



## Federal R&D Funding by Budget Function: 2007–09

Detailed Statistical Tables | NSF 08-315 | September 2008

Richard J. Bennof,  
Project Officer  
Research and Development Statistics Program  
(703) 292-7783

### General Notes

This annual report contains information on federal funding of the research and development and R&D plant components of U.S. federal agency programs, as proposed by the administration for FY 2009. R&D data in this report are classified into the same federal budget function categories used in the *Budget of the United States Government, Fiscal Year 2009*, prepared by the Office of Management and Budget (OMB). Proposed FY 2009 funding levels are for budget authority (defined below), which is the basis for initial congressional action. Data reported here as preliminary or proposed will be revised in future budget function reports to reflect congressional appropriation and actual program-funding decisions.

Detailed data are included on preliminary estimates of federal funding of R&D for FY 2008. This report also includes detailed data (by subfunction) on actual budget authorizations of R&D by federal agencies in FY 2007 and aggregate data (by broad function) on actual R&D budget authorizations in FY 2006 and earlier years.

### Definitions

#### Research, Development and R&D Plant

In this report, *R&D* refers to research (both basic and applied) and development activities in the sciences and engineering.

*Research* is systematic study directed toward fuller scientific knowledge or understanding of the subject studied. Research is classified as either basic or applied according to the objective of the sponsoring agency.

- *Basic research* is defined as systematic study directed toward fuller knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications toward processes or products in mind.
- *Applied research* is defined as systematic study to gain knowledge or understanding necessary to determine the means by which a recognized and specific need may be met.

*Development* is defined as systematic application of knowledge or understanding, directed toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements. It excludes quality control, routine product testing, and production.

Funds for conducting R&D include those for personnel, program supervision, and administrative support directly associated with R&D activities. Expendable or movable equipment needed to conduct R&D, for example, microscopes or spectrometers, is also included.

*R&D plant* includes such R&D facilities as reactors, wind tunnels, or particle accelerators or the construction, repair, or alteration of such facilities.

This report excludes all non-R&D activities performed within budget functions that conduct R&D and all functions in which no R&D is conducted.

### **Budget Authority, Obligations, and Outlays**

The federal R&D funding data presented here, with a few noted exceptions, are provided in budget authority. Budget authority is used because it is the initial budget parameter for congressional action on the President's proposed budget. Budget authority imposes a ceiling on obligations and outlays; obligations and outlays flow from budget authority.

*Budget authority* is the primary source of legal authorization to enter into obligations that will result in outlays. Budget authority is most commonly granted in the form of appropriations by the congressional committees assigned to determine the budget for each function.

*Obligations* represent the amounts for orders placed, contracts awarded, services received, and similar transactions during a given period, regardless of when the funds were appropriated and when the future payment of money is required.

*Outlays* represent the amounts for checks issued and cash payments made during a given period, regardless of when the funds were appropriated or obligated.

### **Budget Functions**

All activities covered by the federal budget, including R&D, are classified into 20 broad functional categories. The federal budget total comprises funding for these 20 functions. An agency's activities are not necessarily included in only one function. Instead, the programs of one agency typically are distributed across functions, and each function often includes programs from multiple agencies. No overlap occurs among functions or among the various agency programs within those functions. In a few cases, components of a major national effort are funded through multiple functions, such as the human genome activities, which are funded under the health and general science categories.

Notably, each specific R&D activity is assigned to only one function area, consistent with the official codes used in budget documents, even though the R&D activity may address several functional concerns. For example, except for those of the U.S. Army Corps of Engineers, all R&D activities sponsored by the Department of Defense (DOD) are classified as defense, even though some activities have secondary objectives, such as space or health. Moreover, only R&D activities funded by the Department of Health and Human Services and the Department of Labor are classified in the health function category. Yet some R&D funding from at least three additional agencies—the Departments of Defense, Energy, and Veterans Affairs—has a major health component.

The functional categories and definitions used in this report are the same as those used in the federal budget, with one exception. R&D activities categorized as general science, space, and technology (function 250) are reported separately here. Subfunction 251 contains R&D activities for general science and basic research, and subfunction 252 contains R&D activities for space research and technology. However, not all federally sponsored basic research is categorized in function 251; some basic research is included in 11 of the remaining 19 functional categories.

Five federal budget functions—Medicare (function 570), Social Security (function 650), net interest (function 900), allowances (function 920), and undistributed offsetting receipts (function 950)—have no R&D components. Consequently, they are not discussed in this report, except where R&D is described as a proportion of total federal budget authority.

For FY 2007–09, no R&D was appropriated or authorized for general government (function 800), as was the case in the last report. In previous years, small amounts of R&D were authorized for this budget function.

Appendix A lists (by name and function code) the 15 individual R&D functions funded by federal agencies.

## **Data Sources**

Within the overall federal budget, there is no separately identified R&D budget as such nor are most appropriations for R&D so labeled except in the case of certain program areas, such as defense, energy, health, and environment. Consequently, most funds for R&D are not line items in agency budget submissions but are included within general program funding. To determine funding for federal R&D, OMB requires agencies with annual R&D funding greater than \$10 million to submit data on their R&D programs as part of their annual budget submissions. Specifically, the agencies provide data on funding levels for basic research, applied research, development, R&D facilities, and capital equipment for R&D, reported in accordance with OMB Circular A-11, MAX Schedule C, "Research and Development Activities."

The data in this report represent agencies' best estimates of actual and proposed federal funding for R&D collected during the period between February and April 2008. These data are based primarily on information provided to OMB by 22 agencies and account for an estimated 99% of all federally sponsored R&D activities. Also included in this report is R&D information that became available from individual agencies after the administration's budget was prepared and reported in the *Budget of the United States Government*. This information consists of budget justification documents that agencies submit to Congress and supplemental, program-specific information obtained from agency budget and program staff through late April 2008.

The FY 2008 data reflect agency estimates of final 2008 appropriations based on agency documents and OMB data through March 2008. FY 2008 supplemental appropriations were not completed in time for inclusion in this report. FY 2008 data also do not reflect detailed NOAA and USDA data that were not received in time for inclusion in this report. Therefore, budget numbers for individual activities, programs, or agencies may differ slightly from those published in the President's budget or in agency budget documents.

## Data Tables

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Table	<b>Federal budget authority</b>
	by budget function: FY 2007–09
1	R&D and R&D plant
2	R&D
3	% distribution, R&D and R&D plant
4	% distribution, R&D
5	basic research
6	R&D and R&D plant as % of total budget authority
7	R&D as % of total budget authority
	<b>Specific budget function: FY 2007–09</b>
	Administration of justice (750)
8	R&D
	Agriculture (350)
9	R&D and R&D plant
10	R&D
	Commerce and housing credit (370)
11	R&D and R&D plant
12	R&D
	Community and regional development (450)
13	R&D
	Education, training, employment, and social services (500)
14	R&D and R&D plant
15	R&D
	Energy (270)
16	R&D and R&D plant
17	R&D
	General science and basic research (251)
18	R&D and R&D plant
19	R&D
	Health (550)
20	R&D and R&D plant
21	R&D
	National Institutes of Health
22	R&D and R&D plant
23	R&D
	Income security (600)
24	R&D
	International affairs (150)
25	R&D

- National defense (050)
- 26 R&D and R&D plant
- 27 R&D
- 28 obligational authority for research, development, test, and evaluation

Natural resources and environment (300)

- 29 R&D and R&D plant
- 30 R&D

Space research and technology (252)

- 31 R&D and R&D plant
- 32 R&D

Transportation (400)

- 33 R&D and R&D plant
- 34 R&D

Veterans benefits and services (700)

- 35 R&D

**R&D obligations and budget authority, by budget function: FY 1955–2009**

- 36 all functions, and budget authority for basic research
- 37 national defense and civilian functions

TABLE 1. Federal research and development and R&D plant budget authority, by budget function: FY 2007–09

2009 rank	Budget function	2007 actual	2008 preliminary	2009 proposed	2007–08	2008–09
		\$millions			% change	
	All functions conducting R&D	141,890	142,413	147,321	0.4	3.4
1	National defense	82,658	81,500	84,513	-1.4	3.7
2	Health	29,581	29,776	29,933	0.7	0.5
3	Space research and technology	10,988	11,677	12,334	6.3	5.6
4	General science and basic research	8,712	8,744	10,225	0.4	16.9
5	Energy	1,922	2,460	2,474	28.0	0.6
6	Natural resources and environment	2,096	2,153	2,060	2.7	-4.3
7	Agriculture	1,950	1,987	1,640	1.9	-17.5
8	Transportation	1,380	1,359	1,366	-1.5	0.5
9	Veterans benefits and services	820	891	884	8.7	-0.8
10	Education, training, employment, and social services	577	621	615	7.6	-1.0
11	Commerce and housing credit	516	558	576	8.1	3.3
12	Administration of justice	369	355	356	-4.0	0.3
13	International affairs	246	255	255	3.7	0.0
14	Community and regional development	49	51	55	4.1	7.8
15	Income security	27	27	35	0.0	29.6

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; and supplemental data from agencies' budget offices.

TABLE 2. Federal research and development budget authority, by budget function: FY 2007–09

2009 rank	Budget function	2007 actual	2008 preliminary	2009 proposed	2007–08	2008–09
		\$millions			% change	
	All functions conducting R&D	138,087	137,972	142,605	-0.1	3.4
1	National defense	82,272	81,050	84,091	-1.5	3.8
2	Health	29,461	29,634	29,783	0.6	0.5
3	Space research and technology	9,024	9,233	9,728	2.3	5.4
4	General science and basic research	7,809	7,915	9,012	1.4	13.9
5	Energy	1,893	2,374	2,463	25.4	3.7
6	Natural resources and environment	1,936	2,008	1,987	3.7	-1.0
7	Agriculture	1,857	1,852	1,616	-0.3	-12.7
8	Transportation	1,361	1,340	1,345	-1.5	0.4
9	Veterans benefits and services	820	891	884	8.7	-0.8
10	Education, training, employment, and social services	536	567	546	5.8	-3.7
11	Commerce and housing credit	428	420	448	-2.0	6.8
12	Administration of justice	369	355	356	-4.0	0.3
13	International affairs	246	255	255	3.7	0.0
14	Community and regional development	49	51	55	4.1	7.8
15	Income security	27	27	35	0.0	29.6

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; and supplemental data from agencies' budget offices.

TABLE 3. Distribution of total federal research and development and R&D plant budget authority, by budget function: FY 2007–09

(Percent distribution)

2009 rank	Budget function	2007 actual	2008 preliminary	2009 proposed
	All functions conducting R&D	100.0	100.0	100.0
1	National defense	58.3	57.2	57.4
2	Health	20.8	20.9	20.3
3	Space research and technology	7.7	8.2	8.4
4	General science and basic research	6.1	6.1	6.9
5	Energy	1.4	1.7	1.7
6	Natural resources and environment	1.5	1.5	1.4
7	Agriculture	1.4	1.4	1.1
8	Transportation	1.0	1.0	0.9
9	Veterans benefits and services	0.6	0.6	0.6
10	Education, training, employment, and social services	0.4	0.4	0.4
11	Commerce and housing credit	0.4	0.4	0.4
12	Administration of justice	0.3	0.2	0.2
13	International affairs	0.2	0.2	0.2
14	Community and regional development	*	*	*
15	Income security	*	*	*

\* = less than 0.05%.

NOTE: Detail may not add to total because of rounding.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; and supplemental data from agencies' budget offices.



TABLE 4. Distribution of total federal research and development budget authority, by budget function: FY 2007–09  
(Percent distribution)

2009 rank	Budget function	2007 actual	2008 preliminary	2009 proposed
	All functions conducting R&D	100.0	100.0	100.0
1	National defense	59.6	58.7	59.0
2	Health	21.3	21.5	20.9
3	Space research and technology	6.5	6.7	6.8
4	General science and basic research	5.7	5.7	6.3
5	Energy	1.4	1.7	1.7
6	Natural resources and environment	1.4	1.5	1.4
7	Agriculture	1.3	1.3	1.1
8	Transportation	1.0	1.0	0.9
9	Veterans benefits and services	0.6	0.6	0.6
10	Education, training, employment, and social services	0.4	0.4	0.4
11	Commerce and housing credit	0.3	0.3	0.3
12	Administration of justice	0.3	0.3	0.2
13	International affairs	0.2	0.2	0.2
14	Community and regional development	*	*	*
15	Income security	*	*	*

\* = less than 0.05%.

NOTE: Detail may not add to total because of rounding.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; and supplemental data from agencies' budget offices.

TABLE 5. Federal budget authority for basic research, by budget function: FY 2007–09

2009 rank	Budget function	2007	2008	2009	2007–08	2008–09
		actual	preliminary	proposed		
		\$millions			% change	
	All functions conducting R&D	28,166	28,694	29,656	1.9	3.4
4	National defense	1,533	1,641	1,706	7.1	3.9
1	Health	15,638	15,883	15,861	1.6	-0.1
3	Space research and technology	2,318	2,311	2,287	-0.3	-1.0
2	General science and basic research	6,887	7,024	8,002	2.0	13.9
12	Energy	7	19	16	171.4	-15.8
7	Natural resources and environment	260	265	265	1.9	0.2
5	Agriculture	821	798	731	-2.8	-8.4
13	Transportation	2	3	3	50.0	0.0
6	Veterans benefits and services	336	361	354	7.6	-1.9
8	Education, training, employment, and social services	149	153	157	2.7	2.6
10	Commerce and housing credit	92	94	114	2.4	21.3
9	Administration of justice	106	125	142	17.9	13.6
11	International affairs	18	18	18	0.0	0.0
14	Community and regional development	0	0	0	na	na
15	Income security	0	0	0	na	na

na = not applicable.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data. Order of budget functions is same as order for federal R&D budget authority by budget function shown in table 2.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; and supplemental data from agencies' budget offices.

TABLE 6. Federal research and development and R&D plant budget authority as percentage of total budget authority, by budget function: FY 2007–09

2009 rank	Budget function	2007 actual	2008 preliminary	2009 proposed
	All functions conducting R&D	8.3	7.8	8.4
4	National defense	13.2	11.8	13.8
5	Health	12.1	10.4	10.1
3	Space research and technology	70.5	70.7	72.3
1	General science and basic research	81.5	80.3	81.8
2	Energy <sup>a</sup>	297.5	87.1	79.5
7	Natural resources and environment	6.2	6.5	5.8
6	Agriculture	8.6	10.6	8.2
9	Transportation	1.8	1.8	1.9
10	Veterans benefits and services	1.0	1.0	1.0
12	Education, training, employment, and social services	0.6	0.7	0.7
8	Commerce and housing credit	5.1	6.0	4.3
11	Administration of justice	0.8	0.8	0.8
12	International affairs	0.4	0.6	0.7
14	Community and regional development	0.3	0.3	0.5
15	Income security	*	*	*

\* = less than 0.05%.

<sup>a</sup> R&D as percentage of total budget authority can be greater than 100% because gross budget authority has been reduced by offsetting receipts.

NOTES: Total budget authority includes discretionary and mandatory budget authority, less offsets. Order of budget functions is same as order for federal R&D and R&D plant budget authority by budget function shown in table 1.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; supplemental data from agencies' budget offices; and Office of Management and Budget, *Budget of the United States Government, Fiscal Year 2009* (Washington, DC: U.S. Government Printing Office, 2008).

TABLE 7. Federal research and development budget authority as percentage of total budget authority, by budget function:  
FY 2007–09

2009 rank	Budget function	2007 actual	2008 preliminary	2009 proposed
	All functions conducting R&D	8.0	7.6	8.1
4	National defense	13.1	11.7	13.8
5	Health	12.1	10.4	10.0
3	Space research and technology	57.9	55.9	57.1
2	General science and basic research	73.0	72.7	72.1
1	Energy	293.0	84.1	79.1
7	Natural resources and environment	5.7	6.1	5.6
6	Agriculture	8.2	9.9	8.1
9	Transportation	1.7	1.8	1.9
10	Veterans benefits and services	1.0	1.0	1.0
13	Education, training, employment, and social services	0.6	0.6	0.6
8	Commerce and housing credit	4.3	4.5	3.4
11	Administration of justice	0.8	0.8	0.8
12	International affairs	0.4	0.6	0.7
14	Community and regional development	0.3	0.3	0.5
15	Income security	*	*	*

\* = less than 0.05%.

<sup>a</sup> R&D as percentage of total budget authority can be greater than 100% because gross budget authority has been reduced by offsetting receipts.

NOTES: Total budget authority includes discretionary and mandatory budget authority, less offsets. Order of budget functions is same as order for federal R&D budget authority by budget function shown in table 2.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; supplemental data from agencies' budget offices; and Office of Management and Budget, *Budget of the United States Government, Fiscal Year 2009* (Washington, DC: U.S. Government Printing Office, 2008).

TABLE 8. Federal research and development budget authority for administration of justice (750): FY 2007–09

(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	369	355	356	0.3
Department of Homeland Security (DHS) (751)	265	274	279	1.8
Department of Justice (DOJ)	104	81	77	-4.9
Federal Bureau of Investigation (751)	33	33	33	0.0
Federal Prison System (753)	11	11	11	0.0
Office of Justice Programs (754)	60	37	33	-10.8

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data. In FY 2007 DHS changed its R&D portfolio to reclassify funding in defense and most administration of justice as general science and basic research.

SOURCES: Agencies' submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C, and supplemental data obtained from DOJ and DHS budget offices.

TABLE 9. Federal research and development and R&D plant budget authority for agriculture (350): FY 2007–09  
(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	1,950	1,987	1,640	-17.5
Agricultural research and services (352)				
Department of Agriculture (USDA)				
Agricultural Marketing Service	4	4	4	0.0
Agricultural Research Service	1,151	1,188	1,003	-15.6
Animal and Plant Health Inspection Service	27	27	27	0.0
Cooperative State Research, Education, and Extension Service	666	662	508	-23.3
McEntire-Stennis Cooperative Forestry	30	25	20	-21.5
National Research Initiative	190	191	257	34.4
Payments to 1890 colleges and Tuskegee Institute	41	41	38	-6.6
Payments under the Hatch Act	323	196	139	-28.9
Special research grants	0	92	3	-96.5
Other research programs	83	118	51	-56.5
Economic Research Service	75	77	82	6.5
Federal Grain Inspection Service	7	7	8	14.3
Foreign Agricultural Service	1	1	1	0.0
National Agricultural Statistics Service	5	7	7	0.0
Natural Resources Conservation Service	14	14	0	-100.0

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: USDA submission to Office of Management and Budget, Circulat No. A-11, MAX Schedule C; USDA budget justification documents; and supplemental data obtained from USDA budget office.

TABLE 10. Federal research and development budget authority for agriculture (350): FY 2007–09  
(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	1,857	1,852	1,616	-12.7
Agricultural research and services (352)				
Department of Agriculture (USDA)				
Agricultural Marketing Service	4	4	4	0.0
Agricultural Research Service	1,060	1,055	979	-7.2
Animal and Plant Health Inspection Service	27	27	27	0.0
Cooperative State Research, Education, and Extension Service				
McEntire-Stennis Cooperative Forestry	30	25	20	-21.5
National Research Initiative	190	191	257	34.4
Payments to 1890 colleges and Tuskegee Institute	41	41	38	-6.6
Payments under the Hatch Act	323	196	139	-28.9
Special research grants	0	92	3	-96.5
Other research programs	83	118	51	-56.5
Economic Research Service	75	77	82	6.5
Federal Grain Inspection Service	7	7	8	14.3
Foreign Agricultural Service	1	1	1	0.0
National Agricultural Statistics Service	5	7	7	0.0
Natural Resources Conservation Service	12	12	0	-100.0

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: USDA submission to Office of Management and Budget, Circular No. A-11, MAX Schedule C; USDA budget justification documents; and supplemental data obtained from USDA budget office.

TABLE 11. Federal research and development and R&D plant budget authority for commerce and housing credit (370): FY 2007–09

(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	516	558	576	3.3
Other advancement of commerce (376)				
Department of Commerce				
Bureau of the Census	22	29	28	-3.4
National Institute of Standards and Technology	487	522	546	4.7
Construction of research facilities	59	109	99	-9.3
Industrial technology services				
Technology Innovation Program <sup>a</sup>	52	27	0	-100.0
Scientific and technical research and services	376	385	447	16.1
National Telecommunications and Information Administration	7	7	2	-71.4

<sup>a</sup> Renamed from the Advanced Technology Program in August 2007.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Department of Commerce (DOC) submission to Office of Management and Budget, Circular No. A-11, MAX Schedule C; and supplemental data obtained from DOC budget office.



TABLE 12. Federal research and development budget authority for commerce and housing credit (370): FY 2007–09

(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	428	420	448	6.8
Other advancement of commerce (376)				
Department of Commerce				
Bureau of the Census	22	29	28	-3.4
National Institute of Standards and Technology	399	384	418	9.0
Industrial technology services				
Technology Innovation Program <sup>a</sup>	52	27	0	-100.0
Scientific and technical research and services	347	356	418	17.4
National Telecommunications and Information Administration	7	7	2	-71.4

<sup>a</sup> Renamed from the Advanced Technology Program in August 2007.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Department of Commerce (DOC) submission to Office of Management and Budget, Circular No. A-11, MAX Schedule C; and supplemental data obtained from DOC budget office.

TABLE 13. Federal research and development budget authority for community and regional development (450): FY 2007–09

(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	49	51	55	7.8
Department of Housing and Urban Development (451)	49	51	55	7.8

NOTES: Percent change derived from unrounded data.

SOURCES: Department of Housing and Urban Development submission to Office of Management and Budget, Circular No. A-11, MAX Schedule C.

TABLE 14. Federal research and development and R&D plant budget authority for education, training, employment, and social services (500): FY 2007–09  
(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	577	621	615	-1.0
Research and general education aids (501, 502, 503)	429	442	460	4.1
Department of Education programs	243	239	238	-0.4
Smithsonian Institution programs	186	203	222	9.4
Social services (506)	128	126	130	3.2
Administration for Children and Families (DHHS)	44	44	44	0.0
Rehabilitation services (ED)	84	82	86	4.9
Training and employment (504)				
Employment and Training Administration (DOL)	20	53	25	-52.8

DHHS = Department of Health and Human Services; DOL = Department of Labor; ED = Department of Education.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; and supplemental data from agencies' budget offices.

TABLE 15. Federal research and development budget authority for education, training, employment, and social services (500): FY 2007–09  
(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	536	567	546	-3.7
Research and general education aids (501, 502, 503)	388	388	391	0.8
Department of Education programs	243	239	238	-0.4
Smithsonian Institution programs	145	149	153	2.7
Social services (506)	128	126	130	3.2
Administration for Children and Families (DHHS)	44	44	44	0.0
Rehabilitation services (ED)	84	82	86	4.9
Training and employment (504)				
Employment and Training Administration (DOL)	20	53	25	-52.8

DHHS = Department of Health and Human Services; DOL = Department of Labor; ED = Department of Education.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; and supplemental data from agencies' budget offices.

TABLE 16. Federal research and development and R&D plant budget authority for energy (270): FY 2007–09  
(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	1,922	2,460	2,474	0.6
Department of Energy	1,826	2,369	2,380	0.5
Energy programs (271)	1,335	1,790	1,755	-2.0
Energy efficiency and renewable energy	938	1,238	1,025	-17.2
Electricity delivery and energy reliability	97	111	100	-9.9
Nuclear energy	300	441	630	42.9
Fossil energy (271)	481	576	625	8.5
Cooperative R&D	0	5	0	-100.0
Petroleum, coal, and gas program	481	571	625	9.4
Radioactive waste management (271)	10	3	0	-100.0
Nuclear Regulatory Commission (276)	76	71	77	8.5
Tennessee Valley Authority (271)	20	20	17	-15.0

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C; Department of Energy budget justification documents; and supplemental data obtained from agencies' budget offices.

TABLE 17. Federal research and development budget authority for energy (270): FY 2007–09  
(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	1,893	2,374	2,463	3.7
Department of Energy	1,797	2,283	2,369	3.8
Energy programs (271)	1,318	1,717	1,749	1.9
Energy efficiency and renewable energy	921	1,176	1,019	-13.4
Electricity delivery and energy reliability	97	100	100	0.0
Nuclear energy	300	441	630	42.9
Fossil energy (271)	469	563	620	10.1
Cooperative R&D	0	5	0	-100.0
Petroleum, coal, and gas program	469	558	620	11.1
Radioactive waste management (271)	10	3	0	-100.0
Nuclear Regulatory Commission (276)	76	71	77	8.5
Tennessee Valley Authority (271)	20	20	17	-15.0

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C; Department of Energy budget justification documents; and supplemental data obtained from agencies' budget offices.

TABLE 18. Federal research and development and R&D plant budget authority for general science and basic research (251): FY 2007–09  
(Millions of dollars)

Agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	8,712	8,744	10,225	16.9
Department of Energy (DOE)	3,560	3,574	4,314	20.7
Advanced scientific computing research	276	351	369	5.0
Basic energy sciences	1,221	1,270	1,568	23.5
Biological and environmental research	480	544	569	4.4
Human genome research	70	73	70	-3.8
All other biological and environmental research	410	472	499	5.7
Fusion energy sciences	312	287	493	72.1
High energy physics	732	689	805	16.8
Nuclear physics	412	433	510	17.9
Small business innovation research <sup>a</sup>	126	0	0	na
National Science Foundation (NSF)	4,440	4,479	5,175	15.5
Biological sciences	609	612	675	10.3
Computer and information science and engineering	527	535	639	19.5
Education and human resources	56	59	66	11.9
Engineering	630	637	759	19.2
Geosciences	746	753	849	12.8
Integrative activities	220	232	276	18.8
Major research equipment and facilities	191	206	148	-28.2
Mathematical and physical sciences	1,151	1,167	1,403	20.2
Office of cyberinfrastructure	182	185	220	18.8
Social, behavioral, and economic sciences	215	215	233	8.5
U.S. polar research programs	438	443	491	10.9
Budget authority adjustment <sup>b</sup>	-524	-564	-584	na
Department of Homeland Security (DHS) <sup>c</sup>	712	692	737	6.5

na = not applicable.

<sup>a</sup> DOE treats this activity as a budget execution program (i.e., funds are collected from existing appropriations and are not allocated until three-quarters into the fiscal year).

<sup>b</sup> Budget authority adjustment subtracts costs for research facilities, major equipment support, and other non-R&D from total NSF budget authority.

<sup>c</sup> In FY 2007 DHS changed its R&D portfolio to reclassify funding in defense and most administration of justice as general science and basic research.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data. Not all federally sponsored basic research is categorized in subfunction 251.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; and supplemental data from agencies' budget offices.

TABLE 19. Federal research and development budget authority for general science and basic research (251): FY 2007–09  
(Millions of dollars)

Agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	7,809	7,915	9,012	13.9
Department of Energy (DOE)	3,119	3,206	3,534	10.2
Advanced scientific computing research	266	338	356	5.2
Basic energy sciences	989	1,073	1,234	15.0
Biological and environmental research	462	525	537	2.1
Human genome research	70	73	70	-3.8
All other biological and environmental research	392	453	467	3.1
Fusion energy sciences	243	265	260	-1.7
High energy physics	672	630	727	15.3
Nuclear physics	360	375	420	12.1
Small business innovation research <sup>a</sup>	126	0	0	na
National Science Foundation (NSF)	3,978	4,017	4,742	18.0
Biological sciences	609	612	675	10.3
Computer and information science and engineering	527	535	639	19.5
Education and human resources	56	59	66	11.9
Engineering	630	637	759	19.2
Geosciences	746	753	849	12.8
Integrative activities	220	232	276	18.8
Mathematical and physical sciences	1,151	1,167	1,403	20.2
Office of cyberinfrastructure	182	185	220	18.8
Social, behavioral, and economic sciences	215	215	233	8.5
U.S. polar research programs	438	443	491	10.9
Budget authority adjustment <sup>b</sup>	-795	-820	-869	na
Department of Homeland Security (DHS) <sup>c</sup>	712	692	737	6.5

na = not applicable.

<sup>a</sup> DOE treats this activity as a budget execution program (i.e., funds are collected from existing appropriations and are not allocated until three-quarters into the fiscal year).

<sup>b</sup> Budget authority adjustment subtracts costs for research facilities, major equipment support, and other non-R&D from total NSF budget authority.

<sup>c</sup> In FY 2007 DHS changed its R&D portfolio to reclassify funding in defense and most administration of justice as general science and basic research.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data. Not all federally sponsored basic research is categorized in subfunction 251.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; and supplemental data from agencies' budget offices.



TABLE 20. Federal research and development and R&D plant budget authority for health (550): FY 2007–09

(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	29,581	29,776	29,933	0.5
Consumer and occupational health and safety (554)	142	132	135	2.3
Food and Drug Administration (DHHS)	138	128	131	2.3
Occupational Safety and Health Administration (DOL)	4	4	4	0.0
Health care services and health research and training (551, 552)	29,439	29,644	29,798	0.5
Department of Health and Human Services				
Agency for Healthcare Research and Quality	346	362	353	-2.5
Centers for Disease Control and Prevention	559	441	441	0.0
Centers for Medicare and Medicaid Services	48	31	31	0.0
Health Resources and Services Administration	11	12	12	0.0
National Institutes of Health	28,350	28,676	28,666	0.0
Departmental management (other)	125	122	295	141.8

DHHS = Department of Health and Human Services; DOL = Department of Labor.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C; and supplemental data obtained from agencies' budget offices.

TABLE 21. Federal research and development budget authority for health (550): FY 2007–09

(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	29,461	29,634	29,783	0.5
Consumer and occupational health and safety (554)	125	117	118	0.9
Food and Drug Administration (DHHS)	121	113	114	0.9
Occupational Safety and Health Administration (DOL)	4	4	4	0.0
Health care services and health research and training (551, 552)	29,336	29,517	29,665	0.5
Department of Health and Human Services				
Agency for Healthcare Research and Quality	346	362	353	-2.5
Centers for Disease Control and Prevention	559	441	441	0.0
Centers for Medicare and Medicaid Services	48	31	31	0.0
Health Resources and Services Administration	11	12	12	0.0
National Institutes of Health	28,247	28,549	28,533	-0.1
Departmental management (other)	125	122	295	141.8

DHHS = Department of Health and Human Services; DOL = Department of Labor.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C; and supplemental data obtained from agencies' budget offices.

TABLE 22. Federal research and development and R&D plant budget authority for the National Institutes of Health: FY 2007–09  
(Millions of dollars)

Agency, by 2009 rank	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	28,350	28,676	28,666	0.0
National Cancer Institute	4,725	4,734	4,738	0.1
National Institute of Allergy and Infectious Diseases	4,306	4,503	4,510	0.2
National Heart, Lung, and Blood Institute	2,823	2,826	2,828	0.1
National Institute of General Medical Sciences	1,742	1,739	1,738	-0.1
National Institute of Diabetes and Digestive and Kidney Diseases	1,800	1,801	1,801	0.0
National Institute of Neurological Disorders and Stroke	1,501	1,510	1,512	0.1
National Institute of Mental Health	1,350	1,352	1,353	0.1
National Institute of Child Health and Human Development	1,214	1,215	1,216	0.1
National Center for Research Resources	1,138	1,144	1,155	1.0
Office of the Director	1,048	1,109	1,057	-4.7
National Institute on Aging	1,022	1,023	1,023	0.1
National Institute on Drug Abuse	976	977	978	0.1
National Institute of Environmental Health Sciences <sup>a</sup>	701	700	701	0.1
National Eye Institute	656	657	657	0.1
National Institute of Arthritis and Musculoskeletal and Skin Diseases	492	492	493	0.1
National Human Genome Research Institute	480	480	481	0.2
National Institute on Alcohol Abuse and Alcoholism	424	424	425	0.1
National Institute on Deafness and Other Communication Disorders	380	380	381	0.2
National Institute of Dental and Cranofacial Research	375	373	374	0.1
National Library of Medicine	320	321	323	0.8
National Institute of Biomedical Imaging and Bioengineering	288	289	288	-0.2
National Center for Minority Health and Health Disparities	199	200	200	0.1
National Institute of Nursing Research	127	127	127	0.1
Buildings and Facilities	81	119	126	5.6
National Center for Complementary and Alternative Medicine	117	118	118	0.1
John E. Fogarty International Center	66	67	67	0.1

<sup>a</sup> Includes funding from Superfund-related transfers and appropriations.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data. Institute totals exclude non-R&D components of institute budgets.

SOURCES: Departmental submission to Office of Management and Budget, Circular No. A-11, MAX Schedule C; and supplemental data obtained from National Institutes of Health budget office.

TABLE 23. Federal research and development budget authority for the National Institutes of Health: FY 2007–09

(Millions of dollars)

Agency, by 2009 rank	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	28,247	28,549	28,533	-0.1
National Cancer Institute	4,717	4,726	4,730	0.1
National Institute of Allergy and Infectious Diseases	4,292	4,503	4,510	0.2
National Heart, Lung, and Blood Institute	2,823	2,826	2,828	0.1
National Institute of General Medical Sciences	1,742	1,739	1,738	-0.1
National Institute of Diabetes and Digestive and Kidney Diseases	1,800	1,801	1,801	0.0
National Institute of Neurological Disorders and Stroke	1,501	1,510	1,512	0.1
National Institute of Mental Health	1,350	1,352	1,353	0.1
National Institute of Child Health and Human Development	1,214	1,215	1,216	0.1
National Center for Research Resources	1,138	1,144	1,155	1.0
Office of the Director	1,048	1,109	1,057	-4.7
National Institute on Aging	1,022	1,023	1,023	0.1
National Institute on Drug Abuse	976	977	978	0.1
National Institute of Environmental Health Sciences <sup>a</sup>	701	700	701	0.1
National Eye Institute	656	657	657	0.1
National Institute of Arthritis and Musculoskeletal and Skin Diseases	492	492	493	0.1
National Human Genome Research Institute	480	480	481	0.2
National Institute on Alcohol Abuse and Alcoholism	424	424	425	0.1
National Institute on Deafness and Other Communication Disorders	380	380	381	0.2
National Institute of Dental and Cranofacial Research	375	373	374	0.1
National Library of Medicine	320	321	323	0.8
National Institute of Biomedical Imaging and Bioengineering	288	289	288	-0.2
National Center for Minority Health and Health Disparities	199	200	200	0.1
National Institute of Nursing Research	127	127	127	0.1
National Center for Complementary and Alternative Medicine	117	118	118	0.1
John E. Fogarty International Center	66	67	67	0.1

<sup>a</sup> Includes funding from Superfund-related transfers and appropriations.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data. Institute totals exclude non-R&amp;D and R&amp;D facilities components of institute budgets.

SOURCES: Departmental submission to Office of Management and Budget, Circular No. A-11, MAX Schedule C; and supplemental data obtained from National Institutes of Health budget office.

TABLE 24. Federal research and development budget authority for income security (600): FY 2007–09

(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	27	27	35	29.6
Social Security Administration (650)	27	27	35	29.6

NOTE: Percent change derived from unrounded data.

SOURCES: Social Security Administration submission to Office of Management and Budget, Circular No. A-11, MAX Schedule C.

TABLE 25. Federal research and development budget authority for international affairs (150): FY 2007–09

(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	246	255	255	0.0
Agency for International Development (151)	223	223	223	0.0
International Security Assistance (152)	23	32	32	0.0

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C; and supplemental data obtained from agencies' budget offices.

TABLE 26. Federal research and development and R&D plant budget authority for national defense (050): FY 2007–09  
(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	82,658	81,500	84,513	3.7
Department of Defense, military (051) (DOD)	79,009	77,782	80,688	3.7
RDT&E	77,549	76,387	79,616	4.2
Defense agencies	21,862	20,499	21,499	4.9
Defense Advanced Research Projects Agency	2,908	2,959	3,286	11.0
Missile Defense Agency	9,381	8,552	8,891	4.0
Other defense agencies	9,573	8,988	9,323	3.7
Department of the Air Force	24,566	25,902	28,067	8.4
Department of the Army	11,303	12,032	10,524	-12.5
Department of the Navy	19,638	17,776	19,337	8.8
Operational test and evaluation	180	178	189	6.2
Other military funding <sup>a</sup>	1,460	1,395	1,072	-23.2
Department of Energy, atomic energy defense activities (053) (DOE)	3,649	3,718	3,825	2.9
Environmental restoration and waste management	21	22	33	50.0
Naval reactors development	752	743	794	6.9
Nonproliferation	209	208	208	0.0
Weapons activities	2,664	2,742	2,787	1.6
Other defense activities	3	3	3	0.0
Department of Homeland Security (DHS) <sup>b</sup>	0	0	0	na

na = not applicable.

RDT&E = research, development, test, and evaluation.

<sup>a</sup> This item includes appropriate personnel costs in direct support of conduct of R&D, other appropriations funding certain DOD programs, and medical research funded outside RDT&E accounts.

<sup>b</sup> In 2007 DHS reclassified its formerly defense activities as general science (250).

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: DOD, DOE, and DHS submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C; DOD, RDT&E Programs (R-1).

TABLE 27. Federal research and development budget authority for national defense (050): FY 2007–09

(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	82,272	81,050	84,091	3.8
Department of Defense, military (051) (DOD)	78,949	77,640	80,531	3.7
RDT&E	77,549	76,387	79,616	4.2
Defense agencies	21,862	20,499	21,499	4.9
Defense Advanced Research Projects Agency	2,908	2,959	3,286	11.0
Missile Defense Agency	9,381	8,552	8,891	4.0
Other defense agencies	9,573	8,988	9,323	3.7
Department of the Air Force	24,566	25,902	28,067	8.4
Department of the Army	11,303	12,032	10,524	-12.5
Department of the Navy	19,638	17,776	19,337	8.8
Operational test and evaluation	180	178	189	6.2
Other military funding <sup>a</sup>	1,400	1,253	915	-27.0
Department of Energy, atomic energy defense activities (053) (DOE)	3,323	3,410	3,560	4.4
Environmental restoration and waste management	21	22	33	50.0
Naval reactors development	712	680	739	8.7
Nonproliferation	209	208	208	0.0
Weapons activities	2,378	2,497	2,577	3.2
Other defense activities	3	3	3	0.0
Department of Homeland Security (DHS) <sup>b</sup>	0	0	0	na

na = not applicable.

RDT&E = research, development, test, and evaluation.

<sup>a</sup> This item includes appropriate personnel costs in direct support of conduct of R&D, other appropriations funding certain DOD programs, and medical research funded outside RDT&E accounts.

<sup>b</sup> In 2007 DHS reclassified its formerly defense activities as general science (250).

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: DOD, DOE, and DHS submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C; DOD, RDT&E Programs (R-1).



TABLE 28. Total obligational authority for Department of Defense research, development, test, and evaluation budget, by DOD budget activity: FY 2007–09

(Millions of dollars)

Budget activity	Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
	Total RDT&E (budget authority)	77,549	76,387	79,616	4.2
	Total RDT&E (TOA) <sup>a</sup>	77,589	76,734	79,616	3.8
1	Basic research	1,525	1,634	1,699	4.0
	Defense agencies	294	336	339	0.8
	Department of the Air Force	395	421	452	7.4
	Department of the Army	353	379	379	0.1
	Department of the Navy	482	498	528	6.1
2	Applied research	5,104	5,058	4,245	-16.1
	Defense agencies	2,027	1,912	1,844	-3.6
	Department of the Air Force	1,115	1,170	1,045	-10.7
	Department of the Army	1,189	1,175	724	-38.4
	Department of the Navy	773	801	633	-20.9
3	Advanced technology development	6,211	5,987	5,532	-7.6
	Defense agencies	3,175	3,264	3,536	8.3
	Department of the Air Force	1,030	664	578	-12.9
	Department of the Army	1,254	1,337	739	-44.7
	Department of the Navy	751	722	679	-6.0
	Operational test and evaluation	0	0	0	na
4	Advanced component development and prototypes	15,925	15,557	15,774	1.4
	Defense agencies	9,286	8,673	8,942	3.1
	Department of the Air Force	2,480	2,693	2,440	-9.4
	Department of the Army	523	1,141	952	-16.5
	Department of the Navy	3,637	3,051	3,440	12.8
5	System development and demonstration	19,119	18,184	19,537	7.4
	Defense agencies	606	779	920	18.2
	Department of the Air Force	4,560	4,246	4,954	16.7
	Department of the Army	5,179	5,182	4,981	-3.9
	Department of the Navy	8,774	7,977	8,682	8.8
6	RDT&E management support	5,466	4,491	4,369	-2.7
	Defense agencies	1,236	1,002	1,028	2.6
	Department of the Air Force	1,405	1,049	1,084	3.4
	Department of the Army	1,463	1,186	1,113	-6.2
	Department of the Navy	1,182	1,076	955	-11.3
	Operational test and evaluation	180	178	189	5.9
7	Operational system development	24,240	25,823	28,461	10.2
	Defense agencies	5,215	4,677	4,891	4.6
	Department of the Air Force	13,507	15,827	17,514	10.7
	Department of the Army	1,394	1,645	1,636	-0.5
	Department of the Navy	4,125	3,675	4,420	20.3
	Adjustment for RDT&E budget authority <sup>a</sup>	-40	-347	0	na

na = not applicable.

RDT&E = research, development, test, and evaluation; TOA = total obligational authority.

<sup>a</sup> Detailed budget information on Department of Defense (DOD) RDT&E activities is available only in TOA, which is the sum of new budget authority, unobligated budget authority from previous years, and other authorized credits. Adjustment converts TOA to budget authority by subtracting unobligated budget from authority from previous years and other authorized credits from TOA.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Data derived from DOD, RDT&E Programs (R-1); and Office of Management and Budget, *Budget of the United States Government, Fiscal Year 2009* (Washington, DC: U.S. Government Printing Office, 2008).

TABLE 29. Federal research and development and R&D plant budget authority for natural resources and environment (300): FY 2007–09  
(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	2,096	2,153	2,060	-4.3
Conservation and land management (302)	363	374	356	-4.8
Department of the Interior <sup>a</sup>	38	37	41	10.8
Forest Service (USDA)	325	337	315	-6.5
Pollution control and abatement (304)	557	548	541	-1.3
Environmental Protection Agency	557	548	541	-1.3
Leaking underground storage tanks	1	1	0	-42.9
Oil spill response research	1	1	1	-22.2
Science and technology	525	520	513	-1.4
Superfund	30	26	26	2.7
Recreational resources (303)	200	199	200	0.7
National Park Service (DOI)	19	19	20	5.3
U.S. Geological Survey (DOI)	181	180	180	0.3
Water resources (301)	27	45	22	-51.1
Army Corps of Engineers (DOD)	11	11	11	0.0
Bureau of Reclamation (DOI)	16	34	11	-67.6
Other natural resources (306)	950	988	941	-4.7
National Oceanic and Atmospheric Administration (DOC)	557	581	576	-0.9
National environmental satellite, data, and information service	28	29	29	-0.9
National marine fisheries service	50	52	52	-0.9
National ocean service	56	58	58	-0.9
National weather service	22	23	23	-0.9
Oceanic and atmospheric research	279	291	288	-0.9
Climate research	176	193	196	1.5
All other research	102	98	93	-5.5
All other NOAA	123	128	127	-0.9
U.S. Geological Survey	393	407	365	-10.1
Enterprise information	5	5	5	3.9
Geographic research	44	48	42	-11.8
Geologic hazards and resources	218	219	185	-15.3
Global change <sup>b</sup>	0	7	27	260.1
Water resources investigations	126	128	107	-16.7

DOC = Department of Commerce; DOD = Department of Defense; DOI = Department of the Interior; NOAA = National Oceanic and Atmospheric Administration; USDA = U.S. Department of Agriculture.

<sup>a</sup> Includes Bureau of Land Management, Office of Surface Mining and Reclamation, and Minerals Management Service.

<sup>b</sup> New account within U.S. Geological Survey.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C; agencies' budget justification documents; and supplemental data obtained from agencies' budget offices.

TABLE 30. Federal research and development budget authority for natural resources and environment (300): FY 2007–09

(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	1,936	2,008	1,987	-1.0
Conservation and land management (302)	339	351	332	-5.4
Department of the Interior <sup>a</sup>	35	34	39	14.7
Forest Service (USDA)	304	317	293	-7.6
Pollution control and abatement (304)	557	548	541	-1.3
Environmental Protection Agency	557	548	541	-1.3
Leaking underground storage tanks	1	1	0	-42.9
Oil spill response research	1	1	1	-22.2
Science and technology	525	520	513	-1.4
Superfund	30	26	26	2.7
Recreational resources (303)	200	199	200	0.7
National Park Service (DOI)	19	19	20	5.3
U.S. Geological Survey (DOI)	181	180	180	0.3
Water resources (301)	22	26	22	-15.4
Army Corps of Engineers (DOD)	11	11	11	0.0
Bureau of Reclamation (DOI)	11	15	11	-26.7
Other natural resources (306)	819	885	892	0.9
National Oceanic and Atmospheric Administration (DOC)	426	478	527	10.3
National environmental satellite, data, and information service	28	29	29	-0.9
National marine fisheries service	50	52	52	-0.9
National ocean service	56	58	58	-0.9
National weather service	22	23	23	-0.9
Oceanic and atmospheric research	268	284	288	1.6
Climate research	176	193	196	1.5
All other research	91	91	93	1.8
All other NOAA	3	32	78	144.2
U.S. Geological Survey	393	407	365	-10.1
Enterprise information	5	5	5	3.9
Geographic research	44	48	42	-11.8
Geologic hazards and resources	218	219	185	-15.3
Global change <sup>b</sup>	0	7	27	260.1
Water resources investigations	126	128	107	-16.7

DOC = Department of Commerce; DOD = Department of Defense; DOI = Department of the Interior; NOAA = National Oceanic and Atmospheric Administration; USDA = U.S. Department of Agriculture.

<sup>a</sup> Includes Bureau of Land Management, Office of Surface Mining and Reclamation, and Minerals Management Service.

<sup>b</sup> New account within U.S. Geological Survey.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; and supplemental data from agencies' budget offices.

TABLE 31. Federal research and development and R&D plant budget authority for space research and technology (252): FY 2007–09  
(Millions of dollars)

Agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	10,988	11,677	12,334	5.6
National Aeronautics and Space Administration (NASA)				
Advanced capabilities	755	671	452	-32.6
Astrophysics	1,365	1,338	1,162	-13.1
Constellation systems	2,115	2,472	3,048	23.3
Cross-agency support <sup>a</sup>	1,872	2,083	2,176	4.5
Earth science	1,190	1,269	1,360	7.1
Heliophysics	831	841	577	-31.4
Innovative partnerships	189	147	176	19.7
Planetary science	1,203	1,235	1,322	7.0
Space station	1,469	1,813	2,060	13.6
Undistributed rescission	0	-193	0	-100.0

<sup>a</sup> NASA proposes for FY 2009 to restructure its budget to include program support costs in Cross-agency support, and proposes some other restructurings of accounts. FY 2007 and 2008 were adjusted for comparability. Innovative partnerships are listed separately from other cross-agency support.

NOTES: Includes funds for research and research program management but excludes fixed capital equipment costs. Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: NASA submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C; NASA budget justification documents; and supplemental data obtained from NASA budget and NASA budget office.

TABLE 32. Federal research and development budget authority for space research and technology (252): FY 2007–09  
(Millions of dollars)

Agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	9,024	9,233	9,728	5.4
National Aeronautics and Space Administration (NASA)				
Advanced capabilities	616	671	452	-32.6
Astrophysics	1,365	1,338	1,162	-13.1
Constellation systems	2,115	2,287	2,970	29.9
Cross-agency support <sup>a</sup>	1,571	1,671	1,721	3.0
Earth science	1,159	1,249	1,348	7.9
Heliophysics	831	841	577	-31.4
Innovative partnerships	189	147	176	19.7
Planetary science	1,179	1,222	1,322	8.1
Space station	0	0	0	na
Undistributed rescission	0	-193	0	-100.0

na = not applicable.

<sup>a</sup> NASA proposes for FY 2009 to restructure its budget to include program support costs in cross-agency support and proposes other restructurings of accounts. FY 2007 and 2008 figures were adjusted for comparability. Innovative partnerships are listed separately from other cross-agency support.

NOTES: Includes funds for research and research program management but excludes fixed capital equipment costs. Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: NASA submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C; NASA budget justification documents; and supplemental data obtained from NASA budget and NASA budget office.

TABLE 33. Federal research and development and R&D plant budget authority for transportation (400): FY 2007–09  
(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	1,380	1,359	1,366	0.5
Air transportation (402)	827	783	782	-0.1
Federal Aviation Administration (DOT)	234	271	335	23.7
National Aeronautics and Space Administration, aeronautics <sup>a</sup>	594	512	447	-12.7
Ground transportation (401) (DOT)	504	515	538	4.4
Federal Highway Administration	371	373	393	5.4
Federal Motor Carrier Safety Administration	9	8	7	-16.7
Federal Railroad Administration	37	39	37	-4.8
Federal Transit Administration	8	13	18	42.1
National Highway Traffic Safety Administration	79	83	83	0.2
Water transportation (403)	19	27	18	-33.3
U.S. Coast Guard (DHS)	19	27	18	-33.3
Other transportation (407) <sup>b</sup> (DOT)	29	35	29	-16.0

DHS = Department of Homeland Security; DOT = Department of Transportation.

<sup>a</sup> Excludes funds for research program management.

<sup>b</sup> Includes Office of the Secretary, Pipeline and Hazardous Materials Safety Administration, and the Research and Innovative Technology Administration.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C; and supplemental data obtained from agencies' budget offices.

TABLE 34. Federal research and development budget authority for transportation (400): FY 2007–09

(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	1,361	1,340	1,345	0.4
Air transportation (402)	810	765	763	-0.3
Federal Aviation Administration (DOT)	216	254	317	24.9
National Aeronautics and Space Administration, aeronautics <sup>a</sup>	594	512	447	-12.7
Ground transportation (401) (DOT)	502	513	535	4.3
Federal Highway Administration	371	373	393	5.4
Federal Motor Carrier Safety Administration	9	8	7	-16.7
Federal Railroad Administration	35	37	34	-6.9
Federal Transit Administration	8	13	18	42.1
National Highway Traffic Safety Administration	79	83	83	0.2
Water transportation (403)	19	27	18	-33.3
U.S. Coast Guard (DHS)	19	27	18	-33.3
Other transportation (407) <sup>b</sup> (DOT)	29	35	29	-16.0

DOT = Department of Transportation; DHS = Department of Homeland Security.

<sup>a</sup> Excludes funds for research program management.<sup>b</sup> Includes Office of the Secretary, Pipeline and Hazardous Materials Safety Administration, and the Research and Innovative Technology Administration.

NOTES: Detail may not add to total because of rounding. Percent change derived from unrounded data.

SOURCES: Agencies' submissions to Office of Management and Budget, Circular No. A-11, MAX Schedule C; and supplemental data obtained from agencies' budget offices.

TABLE 35. Federal research and development budget authority for veterans benefits and services (700): FY 2007–09

(Millions of dollars)

Funding category and agency	2007 actual	2008 preliminary	2009 proposed	2008–09 (% change)
Total	820	891	884	-0.8
Department of Veterans Affairs				
Medical and prosthetic research (703)	820	891	884	-0.8

NOTE: Includes administration and operating expenses related to Department of Veterans Affairs research.

SOURCE: Department of Veterans Affairs submission to Office of Management and Budget, Circular No. A-11, MAX Schedule C.



TABLE 36. Federal research and development obligations, budget authority, and budget authority for basic research, by budget function: FY 1955–2009

(Millions of dollars)

Federal R&D obligations and authority	All functions	Budget function																
		Administration of justice	Agriculture	Commerce and housing credit	Community and regional development	Education, training, employment, and social services	Energy	General government	General science and basic research	Health	Income security	International affairs	National defense	Natural resources and environment	Space research and technology	Transportation	Veterans benefits and services	Other <sup>a</sup>
All R&D obligations																		
1955	2,533	NA	NA	NA	NA	NA	NA	NA	NA	67	NA	NA	2,151	NA	NA	NA	NA	315
1956	2,988	NA	NA	NA	NA	NA	NA	NA	NA	83	NA	NA	2,535	NA	NA	NA	NA	370
1957	3,932	NA	NA	NA	NA	NA	NA	NA	NA	140	NA	NA	3,327	NA	NA	NA	NA	465
1958	4,570	NA	NA	NA	NA	NA	NA	NA	NA	177	NA	NA	3,801	NA	NA	NA	NA	592
1959	6,694	NA	NA	NA	NA	NA	NA	NA	NA	233	NA	NA	5,556	NA	NA	NA	NA	904
1960	7,552	NA	NA	NA	NA	NA	NA	NA	NA	305	NA	NA	6,107	NA	NA	NA	NA	1,140
1961	9,059	NA	125	NA	NA	NA	373	NA	137	405	NA	NA	7,005	73	777	55	NA	108
1962	10,290	NA	136	NA	NA	NA	448	NA	187	551	NA	NA	7,238	108	1,413	101	NA	107
1963	12,495	NA	146	NA	NA	NA	515	NA	246	626	NA	NA	7,764	120	2,812	142	NA	125
1964	14,225	NA	165	NA	NA	NA	571	NA	277	728	NA	NA	7,829	134	4,241	122	NA	160
1965	14,614	NA	195	NA	NA	NA	585	NA	304	792	NA	NA	7,342	159	4,887	147	NA	203
1966	15,320	NA	201	NA	NA	NA	575	NA	377	900	NA	NA	7,536	189	4,976	251	NA	315
1967	16,529	*	218	43	37	154	600	3	409	915	48	18	8,566	320	4,778	380	41	na
1968	15,921	1	217	48	44	166	657	5	437	1,021	50	17	8,275	331	4,304	304	45	na
1969	15,641	5	221	54	32	169	597	5	433	1,088	78	26	8,356	323	3,799	404	50	na
1970	15,339	9	238	79	47	164	574	6	452	1,084	136	32	7,981	340	3,606	535	59	na
1971	15,543	10	259	90	65	215	556	7	513	1,288	145	32	8,110	416	3,048	728	63	na
1972	16,496	23	294	50	66	235	574	8	625	1,547	106	29	8,902	479	2,932	558	69	na
1973	16,800	33	308	50	78	290	630	7	658	1,585	106	28	9,002	554	2,824	572	74	na
1974	17,410	35	313	51	82	236	759	9	749	2,069	71	24	9,016	516	2,702	693	85	na
1975	19,039	44	342	65	93	239	1,363	12	813	2,170	72	29	9,679	624	2,764	635	95	na
1976	20,780	35	383	69	109	255	1,649	12	858	2,351	48	42	10,430	683	3,130	631	98	na
1977	23,450	30	457	71	101	230	2,562	13	974	2,629	55	66	11,864	753	2,832	708	107	na
All R&D authority																		
1978	25,976	44	501	77	92	345	3,134	20	1,050	2,968	67	57	12,899	904	2,939	768	111	na
1979	28,208	47	552	93	127	354	3,461	23	1,119	3,401	57	117	13,791	1,010	3,136	798	123	na
1980	29,739	45	585	101	119	468	3,603	22	1,233	3,694	47	125	14,946	999	2,738	887	126	na
1981	33,735	34	659	106	104	298	3,501	22	1,340	3,871	43	160	18,413	1,061	3,111	869	143	na

TABLE 36. Federal research and development obligations, budget authority, and budget authority for basic research, by budget function: FY 1955–2009

(Millions of dollars)

Federal R&D obligations and authority	All functions	Budget function																
		Administration of justice	Agriculture	Commerce and housing credit	Community and regional development	Education, training, employment, and social services	Energy	General government	General science and basic research	Health	Income security	International affairs	National defense	Natural resources and environment	Space research and technology	Transportation	Veterans benefits and services	Other <sup>a</sup>
1982	36,115	31	693	104	63	228	3,012	10	1,359	3,869	32	165	22,070	965	2,584	791	139	na
1983	38,768	37	745	107	44	189	2,578	6	1,502	4,298	32	177	24,936	952	2,134	876	157	na
1984	44,214	24	762	110	46	200	2,581	8	1,676	4,779	26	192	29,287	963	2,300	1,040	218	na
1985	49,887	47	836	114	50	220	2,389	17	1,862	5,418	21	210	33,698	1,059	2,725	1,030	193	na
1986	53,249	41	815	111	88	248	2,286	14	1,873	5,565	14	211	36,926	1,062	2,894	917	183	na
1987	57,069	49	822	110	99	267	2,053	17	2,042	6,556	25	223	39,152	1,133	3,398	908	215	na
1988	59,106	51	882	122	108	285	2,126	17	2,160	7,076	23	224	40,099	1,160	3,683	896	195	na
1989	62,115	45	907	128	74	347	2,419	15	2,373	7,773	27	279	40,642	1,255	4,555	1,064	212	na
1990	63,781	44	950	140	67	374	2,726	17	2,410	8,308	33	375	39,925	1,386	5,765	1,045	216	na
1991	65,898	51	1,052	178	88	433	2,953	4	2,635	9,226	30	378	39,328	1,582	6,511	1,231	219	na
1992	68,398	51	1,155	192	127	365	3,099	4	2,659	10,055	37	371	40,083	1,688	6,744	1,523	245	na
1993	69,884	49	1,152	220	57	348	2,677	*	2,691	10,280	36	382	41,249	1,802	6,988	1,703	250	na
1994	68,331	46	1,193	380	68	373	2,873	0	2,712	10,993	45	254	37,764	2,062	7,414	1,888	265	na
1995	68,791	59	1,194	525	70	369	2,844	1	2,794	11,407	43	287	37,204	1,988	7,916	1,833	257	na
1996	69,049	56	1,176	432	50	331	2,521	2	2,846	11,867	16	252	37,801	1,802	7,844	1,795	259	na
1997	71,653	59	1,203	409	48	373	2,372	2	2,944	12,670	9	190	39,591	1,886	7,844	1,785	267	na
1998	73,569	72	1,249	398	42	444	948	2	4,360	13,576	18	163	39,823	1,855	8,198	1,833	587	na
1999	77,637	88	1,288	432	59	403	1,131	3	4,690	15,553	38	190	41,306	1,842	8,245	1,725	644	na
2000	78,664	73	1,426	406	46	418	996	6	4,977	17,869	25	200	42,580	1,999	5,363	1,636	645	na
2001	86,756	88	1,657	429	54	411	1,314	3	5,468	20,758	30	252	45,713	2,096	6,126	1,640	719	na
2002	97,624	91	1,606	467	50	411	1,327	3	5,753	23,560	37	279	53,016	2,160	6,270	1,838	756	na
2003	112,544	299	1,708	463	48	430	1,403	0	6,129	26,517	38	269	63,048	2,151	7,355	1,869	817	na
2004	121,867	684	1,750	454	47	459	1,343	0	6,466	28,251	47	264	69,593	2,168	7,612	1,863	866	na
2005	126,601	758	1,820	423	45	470	1,296	0	6,570	28,824	35	255	74,047	2,168	7,300	1,847	742	na
2006	131,624	1,008	1,869	390	55	495	1,195	0	6,691	28,797	27	255	78,037	2,120	8,204	1,711	769	na
2007	138,087	369	1,857	428	49	536	1,893	0	7,809	29,461	27	246	82,272	1,936	9,024	1,361	819	na
2008 preliminary	137,972	355	1,852	420	51	567	2,374	0	7,915	29,634	27	255	81,050	2,008	9,233	1,340	891	na
2009 proposed	142,605	356	1,616	448	55	546	2,463	0	9,012	29,783	35	255	84,091	1,987	9,728	1,345	884	na

TABLE 36. Federal research and development obligations, budget authority, and budget authority for basic research, by budget function: FY 1955–2009

(Millions of dollars)

Federal R&D obligations and authority	All functions	Budget function																
		Administration of justice	Agriculture	Commerce and housing credit	Community and regional development	Education, training, employment, and social services	Energy	General government	General science and basic research	Health	Income security	International affairs	National defense	Natural resources and environment	Space research and technology	Transportation	Veterans benefits and services	Other <sup>a</sup>
Authority for basic research																		
1978	3,665	10	197	9	8	57	157	0	962	1,246	2	*	320	207	412	70	9	na
1979	4,108	10	222	10	8	59	172	*	1,026	1,579	1	0	365	131	440	75	10	na
1980	4,716	9	246	15	8	61	200	*	1,152	1,761	1	0	552	136	482	79	14	na
1981	5,107	5	281	17	5	66	220	3	1,256	1,951	3	12	610	131	445	89	15	na
1982	5,305	4	295	17	7	78	260	2	1,296	1,953	0	10	696	139	434	102	13	na
1983	6,247	4	326	19	6	70	320	3	1,439	2,475	0	10	788	156	501	117	14	na
1984	7,072	5	353	20	5	77	365	3	1,606	2,813	0	3	845	192	646	125	15	na
1985	7,810	4	406	23	6	86	428	4	1,779	3,243	0	4	856	206	498	255	15	na
1986	8,193	5	390	26	6	83	456	5	1,795	3,324	0	5	960	204	737	184	15	na
1987	9,021	8	397	26	4	78	511	4	1,942	3,851	0	3	900	206	843	231	17	na
1988	9,553	8	428	28	7	83	571	5	2,061	4,087	0	3	905	210	944	197	17	na
1989	10,648	7	433	29	3	92	703	3	2,265	4,413	0	3	965	331	1,099	287	16	na
1990	11,288	9	456	31	3	106	761	3	2,306	4,661	0	4	964	336	1,389	242	16	na
1991	12,405	6	486	39	10	115	878	0	2,526	5,021	0	6	1,188	389	1,479	246	16	na
1992	12,973	5	528	35	11	118	921	0	2,532	5,506	0	6	1,147	383	1,499	266	16	na
1993	13,440	5	553	34	10	121	917	0	2,553	5,700	0	8	1,323	376	1,588	238	16	na
1994	13,552	5	567	38	9	145	921	0	2,542	5,889	0	6	1,174	224	1,796	220	16	na
1995	13,772	9	565	35	3	153	930	0	2,622	6,068	0	0	1,181	187	1,614	389	16	na
1996	14,442	12	547	37	0	140	1,182	0	2,662	6,395	0	2	1,165	147	1,685	456	13	na
1997	14,961	13	548	34	0	142	1,288	0	2,753	6,852	0	2	1,090	153	1,653	420	14	na
1998	15,523	16	571	35	0	133	34	0	4,121	7,356	0	1	1,067	145	1,610	411	23	na
1999	17,433	18	602	41	0	99	36	0	4,464	8,634	0	0	1,110	142	1,667	358	263	na
2000	19,470	20	651	39	0	107	36	0	4,722	10,099	0	42	1,184	146	1,616	542	266	na
2001	21,376	27	749	50	0	112	40	0	5,187	11,642	0	50	1,303	215	1,695	17	289	na
2002	23,848	30	762	56	0	115	45	0	5,561	12,957	0	53	1,404	471	1,912	17	465	na
2003	25,323	42	824	53	1	125	40	0	5,907	14,162	0	18	1,409	185	2,206	23	327	na
2004	26,529	58	780	46	0	125	32	0	6,198	14,850	0	18	1,380	201	2,473	20	347	na
2005	27,678	42	789	53	0	130	31	0	6,238	15,826	0	18	1,508	195	2,486	65	297	na
2006	27,336	68	805	66	0	131	8	0	6,406	15,532	0	18	1,490	195	2,299	0	318	na

TABLE 36. Federal research and development obligations, budget authority, and budget authority for basic research, by budget function: FY 1955–2009

(Millions of dollars)

Federal R&D obligations and authority	All functions	Budget function																
		Administration of justice	Agriculture	Commerce and housing credit	Community and regional development	Education, training, employment, and social services	Energy	General government	General science and basic research	Health	Income security	International affairs	National defense	Natural resources and environment	Space research and technology	Transportation	Veterans benefits and services	Other <sup>a</sup>
2007	28,166	106	821	92	0	149	7	0	6,887	15,637	0	18	1,533	260	2,318	2	335	na
2008 preliminary	28,694	125	798	94	0	153	19	0	7,024	15,883	0	18	1,641	265	2,311	3	361	na
2009 proposed	29,656	142	731	114	0	157	16	0	8,002	15,861	0	18	1,706	265	2,287	3	354	na

\* = less than \$500,000; na = not applicable; NA = not available, data were not collected for all budget functions in all years.

<sup>a</sup>Includes amounts for all functions for which data were not explicitly collected.

NOTES: Detail may not add to total because of rounding. In FY 2004 the Department of Homeland Security (DHS) changed its R&D portfolio to reclassify funding in general science and basic research and in agriculture as administration of justice. In FY 2007 DHS changed its R&D portfolio to reclassify funding in defense and most administration of justice as general science and basic research. In FY 2000 the National Aeronautics and Space Administration transferred funding for the space station program from R&D to R&D plant; change reflected in budget authority for space research and technology. In FY 2000 the National Institutes of Health in the Department of Health and Human Services classified all of its previous development activities as basic research or applied research, resulting in an increase in health basic research. In FY 1998 many Department of Energy programs were reclassified from energy to general science and basic research, and the Department of Veterans Affairs began reporting medical care support funds as part of its total research budgetary resources; change reflected in budget authority for veteran benefits and services.

SOURCES: 1955–94 data from agencies' submissions to Office of Management and Budget, Circular No. A-11, Exhibit 44A, "Research and Development Activities," and supplemental data obtained from agencies' budget offices. 1995–2009 data from agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; and supplemental data from agencies' budget offices.

TABLE 37. Federal research and development obligations and budget authority for national defense and civilian functions: FY 1955–2009

Fiscal year	Total	National defense	Civilian functions	Total	National defense	Civilian functions
	Current \$millions			% distribution		
<b>R&amp;D obligations</b>						
1955	2,533	2,151	382	100.0	84.9	15.1
1956	2,988	2,535	453	100.0	84.8	15.2
1957	3,932	3,327	605	100.0	84.6	15.4
1958	4,570	3,801	769	100.0	83.2	16.8
1959	6,694	5,556	1,138	100.0	83.0	17.0
1960	7,552	6,107	1,445	100.0	80.9	19.1
1961	9,059	7,005	2,054	100.0	77.3	22.7
1962	10,290	7,238	3,052	100.0	70.3	29.7
1963	12,495	7,764	4,731	100.0	62.1	37.9
1964	14,225	7,829	6,396	100.0	55.0	45.0
1965	14,614	7,342	7,272	100.0	50.2	49.8
1966	15,320	7,536	7,784	100.0	49.2	50.8
1967	16,529	8,566	7,963	100.0	51.8	48.2
1968	15,921	8,275	7,646	100.0	52.0	48.0
1969	15,641	8,356	7,285	100.0	53.4	46.6
1970	15,339	7,981	7,358	100.0	52.0	48.0
1971	15,543	8,110	7,433	100.0	52.2	47.8
1972	16,496	8,902	7,594	100.0	54.0	46.0
1973	16,800	9,002	7,798	100.0	53.6	46.4
1974	17,410	9,016	8,394	100.0	51.8	48.2
1975	19,039	9,679	9,360	100.0	50.8	49.2
1976	20,780	10,430	10,350	100.0	50.2	49.8
1977	23,450	11,864	11,586	100.0	50.6	49.4
<b>R&amp;D authority</b>						
1978	25,976	12,899	13,077	100.0	49.7	50.3
1979	28,208	13,791	14,417	100.0	48.9	51.1
1980	29,739	14,946	14,793	100.0	50.3	49.7
1981	33,735	18,413	15,322	100.0	54.6	45.4
1982	36,115	22,070	14,045	100.0	61.1	38.9
1983	38,768	24,936	13,832	100.0	64.3	35.7
1984	44,214	29,287	14,927	100.0	66.2	33.8
1985	49,887	33,698	16,189	100.0	67.5	32.5
1986	53,249	36,926	16,323	100.0	69.3	30.7
1987	57,069	39,152	17,917	100.0	68.6	31.4
1988	59,106	40,099	19,007	100.0	67.8	32.2
1989	62,115	40,642	21,473	100.0	65.5	34.5
1990	63,781	39,925	23,856	100.0	62.6	37.4
1991	65,898	39,328	26,570	100.0	59.7	40.3
1992	68,398	40,083	28,315	100.0	58.6	41.4
1993	69,884	41,249	28,635	100.0	59.0	41.0
1994	68,331	37,764	30,566	100.0	55.3	44.7
1995	68,791	37,204	31,587	100.0	54.1	45.9
1996	69,049	37,801	31,248	100.0	54.7	45.3
1997	71,653	39,591	32,062	100.0	55.3	44.7
1998	73,569	39,823	33,746	100.0	54.1	45.9
1999	77,637	41,306	36,332	100.0	53.2	46.8
2000	78,664	42,580	36,084	100.0	54.1	45.9
2001	86,756	45,713	41,043	100.0	52.7	47.3
2002	97,624	53,016	44,608	100.0	54.3	45.7
2003	112,544	63,048	49,495	100.0	56.0	44.0
2004	121,867	69,593	52,274	100.0	57.1	42.9
2005	126,601	74,047	52,554	100.0	58.5	41.5

TABLE 37. Federal research and development obligations and budget authority for national defense and civilian functions: FY 1955–2009

Fiscal year	Total	National defense	Civilian functions	Total	National defense	Civilian functions
	Current \$millions			% distribution		
2006	131,624	78,037	53,586	100.0	59.3	40.7
2007	138,087	82,272	55,815	100.0	59.6	40.4
2008 preliminary	137,972	81,050	56,922	100.0	58.7	41.3
2009 proposed	142,605	84,091	58,514	100.0	59.0	41.0

NOTES: National defense function includes Department of Defense military activities, Department of Energy atomic energy defense program, and defense-related R&D of Department of Homeland Security. Civilian functions include all other federally funded R&D.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; and supplemental data from agencies' budget offices.

## Appendix A. Agency and budget function crosswalk

Agency	Budget function														
	Administration of justice (750)	Agriculture (350)	Commerce and housing credit (370)	Community and regional development (450)	Education, training, employment, and social services (500)	Energy (270)	General science and basic research (251)	Health (556)	Income security (600)	International affairs (150)	National defense (050)	Natural resources and environment (300)	Space research and technology (252)	Transportation (400)	Veterans benefits and services (700)
Agency for International Development									●						
Army Corps of Engineers (Civil)												●			
Department of Agriculture		●										●			
Department of Commerce			●									●			
Department of Defense (Military)											●				
Department of Education					●										
Department of Energy						●	●				●				
Department of Health and Human Services					●			●							
Department of Homeland Security	●						●							●	
Department of Housing and Urban Development				●											
Department of Justice	●														
Department of Labor					●			●							
Department of the Interior												●			
Department of Transportation														●	
Department of Veterans Affairs															●
Environmental Protection Agency												●			
National Aeronautics and Space Administration													●	●	
National Science Foundation							●								
Nuclear Regulatory Commission					●										
Smithsonian Institution				●											
Social Security Administration								●							
Tennessee Valley Authority						●									

● = R&D function funded by specified agency.

SOURCES: Agencies' submission to Office of Management and Budget, Circular No. A-11, Max Schedule C; budget justification documents; and supplemental data from agencies' budget offices.

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### **Division of Science Resources Statistics**

Lynda T. Carlson  
*Division Director*

Mary J. Frase  
*Deputy Director*

Stephen Cohen  
*Chief Statistician*

John E. Jankowski  
*Program Director, Research and Development Statistics Program*



### **Division of Science Resources Statistics (SRS)**

The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA

Tel: (703) 292-8780, FIRS: (800) 877-8339 | TDD: (800) 281-8749