

PRESIDENT'S BUDGET INCLUDES MODEST INCREASE FOR R&D IN FY 2004; R&D FUNDING FOR HOMELAND SECURITY CONTRIBUTES TO DEFENSE, SCIENCE, TRANSPORTATION, AND AGRICULTURE

by Ronald L. Meeks

The Bush administration has proposed a total budget authority of \$118.0 billion for federally supported research and development (R&D) in fiscal year (FY) 2004, 5.7 percent (4.2 percent in constant dollars) more than the preliminary FY 2003 R&D total of \$111.6 billion (table 1). Defense R&D is slated to increase 7.0 percent (5.5 percent in constant dollars) in FY 2004, and R&D for nondefense programs is slated to increase 4.1 percent (2.6 percent in constant dollars). Pending congressional action will determine the final budget authority for R&D in FY 2004. As of this writing, none of the thirteen FY 2004 appropriations bills has passed Congress. Details on the President's requested Federal funding of the R&D components of agency programs for FYs 2002–04 are in the forthcoming annual report *Federal R&D Funding by Budget Function: Fiscal Years 2002–04*.

R&D in Support of the Department of Homeland Security

In the aftermath of the terrorist attacks against the United States on September 11, 2001, the Federal Government decided to consolidate 22 previously disparate agencies to form one department to protect the nation against threats to the homeland. On November 25, 2002, President Bush signed the Homeland Security Act of 2002, establishing the Department of Homeland Security (DHS). The new department's first priority is

to protect the nation against further terrorist attacks. Component agencies will analyze threats and intelligence, guard U.S. borders and airports, protect critical infrastructure, and coordinate the response of the nation for future emergencies.

Defense-related R&D share increases each year from 52.7 percent in FY 2001 to 56.7 percent in FY 2004.

The agencies slated for DHS will be housed in four major directorates: border and transportation security, emergency preparedness and response, science and technology, and information analysis and infrastructure protection. The R&D activities of DHS are in four budget-function categories: national defense, general science, transportation, and agriculture. R&D funding for the combined DHS activities is proposed to increase by almost 50 percent, from \$562 million in FY 2003 to \$835 million in FY 2004. These funds are about equally divided between defense and nondefense functional categories (table 2).

Proposed Defense R&D Funding

The defense share of the Federal R&D budget authority is expected to be \$66.8 billion, an increase of \$4.4



TABLE 1. Federal R&D budget authority, by budget function: FYs 2000–04

Budget function	Agencies' budget submissions					Percent change FYs 2003–04
	FY 2000 actual	FY 2001 actual	FY 2002 actual	FY 2003 preliminary	FY 2004 proposed	
Billions of current dollars						
Total	78.664	86.756	97.624	111.593	117.967	5.7
National defense	42.580	45.713	53.016	62.463	66.835	7.0
Nondefense	36.084	41.043	44.608	49.129	51.132	4.1
Health	17.869	20.758	23.560	26.358	28.059	6.5
Space research and technology	5.363	6.126	6.270	7.215	7.550	4.6
General science	4.977	5.468	5.753	6.165	6.441	4.5
Natural resources and environment	1.999	2.096	2.160	2.234	2.195	-1.8
Transportation	1.636	1.640	1.838	1.867	1.860	-0.4
Agriculture	1.426	1.657	1.606	1.710	1.564	-8.5
Other functions ¹	2.814	3.298	3.421	3.581	3.463	-3.3
Billions of constant FY 1996 dollars						
Total	73.614	79.251	88.516	99.895	104.073	4.2
National defense	39.847	41.758	48.070	55.915	58.963	5.5
Nondefense	33.768	37.492	40.446	43.979	45.110	2.6
Health	16.722	18.962	21.362	23.595	24.754	4.9
Space research and technology	5.019	5.596	5.685	6.459	6.661	3.1
General science	4.657	4.995	5.216	5.519	5.682	3.0
Natural resources and environment	1.871	1.915	1.958	2.000	1.936	-3.2
Transportation	1.531	1.498	1.667	1.671	1.641	-1.8
Agriculture	1.334	1.514	1.456	1.531	1.380	-9.9
Other functions ¹	2.633	3.013	3.102	3.206	3.055	-4.7

¹Other functions include energy; veterans benefits and services; education, training, employment, and social services; commerce and housing credit; international affairs; administration of justice; community and regional development; income security; and general government.

NOTES: Data reflect budget information collected through April 2003. Percent change is derived from unrounded data.

SOURCES: Agencies' submissions to the Office of Management and Budget, Max Schedule C; agencies' budget documents; and supplemental data obtained from agencies' budget offices.

billion from FY 2003. This growth represents a continuation of recent trends whereby the defense share of Federal R&D budget authority has increased from 52.7 percent in FY 2001 to 56.7 percent in FY 2004. About 93 percent (\$61.8 billion) of the defense dollars are slated for the Department of Defense's (DoD's) military research, development, test, and evaluation (RDT&E) programs. The Army, Navy, Air Force, and two defense agencies (the Missile Defense Agency—formerly the Ballistic Missile Defense Organization—and the Defense Advanced Research Projects Agency) will account for 87.7 percent (\$54.2 billion) of the RDT&E account. Strong R&D growth, represented by an increase of 9.2 percent in FY 2003 funding to \$3.8 billion in FY 2004, is expected in the Department of Energy's (DOE's) atomic energy defense activities,

mainly in support of weapons activities. Proposed defense R&D at DHS is about \$400 million in both FY 2003 and FY 2004.

Proposed Nondefense R&D Funding

Total nondefense R&D budget authority is expected to increase by \$2.0 billion, to \$51.1 billion in FY 2004. The nondefense share of Federal R&D budget authority has decreased each year from 47.3 percent in FY 2001 to 43.3 percent in FY 2004. Six functions account for more than 90 percent of the Federal budget proposed for nondefense-related R&D activities (table 1).

Among individual nondefense budget functions, R&D funding for health activities is expected to increase \$1.7 billion from the FY 2003 level. R&D budget authority

TABLE 2. Federal R&D budget authority for the Department of Homeland Security (DHS), by budget function: FYs 2003–04
(Billions of current dollars)

Budget function	DHS agencies' budget submissions	
	FY 2003 preliminary	FY 2004 proposed
Total	0.562	0.835
National defense	0.416	0.411
Nondefense	0.146	0.424
General science	0.019	0.217
Transportation	0.108	0.193
Agriculture	0.019	0.014

NOTES: Data reflect budget information collected through April 2003. DHS was established by law in November 2002.

SOURCES: Agencies' submissions to the Office of Management and Budget, Max Schedule C; agencies' budget documents; and supplemental data obtained from agencies' budget offices.

for health activities, which primarily includes programs of the National Institutes of Health (NIH), is proposed to increase by 6.5 percent, to \$28.1 billion, giving health programs 23.8 percent of the total Federal R&D budget authority. All 19 NIH institutes would receive increased R&D budgets in FY 2004. The National Cancer Institute is slated to get the largest portion (\$4.7 billion) of NIH R&D dollars, followed by the National Institute of Allergy and Infectious Diseases (\$4.3 billion) and the National Heart, Lung, and Blood Institute (\$2.8 billion).

The Bush administration has proposed a 4.6 percent boost in R&D budget authority, to \$7.6 billion, for space research and technology activities, an increase of \$335 million from FY 2003. National Aeronautics and Space Administration (NASA) programs account for the entire space research and technology budget function. Space science accounts for one-half of these R&D activities and is expected to increase 12.5 percent over the FY 2003 funding level. The second largest share is "crosscutting technology"¹ (21.7 percent), and the third largest share is earth science (20.6 percent). In all, space research and technology accounts for 6.4 percent of the proposed total Federal R&D budget authority.

Research funding for general science is proposed to increase 4.5 percent, or by \$276 million in FY 2004, to a total of \$6.4 billion. The National Science Foundation (NSF) accounts for 57.3 percent (\$3.7 billion) of these

¹Beginning in FY 2004, the NASA budget will be restructured into themes. Crosscutting technology includes the Space Launch Initiative, Mission and Science Measurement Technology, and Innovative Technology Transfer Partnership themes.

general-science funds. Major funded activities in NSF include mathematical and physical sciences; geosciences; biological sciences; engineering; computer and information sciences; and social, behavioral, and economic sciences. DOE accounts for 39.3 percent (\$2.5 billion) of the general-science R&D funds, and DHS makes up the remaining 3.4 percent (\$217 million). DOE's major funded activities in general-science R&D (each accounting for more than \$300 million) include support of high-energy physics, nuclear physics, basic energy sciences, and biological and environmental research. Under the proposed budget, general science would account for 5.5 percent of the total Federal R&D budget authority.

Natural resources and environment R&D is budgeted at \$2.2 billion in FY 2004, down 1.8 percent from the FY 2003 level. Five agencies provide support for R&D activities in this area: the Department of Commerce, accounting for 30.8 percent of the funding; the Department of the Interior, 28.8 percent; the Environmental Protection Agency, 27.7 percent; the Department of Agriculture (USDA), 11.5 percent; and DoD's Army Corps of Engineers, 1.2 percent. Natural resources and environment R&D would account for almost 2 percent of the total Federal R&D budget authority under the proposed budget.

Expected funding in FY 2004 for transportation R&D is \$1.9 billion, down by \$7 million from FY 2003. NASA, at nearly \$1 billion, accounts for 53.4 percent of these funds with its aeronautical research and technology program. The Department of Transportation (DOT) accounts for 36.2 percent of the transportation R&D, mainly through ground and air transportation projects. DHS makes up the remaining 10.4 percent at \$193 million. These dollars are allocated to the new Transportation Security Administration (\$170 million) and to the U.S. Coast Guard (formerly in DOT). Under the proposed budget, transportation R&D would account for less than 2 percent of the total Federal R&D budget authority.

Agriculture R&D is expected to be \$1.6 billion in FY 2004, down by 8.5 percent from the FY 2003 funding level. USDA would receive all but \$14 million of these funds for its projects, with DHS scheduled to receive the balance. Under the proposed budget, agriculture R&D would account for 1.3 percent of the total Federal

R&D budget authority. R&D funding for the combined nine other functions is proposed to decrease 3.3 percent in FY 2004.

Data Collection Notes

The data in the forthcoming report, *Federal R&D Funding by Budget Function: Fiscal Years 2002-04*, represent agencies' best estimates of actual and proposed Federal funding for R&D as reported during the period February through April 2003. These data are based primarily on information that agencies provide to the Office of Management and Budget and account for nearly all federally sponsored R&D activities. The report also contains R&D information that became available from the individual agencies after the administration's budget was prepared and reported. Such information consists of agency budget-justification

documents submitted to Congress and supplemental, program-specific information obtained from agency budget and program staff through April 2003. Budget numbers for individual activities, programs, or agencies may therefore differ from those published in the President's budget or agency budget documents.

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