Congressional Research Service

Report RL32482

Federal Homeland Security Research and Development Funding: Issues of Data Quality

Genevieve J. Knezo, Resources, Science, and Industry Division

June 28, 2004

Abstract. This CRS report portrays some of the data that has been collected about federal agency homeland security R&D and raises issues about the availability and consistency of such information, especially about OMBs data. The quality of information is important since it enters into consideration when attempting to coordinate homeland security R&D programs.

Order Code RL32482

CRS Report for Congress
Received through the CRS Web

Federal Homeland Security Research and Development Funding: Issues of Data Quality

June 28, 2004

Genevieve J. Knezo
Specialist in Science and Technology Policy
Resources, Science, and Industry Division

Federal Homeland Security Research and Development Funding: Issues of Data Quality

Summary

Section 889 of the Homeland Security Act, P.L. 107-296, requires the Office of Management and Budget (OMB) to report homeland security budget data annually to Congress and to consult with Congress to identify homeland security activities for this purpose. Accurate information is needed in order to set and coordinate priorities and policy for federal homeland security research and development (R&D). P.L. 107-296 gave the Department of Homeland Security (DHS) Secretary, acting through the Under Secretary for Science and Technology, coordination responsibilities to ensure that federal homeland security R&D serves DHS's internal needs, supports the agencies transferred to DHS, contributes to presidentially defined homeland security missions, and ensures that federal homeland security R&D programs do not duplicate or leave gaps. According to the Under Secretary, federal homeland security R&D will be coordinated by fall 2004. Legislation has been introduced to require DHS to prioritize and consolidate all of its R&D activities that are not now managed by the agency's Science and Technology Directorate (H.R. 4141/S. 2285).

OMB data show that federal funding for homeland security R&D was requested at $3.6 billion for FY2005; DHS's R&D programs constitute about one-third of total funding. Other agencies with large homeland security R&D budgets are the National Institutes of Health, the Department of Defense, the Department of Justice, the National Science Foundation, the Department of Agriculture, the Environmental Protection Agency, and the Department of Commerce.

OMB has collected cross-agency funding data on homeland security R&D for several years. This is a difficult task on which OMB is making progress. Data are now collected for different purposes; data sets often conflict. In its *Combating Terrorism* reports, OMB publishes summary data by agency on combating terrorism R&D and summarizes some programs. It describes homeland security R&D as a subset of combating terrorism R&D and has not published data on homeland security R&D funding, *per se*. OMB publishes data on homeland security funding by agency, subdivided by programs or units, in tables appended to the FY2005 budget request. It is not possible to identify clearly programs for R&D using these data. OMB has also produced an unpublished homeland security R&D data table; it is not widely circulated and gives only total funding by agency. A 2004 Congressional Budget Office report found shortcomings in federal homeland security funding data.

Problems with the accuracy and consistency of R&D data may be caused by inaccurate reporting, federal agencies' use of different definitions, or changing conceptions of "homeland security" over time. Among options Congress could consider are requiring agencies to use standardized definitions of homeland security R&D, or mandating that OMB or DHS prepare an annual accounting specifically of homeland security R&D funding and activities. See also CRS Report RL32481, *Homeland Security R&D Funding and Activities in Federal Agencies: A Preliminary Inventory*, by Genevieve J. Knezo.

This report will not be updated.

Contents

List of Tables

Federal Homeland Security Research and Development Funding: Issues of Data Quality

Introduction

The Department of Homeland Security (DHS) has statutorily mandated responsibilities to coordinate federal homeland security research and development (R&D). Implementation of these responsibilities depends, in part, on the quality of information about homeland security R&D programs in DHS and in other agencies. There is no single published comprehensive inventory of federal agency homeland security R&D activities. Several different types of data sets have been prepared for different purposes. In its reports to Congress on *Combating Terrorism*, the Office of Management and Budget (OMB) publishes summary data on federal agencies' budgets for R&D for combating terrorism and gives short descriptions of some agency programs.[1] These data are current only through the budget request for the fiscal year when the report is published. OMB describes homeland security R&D as a subset of combating terrorism R&D. OMB has not published data on homeland security R&D funding, *per se*, but, using an internal cross-walk budget data base, it has prepared an unpublished table on homeland security R&D. In data appended to the FY2005 budget request (and available only electronically or on CD-ROM), OMB published information on homeland security funding by agency, subdivided by programs and units. (An earlier version of these data, current only through the FY2004 request, was appended to the *2003 Report to Congress on Combating Terrorism*.)

According to the Congressional Budget Office (CBO), OMB's publication of these data are responsive to section 889 of the Homeland Security Act of 2002, P. L. 107-296, which directed OMB to produce an annual report on homeland security funding to accompany the President's annual budget submission.[2] It is not possible to identify accurately all agency programs for homeland security R&D using these data. CBO identified general limitations in the OMB data on homeland security as follows:

> The allocation of homeland security funding to almost 200 appropriation accounts within the federal budget substantially complicates efforts to track such spending. In addition, agencies, in their accounts, do not separate that funding

---

[1] This report is required by Section 1051 of the National Defense Authorization Act of 1998, P.L. 105-85.

[2] Congressional Budget Office, "Federal Funding for Homeland Security," Economic and Budget Issue Brief, Apr. 30, 2004, p. 3 (html version.) Available at [http://www.cbo.gov/showdoc.cfm?index=5414&sequence=0] or [ftp://ftp.cbo.gov/54xx/doc5414/homeland_security.pdf].

> from money appropriated for their other activities. Indeed, much of the money for homeland security activities resides within accounts that finance primarily non-homeland-security spending, such as departmental salaries and expenses. That accounting practice makes it difficult to clearly identify homeland security funding as it moves through the appropriation process.
>
> Section 889 of the Homeland Security Act of 2002 attempted to address that issue by directing OMB to produce an annual report on homeland security funding to accompany the President's annual budget submission. The reports contain data on homeland security spending collected by federal agencies and updated throughout the fiscal year, but those data do not always provide a consistent picture of expenditures. ... Classifying and reporting spending on homeland security activities require judgments about particular projects and programs. In addition, under the current data-collection process, definitions of homeland security and current- and prior-year funding levels are continually being modified and updated.[3]

This CRS report portrays some of the data that has been collected about federal agency homeland security R&D and raises issues about the availability and consistency of such information, especially about OMB's data.[4] The quality of information is important since it enters into consideration when attempting to coordinate homeland security R&D programs. Another CRS report inventories in detail specific federal agency homeland security R&D programs and funding trends. (CRS Report RL32481, *Homeland Security R&D Funding and Activities in Federal Agencies: A Preliminary Inventory*).

Among the observations made are that the different data sets that the Office of Management and Budget (OMB) publishes about homeland security R&D are not consistent and do not always include funding data for all federal agencies that are known to have homeland security R&D programs. In addition, agencies may be using different definitions when reporting homeland security funding. An implication is that DHS and Congress would have a clearer picture of federal commitments for homeland security R&D and would be better equipped to coordinate and set priorities for such R&D if more accurate and consistent information were collected and published.

DHS's R&D Coordination Goals and Responsibilities

DHS Under Secretary for Science and Technology, Dr. Charles E. McQueary, testified before Congress on February 25, 2004, that he had established two challenging goals relating to coordination of federal homeland security R&D: "By

---

[3] CBO, "Federal Funding for Homeland Security," op. cit.

[4] For other information about federal agency homeland security R&D funding and activities, see CRS Report RS21270: *Homeland Security and Combating Terrorism Research and Development: Funding, Organization, and Oversight*, by Genevieve J. Knezo, and CRS Report RL31914, *Research and Development in the Department of Homeland Security*, by Daniel Morgan,.

the autumn of 2004, all Department of Homeland Security research and development programs will be consolidated and all United States Government research and development relevant to fulfilling the Department's mission will have been identified and coordinated as appropriate."[5] This is a daunting and complex goal, given the size and complexity of the federal homeland security R&D budget. DHS's homeland security R&D was requested at about $1.2 billion for FY2005. The FY2005 request for total federal homeland security R&D was about $3.6 billion (more than double the resources used in FY2002 and about 63% more than enacted for FY2003). Total federal agency homeland security R&D, including facilities and construction budget authority, which numerous federal agencies[6] fund, was requested at about $4.2 billion for FY2005.[7] While DHS's R&D programs account for one-third of total expenditures, other agencies with large homeland security R&D activities listed in descending order of funding responsibility, include the National Institutes of Health (NIH), the Department of Defense (DOD), the Department of Justice (DOJ), the National Science Foundation (NSF), the Department of Agriculture (USDA), the Environmental Protection Agency (EPA), the Department of Commerce (DOC), the Department of Energy (DOE), and the Department of Transportation (DOT).

DHS's Statutorily Mandated Coordination Responsibilities

DHS funds about one-third of all federal homeland security R&D, but has the responsibility of ensuring that all federal homeland security R&D funding is prioritized properly to serve the President's homeland security missions. The Secretary of Homeland Security is required by the Homeland Security Act, P.L. 107-296, to prioritize and coordinate research and development for DHS and for other federal agencies. Pursuant to P.L. 107-296, the Secretary of DHS, acting through the DHS Under Secretary for Science and Technology, has major responsibilities to coordinate R&D internally within the DHS Directorate for Science and Technology; within the department as a whole to support the R&D needs of DHS's other directorates and missions (for border security; infrastructure protection; and combating chemical, biological, and radiological threats); and on an interagency basis, with individual agencies. The Under Secretary is also mandated to develop federal R&D strategies that support homeland security missions. Specifically, Section 302 of P.L. 107-296 outlined these intra-departmental and interagency coordination responsibilities, including:

---

[5] Statement of Dr. Charles E. McQueary, Under Secretary for Science and Technology, Department of Homeland Security Before the U.S. House of Representatives, Subcommittee on Cybersecurity, Science, and Research and Development, February 25, 2004.

[6] One estimate is that at least 50 agencies supported homeland security R&D. See, Tom LaTourrette, "Appendix H - Developing a Strategy for Research and Development in the Department of Homeland Security," in *Forging America's New Normalcy, The Fifth Annual Report to the President and the Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction,* Dec. 15, 2003, p. H-8

[7] This information is from the American Association for the Advancement of Science, "Bush Administration Seeks $4.2 Billion for Homeland Security R&D in FY2005," May 12, 2004 [http://www/aaas/org/spp/rd/hs05.htm].

- advising the Secretary regarding DHS's R&D priorities;
- with other agencies, developing a strategic plan for federal R&D priorities and goals related to countermeasures for chemical, biological, radiological, nuclear and other emerging terrorist threats;
- conducting R&D relevant to all elements of DHS and coordinating and integrating all of DHS's RDT&E activities;
- establishing priorities for, directing, funding and conducting national RDT&E to prevent the importation of terrorist weapons and detecting and preventing such attacks;
- entering into agreement with the Department of Energy regarding using the national laboratories;
- collaborating with the Secretary of Agriculture and the Attorney General as provided in section 212 of the Agricultural Bioterrorism Protection Act of 2002 (7 U.S.C. 8401) as amended by section 1709 (b) (relating to the topic of regulating the use of certain toxins and biological agents);
- collaborating with the Secretary of Health and Human Services and the Attorney General regarding identification of select agents;
- supporting U.S. leadership in S&T; and
- coordinating with other federal agencies to develop and carry out the S&T agenda of DHS "to reduce duplication and identify unmet needs."

Also, pursuant to Section 304, the DHS Secretary is to collaborate with the DHHS Secretary to set priorities for homeland security-related human health R&D and to establish benchmarks regarding achievement.

Most of DHS's R&D activities are in the Directorate of Science and Technology (S&T Directorate), but some are managed by other DHS units. The FY2004 homeland security appropriations conference report (H.Rept. 108-280) expressed concern about the potential for duplication, waste, and inadequate management oversight, and directed DHS to "consolidate all Departmental research and development funding within the science and technology programs in the FY2005 budget request." DHS did portray this information in a consolidated manner in the FY2005 budget request. Legislation has been introduced that would require DHS to prioritize and consolidate all of its R&D activities that are not now managed by the agency's Science and Technology Directorate (H.R. 4141/S. 2285).

The issue of coordinating homeland security R&D funding among federal agencies is important for several reasons. These include priority-setting in order to produce R&D and know-how about the science and technology issues most crucial to ensuring homeland security; avoid unnecessary duplication; identify gaps where R&D is needed; and enhance the potential for exchange of information and transfer of technologies developed. Whether or not DHS achieves its goals relating to coordination of homeland security R&D by fall 2004 and whether it has adequate information about agency homeland security R&D activities may be of potential interest to congressional committees with oversight for homeland security issues — those that authorize and appropriate funds for DHS — and also to those that deal with the R&D programs of other agencies with homeland security R&D budgets.

R&D To Combat Terrorism: Data and Information Sources

Although there is some overlap between data sets, as will be explained in this report, OMB prepares separate information on "combating terrorism" R&D, which will be examined first, and on "homeland security" R&D, which will be examined in the following section.

The most comprehensive single source of information about federal funding and agency programs for "combating terrorism" is the OMB annual series *Report to Congress on Combating Terrorism*.[8] The latest report, for 2003, was published in September 2003; it contains data for FY2002, FY2003, and the FY2004 request. The OMB report has been produced since 2001, and the series contains data starting with FY2000. Information in the OMB report gives funding levels and describes the objectives and activities of some federal agency programs to combat terrorism, of which homeland security programs are considered a subset.[9] The report does not give detailed financial or descriptive information about all programs.

The OMB 2003 *Combating Terrorism* report identified two types of activities: "antiterrorism (defensive measures used to combat terrorism) and counterterrorism (offensive measures used to combat terrorism), both domestically and abroad."[10] OMB divided the "combating terrorism" heading into two funding categories, "homeland security" (HS) and "overseas combating terrorism" (OCT).[11] The report defined "homeland security" programs as follows:

> Homeland security programs focus on activities within the United States and its territories, or on activities in support of domestically-based systems and processes. The Homeland Security Council (HSC) coordinates these activities government-wide. ... Homeland security is defined as a concerted national effort to prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism, and minimize the damage and recover from attacks that do occur. [Homeland security can include activities that occur] ... outside the United States and its territories if they support domestically-based systems or activities (e.g., pre-screening high-risk cargo at overseas ports).[12]

The 2003 *Combating Terrorism* report included a summary table with data on federal R&D funding to combat terrorism, by agency. These data, as depicted in **Table 1,** show that, for FY2004, the latest year for which data were available for this data set, agencies requested about $3.2 billion for R&D to combat terrorism. The Department of Health and Human Services (DHHS) requested about 51% of this amount and also posted the largest increase in funding, at 98% more than FY2003.

---

[8] Reports for the fiscal years 2001 to 2003 are available at [http://www.omb.gov].

[9] Office of Management and Budget, *2003 Report to Congress on Combating Terrorism*, September 2003, pp. 2-3.

[10] OMB, *2003 Report to Congress on Combating Terrorism*, p. 3.

[11] OMB, *2003 Report to Congress on Combating Terrorism*, p. 3.

[12] Idem.

This table did not say that it excluded OCT R&D, or that the table included only "homeland security" R&D.

OMB's *2003 Report to Congress on Combating Terrorism* included an appendix table which gave funding levels for overseas combating terrorism (OCT) programs for agencies which support such activities. OCT R&D program funding *per se* appeared only for four DOD budget accounts for "research, development, test, and evaluation programs (RDT&E)." For FY2004, DOD requested a total of $2.1 billion, with the Air Force requesting the largest amount. **See Table 2**.

Table 1. OMB Data on Funding for R&D to Combat Terrorism, by Agency, FY2002 to FY2004, Request

(budget authority, $ in millions)

Agency	2002 Enacted	2002 Supple-mental	2003 Enacted	2003 Supple-mental	2004 Request*	Percent Change FY2003 to FY2004
Dept. of Agriculture	$28.0	$52.2	$30.4	none	$42.1	+38%
Dept. of Commerce	11.7	7.0	16.4	none	19.4	+18%
Dept. of Defense	259.0	2.0	597.0	none	157.0	-74%
Dept. of Energy	none	none	19.0	none	none	-100%
Dept. of Health and Human Srvs.	117.2	85.0	831.2	none	1,648.2	+98%
Dept. of Homeland Security	110.0	93.4	658.2	none	844.0	+28%
Dept. of Justice	13.1	76.1	173.5	$4.9	174.7	-2%
Dept. of State	1.8	none	1.8	none	1.8	0%
Dept. of Transportation	54.7	54.0	3.7	none	3.9	+5%
Corps of Engineers-Civil Works	none	3.0	none	none	none	0%
Environmental Protection Agency	2.8	1.5	49.7	none	29.0	-42%
National Science Foundation	228.8	none	268.5	none	285.7	+6%
Postal Service	none	9.5	none	none	none	0%
Total, Combating Terrorism R&D	$827.0	$383.6	$2,649.4	$4.9	$3,205.7	+21%

Source: Retyped version of a table in Office of Management and Budget, *2003 Report to Congress on Combating Terrorism,* September 2003, p. 16. The last column was calculated by CRS.
*FY2004, Request, is the latest year for which data were available in the OMB report.

OMB did not include the DOD OCT R&D data in the combating terrorism R&D table in the 2003 report (**see Table 1** above). Thus, it appears that all of DOD's R&D funding was not portrayed in that table, even though OMB did not say that the table excluded OCT R&D funding. It is not clear what types of DOD combating terrorism R&D funding are included in **Table 1**, i.e. whether OMB reported only a subset of DOD's R&D funding. Most federal documents that report R&D funding levels, including National Science Foundation reports and other OMB documents, include all of DOD's RDT&E funding in the reporting category of research and development (R&D), and all RDT&E funding is included in government totals portraying federal R&D funding.[13] While OMB separately reported DOD's OCT RDT&E funding, it is not clear whether the DOD R&D budget authority data in the combating terrorism data table (**Table 1**), excluded any part of DOD's OCT R&D or domestic RDT&E funding data. Also, it is not clear if other agencies' domestic RDT&E funding data for combating terrorism are included in **Table 1**. This is confusing and can lead to inaccuracies in portraying funding for combating terrorism R&D.

Table 2. Overseas Combating Terrorism (OCT) Funding by Agency and Budget Account, Department of Defense — Military for Research, Development, Test, and Evaluation (RDT&E)

(budget authority, $ in millions)

Program	FY2002, enacted	FY2003, enacted	FY2004 request*
RDT&E, Defense Agencies	$304	$520	$679
RDT&E, Navy	25	139	193
RDT&E, Army	201	1	—
RDT&E, Air Force	843	1,600	1,237

Source: Excerpted by CRS from: Office of Management and Budget, *2003 Report to Congress on Combating Terrorism*, September 2003, p. 69.

*FY2004 request, is the latest year for which data were available in the OMB report.

Homeland Security R&D: Data and Information Sources

OMB's *2003 Report to Congress on Combating Terrorism* identified "homeland security" R&D as a subset of combating terrorism R&D, as noted above. It did not present any data specifically labeled homeland security R&D. The only summary data it presented was the table on combating terrorism R&D, which, by implication, may be for homeland security R&D, since it does not appear to include OCT R&D. But, as will be noted below, OMB and other sources have presented other data for homeland security R&D. There are inconsistencies among these various information sources, raising additional questions about the accuracy (both reliability and validity) of OMB's data.

---

[13] See definitions of R&D and data portraying the components of DOD's R&D included in federal funding totals in National Science Foundation, *Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003*, Volume 51 (NSF 04-310), pp. 3, 38.

Data Sources Used

The Congressional Research Service (CRS) identified several sources of other homeland security R&D funding data, including OMB appendix tables on homeland security, *unpublished* OMB data, agency data, and data presented by the American Association for the Advancement of Science (AAAS).

OMB's *Unpublished* Data. In early 2004, OMB provided CRS with an unpublished table arraying total federal agency funding for homeland security R&D *per se* for FY2003, FY2004, and the FY2005 request. The *unpublished* data table was prepared using an internal OMB database that identified agency programs and data for homeland security R&D.[14] The table gave only totals for each agency; funding data were not reported for budget accounts within an agency, program or unit within an agency, or homeland security missions. **See Table 3.**

Table 3. *Unpublished* OMB Data on Homeland Security R&D Funding by Agency

(budget authority, $ in millions)

Agency	2003 Enacted	2003 Supplemental	2004 Enacted	2005 Request
Agriculture	$11.8	—	$21.8	$50.0
Commerce	16.4	—	16.5	22.6
Defense	212.0	—	267.0	340.2
Energy	18.9	—	19.5	8.0
Health/Human Services	834.2	—	1,643.8	1,557.2
Homeland Security	619.2	—	959.2	1,111.4
Justice	160.5	25.2	179.5	194.5
Transportation	3.7	—	—	4.1
Environmental Protection Agency	52.9	—	28.8	22.8
National Science Foundation	268.5	—	305.6	315.8
Total Homeland Security R&D	**2,198.2**	**25.2**	**3,441.7**	**3,626.6**
Total Non-defense Homeland Security R&D	$1,986.2	$25.2	$3,174.7	$3,286.4

Source: Information provided by OMB, Jan. 27, 2004. OMB characterized these data as "discretionary budgetary resources," which, according to OMB staff is "budget authority," the term used in the table. Data exclude facilities and construction. According to OMB staff, these data will not be updated (Interview, April 2004).

Data From OMB Appendix Tables. OMB's *2003 Report to Congress on Combating Terrorism* included an appendix that gave details on homeland security

[14] OMB staff gave CRS permission to use this table. Staff explained: "OMB collected this data on homeland security R&D as part of its data collection for the Report to Congress on Combating Terrorism. The R&D numbers are the sum of programs identified as "R&D" through the data collection process." This data table was not printed in the referenced report to Congress.

funding, by agency, for FY2002 enacted, FY2003 enacted, and the FY2004 request. These data were updated in an appendix on agency funding for homeland security programs for the years FY2003 enacted, FY2004 enacted, and the FY2005 request, that is accessible electronically via a CD-ROM and at the OMB website for the report, *Analytical Perspectives, Budget of the United States Government, Fiscal Year 2005*.[15] In these appendix tables, OMB arrayed funding information (budget authority) by what it called "budget account" line-items[16] for homeland security activities for federal agency units or programs. Data for each budget account was subdivided further according to homeland security missions, as defined in President Bush's *National Strategy for Homeland Security*, July 2002. These appendix data were used to identify likely agency programs or units with responsibilities for science or R&D. Identified from among these were programs or units that served the homeland security mission of "defending against catastrophic threats," the category that included most R&D in President's *Strategy* document.[17] In addition, since it was obvious that some agencies reported R&D in the mission category of "protecting critical infrastructures and key assets," some budget accounts for R&D programs or units that used this category were also counted.[18] It should be pointed out that the *2003 Combating Terrorism* report noted that some funding for "protecting critical infrastructure and key assets" may be for cyber security and physical security improvements to agency facilities or infrastructure.[19] OMB did not give enough information to differentiate between R&D and physical protection activities. Although such cyber and physical security improvements to facilities and

---

[15] As noted above, according to the Congressional Budget Office, OMB's publication of these data are responsive to section 889 of the Homeland Security Act of 2002, P. L. 107-296. The CD-ROM material for homeland security is available at 3. Homeland Security Funding Analysis , Appendix — Homeland Security Mission Funding by Agency and Budget Account (PDF), [http://www.whitehouse.gov/omb/budget/fy2005 /pdf/ap_cd_rom/homeland.pdf].

[16] These budget account categories are different from those that appear in the President's budget.

[17] OMB's *2003 Report to Congress on Combating Terrorism*, p. 4, defined "Defending Against Catastrophic Threats" as "This mission area includes homeland security programs that involve protecting against, detecting, deterring, or mitigating the terrorist use of weapons of mass destruction, including understanding terrorists' efforts to gain access to the expertise, technology, and materials needed to build chemical, biological, radiological, and nuclear (CBRN) weapons. In addition, this mission area includes funding for efforts or planning to decontaminate buildings, facilities, or geographic areas after a catastrophic event."

[18] OMB's *2003 Report to Congress on Combating Terrorism*, p. 4, defined "Protecting Critical Infrastructures and Key Assets" as "An attack on one or more pieces of our critical infrastructure may disrupt entire systems and cause significant damage. Programs that improve protection of the individual pieces and the interconnecting systems that make up our critical infrastructure belong in this mission area. Any funding for programs associated with the physical or cyber security of federal assets also belongs in this mission area. This mission area also includes programs designed to protect America's key assets, which are those unique facilities, sites, and structures whose disruption or destruction could have significant consequences, including national monuments and icons."

[19] OMB, *2003 Report to Congress on Combating Terrorism*, p. 4.

infrastructure may be for R&D, R&D funding may or may not be included in these amounts. It is clear that for some agencies with large homeland security R&D budgets, such as the National Science Foundation, OMB reported large amounts of funding, or even most homeland security R&D funding, in the mission category of "protecting critical infrastructure and key assets."

Issues Relating to Data Quality

Pursuant to the definitions used by OMB, and if all combating terrorism OCT R&D funding was reported separately, there should be identical data in OMB's *unpublished* table on homeland security R&D and in OMB's published data table on funding for combating terrorism R&D that was included in OMB's *2003 Combating Terrorism* report. Comparisons may be made for only one year, FY2003 enacted, because comparable data are not available for other years.[20] Comparisons may also be made with data identified for this CRS report as likely to be R&D from OMB's published appendix tables. **See Table 4.**

Comparisons Between FY2003 Data Sets

For FY2003 enacted, the data from two tables, OMB's unpublished data on homeland security R&D and published data table on combating terrorism R&D, were the same for only three agencies, the Departments of Commerce, Transportation, and the National Science Foundation. Data were similar (no greater than 5% difference) for DOE, DHHS, and the Department of Justice. Comparing these two sources, there were major differences in funding for the Departments of Agriculture (where the amount in the unpublished homeland security table exceeded the amount in the published combating terrorism table by 158%); Defense, (where the amount in the unpublished homeland security table exceeded the amount in the published combating terrorism amount by 182%); Homeland Security, (where the amount in the unpublished homeland security table was 6% less than the amount in the published combating terrorism table) and State, (where the amount in the unpublished homeland security table exceeded amount in the published combating terrorism table by 100%. (Compare columns 2 and 3 of **Table 4.)**

There were other inconsistencies between the data sets. The "combating terrorism" R&D data included funding for the State Department, but the *unpublished* OMB table on homeland security R&D did not report any funding for this agency. The funding amount reported for combating terrorism R&D was larger than the funding reported in the *unpublished* homeland security R&D table for the Departments of Agriculture, Defense, and Homeland Security. It may be that some combating terrorism R&D supported by these agencies went to overseas activities, but such funding was not identified in the OMB report. It appears unlikely that DHS

[20] The combating terrorism R&D table also included data for FY2002, enacted and supplemental and FY2004 requested, but no data for FY2005, preventing comparisons FY2004 and FY2005.

and USDA have OCT R&D responsibilities; no OCT homeland security funding was reported for these two agencies.[21]

Table 4. Comparisons Among Funding Data: *Unpublished* and Published OMB Data on Homeland Security R&D, OMB Combating Terrorism R&D, AAAS Homeland Security R&D, FY2003 Enacted

($ in millions)

(1)Agency	(2)Un-published OMB Data on Homeland Security R&D, FY2003 Enacted	(3)Published OMB Data on Funding for R&D to Combat Terrorism, FY2003 Enacted	(4)Published OMB Appendix Data on Homeland Security R&D, With Items Identified in This CRS Report as Likely To Be R&D, FY2003 Enacted, Including Data for *Both* Homeland Security Missions	(5)Published OMB Appendix Data on Homeland Security R&D, With Items Identified in This CRS Report as Likely To Be R&D, FY2003 Enacted, Including Data for Only the Homeland Security Mission of "Defending Against Catastrophic Threats"	(6)AAAS Data on Homeland Security R&D, FY2003 Enacted (Including Funding for Construction)
Agriculture	$11.8	$30.4	$11.8 (plus possible $76.1 and $110.0 for bldgs)	$11.8 (plus possible $110.0 for bldgs.)	$155.0
Commerce	16.4	16.4	17.8	none given	16.0
Defense	212.0	597.0	211.0	105.0	212.0
Energy	18.9	19.0	48.1	none given	38.0
Health/ Human Services	834.2	831.2	1760.3	1646.5	1,653.0
Homeland Security	619.2	658.2	524.0	491.0	737.0
Justice	185.7	178.4	impossible to determine	41.0	none given
State	none given	1.8	none given	none given	none given
Transpor-tation	3.7	3.7	1.2	none given	3
EPA	52.9	49.7	20.6	none given	70.0
NASA	none given	none given	83.0	none given	73.0
NSF	268.5	268.5	284.5	27.0	271.0
Nuclear Regulatory Com-mission*	none given	none given	38.8	8.9	none given
Other					47.0

*These figures are from an account for salaries and expenses, not a program or office identified as related to R&D *per se*. They are included because they report budget accounts for homeland security missions from which R&D may be funded.

[21] *2003 Report to Congress on Combating Terrorism*, Appendix, pp. 68-70.

Source: Unpublished data on homeland security R&D are from: information provided by OMB, Jan. 27, 2004. OMB characterized these data as "discretionary budgetary resources," which, according to OMB staff, is "budget authority," the term used in the table. Data exclude facilities and construction. Published data on homeland security R&D are from: Information excerpted by the CRS author from the appendix on homeland security to the OMB's FY2005 Budget, *Analytical Perspectives*, entitled "Homeland Security Funding Analysis, Appendix — Homeland Security Mission Funding by Agency and Budget Account (PDF),"[http://www.whitehouse.gov/omb/budget /fy2005/pdf/ap_cd_rom/homeland.pdf]. Published data on funding for R&D to combat terrorism are from: Office of Management and Budget, *2003 Report to Congress on Combating Terrorism*, September 2003, p. 16.

If the difference in DOD totals between columns 2 and 3 in **Table 4** represents DOD's OCT R&D funding, that difference ($385 million), is $1,875 million less than the total reported for DOD's FY2003 OCT R&D as reported in **Table 2**. While the amount exceeding $212 million (see column 2 of **Table 4**) may be for OCT R&D, that amount would constitute only part of DOD's OCT R&D budget authority as depicted in **table 2**. Thus, it is unclear if the $385 million is for homeland security R&D or for OCT R&D.

Comparisons between data identified for this CRS report as likely to be R&D from OMB's published appendix tables and OMB's unpublished data on homeland security R&D show that for FY2003, data were identical for one budget account, USDA's ARS. Data were similar (no greater than 5% difference) for total DOD budget accounts for both FY2004 and FY2005. **See tables 5 and 6.**

Regarding data for the Department of Homeland Security, the amount reported for combating terrorism exceeded the amount in the *unpublished* homeland security R&D table by $39 million. It is doubtful that this is for OCT R&D — which is not a likely mission for DHS — and OMB did not identify DHS as having any budget authority associated with OCT. There is a similar problem with respect to USDA, which according to OMB has no OCT accounts; but the funding reported for USDA's combating terrorism R&D exceeded homeland security R&D funding by almost $20 million.

There are instances when the unpublished homeland security R&D data table reported more funding than did the combating terrorism R&D data set, even though the two categories may be intended to be equivalent, or where homeland security R&D funding would not exceed the combating terrorism R&D funding. This occurred in data reported for the Departments of Health and Human Services, Justice, and for the Environmental Protection Agency. **See Table 4.**

There are also major differences in data sets for DHHS. For instance, for FY2003 enacted, OMB's unpublished homeland security R&D data and OMB's combating terrorism R&D data are almost equivalent. But they are both about $900 million less than the putative homeland security R&D data identified for this CRS report from OMB's appendix data attached to the *Analytical Perspectives on the FY2005 Budget*. The two data sets for FY2003 also are about $800 million less than reported elsewhere in the FY2005 volume of *Analytical Perspectives on the Budget*, which reported R&D activities for DHHS totaling $1.664 billion for the homeland

security mission of defending against catastrophic terrorism.[22] AAAS data also report larger amounts of funding for DHHS than OMB's unpublished or appendix data. **See Table 4.**

Table 5. Comparison Among *Unpublished* and Published Data on Homeland Security R&D Funding and AAAS Data on Homeland Security R&D Funding, FY2004 Enacted

($ in milllions)

Agency	*Unpublished* OMB Data on Homeland Security R&D, FY2004 Enacted	Published OMB Appendix Data on Homeland Security, With All Items Identified in This CRS Report as Likely To Be R&D, FY2004 Enacted Including Data for *Both* Homeland Security Missions	Published OMB Appendix Data on Homeland Security With Items Identified in This CRS Report as Likely To Be R&D, FY2004 Enacted For the Mission of "Defending Against Catastrophic Terrorism"	AAAS Data on Homeland Security R&D, FY2004 Enacted (Including Funding for Construction)
Agriculture	$21.8	$20.8 (plus possible $62.5 for bldgs.)	$20.8	$39.0
Commerce	16.5	24.9	none given	24.0
Defense	267.0	265.0	146.8	267.0
Energy	19.5	47.2	none given	47.0
Health/Human Services	1,643.8	1,849.9	1,736.6	1,725.0
Homeland Security	959.2	874.0	774.0	1,053.0
Justice	179.5	impossible to identify	impossible to identify	none given
Transportation	none given	0.4	none given	3.0
EPA	28.8	51.5	none given	60.0
NASA	none given	79.0	none given	65.0
NSF	305.6	327.9	27.0	308.0
Nuclear Regulatory Commission*	none given	66.2	16.2	none given
Other				34.0

*No R&D budget account was listed for the Commission. These data are from a budget account for salaries and expenses, which is not R&D oriented but is included because other sources indicate that the Commission funds homeland security R&D.

Sources: Unpublished data are from: information provided by OMB, Jan. 27, 2004. OMB characterized these data as "discretionary budgetary resources," which, according to OMB staff, is "budget authority," the term used in the table. Data exclude facilities and construction. Published data are from: information excerpted by the CRS author from the appendix on homeland security to the OMB's FY2005 Budget, *Analytical Perspectives*, entitled "Homeland Security Funding Analysis, Appendix — Homeland Security Mission Funding by Agency and Budget Account (PDF),"[http://www.whitehouse.gov/omb/budget/fy2005/pdf/ap_cd_rom/homeland.pdf].

FY2005 OMB data on "R&D to Combat Terrorism" are not available yet.

[22] Page 32.

There are other notable differences between the unpublished data on homeland security and data in the putative R&D budget accounts identified in this CRS report. Some agencies, such as the Nuclear Regulatory Commission and the National Aeronautics and Space Administration, reported budget account items for units which appear to conduct homeland security R&D, but did not report funding for homeland security R&D activities. **See Table 4.** (Similar differences appeared in data for FY2004 (**see Table 5)** and for FY2005 **(see Table 6)**. As noted above, it is not likely, in these instances, that all the homeland security funding for budget accounts which appear to be R&D-related goes exclusively to facilities protection.

These discrepancies indicate that sometimes OMB uses the terms "combating terrorism R&D" interchangeably with R&D for homeland security and sometimes it does not, or that, at a minimum, different data sets count different kinds of activities.

Comparisons Among Data Sets for FY2004 and FY2005

Comparisons between data sets for FY2004 are shown in **Table 5,** and for FY2005 in **Table 6**. For FY2004 and FY2005, there were no instances of equal data among agencies in comparing OMB's unpublished table on homeland security R&D and the data identified as likely R&D for this CRS report using OMB's appendix tables on homeland security. However, data were similar (no greater than 5% difference) for total DOD budget accounts for FY2004 and for FY2005, and also for USDA's ARS for one budget account for the one homeland security mission, "defending against catastrophic terrorism."

Table 7 provides an alternative cut on the data, as presented by the American Association for the Advancement of Science (AAAS), which also includes funding for construction related to R&D.

Table 6. Comparison Among *Unpublished* and Published OMB Data on Homeland Security R&D Funding and AAAS Data on Homeland Security R&D Funding, FY2005 Request

($ in millions)

Agency	*Unpublished* OMB Data on Homeland Security R&D, FY2005 Request	Published OMB Appendix Data on Homeland Security, With All Items Identified in This CRS Report as Likely To Be R&D, FY2005 Request, Including Data for *Both* Homeland Security Missions	Published OMB Appendix Data on Homeland Security With Items Identified in This CRS Report as Likely To Be R&D, FY2005 Only for the Mission of "Defending Against Catastrophic Terrorism"	AAAS Data on Homeland Security R&D, FY2005 Request (Including Funding for Construction)
Agriculture	$50.0	$49.0 (plus possible $285.0 for bldgs.)	$49.0	$262.0
Commerce	22.6	30.5	none given	24.0
Defense	340.2	310.1	161.3	340.0
Energy	8.0	67.9	none given	68.0
Health/Human Services	1,557.2	1,996.0	1,874.9	1,804.0
Homeland Security	1,111.4	987.0	886.0	1,216.0
Justice	194.5	impossible to identify	impossible to identify	— -
Transportation	4.1	0.4	none given	2.0
EPA	22.8	31.0	none given	31.0
NASA	none given	81.0	none given	55.0
NSF	315.8	343.6	27.0	317.0
Nuclear Regulatory Commission*	none given	56.4	16.1	none given
Other	none given	none given	none given	88.0

*No R&D budget account was listed for the Commission. These data are from a budget account for salaries and expenses, which is not R&D oriented but is included because other sources indicate that the Commission funds homeland security R&D.

Sources: Unpublished data are from: information provided by OMB, Jan. 27, 2004. OMB characterized these data as "discretionary budgetary resources," which, according to OMB staff, is "budget authority," the term used in the table. Data exclude facilities and construction. Published data are from: information excerpted by the CRS author from the appendix on homeland security to the OMB's FY2005 Budget, *Analytical Perspectives*, entitled "Homeland Security Funding Analysis, Appendix — Homeland Security Mission Funding by Agency and Budget Account (PDF),"[http://www.whitehouse.gov/omb/budget/fy2005/pdf/ap_cd_rom/homeland.pdf].

FY2005 OMB data on "R&D to Combat Terrorism" are not available yet.

Table 7. AAAS Data on "Federal Homeland Security R&D in the FY2005 Budget" Including Funding for R&D Facilities

(budget authority, $ in millions)

Department/Agency	FY2002 Actual	FY2003 Actual	FY2004 Estimate	FY2005 Request
Agriculture	$175	$155	$39	$262
Commerce	20	16	24	24
Defense	259	212	267	340
Energy	50	38	47	68
Homeland Security	266	737	1,053	1,216
Health and Human Services	177	1,653	1,725	1,804
Justice	—	—	—	—
Environmental Protection Agency	95	70	60	31
National Aeronautics and Space Administration	73	73	65	55
National Science Foundation	229	271	308	31
Transportation	106	7	3	2
All Other	48	47	34	80
Total	1,499	3,290	3,625	4,200

Sources: Excerpted from data provided by AAAS, Mar. 11, 2004. Prepared by AAAS based on OMB data from OMB's *2004 Report to Congress on Combating Terrorism* and Budget of the U.S. Government FY2005. "Figures adjusted from OMB data by AAAS to include conduct of R&D and R&D facilities, and revised estimates of DHS R&D. Figures do not include non-R&D homeland security activities, nor do they included DOD R&D investments in overseas combating terrorism. Funding for all years includes regular appropriations and emergency supplemental appropriations." Prepared by AAAS Feb. 6, 2004-preliminary.

Summary of Major Differences Among Data Sets, for FY2005 Requested Funding

For FY2005 requested funding, there were notable differences among the data sets and, for the most part, the data in OMB's *unpublished* table on homeland security R&D differed from the data in R&D-related budget accounts identified in this CRS report that appeared in OMB's published appendix tables on homeland security. Major differences among data sets are summarized in **Table 8.** Some of these are elaborated upon in CRS Report RL32481, *Homeland Security R&D Funding and Activities in Federal Agencies: A Preliminary Inventory*, by Genevieve J. Knezo.

Table 8. Summary of Differences in FY2005, Requested Data Sets, by Agency

Agency	Issue
USDA	OMB's unpublished data on homeland security R&D appear to encompass only the budget account for Agricultural Research Service (ARS) salaries and expenses "for defending against catastrophic threats." The unpublished data table did not appear to report funding for homeland security R&D facilities or for the category of "protecting critical infrastructure and key assets," which USDA also appears to support, as indicated in the published appendix data identified for this CRS report.
DOC	OMB's unpublished data may track primarily the National Institute of Standards and Technology's (NIST) R&D activities. All FY2005 requested DOD homeland security R&D-related accounts identified for this report are reported under the category of "protecting critical infrastructures and key assets." It is impossible to identify the actual amount of funding for NOAA's and NIST's homeland security R&D activities.
DOD	OMB's unpublished and published electronic appendix data, identified for this CRS report for DOD's homeland security R&D differ less than 5% for FY2005 requested and funding is split between the two homeland security missions. DOD's OCT RDT&E funding does not appear to be included in either account. OMB's published combating terrorism R&D data are unclear about whether OCT funding is included, and if excluded, whether these data coincide with OMB data on DOD's homeland security R&D funding.
DOE	OMB's data sets are very different. Unpublished data put the agency's homeland security R&D total at $8 million requested for FY2005, but published appendix data, identified for this report, and other DOE data indicate the Office of Science's homeland security energy programs (largely R&D) could total almost $68 million.
DHHS	OMB's published electronic appendix data for homeland security R&D, as identified for this report, place DHHS's total at least $439 million more than do OMB's unpublished data on homeland security activities in R&D-related budget accounts. These data are largely for the mission category of "defending against catastrophic terrorism."
DHS	OMB's published data are about $124 million less than OMB's unpublished data. The published data include only R&D activities of the Directorate of Science and Technology and do not include R&D in other DHS directorates. Most funding is reported under the homeland security mission of "defending against catastrophic terrorism." These data differ from those in the congressional budget request.
DOJ	OMB's unpublished data put DOJ's homeland security R&D funding at $194.5 million, while the published appendix data identified for this report, show homeland security R&D-related activities only for the Federal Bureau of Investigation (FBI) at $41 million.

Agency	Issue
DOT	There is no correspondence between OMB's data sets for DOT homeland security R&D, and there are large differences between DOT's own reports of its homeland security R&D and OMB reports.
EPA	OMB's unpublished data on homeland security R&D differ by about $8.2 million from the published appendix data identified for this report.
NASA	OMB's unpublished data do not report any homeland security R&D funding. Data excerpted for this report from OMB's published electronic appendix data show about $81 million for a science and technology budget account of which an undetermined amount is likely for homeland security R&D.
NSF	The two data sets, OMB's unpublished homeland security R&D data and the homeland security data identified for this report as likely R&D are close; differing by about 9%. Most homeland security R&D funding is categorized under the heading largely of "protecting critical infrastructure and key assets," not "defending against catastrophic terrorism," the mission for which DHHS's R&D data are categorized. NSF's homeland security funding goes largely to support R&D, and is not primarily for facilities protection and cyber security activities.

Summary Observations About Data on R&D

The analysis in this CRS report has shown that while homeland security-related information is collected for a variety of purposes, questions may be raised about the accuracy of funding data for homeland security R&D. Issues include consistency of OMB trend data over time; inconsistences among data sets which appear to count the same things; problems with using budget account data line-items to count R&D; whether or not all overseas combating terrorism R&D data are included; whether or not all of DOD's R&D is included; and use of different homeland security mission descriptors for R&D.

Some of the agency-specific observations made in this concluding section are based on data summarized in this report, but discussed in greater detail in CRS Report RL32481, *Homeland Security R&D Funding and Activities in Federal Agencies: A Preliminary Inventory*.

Major Difficulties With the Data

Several major difficulties have been observed in the current data; they are summarized next.

Different Types of Information Are Compiled for Different Purposes. The most up-to-date and complete source of trend information about federal agency homeland security R&D funding is OMB's *unpublished* data table. However, that document is not widely circulated, and, because it gives only agency totals, it is not possible to use it to identify funding for units or programs within an agency.

OMB's published combating terrorism R&D table in OMB's *2003 Report to Congress on Combating Terrorism,* is prepared annually in response to congressional mandate. This table is almost two years out-of-date when published (for instance, the report published in September 2003 included data only through the FY2004 request). In that document OMB reported that homeland security is a subset of combating terrorism (i.e., the total for combating terrorism R&D, minus the total for overseas combating terrorism R&D). OMB did not publish data on homeland security R&D funding *per se* in that document and it is not clear what overseas combating terrorism R&D data are included or excluded from the table.

OMB publishes homeland security information in appendix tables, the most recent in a CD-ROM and electronic appendix to *Analytical Perspectives, U.S. Budget, FY2005.* These data are prepared in response to a congressional directive to report homeland security funding. OMB uses budget account data for these tabulations.[23] R&D funding *per se* is not listed as a budget account item. This CRS report attempted to use this information to obtain estimates of R&D data, by counting data in budget accounts that appear to be R&D-related. While this method permitted identification of some units that support homeland security R&D, the funding reported may include other than R&D activities (it may include upgrades for physical and cybersecurity). Also, homeland security R&D may be supported by offices or programs whose budget account does not include descriptors that are science or research-related or under homeland security missions that are not related to R&D. Thus, some homeland security R&D activities that an agency conducts, but which appear under other budget accounts that are not principally for R&D, may be excluded. An example is the funding amount given for homeland security R&D in the Department of Homeland Security (DHS). The OMB *2003 Report to Congress on Combating Terrorism,* the homeland security appendix data for FY2004, and the FY2005 request reported data only for DHS's Science and Technology Directorate, even though other parts of DHS also support R&D.

Differences Observed Among Data Sets. OMB's *unpublished* homeland security R&D table presents only total funding by agency and its trend data do not always coincide with the data in other OMB data sets. For instance, except for three agencies, the data in OMB's table on combating terrorism R&D for FY2003, enacted, differed from OMB's *unpublished* table on homeland security R&D funding. Also, with a few exceptions, the data in these two tables differed from the data CRS identified as for homeland security R&D in OMB's *published* (or electronically available) appendix data on homeland security.

OMB Data Do Not Appear to Report All Funding for R&D. OMB may not have included in its inventory of homeland security R&D some agencies' homeland security R&D programs that were described elsewhere — on their websites, in budget documents, or in their annual plans or strategic plans. Sometimes in its published appendix data on homeland security, OMB reported funding for science or research-related budget accounts for some agencies, but did not report them as having any homeland security or combating terrorism R&D funding

[23] Which uses different numbers from the budget account number and data given in the appendix to the President's annual budget documents.

responsibilities. Even though OMB reported that funding for homeland security R&D is a subset of the category "combating terrorism R&D," sometimes OMB reported agencies as having homeland security R&D funding responsibilities, but no combating terrorism R&D responsibilities. For instance, it is not clear if, or how much, OMB included for the homeland security R&D programs of the National Nuclear Security Administration, the Food and Drug Administration, the Centers for Disease Control and Prevention, the Department of Energy, the Department of Justice, the National Aeronautics and Space Administration, and some programs in the Department of Homeland Security.

OMB may have undercounted the amount of homeland security R&D in some agencies that was described elsewhere. For instance, OMB's *unpublished* data reported that DOT received no funding for homeland security R&D for FY2004 and that $4.1 million was requested for FY2005. The published appendix data identified by CRS indicated that DOT requested about $0.4 million for FY2004 for homeland security and national security activities R&D. According to these OMB data, no funding appears to have been appropriated for FY2004. Nevertheless, in DOT's *FY2004 Performance Plan*, the agency said it requested funding FY2004 homeland and national security R&D programs funding totaling $63.7 million. Similarly reports of homeland security R&D funding for NASA and DOJ, among other agencies, differ.

Whether Overseas Combating Terrorism R&D Funding is Included in Combating Terrorism R&D Totals. "Combating terrorism," according to OMB, includes both homeland security funding and overseas combating terrorism (OCT) funding. It is not clear if OMB included or excluded OCT amounts for other agencies in its tables. OMB's *2003 Report to Congress on Combating Terrorism* does report separately funding for DOD's OCT R&D, called RDT&E (research, [advanced] development, testing and evaluation). The amounts reported for DOD OCT RDT&E alone far exceed the total reported for DOD's combating terrorism R&D. It is not clear how other agencies' OCT R&D funding was handled in this and other data sets. This issue may require clarification in order to obtain accurate totals for federal agency combating terrorism R&D responsibilities.

OMB May Not Count All of DOD's R&D. As noted, OMB may not have included all DOD homeland security RDT&E in its data set on DOD homeland security R&D or in its FY2003 combating terrorism R&D table. This is exemplified by the fact that DOD's OCT R&D totals, which were for RDT&E, reported larger funding amounts than were reported in the combating terrorism R&D table. It is not clear if the difference was due to OCT activities or whether DOD's DT&E (advanced development, test and evaluation) activities were not counted in the combating terrorism R&D table. It is reasonable, pursuant to OMB's definition, to exclude DOD's OCT RDT&E from funding amounts on homeland security R&D. However, it is not clear if the DOD homeland security R&D data that were reported included all DT& E. Other documents that inventory federal R&D funding levels, including NSF reports and other OMB documents, include all of DOD's RDT&E in the reporting category of research and development (R&D). Furthermore, in the various OMB data sets surveyed, OMB did not report consistent figures for DOD's budget authority for homeland security R&D funding.

Agencies May Be Using Different Definitions When Reporting Funding Levels to OMB. In its *Combating Terrorism* report, OMB said it allowed federal agencies to report data to it, and purposefully allowed agencies to use their own definitions of activities to report, although OMB said it did review all responses "to ensure consistency and comparability."[24] In detail,

> Throughout the data collection cycle, agencies reported information using applicable definitions. The data provided by the agencies are developed at the "activity level," which is a set of like programs or projects that make up a coherent effort, aggregated at a level of detail sufficient to analyze total governmental spending on homeland security and overseas combating terrorism missions (the two major components of the overarching combating terrorism mission). OMB purposely left the definition of "activity" to the interpretation of respondent agencies to allow for flexibility in responses, and reviewed all responses to ensure consistency and comparability.[25]

The data presented in this report suggest that agencies may be using different definitions of R&D activities when reporting to OMB or that some of the data may be inaccurate. This raises the issue of whether agencies are reporting homeland security R&D uniformly and the accuracy of OMB's statement that "homeland security" data were reported as a subset of "combating terrorism" data.

Also, OMB data do not include funding for the construction of buildings or facilities where homeland security R&D is conducted and, therefore, OMB data, in some cases, are less than data sets which include such activities, such as prepared by the American Association for the Advancement of Science (AAAS). AAAS data show major construction activities that do not appear in OMB data for USDA, DOE, DHS, and DHHS for both FY2003 and the FY2005 request.

R&D Funding Reported Under Two Different Homeland Security Missions. In OMB's published appendix data on homeland security funding, some agencies with clear R&D missions, such as the National Science Foundation, appeared to report most homeland security R&D-related funding under the homeland security mission of "protecting critical infrastructure and key assets," and not under the mission of "defending against catastrophic threats," the heading that includes most R&D in President's *Strategy* document. Because the mission of "protecting critical infrastructure and key assets" may also include cyber and physical security protection activities, it is difficult to identify what part of the funding for the category goes for R&D. Most NIH homeland security R&D was reported under the category of "defending against catastrophic terrorism." Thus, the following questions may be raised: both NSF and NIH support the conduct of R&D, yet most of NSF's homeland security R&D activities were categorized under the homeland security mission of "protecting critical infrastructure and key assets" while most of NIH's homeland security R&D activities were categorized under the mission of "defending against catastrophic threats." Some may ask the following questions: Why the difference in categorization? What are the fundamental differences, or similarities, in the kinds

---

[24] OMB, *2003 Report to Congress on Combating Terrorism,* p.2.

[25] OMB, *2003 Report to Congress on Combating Terrorism,* p.2.

of homeland security R&D supported by the two agencies? For FY2005, NSF requested $27 million for activities related to "defending against catastrophic threats." Should it be assumed that this is the amount that will be allocated to NSF's two bioterrorism-related activities for "Ecology of Infectious Diseases program," co-sponsored by NSF and NIH, a "Microbial Genome Sequencing program,"with USDA? Or is some of this program funding categorized under the heading labeled "protecting critical infrastructure and key assets?" Should it be assumed that most of NSF's homeland security R&D funding is oriented primarily to improving cyber security and physical security since most of its homeland security R&D funding is reported under this category? NSF"s own information on its homeland security R&D indicates that it supports a vast array of fields. From the perspective of fields of science, performers, and so forth, what is the difference between the kinds of research supported under these two different headings?

Options to Improve Information About Homeland Security R&D Funding

OMB has collected data on cross-cutting, or cross-agency, funding on homeland security R&D for several years. This is a difficult task and OMB has made progress in establishing ways to report these data. Improved data collection could improve decisionmaking about policy, programs, and funding for homeland security R&D, specifically for setting priorities, avoiding unnecessary duplication, and assisting in transferring information and technology among agencies and first responders. However, as OMB transitions to improve its homeland security data collection, it appears to have encountered problems in data accuracy and consistency. These may be due to errors in reporting, changing definitions of homeland security R&D and its components over time, federal agencies' use of different definitions, and inconsistency in reporting categories OMB uses for the different data sets that it prepares.

In a 2004 report, the Congressional Budget Office (CBO) identified general problems with OMB's homeland security data, focusing on the difficulty federal agencies confront in separating homeland security funding from accounts that serve non-homeland security purposes, or are primarily for salaries and expenses. CBO also observed that definitions of homeland security activities change from year to year and often require judgments by accountants or analysts. These problems make it difficult to obtain consistent data and to portray funding and trends adequately, even within the same data set.[26] Many of these problems were manifested in the OMB-prepared R&D data examined in this report, raising questions about the reliability or validity of the data examined.

[26] Congressional Budget Office, *Federal Funding for Homeland Security*, Economic and Budget Issue Brief, April 30, 2004. Available at [http://www.cbo.gov/showdoc.cfm ?index=5414&sequence=0].

Section 889 of P.L. 107-296 requires OMB to report on homeland security funding and to consult at least annually with Congress[27] about which activities constitute homeland security activities for budgeting purposes. As one response to its data reporting requirements, OMB published data in an appendix to the FY2005 budget volume, *Analytical Perspectives*, that presents homeland security funding using special budget account categories. R&D funding is not specifically identifiable. OMB's unpublished data on homeland security R&D funding cannot be reconciled easily with these data nor, for the most part, with the domestic component of combating terrorism R&D funding that OMB prepares for another purpose. These data also differ from some of the data agencies use to characterize their homeland security R&D programs and funding.

Several options may be addressed to deal with these issues. Congress may seek to ensure that OMB data on homeland security R&D are adequate to enable Congress to identify and oversee, and DHS to identify, prioritize, and coordinate, federal homeland security R&D across all agencies. Oversight could be directed to whether OMB should impose more conformity about the way agencies define homeland security R&D and about the definitions agencies use in reporting homeland security R&D. Consideration could be given to the option of asking OMB or DHS to report separately to Congress on funding for, and activities of, federal agency homeland security R&D programs. The costs of obtaining more precise data have not been estimated. Attention could be directed to examining the costs and benefits of whether or not the federal government should report more accurate and consistent data on federal agency homeland security R&D programs.

[27] Consultations are mandated specifically between OMB and the House and Senate Budget Committees, the House and Senate Appropriations Committees, and the Congressional Budget Office (Sec. 889 of P.L. 107-296).