate, though smaller ones than the increases for development. "Science and Technology" (S&T), encompassing research plus advanced technology development, would exceed \$11 billion for the first time to reach \$11.1 billion (up 8.0 percent); the House would go even higher with \$11.7 billion. Both would exceed 3.0 percent of the total DOD budget, in contrast to the request's 2.6 percent. The Senate would provide \$2.7 billion to the Defense Advanced Research Projects Agency (DARPA), an increase of 18.9 percent.

- In the Senate plan, the **National Science Foundation's (NSF)** R&D funding would rise 11.9 percent for a total of \$3.9 billion, including a 14.8 percent boost in the key Research and Related Activities (R&RA) account which could be the first year of a five-year doubling effort. The Senate would reject the proposed transfer of three programs from EPA, Interior, and Commerce to NSF. Research directorates in mathematical and physical sciences, engineering, the geosciences, social sciences, and computer sciences would all receive increases between 12 and 20 percent; only the biological sciences would lag with a 3.4 percent boost. NSF funding for major facilities construction, however, would fall by nearly half to \$79 million. The total NSF budget of \$5.0 billion would include an 8.4 percent increase for NSF's education and human resources programs.

- The **Department of Energy's (DOE)** R&D programs would receive \$8.7 billion in FY 2003 from the Senate, an increase of \$280 million or 3.3 percent. There would be increases slightly above the rate of inflation for science R&D (up 2.5 percent) and larger increases for defense R&D (up 3.0 percent) and energy R&D (up 5.7 percent). All would be greater than the request, especially energy R&D which was proposed for an 11 percent cut. Most Science programs would receive funding only slightly above FY 2002 funding levels.

- The Senate would provide \$15.2 billion for the **National Aeronautics and Space Administration (NASA)** budget in FY 2003, \$298 million or 2.0 percent more than FY 2002 and \$200 million more than the request. NASA's R&D funding would rise 6.3 percent for a total of \$11.8 billion including a 12.4 percent boost to the Science, Aeronautics, and Technology (SAT) account to \$9.0 billion. The Senate would go along with NASA's request to shift money from the International Space Station to NASA's other R&D programs. Space Science would receive \$3.5 billion (up 21.8 percent); NASA requested most of the increase, but the Senate would add \$105 million for the Pluto-Kuiper Belt mission that NASA had proposed for elimination. Funding for the Space Launch Initiative would climb from \$467 million to \$729 million. There would be an additional \$126 million in Senate earmarks for R&D projects.

- The **Department of Commerce's** R&D portfolio would grow 4.4 percent to \$1.2 billion in the Senate plan. The Senate bill would provide substantial increases for many National Oceanic and Atmospheric Administration (NOAA) accounts, for a total of \$682 million (up 12.2 percent). The Senate would reject the proposed transfer of NOAA's National Sea Grant College Program to NSF. R&D in the National Institute of Standards and Technology (NIST) would fall 3.9 percent to \$498 million because of flat funding for existing programs and the non-renewal of FY 2002 emergency appropriations. The Senate would reject the Bush Administration's proposal to halve the Advanced Technology Program (ATP) and to eliminate the Manufacturing Extension Partnership (MEP). Instead, the Senate would give level funding to both.

- While both the House and Senate would be more generous to R&D in the **U.S. Department of Agriculture (USDA)** than the request, each would result in a cut. The House appropriation would total \$2.1 billion (down 7.6 percent) and the Senate \$2.3 billion (down 2.6 percent). Both the House and Senate would concur with the request to block the FY 2003 availability of funds for a mandatory competitive research grants program. The House would provide \$103 million and the Senate \$104 million for Special Research Grants, congressionally earmarked R&D projects totaling 158 in the House and 177 in the Senate. The National Research Initiative, the main competitive grants program, would rise from \$120 million in FY 2002 to \$130 million in the House and \$164 million in the Senate. The overall cuts are due primarily to a

sharp decline in the intramural Buildings and Facilities account, FY 2002 being a flush year because of emergency appropriations to beef up laboratory security after last fall's anthrax attacks.

- In the Senate plan, the **Environmental Protection Agency's (EPA) R&D** would rise 7.7 percent to \$624 million, including a doubling of the Superfund research program for building decontamination research related to EPA's role in cleaning Senate office buildings of anthrax last fall. The Senate would mostly provide for EPA's requested priorities but would add \$32 million for 24 congressionally designated research projects.

- **Department of Transportation (DOT) R&D** would fall \$94 million or 11.9 percent to \$697 million in the FY 2003 Senate plan, though the total could be higher at the discretion of the new Transportation Security Administration (TSA). The FY 2002 total is inflated with one-time emergency appropriations for aviation security R&D enacted in the aftermath of the September 11 hijackings. TSA and Coast Guard R&D (total \$48 million in the Senate plan) would be transferred to the proposed DHS.

- Both the House and Senate would reject proposed cuts in **the Department of the Interior's R&D** and would instead provide small increases. Although the Administration would have cut R&D in Interior's U.S. Geological Survey (USGS) by 7 percent, the Senate (up 2.6 percent) and the House (up 2.0 percent) would boost USGS R&D and would block the proposed transfer of a toxic hydrology program to NSF.

Policy Context and Budget Outlook

When it returns to session in September, the Senate's proposed increases will come under pressure from House appropriators and the President. The Senate drafted its appropriations bills to total \$758 billion in discretionary spending, but the House and President Bush have insisted on a total that is \$10 billion less at \$748 billion. Because all parties have agreed on similar allocations for defense spending, which makes up half of all discretionary spending, the Senate could be far more generous to domestic programs than the House or the President's request. The House, if it sticks to its total, will be more constrained in its ability to offer increases for R&D programs in NIH, NSF, NASA, and other nondefense agencies than the Senate was.

The budget deficit is no longer a concern because both parties are resigned to years of deficit spending in a time of recession and war. Thus, there is no natural target for discretionary spending as there was when the budget debate was driven by the bipartisan priority to keep the federal budget in surplus. The President's insistence on \$748 billion is somewhat arbitrary, especially given the President's and Congress' willingness to approve billions of dollars in new spending earlier this year in the farm bill, the trade promotion bill, and the FY 2002 supplemental bill. But having drawn the line here, President Bush appears intent on enforcing this budget limit and a vocal group of House Republicans is committed to supporting him.

Although large differences in spending levels between the House and the Senate are normally resolved by meeting in the middle or even at the higher figure, President Bush has insisted on his (and therefore the House's) lower total for discretionary spending and has threatened to veto any bills that exceed his request. Although the large increases for DOD R&D and NIH R&D appear to be safe because they were in his request, President Bush requested an overall cut in non-NIH nondefense R&D programs. Thus, the Senate-proposed funding levels exceeding his request for agencies such as NSF, DOE, USDA, and NASA may be in jeopardy if House-Senate conference negotiators are forced to lower their funding levels toward the House and the President rather than raising them toward the Senate. The outcome for nondefense agencies will depend on how strong the House and President Bush are in their resolve to restrain domestic discretionary spending. The overall federal R&D portfolio, because it is heavily weighted toward the record increases in NIH and DOD which have won bipartisan agreement, will almost certainly end up with a record increase in FY 2003 regardless of what happens to the other agencies.

Less certain than the funding outcome is the end date of the FY 2003 appropriations process. In an election year Congress would like to complete appropriations on or soon after the October 1 start of the fiscal year in order to have a month to campaign, especially in a close election year such as this one when party control

of both chambers is at stake. But there is simply not enough time in September to approve the remaining House and Senate appropriations bills, convene House-Senate conferences, approve conference reports, and get bills signed by the President. This is especially true this September: observances of the one-year anniversary of the September 11 attacks, including a special session in New York City, will cut into legislative time, and what legislative time remains will be consumed with legislation to create the Department of Homeland Security.

The House-Senate conference stage of the process will be especially time-consuming because of the \$10 billion difference between the House and Senate totals. Normally, the House and Senate agree on a total in the spring, through the budget resolution, before the appropriations bills are drafted; thus, any differences in House and Senate totals for individual appropriations bills are usually small. But this year, because of the lack of a budget resolution and the differing totals, the larger domestic appropriations bills could be as much as \$6 billion apart between the House and Senate versions.

Because of these factors, the most likely scenario is that Congress will wrestle with appropriations well into October, with the strong possibility that after recessing for a pre-election break lawmakers will be forced into a lame-duck session in November and December to finish up appropriations and other legislative business. For FY 2002, the last appropriations bill was not signed into law until January 6; it is increasingly likely that FY 2003 will be similar.

(Further AAAS R&D Funding Updates on the AAAS R&D Web site will provide up-to-date information on R&D in FY 2003 appropriations. At the conclusion of FY 2003 appropriations, AAAS will publish an analysis of R&D in final FY 2003 appropriations in our publication *Congressional Action on R&D in the FY 2003 Budget*.)

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Table 1. R&D by Agency in FY 2003 Senate Appropriations (as of 8/14)

Table 1. Total R&D by Agency
Senate Action on R&D in the FY 2003 Budget (as of August 14, 2002)
(budget authority in millions of dollars)

	FY 2002 Estimate	FY 2003 Request	FY 2003 Senate	Action by Congress			
				Chg. from Request		Chg. from FY 2002	
				Amount	Percent	Amount	Percent
Defense (military)	49,829	54,460	57,663	3,204	5.9%	7,835	15.7%
("S&T" 6.1,6.2,6.3 + Medical)	10,298	9,707	11,117	1,410	14.5%	819	8.0%
(All Other DOD R&D)	39,531	44,752	46,546	1,794	4.0%	7,015	17.7%
National Aeronautics & Space Admin.	10,159	10,598	10,798	200	1.9%	639	6.3%
Energy	8,460	8,323	8,740	417	5.0%	280	3.3%
(Office of Science)	3,048	3,059	3,123	64	2.1%	75	2.5%
(Energy R&D)	1,474	1,317	1,559	242	18.4%	85	5.7%
(Atomic Energy Defense R&D)	3,938	3,947	4,058	111	2.8%	120	3.0%
Health and Human Services	23,955	27,385	27,578	193	0.7%	3,624	15.1%
(National Institutes of Health)	22,678	26,361	26,385	24	0.1%	3,707	16.3%
National Science Foundation	3,526	3,651	3,947	296	8.1%	421	11.9%
Agriculture	2,321	2,061	2,262	201	9.8%	-59	-2.6%
Interior	660	628	684	56	8.9%	24	3.6%
Transportation	791	685	697	12	1.8%	-94	-11.9%
Environmental Protection Agency	580	617	624	8	1.2%	45	7.7%
Commerce	1,151	1,084	1,201	117	10.8%	50	4.4%
(NOAA)	608	605	682	77	12.7%	74	12.2%
(NIST)	519	467	498	31	6.6%	-20	-3.9%
Education	268	311	279	-32	-10.2%	11	4.2%
Agency for Int'l Development	243	157	161	4	2.7%	-82	-33.7%
Department of Veterans Affairs	734	781	786	6	0.7%	52	7.1%
Nuclear Regulatory Commission	61	68	68	0	0.0%	7	11.5%
Smithsonian	126	131	131	0	0.0%	5	4.0%
All Other	352	333	357	24	7.2%	5	1.3%
Total R&D	103,216	111,272	115,977	4,705	4.2%	12,761	12.4%
Defense R&D	53,767	58,406	61,722	3,315	5.7%	7,954	14.8%
Nondefense R&D	49,449	52,865	54,256	1,390	2.6%	4,807	9.7%
Nondefense R&D minus NIH	26,771	26,504	27,871	1,366	5.2%	1,100	4.1%
Basic Research	23,530	25,380	26,050	670	2.6%	2,520	10.7%
Applied Research	25,047	26,129	27,265	1,135	4.3%	2,217	8.9%
Total Research	48,578	51,509	53,315	1,806	3.5%	4,737	9.8%
"FS&T"	52,636	56,803	58,706	1,903	3.3%	6,070	11.5%

AAAS estimates of R&D in FY 2003 appropriations bills. Includes conduct of R&D and R&D facilities.

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

FY 2002 figures adjusted to reflect supplemental appropriations in the FY 2002 supplemental bill (Public Law 107-206).

All figures adjusted to exclude President's proposal to fully fund federal retiree costs, and therefore differ slightly from figures presented in AAAS Report XXVII.

August 14, 2002 - Senate-approved and Senate Appropriations Committee-approved funding levels.

These figures may be amended on the Senate floor.

Table 2. Basic and Applied Research in FY 2003 Senate Appropriations (as of 8/14)

Table 2. Estimated Research by Agency
Senate Action on R&D in the FY 2003 Budget (as of August 14, 2002)
(budget authority in millions of dollars)

	FY 2002 Estimate	FY 2003 Request	Action by Congress				
			FY 2003 Senate	Chg. from Request Amount	Chg. from Request Percent	Chg. from FY 2002 Amount	Chg. from FY 2002 Percent
Basic Research:							
Health and Human Services	13,133	14,319	14,442	123	0.9%	1,308	10.0%
<i>National Institutes of Health</i>	<i>13,130</i>	<i>14,316</i>	<i>14,437</i>	122	0.9%	1,307	10.0%
National Science Foundation	3,058	3,205	3,516	311	9.7%	458	15.0%
Department of Defense	1,372	1,361	1,476	115	8.5%	104	7.6%
Department of Energy	2,424	2,519	2,583	64	2.5%	159	6.5%
National Aeronautics & Space Admin.	1,947	2,338	2,339	1	0.0%	391	20.1%
Department of Agriculture	853	865	918	53	6.1%	65	7.6%
Department of the Interior	58	55	59	4	7.2%	1	2.5%
Smithsonian	111	114	114	0	0.0%	3	2.7%
Environmental Protection Agency	105	99	113	14	14.5%	8	7.7%
Department of Commerce (NIST)	52	73	48	-25	-34.1%	-4	-7.5%
All Other	417	434	443	9	2.1%	26	6.2%
Total Est. Basic Research	23,530	25,380	26,050	670	2.6%	2,520	10.7%
RESEARCH (basic and applied):							
Health and Human Services	23,479	26,492	26,635	144	0.5%	3,157	13.4%
<i>National Institutes of Health</i>	<i>22,259</i>	<i>25,487</i>	<i>25,463</i>	-24	-0.1%	3,204	14.4%
National Science Foundation	3,250	3,404	3,734	331	9.7%	485	14.9%
Department of Defense	5,906	5,196	6,134	939	18.1%	228	3.9%
Department of Energy	5,220	5,188	5,404	217	4.2%	185	3.5%
National Aeronautics & Space Admin.	4,776	5,493	5,454	-39	-0.7%	678	14.2%
Department of Agriculture	1,820	1,786	1,873	86	4.8%	52	2.9%
Department of the Interior	628	596	649	53	8.8%	21	3.3%
Environmental Protection Agency	480	522	517	-5	-1.0%	37	7.7%
Department of Commerce	942	867	954	86	10.0%	12	1.3%
NOAA	542	546	648	102	18.6%	105	19.4%
NIST	393	312	303	-9	-2.9%	-89	-22.7%
Department of Transportation	531	456	450	-7	-1.5%	-81	-15.3%
Department of Veterans Affairs	719	765	771	6	0.7%	51	7.1%
Department of Education	180	213	191	-22	-10.2%	11	6.3%
All Other	647	531	548	17	3.3%	-99	-15.3%
TOTAL EST. RESEARCH	48,578	51,509	53,315	1,806	3.5%	4,737	9.8%

AAAS estimates of basic and applied research in FY 2003 appropriations bills.

FY 2002 and FY 2003 request figures based on OMB R&D data and supplemental agency budget data.

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

FY 2002 figures adjusted to reflect supplemental appropriations in the FY 2002 supplemental bill (Public Law 107-206).

All figures adjusted to exclude President's proposal to fully fund federal retiree costs, and therefore differ slightly from figures presented in *AAAS Report XXVII*.

August 14, 2002 - Senate-approved and Senate Appropriations Committee-approved funding levels.

These figures may be amended on the Senate floor.

Table 3. Major Functional Categories of R&D in FY 2003 Senate Appropriations (as of 8/14)

Table 3. Major Functional Categories of R&D
Senate Action on R&D in the FY 2003 Budget (as of August 14, 2002)
(budget authority in millions of dollars)

	FY 2002 Estimate	FY 2003 Request	Action by Congress				% of Total ('03 Sen.)	
			FY 2003 Senate	Chg. from Request Amount	Chg. from Request Percent	Chg. from FY 2002 Amount		Chg. from FY 2002 Percent
Defense ¹	53,767	58,406	61,722	3,315	5.7%	7,954	14.8%	53.2%
Nondefense ²	49,449	52,865	54,256	1,390	2.6%	4,807	9.7%	46.8%
Space	9,224	9,761	9,961	200	2.1%	737	8.0%	8.6%
Health	24,665	28,112	28,341	229	0.8%	3,676	14.9%	24.4%
Energy	1,565	1,415	1,657	242	17.1%	92	5.9%	1.4%
General Science	6,574	6,710	7,070	360	5.4%	496	7.5%	6.1%
Natural Resources & Environ.	2,189	2,159	2,318	158	7.3%	129	5.9%	2.0%
Agriculture	2,006	1,778	1,964	186	10.5%	-42	-2.1%	1.7%
Transportation	1,726	1,522	1,533	12	0.8%	-193	-11.2%	1.3%
Commerce	543	478	519	40	8.4%	-24	-4.4%	0.4%
International	268	182	186	4	2.3%	-82	-30.5%	0.2%
All Other	689	748	707	-41	-5.4%	18	2.6%	0.6%
Total R&D	103,216	111,272	115,977	4,705	4.2%	12,761	12.4%	100.0%

AAAS estimates of R&D in FY 2003 appropriations bills. Includes conduct of R&D and R&D facilities.

FY 2002 and FY 2003 request figures based on OMB R&D data and supplemental agency budget data.

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

FY 2002 figures adjusted to reflect supplemental appropriations in the FY 2002 supplemental bill (Public Law 107-206).

All figures adjusted to exclude President's proposal to fully fund federal retiree costs, and therefore differ slightly from figures presented in *AAAS Report XXVII*.

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).

August 14, 2002 - Senate-approved and Senate Appropriations Committee-approved funding levels.

These figures may be amended on the Senate floor.

Table. "FS&T Budget" in FY 2003 Senate Appropriations (as of 8/14)

Table 4. "FS&T Budget" by Agency
Senate Action on FS&T in the FY 2003 Budget (as of August 14, 2002)
(budget authority in millions of dollars)

	FY 2002 Estimate	FY 2003 Request	FY 2003 Senate	Action by Senate			
				Chg. from Request Amount	Percent	Chg. from FY 2002 Amount	Percent
Health and Human Services	23,510	27,244	27,269	25	0.1%	3,759	16.0%
<i>(National Institutes of Health)</i>	23,510	27,244	27,269	25	0.1%	3,759	16.0%
National Science Foundation	4,789	5,028	5,353	325	6.5%	564	11.8%
Department of Energy	5,081	4,997	5,379	381	7.6%	298	5.9%
National Aeronautics & Space Admin.	7,821	8,701	8,842	141	1.6%	1,022	13.1%
Department of Defense	5,443	5,129	5,740	612	11.9%	298	5.5%
<i>(Basic Research)</i>	1,372	1,361	1,476	115	8.5%	104	7.6%
<i>(Applied Research)</i>	4,071	3,768	4,264	496	13.2%	193	4.8%
Agriculture	1,845	1,853	1,998	145	7.8%	153	8.3%
Commerce	929	844	981	137	16.2%	52	5.6%
<i>(OAR in NOAA)</i>	356	297	396	99	33.2%	40	11.1%
<i>(NIST minus MEP)</i>	573	547	586	38	7.0%	13	2.2%
Interior (USGS)	941	867	927	59	6.8%	-14	-1.5%
Environmental Protection Agency	875	781	796	15	1.9%	-79	-9.0%
Veterans Affairs	371	394	400	6	1.4%	29	7.8%
Education	377	431	388	-44	-10.1%	11	2.8%
Transportation	655	533	633	100	18.7%	-22	-3.3%
Total "FS&T"	52,636	56,803	58,706	1,903	3.3%	6,070	11.5%

AAAS estimates of FS&T in FY 2003 appropriations bills; FY 2002 and FY 2003 request data based on OMB data from the *Budget of the U.S. Government FY 2003: Analytical Perspectives* Chapter 8.

The programs in the Federal Science and Technology Budget do not correspond to definitions of R&D.

The FS&T Budget contains selected R&D and non-R&D programs with an emphasis on basic and applied research and the creation of new knowledge or technologies. The programs in this table were selected by OMB.

FY 2002 figures adjusted to reflect supplemental appropriations in the FY 2002 supplemental bill (Public Law 107-206).

All figures adjusted to exclude President's proposal to fully fund federal retiree costs, and therefore differ slightly from figures presented in *AAAS Report XXVII*.

August 14, 2002 - Senate-approved and Senate Appropriations Committee-approved funding levels. These figures may be amended on the Senate floor.