
increases of more than \$1 billion each. These categories cover advanced development work, mostly performed by industrial firms as defense contractors, on specific weapons systems. Most of the "6.5" increase would come from the \$4.2 billion appropriation (up from \$3.4 billion in FY 2003), divided between the Navy and Air Force, for the Joint Strike Fighter (JSF), a next-generation fighter in development for future use by all the services and U.S. allies.

DOD S&T Programs

Basic research funding (the "6.1" category) would increase a modest \$13 million or 0.9 percent to \$1.4 billion, in contrast to a requested 8 percent cut. Table C shows apparent substantial increases for basic research in the Army, Navy, and Air Force, but these increases reflect major proposed shifts in funding from the Office of the Secretary of Defense (OSD) to the three services. DOD proposes to move funding for the University Research Initiatives program, which funds competitively awarded basic research grants to university performers, from OSD to the three services. The House would agree to these proposed transfers. Overall, funding for University Research Initiatives would rise 13 percent to \$296 million. Funding for the Defense Research Science program, however, which funds basic research in DOD laboratories and universities, would fall 5.2 percent to \$905 million across the three services and DARPA in the House plan, though this would be an improvement over the requested 10.6 percent cut.

Applied research funding (the "6.2" category) would increase modestly by 2.2 percent to \$95 million to \$4.4 billion in FY 2004, in sharp contrast to a requested 14 percent cut. Although the Pentagon would have cut applied research programs in each of the three services and the Defense Agencies, only the Navy's "6.2" portfolio would decline in the House proposal. The Army would see a particularly large increase for its "6.2" programs primarily because of the addition of \$335 million in congressionally designated medical research (for more on medical research, see below).

The "6.1," "6.2," and "6.3" categories are often grouped together as "Science and Technology" (S&T). This category includes basic research, applied research, and generic technology development. These programs contribute to a broad knowledge base with potential applications to a wide variety of military as well as civilian uses. Nearly all DOD support for S&T at colleges and universities comes from the S&T accounts. AAAS estimates of DOD S&T (see Table 3) also include applied medical research in the Defense Health Program, which was formerly included in the Army "6.2" accounts.

DOD funding of "S&T" (the "6.1" through "6.3" categories plus medical research) would climb \$1.1 billion or 9.7 percent to \$12.3 billion in the House bill, a sharp reversal from a proposed cut of nearly \$1 billion in the Administration's request (see Table C). For the past several years, Congress has tended to be more supportive of S&T funding than the Pentagon. In last year's budget, DOD also requested a cut in S&T funding, but Congress ended up appropriating a nearly \$1 billion increase. In the past few years, there has been growing support from outside the Pentagon for raising 3 percent of the DOD budget as a goal for the proper level of S&T investment, and the last two DOD budgets have met that goal. The House bill would raise the S&T/budget ratio to 3.2 percent, in contrast to the request which would have lowered it to 2.7 percent. The House-proposed increase would be heavily concentrated in the "6.3" programs, which collectively would increase by \$1.0 billion or 20.2 percent to \$6.1 billion, including a near-doubling of Air Force investments in technology projects.

The House Defense bill contains a separate \$410 million FY 2004 appropriation outside the regular R&D accounts, for medical research (see Table C), down 11 percent from last year's funding level. Included in this total is \$150 million for breast cancer research and \$85 million for prostate cancer research (same as the FY 2003 funding levels) to be awarded through peer-reviewed competitive grants. The bill also contains \$10 million for ovarian cancer research, \$10 million for diabetes research, \$10 million for neuroscience research, and \$16 million for reproductive research. These programs were congressionally initiated in the early 1990s and DOD has never stopped funding for them, but Congress has annually provided funding. These programs are managed by Army. The House Defense bill also contains numerous congressionally designated appropriations for medical research in DOD's regular accounts,

totaling \$335 million in the Army and \$66 million in the Navy. Counting these appropriations, the House bill provides more than \$800 million for congressionally designated medical research projects

R&D in the Defense Agencies

R&D in the Defense Agencies would increase \$1.8 billion or 7.5 percent to \$18.8 billion, primarily because of a \$797 million increase to \$7.5 billion for development in the Missile Defense Agency (MDA; see Table B). The missile defense program is a high priority for the Bush Administration, and also for Congress, although the House would trim \$251 million from the request. Including some missile defense development funded by the Army, the total missile defense development effort would jump 18 percent to \$8.1 billion in FY 2004, in preparation for deploying a test system as soon as possible. The MDA (formerly the Ballistic Missile Defense Organization) no longer funds research; nearly all missile defense funds go to advanced development, testing, manufacturing, and evaluation of missile defense systems with an additional \$834 million elsewhere in the DOD budget for procurement of completed systems.

The House would provide the Defense Advanced Research Projects Agency (DARPA) with \$3.0 billion in FY 2004, an increase of \$329 million or 12.2 percent (see Table B). DARPA is mostly research-oriented, and its broad research portfolio is aimed at expanding the frontiers of knowledge and military technology to provide future solutions to DOD technology needs. DARPA is the model for the new Department of Homeland Security's research agency, named the Homeland Security Advanced Research Projects Agency (HSARPA) in homage. DARPA's efforts in areas such as tactical technology, materials, aerospace systems, electronics, sensors and guidance technologies would receive large increases. DARPA would also initiate a new program on networked warfare technology with an investment of \$96 million.

The Chemical and Biological Defense Program (CBDP) would receive the largest percentage increase among the Defense Agencies in the House plan, a R&D portfolio of \$721 million (up 13.7 percent; see Table B). The program funds basic and applied research as well as all forms of development geared toward new technologies to keep U.S. troops safe from biological and chemical attack, and is involved in developing counter-terrorism technologies with the Department of Homeland Security (DHS).

Next Steps

[The House approved the Defense bill on July 8 with only minor changes. The Senate plans to draft its version of the bill on July 9.]

(This analysis is one of a series of AAAS R&D Funding Updates on the FY 2004 congressional appropriations process. This analysis includes information on R&D in House appropriations for the Department of Defense. The complete series of AAAS R&D Funding Updates, including continually updated analyses of R&D by agency FY 2004 appropriations, is available on the AAAS R&D Web Site (<http://www.aaas.org/spp/rd>) in the "FY 2004 R&D" or the "What's New" sections.)

- July 3, 2003 (updated July 9)
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Table A. DOD R&D by Program in FY 2003 House Appropriations

**Table A. Department of Defense by Program
House Appropriations Committee Action on R&D in the FY 2004 Budget
(budget authority in millions of dollars)**

	FY 2003 Estimate	FY 2004 Request	FY 2004 House	Action by House			
				Chg. from Request Amount	Percent	Chg. from FY 2003 Amount	Percent
Research, Development, Test, and Evaluation:							
Basic Research ("6.1")	1,417	1,309	1,431	122	9.3%	13	0.9%
Applied Research ("6.2")	4,289	3,670	4,383	713	19.4%	95	2.2%
Total Research, or Tech. Base	5,706	4,979	5,814	835	16.8%	108	1.9%
Advanced Tech. Dev. ("6.3")	5,067	5,253	6,092	840	16.0%	1,025	20.2%
Total Science and Technology	10,773	10,231	11,906	1,675	16.4%	1,133	10.5%
Adv. Component Dev. ("6.4")	10,754	13,197	13,176	-21	-0.2%	2,422	22.5%
System Dev. And Demon. ("6.5")	14,503	15,913	15,950	38	0.2%	1,447	10.0%
Management Support ("6.6")	3,106	3,028	3,315	287	9.5%	210	6.7%
Operational Systems Dev. ("6.7")	18,656	19,458	20,266	808	4.2%	1,611	8.6%
BA Adjustment	-227	0	0	0	--	--	--
TOTAL RDT&E	57,564	61,827	64,614	2,787	4.5%	7,050	12.2%
Other appropriations ¹	701	928	928	0	0.0%	227	32.4%
Medical research ²	459	66	410	345	523.6%	-49	-10.6%
Total DOD R&D	58,724	62,821	65,953	3,132	5.0%	7,228	12.3%
DOD S&T ("6.1" - "6.3" & medical)	11,232	10,297	12,316	2,019	19.6%	1,085	9.7%

AAAS estimates based on FY 2004 appropriations bills. Includes conduct of R&D and R&D facilities.

FY 2003 and FY 2004 request figures based on OMB R&D data and supplemental agency budget data.

FY 2003 figures adjusted to reflect rescissions and supplementals enacted in Public Laws 108-2 and 108-11.

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

¹ R&D support in military personnel, military construction, and other DOD appropriations.

Includes chemical agents and munitions destruction R&D funded outside RDT&E.

² Medical research appropriated in Defense Health Programs, not RDT&E. These funds are not included in "6.2."

July 3, 2003 - House Appropriations Committee-approved funding levels.

These figures may be amended or rejected by the full House.

Table B. DOD R&D by Agency in FY 2004 House Appropriations

**Table B. Department of Defense by Agency
House Appropriations Committee Action on R&D in the FY 2004 Budget
(budget authority in millions of dollars)**

	FY 2003 Estimate	FY 2004 Request	FY 2004 House	Action by House			
				Chg. from Request Amount	Percent	Chg. from FY 2003 Amount	Percent
Research, development, test, and evaluation:							
Army	7,519	9,123	10,186	1,063	11.7%	2,668	35.5%
Navy	13,597	14,107	14,666	560	4.0%	1,069	7.9%
Air Force	18,763	20,336	20,704	368	1.8%	1,941	10.3%
Defense Agencies	17,449	17,974	18,764	790	4.4%	1,315	7.5%
<i>Defense Adv. Res. Projects Agcy.</i>	2,690	2,954	3,019	66	2.2%	329	12.2%
<i>Missile Defense Agency</i>	6,682	7,729	7,478	-251	-3.2%	797	11.9%
<i>Chem. And Bio. Defense Program</i>	634	599	721	122	20.3%	87	13.7%
<i>Defense Threat Reduction Agency</i>	406	382	390	8	2.1%	-16	-3.9%
<i>Office of Secretary of Defense</i>	2,198	1,551	1,782	232	14.9%	-416	-18.9%
<i>Other *</i>	4,839	4,760	5,373	613	12.9%	534	11.0%
Director of Operational Test & Eval.	237	287	294	7	2.4%	57	23.9%
TOTAL RDT&E	57,564	61,827	64,614	2,787	4.5%	7,050	12.2%
Other appropriations ¹	701	928	928	0	0.0%	227	32.4%
Medical research ²	459	66	410	345	523.6%	-49	-10.6%
Total DOD R&D	58,724	62,821	65,953	3,132	5.0%	7,228	12.3%

AAAS estimates based on FY 2004 appropriations bills. Includes conduct of R&D and R&D facilities.

FY 2003 and FY 2004 request figures based on OMB R&D data and supplemental agency budget data.

FY 2003 figures adjusted to reflect rescissions and supplementals enacted in Public Laws 108-2 and 108-11.

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

* Includes classified programs.

¹ R&D support in military personnel, military construction, and other DOD appropriations.

Includes chemical agents and munitions destruction R&D funded outside RDT&E.

² Medical research appropriated in Defense Health Programs, not RDT&E.

July 3, 2003 - House Appropriations Committee-approved funding levels.

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Table C. DOD S&T by Agency in FY 2004 House Appropriations

**Table C. Department of Defense S&T by Agency
House Appropriations Committee Action on R&D in the FY 2004 Budget
(budget authority in millions of dollars)**

	FY 2003 Estimate	FY 2004 Request	Action by House				
			FY 2004 House	Chg. from Request Amount	Chg. from Request Percent	Chg. from FY 2003 Amount	Chg. from FY 2003 Percent
"Science and Technology" (S&T; "6.1" through "6.3" plus medical research)							
Army	2,143	1,790	2,536	746	41.7%	394	18.4%
- Basic Research ("6.1") *	244	343	376	33	9.5%	131	53.6%
- Applied Research ("6.2")	858	641	1,014	373	58.2%	156	18.2%
- Advanced Tech. Dev. ("6.3")	1,040	806	1,146	341	42.3%	106	10.2%
Navy	2,031	1,714	2,066	352	20.5%	35	1.7%
- Basic Research ("6.1") *	412	457	478	22	4.7%	66	15.9%
- Applied Research ("6.2")	806	536	664	129	24.0%	-141	-17.5%
- Advanced Tech. Dev. ("6.3")	813	722	924	202	28.0%	110	13.6%
Air Force	1,751	2,226	2,537	311	14.0%	787	44.9%
- Basic Research ("6.1") *	218	322	333	11	3.4%	115	52.9%
- Applied Research ("6.2")	829	758	895	137	18.1%	66	8.0%
- Advanced Tech. Dev. ("6.3")	704	1,146	1,309	163	14.2%	605	86.0%
Defense Agencies	4,839	4,488	4,754	266	5.9%	-86	-1.8%
- Basic Research ("6.1") *	542	187	244	57	30.5%	-299	-55.0%
- Applied Research ("6.2")	1,796	1,735	1,809	75	4.3%	13	0.7%
- Advanced Tech. Dev. ("6.3")	2,501	2,566	2,700	134	5.2%	199	8.0%
Operational Test & Evaluation ("6.3")	9	13	13	0	0.0%	4	49.4%
TOTAL "6.1" through "6.3"	10,773	10,231	11,906	1,675	16.4%	1,133	10.5%
Medical research ¹	459	66	410	345	523.6%	-49	-10.6%
DOD S&T ("6.1" - "6.3" + medical)	11,232	10,297	12,316	2,019	19.6%	1,085	9.7%

AAAS estimates based on FY 2004 appropriations bills. Includes conduct of R&D and R&D facilities.

FY 2003 and FY 2004 request figures based on OMB R&D data and supplemental agency budget data.

FY 2003 figures adjusted to reflect rescissions and supplementals enacted in Public Laws 108-2 and 108-11.

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

* FY 2004 request proposes to transfer University Research Initiative and other program funds from Defense Agencies "6.1" to Army, Navy, and Air Force "6.1" accounts. FY 2004 House bill would follow this proposal.

¹ Medical research appropriated in Defense Health Programs, not RDT&E.

**July 3, 2003 - House Appropriations Committee-approved funding levels.
These figures may be amended or rejected by the full House.**