

APPENDIX B

DETAILED STATISTICAL TABLES

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TABLE B-1. U.S. research and development expenditures, by performing sector and source of funds: 1993–2003

Year ^f	Performing sector:						Industry							U&C				Nonprofit			
	Funding sector:	Total	Federal	Industry			FFRDCs	U&C ^a						FFRDCs	Other nonprofit institutions				FFRDCs ^b		
				Total	Federal	Industry ^c		Other	government ^d	Industry	U&C	Nonprofit	Total		Federal	Industry	Nonprofit				
	Data column: ^g	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]		
Millions of current dollars																					
1993		165,723	16,531	115,435	20,844	94,591	1,965	20,487	12,302	1,557	1,391	3,708	1,530	5,289	5,267	2,843	567	1,857	749		
1994		169,195	16,355	117,392	20,261	97,131	2,202	21,595	12,987	1,622	1,456	3,937	1,594	5,294	5,599	2,911	617	2,071	758		
1995		183,611	16,904	129,830	21,178	108,652	2,273	22,603	13,582	1,750	1,547	4,109	1,616	5,367	5,827	2,847	671	2,308	808		
1996		197,330	16,585	142,371	21,356	121,015	2,297	23,702	14,073	1,860	1,671	4,434	1,665	5,395	6,209	2,906	730	2,574	772		
1997		212,134	16,819	155,409	21,798	133,611	2,130	24,866	14,517	1,921	1,807	4,836	1,785	5,463	6,626	3,014	809	2,804	821		
1998		226,321	17,362	167,102	22,086	145,016	2,078	26,151	15,147	1,970	1,947	5,168	1,919	5,559	7,225	3,281	880	3,064	843		
1999		243,517	17,851	180,682	20,506	160,176	2,039	28,135	16,223	2,095	2,077	5,630	2,110	5,652	8,175	3,761	975	3,440	993		
2000		264,634	17,917	197,548	17,127	180,421	2,000	30,566	17,637	2,238	2,165	6,211	2,316	5,742	9,404	4,447	1,103	3,854	1,465		
2001		274,211	21,048	198,505	16,899	181,606	2,020	33,518	19,654	2,382	2,177	6,778	2,528	6,225	10,702	5,302	1,110	4,290	2,192		
2002 preliminary		276,434	23,788	192,379	17,085	175,294	2,235	36,846	22,052	2,548	2,150	7,332	2,764	7,132	11,766	5,910	1,070	4,786	2,288		
2003 preliminary		283,795	24,959	193,729	17,314	176,415	2,383	40,262	24,499	2,710	2,123	7,944	2,986	7,421	12,661	6,323	1,077	5,261	2,381		
		[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]	[31]	[32]	[33]	[34]	[35]	[36]		
Millions of constant 1996 dollars																					
1993		176,207	17,576	122,738	22,163	100,575	2,089	21,783	13,080	1,655	1,479	3,943	1,627	5,624	5,601	3,023	603	1,975	796		
1994		176,226	17,035	122,271	21,103	101,168	2,294	22,492	13,527	1,689	1,516	4,101	1,660	5,514	5,831	3,032	642	2,157	790		
1995		187,168	17,231	132,345	21,588	110,756	2,317	23,041	13,845	1,784	1,577	4,188	1,647	5,471	5,940	2,902	684	2,353	823		
1996		197,330	16,585	142,371	21,356	121,015	2,297	23,702	14,073	1,860	1,671	4,434	1,665	5,395	6,209	2,906	730	2,574	772		
1997		208,076	16,497	152,436	21,381	131,055	2,089	24,391	14,239	1,885	1,773	4,744	1,751	5,358	6,500	2,956	793	2,750	805		
1998		219,303	16,824	161,921	21,401	140,519	2,014	25,340	14,677	1,909	1,886	5,008	1,860	5,387	7,001	3,179	853	2,969	817		
1999		232,697	17,058	172,653	19,594	153,059	1,948	26,885	15,503	2,002	1,985	5,380	2,016	5,401	7,812	3,594	932	3,287	949		
2000		247,578	16,763	184,816	16,023	168,793	1,871	28,596	16,500	2,094	2,025	5,811	2,166	5,372	8,798	4,161	1,032	3,606	1,371		
2001		250,614	19,237	181,423	15,445	165,978	1,847	30,634	17,963	2,177	1,989	6,195	2,310	5,690	9,781	4,846	1,015	3,921	2,003		
2002 preliminary		249,903	21,505	173,915	15,445	158,470	2,021	33,310	19,935	2,304	1,943	6,628	2,499	6,447	10,637	5,343	967	4,326	2,069		
2003 preliminary		253,161	22,264	172,817	15,445	157,372	2,126	35,916	21,854	2,417	1,894	7,087	2,664	6,620	11,294	5,641	961	4,693	2,124		

FFRDC federally funded research and development center; U&C universities and colleges

^a Adjustments have been made to university research and development (R&D) for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 and later years are not directly comparable with data for 1997 and earlier years. For fiscal year (FY) 1998, \$479 million in passed-through funds were reported. For FY 2003, \$990 million in passed-through funds are estimated.^b Beginning in 2001, data for nonprofit FFRDCs are reported by FFRDCs. In prior years, data were collected from Federal agencies supporting FFRDCs.^c Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D expenditures.^d Because of limitations in survey information, data on other government funding to other performers are not available and are consequently included in other sectors' support for their own R&D performance, e.g., other government support to nonprofits is included in nonprofit support for their own R&D.^e Includes all R&D expenditures of FFRDCs administered by academic institutions.^f Expenditure levels for academic and Federal Government performers are calendar-year approximations based on FY data. For Federal Government expenditures, approximation is equal to 75 percent of amount reported in same FY plus 25 percent of amount reported in subsequent FY. For academic expenditures, respective percentages are 50 and 50, because those FYs generally begin on July 1 instead of October 1.^g See historical database, table D, which is available in online version of this report at <http://www.nsf.gov/sbe/srs/nprdr/start.htm>, for full series of historical data arranged in same data columns defined in this and other tables.NOTE: Technical notes explaining methodological issues of measurement will be provided in National Science Foundation, *The Methodology Underlying the Measurement of R&D Expenditures: 2003* (Arlington, VA, forthcoming). Data are based on annual reports by performers except for nonprofit sector. For trend comparisons, use only historical data reported here. Do not use data published earlier.SOURCES: Data were derived from National Science Foundation, Division of Science Resources Statistics (NSF/SRS), *Research and Development in Industry 2001* (Arlington, VA, forthcoming); NSF/SRS, *Academic Research and Development Expenditures: Fiscal Year 2001* (Arlington, VA, 2003); NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003* (Arlington, VA, forthcoming); and NSF/SRS, Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97.

TABLE B-2. U.S. research and development expenditures, by source of funds and performing sector: 1993–2003

TABLE D-2. U.S. research and development expenditures, by source and performing sector: 1993-2003																					
Year ^f	Funding sector:	Total	Federal								Industry				U&C	Nonprofit			Other government ^a		
	Performing sector:	Total	Industry		U&C		Non-profit	Nonprofit	Industry		U&C ^b	Nonprofit	U&C ^b	Non-			U&C ^b				
			Total	Federal	Industry	FFRDCs			U&C ^b	FFRDCs ^c				Total	Industry ^e	U&C ^d		Nonprofit	Total	profit	U&C ^b
Millions of current dollars																					
1993		165,723	60,581	16,531	20,844	1,965	12,302	5,289	2,843	749	96,549	94,591	1,391	567	3,708	3,387	1,857	1,530	1,557		
1994		169,195	60,787	16,355	20,261	2,202	12,987	5,294	2,911	758	99,203	97,131	1,456	617	3,937	3,664	2,071	1,594	1,622		
1995		183,611	62,965	16,904	21,178	2,273	13,582	5,367	2,847	808	110,870	108,652	1,547	671	4,109	3,924	2,308	1,616	1,750		
1996		197,330	63,341	16,585	21,356	2,297	14,073	5,395	2,906	772	123,416	121,015	1,671	730	4,434	4,238	2,574	1,665	1,860		
1997		212,134	64,548	16,819	21,798	2,130	14,517	5,463	3,014	821	136,227	133,611	1,807	809	4,836	4,589	2,804	1,785	1,921		
1998		226,321	66,346	17,362	22,086	2,078	15,147	5,559	3,281	843	147,843	145,016	1,947	880	5,168	4,984	3,064	1,919	1,970		
1999		243,517	67,015	17,851	20,506	2,039	16,223	5,652	3,761	993	163,229	160,176	2,077	975	5,630	5,549	3,440	2,110	2,095		
2000		264,634	66,327	17,917	17,127	2,000	17,637	5,742	4,447	1,465	183,688	180,421	2,165	1,103	6,211	6,170	3,854	2,316	2,238		
2001		274,211	73,341	21,048	16,899	2,020	19,654	6,225	5,302	2,192	184,892	181,606	2,177	1,110	6,778	6,818	4,290	2,528	2,382		
2002 preliminary		276,434	80,490	23,788	17,085	2,235	22,052	7,132	5,910	2,288	178,514	175,294	2,150	1,070	7,332	7,550	4,786	2,764	2,548		
2003 preliminary		283,795	85,279	24,959	17,314	2,383	24,499	7,421	6,323	2,381	179,615	176,415	2,123	1,077	7,944	8,247	5,261	2,986	2,710		
		[19]	[40]	[20]	[22]	[24]	[26]	[31]	[33]	[36]	[41]	[23]	[28]	[34]	[29]	[42]	[35]	[30]	[27]		
Millions of constant 1996 dollars																					
1993		176,207	64,414	17,576	22,163	2,089	13,080	5,624	3,023	796	102,657	100,575	1,479	603	3,943	3,601	1,975	1,627	1,655		
1994		176,226	63,313	17,035	21,103	2,294	13,527	5,514	3,032	790	103,326	101,168	1,516	642	4,101	3,816	2,157	1,660	1,689		
1995		187,168	64,184	17,231	21,588	2,317	13,845	5,471	2,902	823	113,017	110,756	1,577	684	4,188	4,000	2,353	1,647	1,784		
1996		197,330	63,341	16,585	21,356	2,297	14,073	5,395	2,906	772	123,416	121,015	1,671	730	4,434	4,238	2,574	1,665	1,860		
1997		208,076	63,313	16,497	21,381	2,089	14,239	5,358	2,956	805	133,622	131,055	1,773	793	4,744	4,501	2,750	1,751	1,885		
1998		219,303	64,289	16,824	21,401	2,014	14,677	5,387	3,179	817	143,258	140,519	1,886	853	5,008	4,829	2,969	1,860	1,909		
1999		232,697	64,037	17,058	19,594	1,948	15,503	5,401	3,594	949	155,976	153,059	1,985	932	5,380	5,303	3,287	2,016	2,002		
2000		247,578	62,052	16,763	16,023	1,871	16,500	5,372	4,161	1,371	171,849	168,793	2,025	1,032	5,811	5,772	3,606	2,166	2,094		
2001		250,614	67,030	19,237	15,445	1,847	17,963	5,690	4,846	2,003	168,982	165,978	1,989	1,015	6,195	6,231	3,921	2,310	2,177		
2002 preliminary		249,903	72,765	21,505	15,445	2,021	19,935	6,447	5,343	2,069	161,381	158,470	1,943	967	6,628	6,825	4,326	2,499	2,304		
2003 preliminary		253,161	76,074	22,264	15,445	2,126	21,854	6,620	5,641	2,124	160,227	157,372	1,894	961	7,087	7,357	4,693	2,664	2,417		

FFRDC federally funded research and development center; U&C universities and colleges

^a Because of limitations in survey information, data on other government funding to other performers are not available and are consequently included in other sectors' support for their own research and development (R&D) performance. For example, other government support to nonprofits is included in nonprofits' support for their own R&D.^b Adjustments have been made to university R&D for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 and later years are not directly comparable with data for 1997 and earlier years. For fiscal year (FY) 1998, \$479 million in passed-through funds were reported. For FY 2003, \$990 million in passed-through funds are estimated.^c Includes all R&D expenditures of FFRDCs administered by academic institutions.^d Beginning in 2001, data for nonprofit FFRDCs are reported by FFRDCs. In prior years, data were collected from Federal agencies supporting FFRDCs.^e Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D expenditures.^f Expenditure levels for academic and Federal Government performers are calendar-year approximations based on FY data. For Federal Government expenditures, approximation is equal to 75 percent of amount reported in same FY plus 25 percent of amount reported in subsequent FY. For academic expenditures, the respective percentages are 50 and 50, because their FYs generally begin on July 1 instead of October 1.^g See historical database, table D, which is available in the online version of this report at <http://www.nsf.gov/sbe/srs/hprdr/start.htm>, for full series of historical data arranged in same data columns defined in this and other tables.NOTE: Technical notes explaining methodological issues of measurement will be provided in National Science Foundation, *The Methodology Underlying the Measurement of R&D Expenditures: 2003* (Arlington, VA, forthcoming).

Data are based on annual reports by performers except for nonprofit sector. For trend comparisons, use only historical data reported here. Do not use data published earlier.

SOURCES: Data were derived from National Science Foundation, Division of Science Resources Statistics (NSF/SRS), *Research and Development in Industry 2001* (Arlington, VA, forthcoming); NSF/SRS, *Academic Research and Development Expenditures: Fiscal Year 2001* (Arlington, VA, 2003); NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003* (Arlington, VA, forthcoming); and NSF/SRS, Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97.

TABLE B-3. U.S. basic research expenditures, by performing sector and source of funds: 1993–2003

TABLE D OF DOD BASIC RESEARCH EXPENDITURES, BY PERFORMING SECTOR AND SOURCE OF FUNDS, 1993-2003																			
Year ^f	Performing sector:	Total	Federal	Industry ^a			Industry FFRDCs	U&C ^b					U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs	
	Funding sector:	Total	Federal	Total	Federal	Industry ^c	Federal	Total	Federal	Other government ^d				Federal ^e	Total	Federal	Industry	Nonprofit	Federal
										U&C	Nonprofit	Other	U&C						
Data column: ^g	[43]	[44]	[45]	[46]	[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	
Millions of current dollars																			
1993		28,739	2,621	6,427	466	5,961	492	13,643	8,637	952	851	2,268	936	2,953	2,532	1,157	324	1,051	72
1994		29,644	2,547	6,514	436	6,078	503	14,393	9,135	991	889	2,405	973	2,934	2,678	1,137	356	1,186	75
1995		29,602	2,689	5,569	190	5,379	530	15,139	9,629	1,069	945	2,509	987	2,702	2,899	1,170	390	1,338	75
1996		32,790	2,680	7,498	650	6,848	708	16,033	10,087	1,148	1,032	2,738	1,028	2,606	3,187	1,248	428	1,510	79
1997		36,918	2,746	9,795	1,029	8,766	625	17,651	10,912	1,250	1,177	3,149	1,163	2,671	3,322	1,317	449	1,557	108
1998		35,256	3,003	5,853	1,002	4,851	568	19,309	11,875	1,331	1,315	3,491	1,296	2,660	3,651	1,461	489	1,701	213
1999		38,710	3,347	6,562	1,200	5,362	557	20,900	12,773	1,429	1,417	3,841	1,439	2,765	4,185	1,734	541	1,910	397
2000		42,321	3,765	6,945	928	6,017	547	22,726	13,836	1,539	1,488	4,271	1,592	2,873	4,852	2,099	612	2,140	616
2001		47,112	4,317	7,911	754	7,157	552	24,862	15,299	1,643	1,501	4,675	1,744	3,041	5,518	2,520	616	2,382	910
2002 preliminary		50,807	4,617	7,671	762	6,908	611	27,369	17,122	1,765	1,489	5,079	1,915	3,484	6,105	2,854	594	2,657	950
2003 preliminary		54,103	4,463	7,725	773	6,952	651	29,940	19,022	1,877	1,470	5,503	2,069	3,625	6,709	3,190	598	2,921	988
		[61]	[62]	[63]	[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]
Millions of constant 1996 dollars																			
1993		30,557	2,787	6,834	495	6,338	523	14,506	9,183	1,012	905	2,411	995	3,140	2,692	1,230	344	1,117	77
1994		30,876	2,653	6,785	454	6,331	524	14,991	9,515	1,032	926	2,505	1,014	3,056	2,790	1,184	370	1,235	78
1995		30,176	2,741	5,677	194	5,483	540	15,432	9,815	1,089	963	2,558	1,006	2,754	2,955	1,193	398	1,364	77
1996		32,790	2,680	7,498	650	6,848	708	16,033	10,087	1,148	1,032	2,738	1,028	2,606	3,187	1,248	428	1,510	79
1997		36,212	2,693	9,608	1,009	8,598	613	17,313	10,704	1,226	1,155	3,088	1,140	2,620	3,259	1,291	440	1,527	106
1998		34,163	2,910	5,672	971	4,701	550	18,710	11,507	1,289	1,274	3,383	1,256	2,578	3,538	1,415	474	1,649	206
1999		36,990	3,198	6,271	1,147	5,124	533	19,971	12,206	1,366	1,354	3,670	1,376	2,642	3,999	1,657	517	1,825	379
2000		39,593	3,522	6,497	868	5,629	512	21,262	12,945	1,440	1,392	3,995	1,490	2,688	4,539	1,964	573	2,002	576
2001		43,058	3,945	7,230	689	6,541	505	22,723	13,983	1,502	1,372	4,273	1,594	2,780	5,043	2,303	563	2,177	832
2002 preliminary		45,931	4,174	6,934	689	6,245	552	24,742	15,479	1,596	1,346	4,591	1,731	3,150	5,519	2,580	537	2,402	859
2003 preliminary		48,263	3,982	6,891	689	6,202	581	26,709	16,968	1,674	1,312	4,909	1,845	3,234	5,985	2,846	534	2,606	882

FFRDC = federally funded research and development center; U&C = universities and colleges

^a Character-of-work estimates for industry have been revised for 1998 and later years; hence these data are not directly comparable with data for 1997 and earlier years.^b Adjustments have been made to university research and development (R&D) for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also was revised for 1998 and later years; hence these data are not directly comparable with data for 1997 and earlier years.^c Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D expenditures.^d Because of limitations in survey information, data on other government funding to other performers are not available and are consequently included in other sectors' support for their own R&D performance. For example, other government support to nonprofits is included in nonprofits' support for their own R&D.^e Includes all R&D expenditures of FFRDCs administered by academic institutions.^f Expenditure levels for academic and Federal Government performers are calendar-year approximations based on fiscal-year data. For Federal Government expenditures, approximation is equal to 75 percent of amount reported in same fiscal year (FY) plus 25 percent of amount reported in subsequent FY. For academic expenditures, respective percentages are 50 and 50, because their FYs generally begin on July 1 instead of October 1.^g See historical database, table D, available in online version of this report at <http://www.nsf.gov/sbe/srs/nprdr/start.htm>, for full series of historical data arranged in same data columns defined in this and other tables.NOTES: Technical notes explaining methodological issues of measurement will be provided in National Science Foundation, *The Methodology Underlying the Measurement of R&D Expenditures: 2003* (Arlington, VA, forthcoming). Data are based on annual reports by performers except for nonprofit sector. For trend comparisons, use only historical data reported here. Do not use data published earlier.SOURCES: Data were derived from National Science Foundation, Division of Science Resources Statistics (NSF/SRS), *Research and Development in Industry 2001* (Arlington, VA, forthcoming); NSF/SRS, *Academic Research and Development Expenditures: Fiscal Year 2001* (Arlington, VA, 2003); NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003* (Arlington, VA, forthcoming); and NSF/SRS, Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97.

TABLE B-4. U.S. basic research expenditures, by source of funds and performing sector: 1993–2003

Year ^e	Funding sector:		Federal								Industry				U&C	Nonprofit			Other government ^a
	Performing sector:	Total	Industry				U&C		Nonprofit										
			Total	Federal	Industry	FFRDCs	U&C ^b	FFRDCs ^c	Nonprofit	FFRDCs	Total	Industry ^d	U&C ^d	Nonprofit	U&C ^b	Total	Nonprofit	U&C ^b	U&C ^b
	Data column: ^f	[43]	[79]	[44]	[46]	[48]	[50]	[55]	[57]	[60]	[80]	[47]	[52]	[58]	[53]	[81]	[59]	[54]	[51]
Millions of current dollars																			
1993		28,739	16,400	2,621	466	492	8,637	2,953	1,157	72	7,136	5,961	851	324	2,268	1,987	1,051	936	952
1994		29,644	16,773	2,547	436	503	9,135	2,934	1,137	75	7,323	6,078	889	356	2,405	2,159	1,186	973	991
1995		29,602	17,030	2,689	190	530	9,629	2,702	1,170	75	6,714	5,379	945	390	2,509	2,325	1,338	987	1,069
1996		32,790	18,037	2,680	650	708	10,087	2,606	1,248	79	8,308	6,848	1,032	428	2,738	2,538	1,510	1,028	1,148
1997		36,918	19,394	2,746	1,029	625	10,912	2,671	1,317	108	10,392	8,766	1,177	449	3,149	2,719	1,557	1,163	1,250
1998		35,256	20,779	3,003	1,002	568	11,875	2,660	1,461	213	6,655	4,851	1,315	489	3,491	2,998	1,701	1,296	1,331
1999		38,710	22,770	3,347	1,200	557	12,773	2,765	1,734	397	7,320	5,362	1,417	541	3,841	3,349	1,910	1,439	1,429
2000		42,321	24,662	3,765	928	547	13,836	2,873	2,099	616	8,118	6,017	1,488	612	4,271	3,732	2,140	1,592	1,539
2001		47,112	27,393	4,317	754	552	15,299	3,041	2,520	910	9,274	7,157	1,501	616	4,675	4,126	2,382	1,744	1,643
2002 preliminary		50,807	30,400	4,617	762	611	17,122	3,484	2,854	950	8,992	6,908	1,489	594	5,079	4,572	2,657	1,915	1,765
2003 preliminary		54,103	32,713	4,463	773	651	19,022	3,625	3,190	988	9,021	6,952	1,470	598	5,503	4,989	2,921	2,069	1,877
		[61]	[82]	[62]	[64]	[66]	[68]	[73]	[75]	[78]	[83]	[65]	[70]	[76]	[71]	[84]	[77]	[72]	[69]
Millions of constant 1996 dollars																			
1993		30,557	17,438	2,787	495	523	9,183	3,140	1,230	77	7,587	6,338	905	344	2,411	2,112	1,117	995	1,012
1994		30,876	17,470	2,653	454	524	9,515	3,056	1,184	78	7,627	6,331	926	370	2,505	2,249	1,235	1,014	1,032
1995		30,176	17,359	2,741	194	540	9,815	2,754	1,193	77	6,844	5,483	963	398	2,558	2,370	1,364	1,006	1,089
1996		32,790	18,037	2,680	650	708	10,087	2,606	1,248	79	8,308	6,848	1,032	428	2,738	2,538	1,510	1,028	1,148
1997		36,212	19,023	2,693	1,009	613	10,704	2,620	1,291	106	10,193	8,598	1,155	440	3,088	2,667	1,527	1,140	1,226
1998		34,163	20,135	2,910	971	550	11,507	2,578	1,415	206	6,448	4,701	1,274	474	3,383	2,905	1,649	1,256	1,289
1999		36,990	21,759	3,198	1,147	533	12,206	2,642	1,657	379	6,995	5,124	1,354	517	3,670	3,200	1,825	1,376	1,366
2000		39,593	23,072	3,522	868	512	12,945	2,688	1,964	576	7,594	5,629	1,392	573	3,995	3,492	2,002	1,490	1,440
2001		43,058	25,036	3,945	689	505	13,983	2,780	2,303	832	8,476	6,541	1,372	563	4,273	3,771	2,177	1,594	1,502
2002 preliminary		45,931	27,482	4,174	689	552	15,479	3,150	2,580	859	8,129	6,245	1,346	537	4,591	4,133	2,402	1,731	1,596
2003 preliminary		48,263	29,182	3,982	689	581	16,968	3,234	2,846	882	8,047	6,202	1,312	534	4,909	4,451	2,606	1,845	1,674

FFRDC federally funded research and development center; U&C universities and colleges

^a Because of limitations in survey information, data on other government funding to other performers are not available and are consequently included in other sectors' support for their own research and development (R&D) performance. For example, other government support to nonprofits is included in nonprofits' support for their own R&D.^b Adjustments have been made to university R&D for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also was revised for 1998 and later years; hence these data are not directly comparable with data for 1997 and earlier years.^c Includes all R&D expenditures of FFRDCs administered by academic institutions.^d Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D expenditures. Character-of-work estimates for industry have been revised for 1998 and later years; hence these data are not directly comparable with data for 1997 and earlier years.^e Expenditure levels for academic and Federal Government performers are calendar-year approximations based on fiscal-year data. For Federal Government expenditures, approximation is equal to 75 percent of amount reported in same fiscal year (FY) plus 25 percent of amount reported in subsequent FY. For academic expenditures, the respective percentages are 50 and 50, because their FYs generally begin on July 1 instead of October 1.^f See historical database, table D, which is available in online version of this report at <http://www.nsf.gov/sbe/srs/nprdr/start.htm>, for full series of historical data arranged in same data columns defined in this and other tables.NOTES: Technical notes explaining methodological issues of measurement will be provided in National Science Foundation, *The Methodology Underlying the Measurement of R&D Expenditures: 2003* (Arlington, VA, forthcoming). Data are based on annual reports by performers except for nonprofit sector. For trend comparisons, use only historical data reported here. Do not use data published earlier.SOURCES: Data were derived from National Science Foundation, Division of Science Resources Statistics (NSF/SRS), *Research and Development in Industry, 2001* (Arlington, VA, forthcoming); NSF/SRS, *Academic Research and Development Expenditures: Fiscal Year 2001* (Arlington, VA, 2003); NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003* (Arlington, VA, forthcoming); and NSF/SRS, Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97.

TABLE B-5. U.S. applied research expenditures, by performing sector and source of funds: 1993–2003

Year ^f	Performing sector:	Total	Federal	Industry ^a			Industry FFRDCs	U&C ^b						U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:	Total	Federal	Total	Federal	Industry ^c	Federal	Total	Federal	Other government ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal	Industry	Nonprofit	Federal
	Data column: ^g	[85]	[86]	[87]	[88]	[89]	[90]	[91]	[92]	[93]	[94]	[95]	[96]	[97]	[98]	[99]	[100]	[101]	[102]
Millions of current dollars																			
1993		37,280	4,838	24,251	4,295	19,956	435	5,146	2,539	496	443	1,181	487	962	1,544	900	148	497	103
1994		36,615	4,985	22,988	3,616	19,372	503	5,387	2,640	517	464	1,256	508	982	1,659	960	158	541	111
1995		40,932	4,952	26,919	3,164	23,755	535	5,655	2,775	559	494	1,311	516	1,050	1,692	934	170	589	129
1996		43,165	4,872	29,010	3,640	25,370	231	5,879	2,859	584	524	1,390	522	1,270	1,781	960	182	640	122
1997		46,542	4,997	32,430	2,648	29,782	213	5,511	2,549	551	517	1,384	510	1,337	1,926	1,011	205	711	128
1998		46,353	5,146	32,208	2,632	29,576	230	5,215	2,286	524	518	1,375	511	1,372	2,060	1,060	223	777	123
1999		51,865	5,530	36,418	3,109	33,309	274	5,843	2,740	546	542	1,467	550	1,251	2,419	1,300	247	872	130
2000		56,481	6,105	38,651	2,521	36,130	269	6,661	3,349	573	554	1,591	593	1,330	3,087	1,831	279	977	217
2001		64,401	7,164	43,486	3,603	39,883	916	7,366	3,839	606	554	1,724	643	1,548	3,570	2,202	281	1,087	351
2002 preliminary		65,559	8,083	42,140	3,643	38,497	955	8,146	4,418	642	542	1,848	697	1,938	3,933	2,448	271	1,213	365
2003 preliminary		67,780	8,837	42,434	3,691	38,743	1,040	8,927	4,954	683	535	2,002	753	1,968	4,215	2,609	273	1,333	359
		[103]	[104]	[105]	[106]	[107]	[108]	[109]	[110]	[111]	[112]	[113]	[114]	[115]	[116]	[117]	[118]	[119]	[120]
Millions of constant 1996 dollars																			
1993		39,638	5,144	25,785	4,567	21,219	463	5,472	2,700	527	471	1,256	518	1,023	1,642	957	157	528	109
1994		38,136	5,192	23,943	3,766	20,177	524	5,611	2,750	539	484	1,308	530	1,022	1,728	999	165	563	116
1995		41,725	5,048	27,440	3,225	24,215	545	5,764	2,829	569	503	1,337	526	1,070	1,725	952	173	600	131
1996		43,165	4,872	29,010	3,640	25,370	231	5,879	2,859	584	524	1,390	522	1,270	1,781	960	182	640	122
1997		45,652	4,901	31,810	2,597	29,212	209	5,405	2,500	540	507	1,357	501	1,312	1,890	992	201	697	126
1998		44,915	4,986	31,209	2,550	28,659	223	5,053	2,215	508	502	1,333	495	1,329	1,996	1,027	216	752	119
1999		49,560	5,284	34,800	2,971	31,829	262	5,584	2,618	522	517	1,402	525	1,196	2,311	1,242	236	833	124
2000		52,841	5,712	36,160	2,359	33,801	251	6,232	3,133	536	519	1,489	555	1,244	2,888	1,713	261	914	203
2001		58,859	6,548	39,744	3,293	36,451	837	6,732	3,509	554	506	1,576	588	1,414	3,263	2,012	257	994	321
2002 preliminary		59,267	7,307	38,095	3,293	34,802	864	7,364	3,994	581	490	1,670	630	1,752	3,555	2,213	245	1,096	330
2003 preliminary		60,464	7,883	37,854	3,293	34,561	928	7,963	4,420	609	477	1,786	671	1,755	3,760	2,327	244	1,189	320

FFRDC federally funded research and development center; U&C universities and colleges

^a Character-of-work estimates for industry have been revised for 1998 and later years; hence these data are not directly comparable with data for 1997 and earlier years.^b Adjustments have been made to university research and development (R&D) for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also was revised for 1998 and later years; hence these data are not directly comparable with data for 1997 and earlier years.^c Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D expenditures.^d Because of limitations in survey information, data on other government funding to other performers are not available and are consequently included in other sectors' support for their own R&D performance. For example, other government support to nonprofits is included in nonprofits' support for their own R&D.^e Includes all R&D expenditures of FFRDCs administered by academic institutions.^f Expenditure levels for academic and Federal Government performers are calendar-year approximations based on fiscal-year data. For Federal Government expenditures, approximation is equal to 75 percent of amount reported in same fiscal year (FY) plus 25 percent of amount reported in subsequent FY. For academic expenditures, respective percentages are 50 and 50, because their FYs generally begin on July 1 instead of October 1.^g See historical database, table D, which is available in online version of this report at <http://www.nsf.gov/sbe/srs/nprdr/start.htm>, for full series of historical data arranged in same data columns defined in this and other tables.NOTES: Technical notes explaining methodological issues of measurement will be provided in National Science Foundation, *The Methodology Underlying the Measurement of R&D Expenditures: 2003* (Arlington, VA, forthcoming). Data are based on annual reports by performers except for nonprofit sector. For trend comparisons, use only historical data reported here. Do not use data published earlier.SOURCES: Data were derived from National Science Foundation, Division of Science Resources Statistics (NSF/SRS), *Research and Development in Industry 2001* (Arlington, VA, forthcoming); NSF/SRS, *Academic Research and Development Expenditures: Fiscal Year 2001* (Arlington, VA, 2003); NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003* (Arlington, VA, forthcoming); and NSF/SRS, Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97.

TABLE B-6. U.S. applied research expenditures, by source of funds and performing sectors: 1993–2003

Year ^e	Funding sector:	Total	Federal								Industry				U&C	Nonprofits			Other government ^a
	Performing sector:	Total	Total	Federal	Industry	FFRDCs	U&C ^b	FFRDCs ^c	Nonprofit	FFRDCs	Total	Industry ^d	U&C ^d	Nonprofit	U&C ^b	Total	Nonprofit	U&C ^b	U&C ^b
	Data column: ^f	[85]	[121]	[86]	[88]	[90]	[92]	[97]	[99]	[102]	[122]	[89]	[94]	[100]	[95]	[123]	[101]	[96]	[93]
Millions of current dollars																			
1993		37,280	14,089	4,838	4,295	435	2,539	962	900	103	20,547	19,956	443	148	1,181	984	497	487	496
1994		36,615	13,805	4,985	3,616	503	2,640	982	960	111	19,995	19,372	464	158	1,256	1,049	541	508	517
1995		40,932	13,463	4,952	3,164	535	2,775	1,050	934	129	24,418	23,755	494	170	1,311	1,104	589	516	559
1996		43,165	13,949	4,872	3,640	231	2,859	1,270	960	122	26,076	25,370	524	182	1,390	1,162	640	522	584
1997		46,542	12,888	4,997	2,648	213	2,549	1,337	1,011	128	30,504	29,782	517	205	1,384	1,221	711	510	551
1998		46,353	12,860	5,146	2,632	230	2,286	1,372	1,060	123	30,317	29,576	518	223	1,375	1,287	777	511	524
1999		51,865	14,332	5,530	3,109	274	2,740	1,251	1,300	130	34,098	33,309	542	247	1,467	1,421	872	550	546
2000		56,481	15,783	6,105	2,521	269	3,349	1,330	1,831	217	36,964	36,130	554	279	1,591	1,570	977	593	573
2001		64,401	19,623	7,164	3,603	916	3,839	1,548	2,202	351	40,718	39,883	554	281	1,724	1,730	1,087	643	606
2002 preliminary		65,559	21,849	8,083	3,643	955	4,418	1,938	2,448	365	39,310	38,497	542	271	1,848	1,909	1,213	697	642
2003 preliminary		67,780	23,458	8,837	3,691	1,040	4,954	1,968	2,609	359	39,551	38,743	535	273	2,002	2,086	1,333	753	683
		[103]	[124]	[104]	[106]	[108]	[110]	[115]	[117]	[120]	[125]	[107]	[112]	[118]	[113]	[126]	[119]	[114]	[111]
Millions of constant 1996 dollars																			
1993		39,638	14,980	5,144	4,567	463	2,700	1,023	957	109	21,847	21,219	471	157	1,256	1,047	528	518	527
1994		38,136	14,378	5,192	3,766	524	2,750	1,022	999	116	20,826	20,177	484	165	1,308	1,093	563	530	539
1995		41,725	13,724	5,048	3,225	545	2,829	1,070	952	131	24,891	24,215	503	173	1,337	1,126	600	526	569
1996		43,165	13,949	4,872	3,640	231	2,859	1,270	960	122	26,076	25,370	524	182	1,390	1,162	640	522	584
1997		45,652	12,641	4,901	2,597	209	2,500	1,312	992	126	29,920	29,212	507	201	1,357	1,197	697	501	540
1998		44,915	12,461	4,986	2,550	223	2,215	1,329	1,027	119	29,377	28,659	502	216	1,333	1,247	752	495	508
1999		49,560	13,695	5,284	2,971	262	2,618	1,196	1,242	124	32,583	31,829	517	236	1,402	1,358	833	525	522
2000		52,841	14,766	5,712	2,359	251	3,133	1,244	1,713	203	34,582	33,801	519	261	1,489	1,469	914	555	536
2001		58,859	17,934	6,548	3,293	837	3,509	1,414	2,012	321	37,214	36,451	506	257	1,576	1,581	994	588	554
2002 preliminary		59,267	19,752	7,307	3,293	864	3,994	1,752	2,213	330	35,537	34,802	490	245	1,670	1,726	1,096	630	581
2003 preliminary		60,464	20,926	7,883	3,293	928	4,420	1,755	2,327	320	35,282	34,561	477	244	1,786	1,861	1,189	671	609

FFRDC federally funded research and development center; U&C universities and colleges

^a Because of limitations in survey information, data on other government funding to other performers are not available and are consequently included in other sectors' support for their own research and development (R&D) performance. For example, other government support to nonprofits is included in nonprofits' support for their own R&D.^b Adjustments have been made to university R&D for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also was revised for 1998 and later years; hence these data are not directly comparable with data for 1997 and earlier years.^c Includes all R&D expenditures of FFRDCs administered by academic institutions.^d Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D expenditures. Character-of-work estimates for industry have been revised for 1998 and later years; hence these data are not directly comparable with data for 1997 and earlier years.^e Expenditure levels for academic and Federal Government performers are calendar-year approximations based on fiscal-year data. For Federal Government expenditures, approximation is equal to 75 percent of amount reported in same fiscal (FY) plus 25 percent of amount reported in subsequent FY. For academic expenditures, respective percentages are 50 and 50, because their FYs generally begin on July 1 instead of October 1.^f See historical database, table D, which is available in online version of this report at <http://www.nsf.gov/sbe/srs/nprdr/start.htm>, for full series of historical data arranged in same data columns as defined in this and other tables.NOTES: Technical notes explaining methodological issues of measurement will be provided in National Science Foundation, *The Methodology Underlying the Measurement of R&D Expenditures: 2003* (Arlington, VA, forthcoming). Data are based on annual reports by performers except for nonprofit sector. For trend comparisons, use only historical data reported here. Do not use data published earlier.SOURCES: Data were derived from National Science Foundation, Division of Science Resources Statistics (NSF/SRS), *Research and Development in Industry, 2001* (Arlington, VA, forthcoming); NSF/SRS, *Academic Research and Development Expenditures: Fiscal Year 2001* (Arlington, VA, 2003); NSF/SRS, *Federal Funds for Research and Development: FY 2001, 2002, and 2003* (Arlington, VA, forthcoming); and NSF/SRS, Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97.

TABLE B-7. U.S. development expenditures, by performing sector and source of funds: 1993–2003

Year ^f	Performing sector:	Total	Federal	Industry ^a				Industry FFRDCs	U&C ^b					U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:	Total	Federal	Total	Federal	Industry ^c	Federal	Total	Federal	Other government ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal	Industry	Nonprofit	Federal
	Data column: ^g	[127]	[128]	[129]	[130]	[131]	[132]	[133]	[134]	[135]	[136]	[137]	[138]	[139]	[140]	[141]	[142]	[143]	[144]
Millions of current dollars																			
1993		99,704	9,071	84,757	16,083	68,674	1,038	1,698	1,126	109	97	259	107	1,374	1,191	787	95	309	574
1994		102,936	8,823	87,890	16,209	71,681	1,196	1,815	1,212	114	102	276	112	1,378	1,261	815	103	343	573
1995		113,077	9,262	97,342	17,824	79,518	1,208	1,810	1,178	123	108	288	113	1,616	1,236	744	111	381	603
1996		121,375	9,033	105,863	17,066	88,797	1,358	1,790	1,127	128	115	305	115	1,520	1,241	698	120	423	571
1997		128,674	9,077	113,184	18,121	95,063	1,292	1,705	1,055	121	113	304	112	1,454	1,378	687	155	536	585
1998		144,712	9,214	129,041	18,452	110,589	1,280	1,628	985	115	114	302	112	1,527	1,515	760	168	586	507
1999		152,941	8,974	137,701	16,196	121,505	1,208	1,392	711	120	119	322	121	1,636	1,570	726	187	658	467
2000		165,827	8,047	151,952	13,678	138,274	1,185	1,179	452	126	122	349	130	1,540	1,461	513	211	737	632
2001		162,698	9,567	147,108	12,542	134,566	552	1,290	516	133	122	378	141	1,636	1,614	581	212	821	931
2002 preliminary		160,068	11,088	142,569	12,680	129,889	669	1,331	512	141	119	406	153	1,710	1,728	608	205	916	974
2003 preliminary		161,911	11,658	143,569	12,850	130,719	692	1,395	523	150	117	439	165	1,828	1,736	524	206	1,006	1,034
		[145]	[146]	[147]	[148]	[149]	[150]	[151]	[152]	[153]	[154]	[155]	[156]	[157]	[158]	[159]	[160]	[161]	[162]
Millions of constant 1996 dollars																			
1993		106,012	9,645	90,119	17,100	73,019	1,104	1,806	1,197	116	103	276	114	1,461	1,267	836	101	329	611
1994		107,214	9,190	91,543	16,883	74,660	1,246	1,890	1,262	118	106	287	116	1,436	1,314	849	107	358	596
1995		115,267	9,441	99,227	18,169	81,058	1,231	1,845	1,201	125	110	293	115	1,647	1,260	758	113	389	615
1996		121,375	9,033	105,863	17,066	88,797	1,358	1,790	1,127	128	115	305	115	1,520	1,241	698	120	423	571
1997		126,213	8,903	111,019	17,774	93,245	1,267	1,672	1,035	119	111	298	110	1,426	1,351	673	152	526	573
1998		140,225	8,928	125,040	17,880	107,160	1,240	1,578	955	112	110	293	109	1,480	1,468	736	163	568	491
1999		146,145	8,575	131,583	15,477	116,106	1,154	1,330	679	115	114	308	115	1,563	1,501	693	178	629	446
2000		155,140	7,529	142,159	12,796	129,362	1,108	1,103	423	118	114	327	122	1,440	1,367	480	197	690	591
2001		148,697	8,744	134,449	11,463	122,986	504	1,179	472	122	111	346	129	1,496	1,475	531	194	750	851
2002 preliminary		144,705	10,024	128,885	11,463	117,423	605	1,203	463	127	108	367	138	1,546	1,562	549	185	828	880
2003 preliminary		144,434	10,400	128,072	11,463	116,609	617	1,244	466	134	105	392	147	1,630	1,549	467	184	898	922

FFRDC federally funded research and development center; U&C universities and colleges

^a Character-of-work estimates for industry have been revised for 1998 and later years; hence these data are not directly comparable with data for 1997 and earlier years.^b Adjustments have been made to university research and development (R&D) for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also was revised for 1998 and later years; hence these data are not directly comparable with data for 1997 and earlier years.^c Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D expenditures.^d Because of limitations in survey information, data on other government funding to other performers are not available and are consequently included in other sectors' support for their own R&D performance. For example, other government support to nonprofits is included in nonprofits' support for their own R&D.^e Includes all R&D expenditures of FFRDCs administered by academic institutions.^f Expenditure levels for academic and Federal Government performers are calendar-year approximations based on fiscal-year data. For Federal Government expenditures, approximation is equal to 75 percent of amount reported in same fiscal year (FY) plus 25 percent of amount reported in subsequent FY. For academic expenditures, respective percentages are 50 and 50, because their FYs generally begin on July 1 instead of October 1.^g See historical database, table D, which is available in online version of this report at <http://www.nsf.gov/sbe/srs/nprdr/start.htm>, for full series of historical data arranged in same data columns defined in this and other tables.NOTES: Technical notes explaining methodological issues of measurement will be provided in National Science Foundation, *The Methodology Underlying the Measurement of R&D Expenditures: 2003* (Arlington, VA, forthcoming). Data are based on annual reports by performers except for nonprofit sector. For trend comparisons, use only historical data reported here. Do not use data published earlier.SOURCES: Data were derived from National Science Foundation, Division of Science Resources Statistics (NSF/SRS), *Research and Development in Industry, 2001* (Arlington, VA, forthcoming); NSF/SRS, *Academic Research and Development Expenditures: Fiscal Year 2001* (Arlington, VA, 2003); NSF/SRS, *Federal Funds for Research and Development: FY 2001, 2002, and 2003* (Arlington, VA, forthcoming); and NSF/SRS, Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97.

TABLE B-8. U.S. development expenditures, by source of funds and performing sector: 1993–2003

Year ^e	Funding sector:	Total	Federal								Industry				U&C	Nonprofit			Other government ^a
	Performing sector:	Total	Industry				U&C				Nonprofit				U&C ^b	Nonprofit			U&C ^b
	Data column: ^f	Total	Total	Federal	Industry	FFRDCs	U&C ^b	FFRDCs ^c	Nonprofit	FFRDCs	Total	Industry ^d	U&C ^d	Nonprofit	U&C ^b	Total	Nonprofit	U&C ^b	U&C ^b
		[127]	[163]	[128]	[130]	[132]	[134]	[139]	[141]	[144]	[164]	[131]	[136]	[142]	[137]	[165]	[143]	[138]	[135]
Millions of current dollars																			
1993		99,704	30,093	9,071	16,083	1,038	1,126	1,374	787	574	68,866	68,674	97	95	259	416	309	107	109
1994		102,936	30,209	8,823	16,209	1,196	1,212	1,378	815	573	71,886	71,681	102	103	276	455	343	112	114
1995		113,077	32,472	9,262	17,824	1,208	1,178	1,616	744	603	79,738	79,518	108	111	288	495	381	113	123
1996		121,375	31,355	9,033	17,066	1,358	1,127	1,520	698	571	89,032	88,797	115	120	305	538	423	115	128
1997		128,674	32,267	9,077	18,121	1,292	1,055	1,454	687	585	95,331	95,063	113	155	304	648	536	112	121
1998		144,712	32,707	9,214	18,452	1,280	985	1,527	760	507	110,871	110,589	114	168	302	698	586	112	115
1999		152,941	29,911	8,974	16,196	1,208	711	1,636	726	467	121,810	121,505	119	187	322	779	658	121	120
2000		165,827	25,878	8,047	13,678	1,185	452	1,540	513	632	138,607	138,274	122	211	349	868	737	130	126
2001		162,698	26,325	9,567	12,542	552	516	1,636	581	931	134,900	134,566	122	212	378	962	821	141	133
2002 preliminary		160,068	28,240	11,088	12,680	669	512	1,710	608	974	130,213	129,889	119	205	406	1,069	916	153	141
2003 preliminary		161,911	29,107	11,658	12,850	692	523	1,828	524	1,034	131,043	130,719	117	206	439	1,172	1,006	165	150
		[145]	[166]	[146]	[148]	[150]	[152]	[157]	[159]	[162]	[167]	[149]	[154]	[160]	[155]	[168]	[161]	[156]	[153]
Millions of constant 1996 dollars																			
1993		106,012	31,997	9,645	17,100	1,104	1,197	1,461	836	611	73,223	73,019	103	101	276	443	329	114	116
1994		107,214	31,464	9,190	16,883	1,246	1,262	1,436	849	596	74,873	74,660	106	107	287	474	358	116	118
1995		115,267	33,101	9,441	18,169	1,231	1,201	1,647	758	615	81,282	81,058	110	113	293	504	389	115	125
1996		121,375	31,355	9,033	17,066	1,358	1,127	1,520	698	571	89,032	88,797	115	120	305	538	423	115	128
1997		126,213	31,650	8,903	17,774	1,267	1,035	1,426	673	573	93,508	93,245	111	152	298	636	526	110	119
1998		140,225	31,693	8,928	17,880	1,240	955	1,480	736	491	107,433	107,160	110	163	293	677	568	109	112
1999		146,145	28,582	8,575	15,477	1,154	679	1,563	693	446	116,398	116,106	114	178	308	744	629	115	115
2000		155,140	24,210	7,529	12,796	1,108	423	1,440	480	591	129,673	129,362	114	197	327	812	690	122	118
2001		148,697	24,060	8,744	11,463	504	472	1,496	531	851	123,291	122,986	111	194	346	879	750	129	122
2002 preliminary		144,705	25,530	10,024	11,463	605	463	1,546	549	880	117,715	117,423	108	185	367	966	828	138	127
2003 preliminary		144,434	25,965	10,400	11,463	617	466	1,630	467	922	116,898	116,609	105	184	392	1,045	898	147	134

FFRDC: federally funded research and development center; U&C: universities and colleges

^a Because of limitations in survey information, data on other government funding to other performers are not available and are consequently included in other sectors' support for their own research and development (R&D) performance. For example, other government support to nonprofits is included in nonprofits' support for their own R&D.

^b Adjustments have been made to university R&D for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also was revised for 1998 and later years; hence these data are not directly comparable with data for 1997 and earlier years.

^c Includes all R&D expenditures of FFRDCs administered by academic institutions.

^d Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D expenditures. Character-of-work estimates for industry have been revised for 1998 and later years; hence these data are not directly comparable with data for 1997 and earlier years.

^e Expenditure levels for academic and Federal Government performers are calendar-year approximations based on fiscal-year data. For Federal Government expenditures, approximation is equal to 75 percent of amount reported in same fiscal year (FY) plus 25 percent of amount reported in subsequent FY. For academic expenditures, respective percentages are 50 and 50, because their FYs generally begin on July 1 instead of October 1.

^f See historical database, table D, which is available in online version of this report at <http://www.nsf.gov/sbe/srs/nprdr/start.htm>, for full series of historical data arranged in same data columns defined in this and other tables.

NOTES: Technical notes explaining methodological issues of measurement will be provided in National Science Foundation, *The Methodology Underlying the Measurement of R&D Expenditures: 2003* (Arlington, VA, forthcoming).

Data are based on annual reports by performers except for nonprofit sector. For trend comparisons, use only historical data reported here. Do not use data published earlier.

SOURCES: Data were derived from National Science Foundation, Division of Science Resources Statistics (NSF/SRS), *Research and Development in Industry, 2001* (Arlington, VA, forthcoming); NSF/SRS, *Academic Research and Development Expenditures: Fiscal Year 2001* (Arlington, VA, 2003); NSF/SRS, *Federal Funds for Research and Development: FY 2001, 2002, and 2003* (Arlington, VA, forthcoming); and NSF/SRS, Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97.

TABLE B-9. Comparative measures of growth for gross domestic product and research and development (federally funded, non-Federal, and total): 1993–2003

		GDP			R&D				R&D/GDP (percent)		
		Billions of current dollars	Implicit price deflator (1996 = 1.00)	Billions of constant 1996 dollars	Millions of current dollars	Millions of constant 1996 dollars	Federal support in millions of constant 1996 dollars	Non-Federal support in millions of constant 1996 dollars	Total	Federal support	Non-Federal support
Year	Data column: ^a	[169]	[170]	[171]	[1]	[19]	[40]	[172]	[173]	[174]	[175]
1993		6,642	0.9405	7,063	165,782	176,270	64,414	111,856	2.50	0.91	1.58
1994		7,054	0.9601	7,348	169,212	176,245	63,313	112,932	2.40	0.86	1.54
1995		7,401	0.9810	7,544	183,617	187,174	64,184	122,989	2.48	0.85	1.63
1996		7,813	1.0000	7,813	197,288	197,288	63,341	133,948	2.53	0.81	1.71
1997		8,318	1.0195	8,160	212,121	208,064	63,313	144,750	2.55	0.78	1.77
1998		8,782	1.0320	8,509	226,311	219,294	64,289	155,005	2.58	0.76	1.82
1999		9,274	1.0465	8,859	243,517	232,697	64,037	168,660	2.63	0.72	1.90
2000		9,825	1.0689	9,191	264,634	247,578	62,052	185,526	2.69	0.68	2.02
2001		10,082	1.0942	9,215	274,211	250,614	67,030	183,584	2.72	0.73	1.99
2002 preliminary		10,442	1.1062	9,440	276,434	249,903	72,765	177,138	2.65	0.77	1.88
2003 preliminary		10,884	1.1210	9,710	283,795	253,161	76,074	177,087	2.61	0.78	1.82

GDP gross domestic product

R&D research and development

^a See historical database, table D, which is available in online version of this report at <http://www.nsf.gov/sbe/srs/nprdr/start.htm>, for full series of historical data arranged in same data columns defined in this and other tables.

SOURCES: Department of Commerce, Bureau of Economic Analysis, special tabulations (Washington, DC, 2003); Office of Management and Budget, special tabulations (Washington, DC, 2003); and National Science Foundation, Division of Science Resources Statistics, special tabulations (Arlington, VA, 2003).

TABLE B-10. Trends in Federal and non-Federal research and development expenditures as percentage of total research and development: 1953–2003
(Percent)

Year	Federal				Non-Federal
	Total	Defense related	Space related	Civilian related	
1953	53.9	48.0	1.0	4.9	46.1
1954	55.2	49.0	1.0	5.2	44.8
1955	58.1	49.3	1.0	7.8	41.9
1956	58.7	49.8	0.9	8.1	41.3
1957	62.7	52.6	1.0	9.1	37.3
1958	64.1	53.2	1.8	9.0	35.9
1959	65.5	53.6	2.9	8.9	34.5
1960	65.1	51.5	4.4	9.2	34.9
1961	65.0	48.0	7.3	9.7	35.0
1962	64.8	49.1	6.6	9.1	35.2
1963	66.5	41.9	13.6	11.0	33.5
1964	66.7	36.9	18.9	10.9	33.3
1965	65.1	33.2	20.8	11.1	34.9
1966	64.2	32.4	19.6	12.2	35.8
1967	62.4	35.3	14.4	12.7	37.6
1968	60.7	34.8	13.6	12.4	39.3
1969	58.6	34.7	11.5	12.4	41.4
1970	57.1	33.4	10.3	13.3	42.9
1971	56.5	32.8	9.6	14.1	43.5
1972	55.8	33.0	7.9	14.9	44.2
1973	53.7	32.1	6.7	14.9	46.3
1974	51.9	29.3	6.9	15.7	48.1
1975	52.1	27.7	7.5	16.8	47.9
1976	51.5	27.0	7.7	16.9	48.5
1977	51.0	27.1	6.6	17.2	49.0
1978	50.1	25.9	6.2	18.0	49.9
1979	49.2	24.8	5.6	18.8	50.8
1980	47.4	24.3	5.3	17.9	52.6
1981	46.7	24.4	5.2	17.0	53.3
1982	46.0	26.1	4.9	15.0	54.0
1983	46.1	27.7	4.2	14.2	53.9
1984	45.5	28.7	3.0	13.7	54.5
1985	45.9	29.9	3.1	12.9	54.1
1986	45.4	31.4	3.0	11.0	54.6
1987	46.3	31.7	3.2	11.4	53.7
1988	44.9	30.2	3.5	11.2	55.1
1989	42.6	27.6	3.9	11.1	57.4
1990	40.5	25.1	4.3	11.1	59.5
1991	37.8	22.4	4.5	10.9	62.2
1992	36.8	21.6	4.3	10.9	63.2
1993	36.5	21.2	4.4	10.9	63.5
1994	35.9	19.7	4.5	11.7	64.1
1995	34.3	18.6	4.5	11.2	65.7
1996	32.1	17.6	4.1	10.4	67.9
1997	30.4	16.7	4.1	9.6	69.6
1998	29.3	15.8	3.8	9.7	70.7
1999	27.5	14.7	3.3	9.6	72.5
2000	25.1	13.5	2.4	9.2	74.9
2001	26.7	14.1	2.4	10.3	73.3
2002 preliminary	29.1	15.3	2.5	11.3	70.9
2003 preliminary	30.0	16.2	2.6	11.2	70.0

NOTE: Details may not sum to totals because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, unpublished tabulations (Arlington, VA, 2003).

TABLE B-11. Federal basic research budget authority, by budget function: FY 1996–2003

Budget function	1996	1997	1998	1999	2000	2001	2002	2003
Millions of current dollars								
Total	14,442	14,961	15,523	17,433	19,470	21,376	23,635	25,499
Health	6,395	6,852	7,356	8,634	10,099	11,642	13,193	14,379
General science	2,662	2,753	4,121	4,464	4,722	5,187	5,398	5,649
Space research/technology	1,685	1,653	1,610	1,667	1,616	1,695	1,967	2,361
Energy	1,182	1,288	34	36	36	40	68	57
National defense	1,165	1,090	1,067	1,110	1,184	1,303	1,392	1,383
Agriculture	547	548	571	602	651	749	808	831
Transportation	456	420	411	358	542	17	13	25
Natural resources/environment	147	153	145	142	146	215	220	208
Education, training, employment, and social services	140	142	133	99	107	112	115	117
Commerce/housing credit	37	34	35	41	39	50	52	73
Veterans benefits/services	13	14	23	263	266	289	329	351
Administration of justice	12	13	16	18	20	27	27	25
International affairs	2	2	1	0	42	50	53	39
Community/regional development	0	0	0	0	0	0	0	0
General government	0	0	0	0	0	0	0	0
Income security	0	0	0	0	0	0	0	0
Millions of constant FY 1996 dollars								
Total	14,442	14,675	15,014	16,644	18,213	19,544	21,146	22,411
Health	6,395	6,721	7,115	8,244	9,447	10,644	11,804	12,637
General science	2,662	2,700	3,985	4,262	4,417	4,743	4,830	4,965
Space research/technology	1,685	1,621	1,557	1,591	1,512	1,550	1,760	2,075
Energy	1,182	1,263	33	34	34	36	61	50
National defense	1,165	1,069	1,032	1,059	1,107	1,191	1,246	1,215
Agriculture	547	537	552	575	609	685	723	730
Transportation	456	412	398	342	507	16	12	22
Natural resources/environment	147	150	141	136	137	197	197	183
Education, training, employment, and social services	140	139	129	95	100	102	103	103
Commerce/housing credit	37	33	34	39	36	46	47	64
Veterans benefits/services	13	14	23	251	249	264	294	309
Administration of justice	12	13	15	17	19	25	24	22
International affairs	2	2	1	0	39	46	47	34
Community/regional development	0	0	0	0	0	0	0	0
General government	0	0	0	0	0	0	0	0
Income security	0	0	0	0	0	0	0	0

FY fiscal year

NOTE: Data for 1996–2001 are actual budget authority. Data for 2002 are preliminary estimates, and data for 2003 are proposed based on FY 2003 budget. Beginning in FY 1998, several Department of Energy programs were reclassified from energy to general science. Beginning in FY 1999, increase in Department of Veterans Affairs basic research total was a result of data reclassification.

SOURCE: National Science Foundation, Division of Science Resources Statistics, *Federal Research and Development Funding by Budget Function: Fiscal Years 2001–03, NSF 02-330* (Arlington, VA, 2002).

TABLE B-12. Federal research and development budget authority, by budget function: FY 1996–2003

Budget function	1996	1997	1998	1999	2000	2001	2002	2003
Millions of current dollars								
Total	69,049	71,653	73,569	77,637	78,664	86,756	98,029	107,057
National defense	37,801	39,591	39,823	41,306	42,580	45,713	52,922	58,259
Health	11,867	12,670	13,576	15,553	17,869	20,758	23,654	26,615
Space research/technology	7,844	7,844	8,198	8,245	5,363	6,126	6,556	7,435
Energy	2,521	2,372	948	1,131	996	1,314	1,547	1,408
General science	2,846	2,944	4,360	4,690	4,977	5,468	5,717	5,890
Natural resources/environment	1,802	1,886	1,855	1,842	1,999	2,096	2,159	2,136
Transportation	1,795	1,785	1,833	1,725	1,636	1,640	1,696	1,554
Agriculture	1,176	1,203	1,249	1,288	1,426	1,657	1,703	1,703
Education, training, employment, and social services	331	373	444	403	418	411	417	484
International affairs	252	190	163	190	200	252	268	182
Veterans benefits/services	259	267	587	644	645	719	761	810
Commerce/housing credit	432	409	398	432	406	429	444	387
Community/regional development	50	48	42	59	46	54	48	48
Administration of justice	56	59	72	88	73	88	98	114
Income security	16	9	18	38	25	30	37	30
General government	2	2	2	3	6	3	3	3
Millions of constant FY 1996 dollars								
Total	69,049	70,283	71,157	74,124	73,586	79,323	87,706	94,091
National defense	37,801	38,834	38,517	39,436	39,832	41,796	47,349	51,203
Health	11,867	12,428	13,131	14,849	16,715	18,980	21,163	23,392
Space research/technology	7,844	7,694	7,929	7,872	5,017	5,601	5,865	6,534
Energy	2,521	2,326	917	1,080	931	1,201	1,384	1,237
General science	2,846	2,888	4,217	4,477	4,655	4,999	5,115	5,177
Natural resources/environment	1,802	1,850	1,794	1,758	1,870	1,916	1,932	1,877
Transportation	1,795	1,751	1,773	1,647	1,531	1,499	1,517	1,365
Agriculture	1,176	1,180	1,208	1,230	1,334	1,515	1,524	1,497
Education, training, employment, and social services	331	366	429	385	391	376	373	425
International affairs	252	186	158	181	187	230	240	160
Veterans benefits/services	259	262	568	615	603	657	681	712
Commerce/housing credit	432	401	385	412	380	392	397	340
Community/regional development	50	47	41	56	43	49	43	42
Administration of justice	56	58	70	84	68	80	88	100
Income security	16	9	17	36	23	27	33	26
General government	2	2	2	3	6	3	3	3

FY fiscal year

NOTE: Data for 1996–2001 are actual budget authority. Data for 2002 are preliminary estimates, and data for 2003 are proposed based on FY 2003 budget. Beginning in FY 1998, several Department of Energy programs were reclassified from energy to general science. The decrease in space research and technology in FY 2000 is a result of National Aeronautics and Space Administration's reclassifying space station as a physical asset and transferring funding for program from research and development (R&D) to R&D plant.

SOURCE: National Science Foundation, Division of Science Resources Statistics, *Federal R&D Funding by Budget Function: Fiscal Years 2001–2003*, NSF 02-330 (Arlington, VA, 2002).

TABLE B-13. Trends in research and development and Federal outlays: FY 1970, 1980, 1990, 2000, 2002, and 2004

Composition of Federal outlays	1970	1980	1990	2000	2002	2004 (proposed)
Billions of current dollars						
Federal outlays	195.6	590.9	1,253.1	1,788.7	2,011.0	2,229.4
Mandatory programs ^a	60.8	262.1	568.2	951.0	1,105.7	1,234.2
Net interest	14.4	52.5	184.3	223.0	171.0	176.4
Discretionary						
Defense	81.9	134.6	300.1	295.0	348.9	389.7
R&D	8.0	14.6	41.1	41.1	48.2	62.9
International	4.0	12.8	19.1	21.3	26.2	28.1
R&D	NA	NA	NA	NA	NA	NA
Domestic	34.4	128.9	181.4	298.5	359.3	401.0
R&D	7.1	15.6	22.7	32.9	39.7	49.2
Total	120.3	276.3	500.6	614.8	734.4	818.8
Total R&D	15.1	30.2	63.8	74.0	87.9	112.1
Percent						
Federal outlays	100.0	100.0	100.0	100.0	100.0	100.0
Mandatory programs ^a	31.1	44.4	45.3	53.2	55.0	55.4
Net interest	7.4	8.9	14.7	12.5	8.5	7.9
Discretionary						
Defense	41.9	22.8	23.9	16.5	17.3	17.5
R&D	4.1	2.5	3.3	2.3	2.4	2.8
International	2.0	2.2	1.5	1.2	1.3	1.3
R&D	NA	NA	NA	NA	NA	NA
Domestic	17.6	21.8	14.5	16.7	17.9	18.0
R&D	3.6	2.6	1.8	1.8	2.0	2.2
Total	61.5	46.8	39.9	34.4	36.5	36.7
Total R&D	7.7	5.1	5.1	4.1	4.4	5.0
Total R&D/total discretionary	12.6	10.9	12.7	12.0	12.0	13.7
Defense	9.8	10.8	13.7	13.9	13.8	16.1
Domestic	20.6	12.1	12.5	11.0	11.0	12.3

NA not available

R&D research and development

^a Includes Social Security, Medicare, Medicaid, and other programs.SOURCE: U.S. Office of Management and Budget, *Historical Tables, Budget of the United States Government: Fiscal Year 2004* (Washington, DC, 2003).

TABLE B-14. Federal obligations for total research, by detailed science and engineering field: FY 1982–2003

(Millions of constant 1996 dollars)

Page 1 of 2

Field	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
All fields	19,814.7	20,774.7	21,055.4	21,953.2	21,926.9	23,199.9	23,353.5	25,039.8	25,127.7	26,810.3	26,695.7
Life sciences, total	7,220.8	7,546.9	7,922.3	8,657.6	8,589.3	9,493.6	9,672.6	10,243.7	10,261.2	10,762.9	10,802.8
Biology and agricultural, total	4,278.5	4,466.4	4,673.9	5,109.9	5,130.6	5,636.2	5,726.8	6,053.3	6,017.9	6,261.6	6,140.8
Biology (excluding environmental)	3,163.9	3,360.3	3,602.9	3,926.7	3,977.4	4,528.6	4,610.2	4,803.1	4,816.5	4,986.4	4,834.4
Environmental biology	279.2	282.2	351.4	354.2	350.9	374.5	376.9	443.5	397.8	514.2	557.0
Agricultural	835.4	823.8	719.7	829.1	802.3	733.1	739.7	806.7	803.5	761.0	749.4
Medical sciences, total	2,697.8	2,809.4	2,969.9	3,222.9	3,136.3	3,446.0	3,682.7	3,885.8	3,930.7	3,870.6	4,261.9
Life sciences, NEC	244.5	271.2	278.5	324.8	322.3	411.5	263.1	304.6	312.7	630.6	400.0
Psychology, total	332.3	351.1	374.9	445.1	443.8	477.8	488.1	508.5	521.3	539.6	324.9
Biological aspects	90.7	92.1	113.6	124.1	119.7	127.1	131.9	146.9	151.8	156.8	37.7
Social aspects	149.3	152.6	151.5	194.4	190.7	199.8	187.1	180.8	206.3	220.9	110.0
Psychological sciences, NEC	92.4	106.4	109.8	126.7	133.4	150.9	169.3	180.8	163.3	162.0	177.2
Physical sciences, total	3,804.6	4,214.3	4,173.5	4,144.8	4,078.0	4,206.1	4,153.9	4,467.9	4,426.1	4,737.5	4,838.9
Astronomy	419.7	520.9	537.4	564.3	622.1	675.3	589.5	653.4	694.0	706.6	805.6
Chemistry	732.2	758.3	852.4	885.0	880.1	879.7	880.4	943.7	885.2	926.6	976.9
Physics	2,450.5	2,703.1	2,581.4	2,471.1	2,399.5	2,397.0	2,473.5	2,641.7	2,620.5	2,752.7	2,810.3
Physical sciences, NEC	202.2	232.0	202.3	224.2	176.2	254.2	210.5	229.0	226.6	351.6	246.0
Environmental sciences, total	1,747.3	1,823.6	1,793.5	1,910.1	1,968.8	1,954.7	2,012.3	2,138.2	2,526.6	2,404.7	2,406.4
Atmospheric sciences	647.9	671.5	610.2	661.3	692.7	715.0	736.0	709.0	898.8	897.9	836.4
Geological sciences	544.1	486.1	504.6	583.8	589.8	571.2	553.0	654.5	768.3	815.1	801.9
Oceanography	397.6	500.7	511.0	542.3	571.0	552.7	576.5	593.2	604.4	445.9	500.2
Environmental sciences, NEC	157.6	165.4	167.7	122.7	115.3	115.7	146.6	181.5	255.1	245.9	267.9
Mathematics and computer sciences, total	532.7	611.3	618.9	782.3	817.7	828.4	805.0	886.8	977.0	1,010.9	1,264.8
Mathematics	194.9	194.6	212.3	249.8	245.2	264.5	272.9	284.7	280.4	254.6	347.4
Computer sciences	260.0	312.8	301.5	381.4	401.8	385.1	366.5	439.6	653.2	654.3	841.3
Mathematics and computer sciences, NEC	77.6	104.1	105.1	151.0	170.7	178.8	165.7	162.5	43.3	101.9	76.2
Engineering, total	5,152.9	5,126.1	5,094.3	4,922.6	4,968.0	5,051.5	4,954.2	5,356.6	4,911.8	5,530.8	5,425.1
Aeronautical	1,127.8	1,196.0	1,209.4	1,004.2	1,030.6	1,048.0	1,004.0	1,189.9	1,077.4	1,136.7	953.3
Astronautical	442.3	468.6	557.8	577.9	700.1	807.7	720.5	816.8	675.0	730.5	687.2
Chemical	144.7	211.3	203.1	346.0	326.6	279.1	323.2	171.5	281.1	340.4	324.3
Civil	307.2	274.7	285.1	294.7	269.6	264.3	269.1	277.1	369.2	341.2	359.9
Electrical	931.5	896.2	885.6	852.9	896.1	1,016.8	915.5	1,016.6	743.8	816.4	827.3
Mechanical	306.1	388.3	267.8	363.3	314.2	302.0	301.5	310.4	311.8	375.3	367.6
Metallurgy and materials	470.3	484.6	479.5	597.6	591.3	468.1	571.9	628.2	644.4	795.0	792.7
Engineering, NEC	1,422.9	1,206.2	1,206.1	885.8	839.4	865.5	848.7	946.0	809.2	995.3	1,112.7
Social sciences, total	587.2	634.5	613.3	625.9	552.1	620.7	608.3	664.4	732.1	813.5	751.8
Anthropology	22.2	18.7	26.1	24.5	18.1	19.7	17.9	16.8	16.7	17.9	15.4
Economics	239.0	241.4	207.1	217.3	174.5	192.0	199.7	201.1	229.2	209.6	230.7
Political science	11.4	16.2	15.2	19.9	15.4	14.6	15.3	16.3	15.2	19.0	24.6
Sociology	79.1	98.8	98.7	90.5	89.0	95.7	102.4	113.5	135.0	205.8	88.0
Social sciences, NEC	235.4	259.4	266.4	273.9	255.1	298.7	273.0	316.9	336.0	361.2	393.3
Other sciences, NEC	436.7	467.0	464.6	464.8	509.3	566.8	659.3	773.7	771.3	1,010.5	881.1

See explanatory information and SOURCE at end of table.

TABLE B-14. Federal obligations for total research, by detailed science and engineering field: FY 1982–2003

(Millions of constant 1996 dollars)

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Field	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
										preliminary	preliminary
All fields	28,628.2	28,565.2	29,002.9	28,259.8	28,803.6	29,908.4	31,979.3	36,001.6	40,844.9	45,161.2	47,782.1
Life sciences, total	11,468.2	11,759.4	12,047.1	12,064.3	12,419.1	13,113.1	14,710.3	16,811.7	21,062.3	23,454.6	25,667.4
Biology and agricultural, total	6,450.9	6,359.9	6,530.5	6,629.9	6,418.8	6,841.9	7,676.1	11,580.8	12,895.0	NA	NA
Biology (excluding environmental)	5,099.4	4,945.6	5,023.9	5,309.9	5,218.4	5,519.5	6,178.5	10,050.7	11,308.8	NA	NA
Environmental biology	592.5	656.4	823.0	704.0	571.4	584.7	687.3	692.5	665.7	NA	NA
Agricultural	759.0	757.8	683.7	616.0	629.0	737.8	810.2	837.6	920.5	NA	NA
Medical sciences, total	4,689.0	5,066.8	5,071.6	4,973.4	5,426.9	5,799.7	6,487.1	4,177.3	6,015.4	NA	NA
Life sciences, NEC	328.2	332.7	445.0	461.1	573.4	471.4	547.1	1,053.6	2,151.9	NA	NA
Psychology, total	586.3	571.5	635.0	525.0	535.0	571.6	603.4	1,522.3	677.7	760.4	855.1
Biological aspects	39.6	50.1	60.0	62.8	56.7	40.2	17.2	7.7	12.4	NA	NA
Social aspects	143.4	121.7	159.4	83.4	94.9	94.3	63.5	52.4	54.6	NA	NA
Psychological sciences, NEC	403.2	399.5	415.6	378.8	383.4	437.1	522.6	1,462.2	610.7	NA	NA
Physical sciences, total	4,713.1	4,432.6	4,363.8	3,923.0	4,069.8	4,071.7	3,878.4	4,480.7	4,202.7	4,665.1	4,655.3
Astronomy	730.7	779.1	779.8	729.0	759.9	708.2	722.9	823.8	693.5	NA	NA
Chemistry	897.7	911.2	880.8	881.1	829.6	792.1	777.3	1,146.9	936.2	NA	NA
Physics	2,808.9	2,546.0	2,500.2	1,991.3	2,028.1	2,061.9	2,119.3	2,251.0	2,248.7	NA	NA
Physical sciences, NEC	276.0	196.2	203.2	321.6	452.2	509.4	258.9	258.9	324.2	NA	NA
Environmental sciences, total	2,777.1	2,957.7	2,911.5	3,019.7	2,987.4	2,961.6	2,952.4	3,115.2	2,970.3	3,325.3	3,472.2
Atmospheric sciences	1,047.7	1,141.1	1,158.3	1,085.7	1,142.0	1,135.9	1,122.2	1,033.4	1,017.2	NA	NA
Geological sciences	849.5	873.3	865.3	784.3	678.6	583.5	629.7	598.2	615.5	NA	NA
Oceanography	497.6	517.7	415.4	574.3	586.3	541.4	626.3	629.8	622.2	NA	NA
Environmental sciences, NEC	382.4	425.7	472.6	575.4	580.5	700.6	574.2	853.7	715.5	NA	NA
Mathematics and computer sciences, total	1,304.6	1,356.4	1,610.7	1,571.6	1,639.8	1,776.6	1,889.1	2,064.0	2,384.7	2,494.6	2,565.7
Mathematics	309.6	356.7	263.8	254.5	295.8	323.1	329.4	405.1	362.1	NA	NA
Computer sciences	879.5	865.2	1,034.2	1,119.8	1,240.5	1,352.8	1,446.1	1,553.1	1,847.8	NA	NA
Mathematics and computer sciences, NEC	115.5	134.5	312.7	197.3	103.5	100.6	113.7	105.8	174.8	NA	NA
Engineering, total	5,854.8	5,710.1	5,822.5	5,680.9	5,581.5	5,702.1	5,974.2	5,939.1	7,487.8	8,116.2	8,200.4
Aeronautical	1,270.1	1,274.2	1,273.3	1,249.4	1,326.8	1,544.1	1,535.4	1,369.9	2,219.8	NA	NA
Astronautical	525.9	520.1	557.4	526.6	584.9	610.4	591.9	481.9	687.6	NA	NA
Chemical	261.4	248.2	251.0	215.1	230.5	183.9	193.8	183.9	181.8	NA	NA
Civil	268.3	289.6	346.2	300.2	270.3	236.1	313.3	223.8	263.4	NA	NA
Electrical	938.5	773.0	771.4	669.7	610.3	618.3	666.4	697.0	812.7	NA	NA
Mechanical	497.1	394.0	420.7	294.0	249.7	241.4	229.3	270.7	291.6	NA	NA
Metallurgy and materials	740.7	887.2	831.6	989.0	844.2	763.2	751.6	859.2	987.3	NA	NA
Engineering, NEC	1,353.0	1,323.7	1,370.9	1,437.0	1,464.6	1,504.6	1,692.4	1,852.6	2,043.4	NA	NA
Social sciences, total	718.5	674.7	692.3	654.6	683.0	779.7	815.4	983.0	921.3	931.4	940.2
Anthropology	14.6	16.9	22.1	18.3	20.6	17.6	17.5	14.9	14.3	NA	NA
Economics	217.9	201.4	210.6	194.2	201.3	222.9	206.6	233.5	213.8	NA	NA
Political science	31.1	26.5	22.7	16.7	13.8	19.5	19.3	21.1	17.8	NA	NA
Sociology	81.7	71.0	48.8	41.2	25.4	97.5	79.9	84.8	87.2	NA	NA
Social sciences, NEC	373.2	358.9	387.9	384.2	422.0	422.1	492.2	628.7	588.3	NA	NA
Other sciences, NEC	1,205.7	1,103.0	919.8	820.7	888.0	932.1	1,156.1	1,085.7	1,138.0	1,413.7	1,425.7

NA not available

NEC not elsewhere classified

NOTE: Details may not add to totals because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, *Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003* (Arlington, VA, forthcoming).

TABLE B-15. Federally funded research and development center expenditures for research and development: FY 2001–02
(Thousands of dollars)

FFRDC	Total R&D FY 2001	Total R&D FY 2002	Administrator	Sponsoring agency	Location
All FFRDCs	10,071,218	11,536,424			
University-administered FFRDCs	5,944,112	7,069,245			
Ames Laboratory	22,916	23,416	Iowa State University of Science and Technology	Department of Energy	Ames, IA
Argonne National Laboratory	478,391	506,666	University of Chicago	Department of Energy	Argonne, IL
Ernest Orlando Lawrence Berkeley National Laboratory	408,487	467,461	University of California	Department of Energy	Berkeley, CA
Fermi National Accelerator Laboratory	310,928	313,556	Universities Research Association, Inc.	Department of Energy	Batavia, IL
Jet Propulsion Laboratory	1,355,463	1,435,039	California Institute of Technology	National Aeronautics and Space Administration	Pasadena, CA
Lawrence Livermore National Laboratory	1,090,875	1,227,111	University of California	Department of Energy	Livermore, CA
Lincoln Laboratory	380,200	451,200	Massachusetts Inst. of Technology	DOD, Department of the Air Force	Lexington, MA
Los Alamos National Laboratory	1,333,194	1,994,031	University of California	Department of Energy	Los Alamos, NM
National Astronomy and Ionosphere Center	10,986	12,295	Cornell University	National Science Foundation	Arecibo, PR
National Center for Atmospheric Research	119,846	157,173	University Corporation for Atmospheric Research	National Science Foundation	Boulder, CO
National Optical Astronomy Observatory	37,364	41,051	Association of Universities for Research in Astronomy, Inc.	National Science Foundation	Tucson, AZ
National Radio Astronomy Observatory	34,208	43,900	Associated Universities, Inc.	National Science Foundation	Green Bank, WV
Princeton Plasma Physics Laboratory	76,021	73,610	Princeton University	Department of Energy	Princeton, NJ
Software Engineering Institute	37,052	45,088	Carnegie Mellon University	DOD, Office of the Secretary of Defense	Pittsburgh, PA
Stanford Linear Accelerator Center	145,979	171,343	Leland Stanford, Jr. University	Department of Energy	Stanford, CA
Thomas Jefferson National Accelerator Facility	102,202	106,305	Southeastern Universities Research Association, Inc.	Department of Energy	Newport News, VA
Industry-administered FFRDCs	1,961,818	2,196,511			
Idaho National Engineering and Environmental	270,636	259,562	Bechtel BWXT Idaho, LLC	Department of Energy	Idaho Falls, ID
National Cancer Institute at Frederick	187,222	260,000	SAIC; Charles River Laboratories, Inc.; Data Management Services, Inc.	Department of Health and Human Services, National Institutes of Health	Frederick, MD
Sandia National Laboratory	1,416,796	1,583,347	Sandia Corporation, a subsidiary of Lockheed Martin Corporation	Department of Energy	Albuquerque, NM
Savannah River Technology	87,164	93,602	Westinghouse Savannah River Co.	Department of Energy	Aiken, SC
Nonprofit-administered FFRDCs	2,165,288	2,270,668			
Aerospace FFRDC	17,600	26,306	Aerospace Corporation	DOD, Department of the Air Force	El Segundo, CA
Arroyo Center	24,317	24,484	RAND Corporation	DOD, Department of the Army	Santa Monica, CA
Brookhaven National Laboratory	454,500	454,482	Brookhaven Science Associates, Inc.	Department of Energy	Upton, Long Island, NY
C3I FFRDC	29,458	31,163	MITRE Corporation	DOD, Office of the Secretary of Defense	Bedford, MA and McLean, VA
Center for Advanced Aviation System	5,683	6,256	MITRE Corporation	Department of Transportation, Federal Aviation Administration	McLean, VA
Center for Naval Analyses	69,102	72,712	The CNA Corporation	DOD, Department of the Navy	Alexandria, VA

See explanatory information and SOURCE at end of table

TABLE B-15. Federally funded research and development center expenditures for research and development: FY 2001–02
(Thousands of dollars)

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FFRDC	Total R&D FY 2001	Total R&D FY 2002	Administrator	Sponsoring agency	Location
Center for Nuclear Waste Regulatory Analyses	14,977	16,398	Southwest Research Institute	Nuclear Regulatory Commission	San Antonio, TX
Institute for Defense Analyses Communications and Computing	43,100	45,296	Institute for Defense Analysis	National Security Agency	Alexandria, VA
Institute for Defense Analysis Studies	92,930	98,236	Institute for Defense Analysis	DOD, Office of the Secretary of Defense	Alexandria, VA
Internal Revenue Service (IRS) FFRDC	1,161	2,434	MITRE Corporation	Department of Treasury, Internal Revenue Service	McLean, VA
National Defense Research Institute	25,512	25,317	RAND Corporation	DOD, Office of the Secretary of Defense	Santa Monica, CA
National Renewable Energy Laboratory	207,230	197,438	Midwest Research Institute	Department of Energy	Golden, CO
Oak Ridge National Laboratory	581,046	620,329	UT-Battelle, LLC	Department of Energy	Oak Ridge, TN
Pacific Northwest National Laboratory	562,000	608,500	Battelle Memorial Institute	Department of Energy	Richland, WA
Project Air Force	29,361	32,439	RAND Corporation	DOD, Department of the Air Force	Santa Monica, CA
The Science and Technology Policy Institute	7,311	8,878	RAND Corporation	National Science Foundation	Washington, DC

DOD Department of Defense; FFRDC federally funded research and development center; FY fiscal year; R&D research and development

NOTE: More information about 36 FFRDCs can be found on National Science Foundation website, <http://www.nsf.gov/sbe/srs/ffrdc/start.htm>.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Academic Research and Development Expenditures: Fiscal Year 2002.

TABLE B-16. Budgetary impact of the Federal research and experimentation tax credit: FY 1981–2000
(Millions of dollars)

Year	Outlay equivalent cost of credit (current dollars)	Total Federal R&D outlays (current dollars)	Ratio of credit outlays/R&D outlays (percent)	Outlay equivalent cost of credit (constant 1996 dollars) ^a
1981	205	32,459	0.6	334
1982	640	34,391	1.9	974
1983	1,010	36,659	2.8	1,472
1984	3,360	39,691	8.5	4,723
1985	2,430	44,171	5.5	3,307
1986	2,295	50,609	4.5	3,049
1987	2,715	51,612	5.3	3,511
1988	1,240	54,739	2.3	1,553
1989	1,590	59,450	2.7	1,917
1990	1,625	62,135	2.6	1,888
1991	1,070	61,130	1.8	1,197
1992	1,850	62,934	2.9	2,017
1993	1,900	65,241	2.9	2,023
1994	2,110	66,151	3.2	2,199
1995	1,820	66,662	2.7	1,856
1996	1,245	66,142	1.9	1,245
1997	1,360	68,898	2.0	1,334
1998	3,270	70,632	4.6	3,163
1999	2,625	70,585	3.7	2,504
2000	2,510	69,807	3.6	2,349

R&D research and development

^aFigures in constant dollars were obtained using fiscal-year gross domestic product implicit price deflators (1996 = 100).

NOTES: Outlay equivalent estimates are comparable to taxable outlay figures reported in budget. This allows for a comparison of resource cost of tax credit with cost of direct Federal R&D expenditure support. Tax expenditure estimates are prepared by U.S. Treasury Department, based on income tax law enacted as of December 31 of year for which expenditures are reported.

SOURCES: U.S. Office of Management and Budget, Budget of the United States Government (Washington, DC, annual series); and National Science Foundation, Division of Science Resources Statistics, Survey of Federal Funds for Research and Development, various years.

TABLE B-17. Research and development expenditure, by state, performing sector, and source of funds: 2001
(Millions of current dollars)

State:	Performing sector: Funding sector:	All R&D	R&D Rank	Other																R&D intensity ^e			
				Federal		Industry		FFRDCs		U&C ³				U&C FFRDCs		nonprofit insti- tutions		Non- profit FFRDCs		GSP		Percent	Rank
				Federal	Total	Federal	Industry ^b	Total ^c	Total	Non-		Total ^c	Federal ^d	Total ^c	GSP	rank							
										Federal	Industry						U&C	profit					
U.S. total		274,211	na	21,048	198,505	16,899	181,606	2,020	33,518	19,654	2,382	2,177	6,778	2,528	6,225	5,302	2,192	10,137,190	2.71	na			
Alabama		2,251	27	870	905	176	729	0	445	313	5	22	85	21	0	30	0	121,490	25	1.85	27		
Alaska		297	48	99	68	2	66	0	116	58	3	29	25	0	0	14	0	28,581	46	1.04	41		
Arizona		3,048	23	235	2,257	232	2,025	0	501	266	14	30	170	21	37	18	0	160,687	23	1.90	26		
Arkansas		451	43	52	254	5	249	0	141	64	37	8	23	9	0	4	0	67,913	34	0.66	47		
California		50,959	1	2,259	40,430	3,648	36,782	0	4,422	2,527	255	262	954	423	3,001	750	97	1,359,265	1	3.75	9		
Colorado		4,313	18	266	3,082	579	2,503	0	573	439	22	30	57	26	120	65	207	173,772	21	2.48	17		
Connecticut		5,311	16	93	4,686	110	4,576	0	499	328	15	24	76	55	0	33	0	166,165	22	3.20	13		
Delaware		1,316	34	3	1,232	10	1,222	0	80	44	5	5	17	10	0	1	0	40,509	42	3.25	12		
District of Columbia		2,543	26	1,819	242	78	164	0	228	192	3	13	4	16	0	246	7	64,459	36	3.94	8		
Florida		5,642	13	865	3,755	736	3,019	0	997	468	114	92	277	46	0	24	0	491,488	4	1.15	36		
Georgia		3,236	22	310	1,912	57	1,855	0	989	473	79	97	297	44	0	25	0	299,874	10	1.08	38		
Hawaii		358	47	70	93	14	79	0	157	98	33	7	19	0	0	38	0	43,710	40	0.82	45		
Idaho		1,259	35	22	884	3	881	271	83	34	18	7	22	1	0	0	0	36,905	45	3.41	10		
Illinois		10,472	9	79	8,232	749	7,483	0	1,281	742	83	59	312	86	789	91	0	475,541	5	2.20	22		
Indiana		4,235	19	56	3,583	63	3,520	0	584	248	46	42	204	46	0	12	0	189,919	16	2.23	20		
Iowa		1,324	33	40	817	21	796	0	440	219	60	35	104	22	23	5	0	90,942	30	1.46	32		
Kansas		1,597	28	25	1,299	D	D	0	269	115	45	13	74	22	0	5	0	87,196	31	1.83	29		
Kentucky		951	36	13	636	8	628	0	297	120	41	14	101	21	0	4	0	120,266	26	0.79	46		
Louisiana		827	38	74	316	13	303	0	432	183	85	26	100	39	0	4	0	148,697	24	0.56	50		
Maine		389	46	9	249	49	200	0	68	25	9	4	26	5	0	62	0	37,449	43	1.04	40		
Maryland		11,379	7	5,435	3,682	1,119	2,563	187	1,645	1,196	60	72	211	106	0	430	0	195,007	15	5.84	2		
Massachusetts		14,665	3	363	11,240	1,813	9,427	0	1,577	1,140	38	156	80	162	380	1,105	0	287,802	11	5.10	3		
Michigan		15,533	2	119	14,283	117	14,166	0	1,107	622	67	66	278	75	0	24	0	320,470	9	4.85	4		
Minnesota		5,010	17	33	4,355	207	4,148	0	469	268	59	27	82	34	0	153	0	188,050	17	2.66	16		
Mississippi		650	39	181	219	7	212	0	242	146	39	8	48	1	0	8	0	67,125	35	0.97	43		
Missouri		2,550	25	43	1,792	142	1,650	0	679	410	25	38	164	41	0	36	0	181,493	19	1.40	34		
Montana		239	49	44	70	3	67	0	108	57	20	9	21	1	0	17	0	22,635	48	1.06	39		
Nebraska		580	40	26	306	9	297	0	242	77	7	18	128	13	0	6	0	56,967	37	1.02	42		
Nevada		444	44	34	290	8	282	0	116	69	10	5	28	4	0	4	0	79,220	32	0.56	49		
New Hampshire		1,587	29	43	1,339	D	D	0	197	115	12	12	43	15	0	8	0	47,183	39	3.36	11		
New Jersey		11,392	6	524	10,164	207	9,957	0	610	270	52	34	173	81	76	19	0	365,388	8	3.12	14		
New Mexico		3,947	20	494	231	95	136	1,599	274	186	12	12	56	9	1,333	16	0	55,426	38	7.12	1		
New York		14,422	4	271	10,884	994	9,890	0	2,476	1,566	128	130	414	239	0	337	455	826,488	2	1.75	30		

See explanatory information and SOURCE at end of table.

TABLE B-17. Research and development expenditure, by state, performing sector, and source of funds: 2001
(Millions of current dollars)

State:	Performing																	Other						
	sector:			Federal	Industry		FFRDCs		U&C ³						U&C	insti-	Non-							
	Funding	All	R&D		Total	Federal	Industry ^b	Total ^c	Total	Federal	Federal	Industry	U&C	profit	FFRDCs	tutions	profit							
	sector:	R&D	Rank	Federal											Total ^c	Federal ^d	Total ^c	GSP	rank	Percent	Rank			
North Carolina		5,825	12	441	4,138	70	4,068	0	1,137	655	121	168	153	41	0	109	0	275,615	12	2.11	24			
North Dakota		461	42	28	347	1	346	0	85	31	1	6	42	4	0	2	0	19,005	51	2.43	18			
Ohio		8,790	11	907	6,694	783	5,911	0	996	561	80	86	193	76	0	194	0	373,708	7	2.35	19			
Oklahoma		872	37	54	543	14	529	0	255	96	41	17	88	13	0	20	0	93,855	29	0.93	44			
Oregon		5,447	15	82	4,962	19	4,943	0	366	255	41	15	36	19	0	38	0	120,055	27	4.54	6			
Pennsylvania		11,156	8	178	8,967	122	8,845	0	1,688	1,145	52	163	209	120	37	286	0	408,373	6	2.73	15			
Rhode Island		1,579	30	254	1,134	D	D	0	143	102	6	2	30	4	0	49	0	36,939	44	4.28	7			
South Carolina		1,447	32	55	921	17	904	87	361	169	30	23	131	8	0	22	0	115,204	28	1.26	35			
South Dakota		141	50	21	87	2	85	0	32	16	9	0	4	3	0	1	0	24,251	47	0.58	48			
Tennessee		2,651	24	101	1,503	154	1,349	0	423	265	44	22	57	36	0	43	581	182,515	18	1.45	33			
Texas		12,722	5	527	9,839	185	9,654	0	2,244	1,231	228	177	369	240	0	97	15	763,874	3	1.67	31			
Utah		1,495	31	82	1,069	168	901	0	338	213	21	15	55	34	0	5	0	70,409	33	2.12	23			
Vermont		423	45	5	339	7	332	0	77	50	4	6	12	4	0	2	0	19,149	50	2.21	21			
Virginia		5,544	14	1,540	2,957	680	2,277	0	611	345	70	50	110	37	102	93	241	273,070	13	2.03	25			
Washington		10,372	10	179	8,691	555	8,136	0	707	489	19	48	129	23	0	233	562	222,950	14	4.65	5			
West Virginia		466	41	111	211	6	205	0	79	36	3	7	29	5	34	31	0	42,368	41	1.10	37			
Wisconsin		3,249	21	41	2,469	22	2,447	0	729	386	40	23	207	72	0	11	0	177,354	20	1.83	28			
Wyoming		82	51	8	28	1	27	0	42	20	2	3	16	1	0	5	0	20,418	49	0.40	51			
Other and unknown		9,950	na	47	9,819	785	9,034	0	71	50	5	2	13	1	11	13	0	NA	NA	NA	NA			
Adjustment		8,364	na	1,520	0	0	0	(124)	795	463	67	(57)	225	98	281	454	27	NA	NA	NA	NA			

na not applicable; D data withheld to avoid disclosing operations of individual companies; NA not available; FFRDC federally funded research and development center; GSP gross state product;
R&D research and development; U&C universities and colleges

^a Adjustments have been made to R&D expenditures reported by universities to eliminate double counting of funds passed through from one academic institution to another at national level. State-level university R&D data have not been adjusted to correct for this double counting.

^b Industry sources of industry R&D expenditures include all non-Federal sources of industry R&D expenditures.

^c Includes all R&D expenditures of FFRDCs; over 90 percent of these expenditures are federally funded.

^d Other sources of support for nonprofit institutions were unavailable by state. For 2001, total nonprofit performance is estimated at \$10.7 billion. Industry provided an estimated \$1.1 billion to nonprofit sector, and nonprofit institutions provided an estimated \$4.3 billion. These non-Federal support amounts are included in total R&D column for U.S. total and in other and unknown. For these two columns, amounts under all R&D are greater than sum of components to right, because those components do not include non-Federal support to nonprofit organizations.

^e R&D intensity is ratio of total R&D performed in a state to GSP.

NOTES: Industry R&D data refer to calendar years; other R&D data refer to fiscal years but may serve as approximations to calendar-year data. "Other and unknown" category reflects reported data that could not be assigned to a geographic location. "Adjustment" category reflects difference in state totals (and other and unknown) when reported on a fiscal-year basis and U.S. totals that have been adjusted to calendar-year estimates.

SOURCES: Data were derived from National Science Foundation, Division of Science Resources Statistics (NSF/SRS), Survey of Industrial Research and Development, 2001; NSF/SRS, Survey of Research and Development Expenditures at Universities and Colleges: FY 2001; and NSF/SRS, Survey of Federal Funds for Research and Development: FY 2001. GSP data are from the U.S. Bureau of Economic Analysis, <http://www.bea.gov/bea/regional/gsp.htm>, 2003.

TABLE B-18. International research and development expenditures and research and development as percentage of gross domestic product, by selected country and for all Organisation for Economic Co-operation and Development countries: 1981–2001

Page 1 of 2

Year	United States	Japan ^a	Germany ^b	France	United Kingdom	Italy	Canada	Russian Federation	Total OECD
Billions of constant 1995 U.S. dollars ^c									
1981	114.5	39.7	27.8	17.4	18.2	7.7	6.0	NA	254.9
1982	120.5	42.6	28.4	18.7	NA	7.9	6.6	NA	267.4
1983	129.1	46.0	28.8	19.4	17.8	8.5	6.6	NA	281.9
1984	141.6	49.4	29.7	20.6	NA	9.2	7.2	NA	303.6
1985	153.7	54.6	32.5	21.5	19.2	10.5	7.8	NA	329.7
1986	157.3	55.6	33.5	21.9	20.1	10.9	8.2	NA	339.6
1987	160.2	59.6	35.3	22.8	20.5	11.8	8.2	NA	351.9
1988	164.2	64.1	36.5	23.8	21.0	12.5	8.5	NA	365.7
1989	167.6	70.1	37.9	25.4	21.5	13.1	9.1	NA	381.3
1990	172.9	75.9	38.3	27.0	21.7	13.9	9.5	28.4	397.6
1991	176.6	77.6	42.0	27.2	20.6	13.4	9.7	20.5	415.7
1992	177.1	76.8	40.9	27.7	20.2	13.1	10.1	8.6	417.1
1993	173.3	74.7	39.5	27.8	21.0	12.3	10.7	7.8	412.7
1994	173.3	74.0	38.8	27.6	21.5	11.8	11.6	7.4	415.7
1995	184.1	78.7	39.5	27.7	21.5	11.5	11.7	6.6	439.7
1996	194.0	84.0	39.7	27.9	21.2	11.7	11.6	7.4	459.4
1997	204.6	87.5	40.9	27.4	21.1	12.5	12.2	8.0	480.1
1998	215.5	89.7	42.1	27.7	21.6	12.9	13.3	7.2	497.9
1999	228.6	90.2	45.3	28.8	23.1	12.8	14.0	8.3	522.8
2000	243.3	93.7	47.7	29.9	23.4	13.5	15.0	9.4	553.5
2001	252.9	NA	48.6	30.7	NA	NA	16.2	10.9	NA
Percent of GDP									
1981	2.34	2.11	2.43	1.93	2.38	0.88	1.24	NA	1.95
1982	2.52	2.19	2.50	2.02	NA	0.90	1.39	NA	2.05
1983	2.59	2.32	2.50	2.06	2.20	0.95	1.36	NA	2.10
1984	2.64	2.40	2.50	2.16	NA	1.01	1.40	NA	2.16
1985	2.76	2.54	2.68	2.22	2.24	1.12	1.44	NA	2.26
1986	2.73	2.51	2.70	2.21	2.26	1.13	1.48	NA	2.26
1987	2.69	2.57	2.80	2.24	2.20	1.19	1.43	NA	2.26
1988	2.65	2.60	2.79	2.24	2.14	1.22	1.40	NA	2.25
1989	2.62	2.70	2.79	2.29	2.15	1.24	1.47	NA	2.26
1990	2.65	2.78	2.67	2.37	2.15	1.29	1.53	2.03	2.29
1991	2.72	2.75	2.53	2.37	2.07	1.23	1.60	1.43	2.23
1992	2.65	2.70	2.41	2.38	2.02	1.18	1.66	0.74	2.19
1993	2.52	2.62	2.35	2.40	2.05	1.13	1.71	0.77	2.14
1994	2.43	2.57	2.26	2.34	2.01	1.05	1.76	0.84	2.09
1995	2.51	2.69	2.26	2.31	1.95	1.00	1.73	0.79	2.10
1996	2.55	2.77	2.26	2.30	1.88	1.01	1.69	0.90	2.13
1997	2.58	2.83	2.29	2.22	1.81	1.05	1.71	0.97	2.15
1998	2.60	2.94	2.31	2.17	1.80	1.07	1.79	0.92	2.17
1999	2.65	2.94	2.44	2.18	1.88	1.04	1.79	1.01	2.20
2000	2.72	2.98	2.49	2.18	1.85	1.07	1.82	1.05	2.24
2001	2.82	NA	2.53	2.20	NA	NA	1.94	1.16	NA

See explanatory information and SOURCE at end of table.

TABLE B-18. International research and development expenditures and research and development as percentage of gross domestic product, by selected country and for all Organisation for Economic Co-operation and Development countries: 1981–2001

Page 2 of 2

Year	United States	Japan ^a	Germany ^b	France	United Kingdom	Italy	Canada	Russian Federation	Total OECD
Billions of constant 1995 units of national currency ^d									
1981	114.5	6,739	28.6	17.1	11.9	6.1	7.1	NA	NA
1982	120.5	7,237	29.3	18.4	NA	6.4	7.7	NA	NA
1983	129.1	7,818	29.7	19.1	11.6	6.8	7.8	NA	NA
1984	141.6	8,387	30.6	20.3	NA	7.4	8.5	NA	NA
1985	153.7	9,281	33.5	21.2	12.6	8.4	9.2	NA	NA
1986	157.3	9,450	34.6	21.6	13.2	8.7	9.6	NA	NA
1987	160.2	10,121	36.4	22.5	13.4	9.4	9.7	NA	NA
1988	164.2	10,897	37.6	23.5	13.7	10.0	10.0	NA	NA
1989	167.6	11,918	39.0	25.0	14.1	10.5	10.8	NA	NA
1990	172.9	12,899	39.5	26.6	14.2	11.2	11.2	51.9	NA
1991	176.6	13,186	43.3	26.8	13.5	10.8	11.5	37.5	NA
1992	177.1	13,045	42.1	27.3	13.2	10.5	12.0	15.8	NA
1993	173.3	12,703	40.7	27.4	13.7	9.9	12.6	14.3	NA
1994	173.3	12,581	40.0	27.2	14.0	9.4	13.7	13.5	NA
1995	184.1	13,369	40.7	27.3	14.0	9.2	13.8	12.1	NA
1996	194.0	14,272	40.9	27.4	13.9	9.4	13.7	13.4	NA
1997	204.6	14,863	42.1	27.0	13.8	10.0	14.4	14.6	NA
1998	215.5	15,248	43.4	27.3	14.1	10.3	15.8	13.1	NA
1999	228.6	15,331	46.6	28.3	15.1	10.2	16.6	15.2	NA
2000	243.3	15,924	49.1	29.5	15.3	10.8	17.7	17.1	NA
2001	252.9	NA	50.1	30.2	NA	NA	19.1	19.9	NA

NA not available

GDP gross domestic product

OECD Organisation for Economic Co-operation and Development

^a Data on Japanese research and development in 1996 and later years may not be consistent with data in earlier years because of changes in methodology.

^b Data for 1981–90 are for West Germany.

^c Conversions of foreign currencies to U.S. dollars are calculated with each country's GDP implicit price deflator and with OECD purchasing power parity exchange rates.

^d Constant foreign currencies are based on deflation with each country's GDP implicit price deflator. Figures for Germany, France, and Italy are in euros.

SOURCE: OECD, *Main Science and Technology Indicators* (Paris, 2002).

TABLE B-19. International nondefense research and development expenditures and nondefense research and development as percentage of gross domestic product, by selected country: 1981–2001

Year	United States	Japan ^a	Germany ^b	France	United Kingdom	Italy	Canada
	Billions of constant 1995 U.S. dollars ^c						
1981	85	39	27	14	14	7	6
1982	86	42	27	15	NA	8	6
1983	90	46	28	16	14	8	6
1984	99	49	29	17	NA	9	7
1985	106	54	31	18	16	10	7
1986	108	55	32	18	16	10	8
1987	109	59	34	19	17	12	8
1988	114	64	35	19	18	12	8
1989	120	70	36	21	17	13	9
1990	128	75	37	22	17	14	9
1991	136	77	41	22	17	13	9
1992	138	76	39	23	17	13	10
1993	136	74	38	24	18	12	10
1994	138	73	37	23	18	12	11
1995	150	84	38	24	18	11	12
1996	160	83	38	24	18	12	11
1997	170	87	40	25	18	13	12
1998	182	89	41	25	18	13	13
1999	195	89	44	26	20	13	14
2000	210	93	47	28	20	14	NA
2001	218	NA	48	28	NA	NA	NA
Year	Percent of GDP						
1981	1.7	2.1	2.3	1.6	1.9	0.9	1.2
1982	1.8	2.2	2.4	1.6	NA	0.9	1.3
1983	1.8	2.3	2.4	1.7	1.7	0.9	1.3
1984	1.8	2.4	2.4	1.8	NA	1.0	1.3
1985	1.9	2.5	2.6	1.8	1.8	1.1	1.4
1986	1.9	2.5	2.6	1.8	1.8	1.1	1.4
1987	1.8	2.6	2.7	1.8	1.8	1.2	1.4
1988	1.8	2.6	2.7	1.8	1.8	1.2	1.3
1989	1.9	2.7	2.7	1.9	1.7	1.2	1.4
1990	2.0	2.8	2.5	1.9	1.7	1.3	1.5
1991	2.1	2.7	2.4	1.9	1.7	1.2	1.6
1992	2.1	2.7	2.3	2.0	1.7	1.2	1.6
1993	2.0	2.6	2.3	2.0	1.7	1.1	1.7
1994	1.9	2.5	2.2	2.0	1.7	1.0	1.7
1995	2.0	2.8	2.2	2.0	1.7	1.0	1.7
1996	2.1	2.7	2.2	2.0	1.6	1.0	1.7
1997	2.1	2.8	2.2	2.0	1.5	1.1	1.7
1998	2.2	2.9	2.3	2.0	1.5	1.1	1.8
1999	2.3	2.9	2.4	2.0	1.6	1.0	1.8
2000	2.4	3.0	2.4	2.0	1.6	1.1	NA
2001	2.4	NA	2.5	2.0	NA	NA	NA

NA not available; GDP gross domestic product; R&D research and development

^a Data on Japanese R&D in 1996 and later years may not be consistent with data in earlier years because of changes in methodology.

^b Data for 1981–90 are for West Germany.

^c Nondefense R&D data are estimates. Nondefense R&D/GDP ratios are obtained directly from Organisation for Economic Co-operation and Development (OECD) reports or, for following countries and years, are estimated by National Science Foundation from OECD data: United States, for all years; Japan, for 1995 and later years; Germany, for 1990 and earlier years; United Kingdom, for 1981–84 and 1986–88; Italy, for 1986 and earlier years; and Canada, for 1990 and later years. Conversions of foreign currencies to U.S. dollars are calculated with OECD purchasing power parity exchange rates.

NOTE: Nondefense R&D/GDP ratio for Russian Federation was 1.2 in 1990, 0.6 in 1995, and 0.9 in 2001.

SOURCES: OECD, *Main Science and Technology Indicators* (Paris, 2002); and National Science Foundation, Division of Science Resources Statistics, special tabulations (Arlington, VA, 2003).

TABLE B-20. International research and development expenditures for selected countries, by performing sector and source of funds: 2000 or 2001

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Table 1.10. Source of R&D funds							
Country and R&D performer	Total	Industry	Government	Higher	Private	Abroad	Percent
Billions of yen							
Japan (2000)	15,304	11,083	2,997	1,049	111	64	100.0
Industry	10,860	10,606	184	—	8	62	71.0
Government	1,514	15	1,498	—	—	—	9.9
Higher education	2,224	56	1,115	1,048	4	1	14.5
Private nonprofit	707	407	199	—	99	2	4.6
Percent distribution, sources	100.0	72.4	19.6	6.9	0.7	0.4	na
Millions of euros							
Germany (2001)	51,539	34,011	16,250	0	212	1,066	100.0
Industry	36,350	32,924	2,570	—	74	781	70.5
Government	6,923	152	6,492	—	138	142	13.4
Higher education	8,266	935	7,188	—	—	143	16.0
Private nonprofit	—	—	—	—	—	—	0.0
Percent distribution, sources	100.0	66.0	31.5	0.0	0.4	2.1	na
France (2000)	30,954	16,255	11,967	237	270	2,224	100.0
Industry	19,348	15,671	1,918	4	6	1,749	62.5
Government	5,361	359	4,673	10	9	311	17.3
Higher education	5,804	157	5,311	199	17	120	18.8
Private nonprofit	439	69	65	24	239	44	1.4
Percent distribution, sources	100.0	52.5	38.7	0.8	0.9	7.2	na
Italy (2000)	12,460	—	—	—	—	—	100.0
Industry	6,239	5,023	686	5	16	510	50.1
Government	2,356	40	2,199	3	25	91	18.9
Higher education	3,865	—	—	—	—	—	31.0
Private nonprofit	0	—	—	—	—	—	0.0
Percent distribution, sources	100.0	—	—	—	—	—	na
Millions of pounds							
United Kingdom (2000)	17,544	8,648	5,069	158	815	2,854	100.0
Industry	11,510	8,023	1,014	—	3	2,470	65.6
Government	2,134	322	1,656	9	69	80	12.2
Higher education	3,645	259	2,358	147	598	283	20.8
Private nonprofit	255	44	42	2	146	21	1.5
Percent distribution, sources	100.0	49.3	28.9	0.9	4.6	16.3	na
Millions of Canadian dollars							
Canada (2001)	20,828	8,726	6,513	1,386	489	3,714	100.0
Industry	11,973	8,030	291	—	—	3,652	57.5
Government	2,474	75	2,393	—	—	6	11.9
Higher education	6,313	609	3,803	1,386	460	55	30.3
Private nonprofit	68	12	26	—	29	1	0.3
Percent distribution, sources	100.0	41.9	31.3	6.7	2.3	17.8	na
Billions of rubles							
Russian Federation (2001)	105,261	35,394	60,229	360	206	9,072	100.0
Industry	73,976	30,729	36,275	46	149	6,777	70.3
Government	25,580	3,167	20,398	17	8	1,991	24.3
Higher education	5,488	1,454	3,444	297	8	285	5.2
Private nonprofit	217	44	112	—	40	20	0.2
Percent distribution, sources	100.0	33.6	57.2	0.3	0.2	8.6	na

See explanatory information and SOURCE at end of table.

TABLE B-20. International research and development expenditures for selected countries, by performing sector and source of funds: 2000 or 2001

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Country and R&D performer	Source of R&D funds						Percent
	Total	Industry	Government	Higher	Private	Abroad	
Korea (2001)	16,111	11,673	4,023	278	61	76	100.0
Industry	12,274	11,196	989	3	17	69	76.2
Government	1,991	160	1,819	1	9	2	12.4
Higher education	1,677	239	1,148	273	12	5	10.4
Private nonprofit	169	78	67	—	24	—	1.0
Percent distribution, sources	100.0	72.5	25.0	1.7	0.4	0.5	na
Millions of U.S. dollars							
United States (2001)	274,211	184,892	75,723	6,778	6,818	—	100.0
Industry	198,505	181,606	16,899	—	—	—	72.4
Government	31,486	—	31,486	—	—	—	11.5
Higher education	33,518	2,177	22,036	6,778	2,528	—	12.2
Private nonprofit	10,702	1,110	5,302	—	4,290	—	3.9
Percent distribution, sources	100.0	67.4	27.6	2.5	2.5	—	na

— assumed negligible or not available

na not applicable

R&D research and development

SOURCE: Organisation for Economic Co-operation and Development, unpublished tabulations (Paris, 2003); and National Science Foundation, *Division of Science Resources Statistics, National Patterns of R&D Resources* (Arlington, VA, annual series).

TABLE B-21. U.S. research and development, by performing sector: 1953–2003

Year ^c	Data column: ^d						Other						Other
		Total	Federal	Industry	FFRDCs ^a	U&C ^b	nonprofit	Total	Federal	Industry	FFRDCs ^a	U&C ^b	nonprofit
		[1]	[2]	[3]	[6]+[13]+[18]	[7]	[14]	[19]	[20]	[21]	[24]+[31]+[36]	[25]	[32]
Millions of current dollars							Millions of constant 1996 dollars						
1953		5,160	1,015	3,630	131	273	112	26,805	5,273	18,857	681	1,416	579
1954		5,621	963	4,070	161	301	127	28,912	4,951	20,936	826	1,548	651
1955		6,281	973	4,517	319	342	131	31,756	4,918	22,836	1,610	1,729	662
1956		8,500	1,130	6,272	561	391	146	41,565	5,528	30,670	2,743	1,912	711
1957		9,908	1,297	7,324	688	433	167	46,892	6,139	34,662	3,253	2,049	788
1958		10,915	1,507	8,066	657	491	195	50,439	6,962	37,274	3,034	2,269	901
1959		12,490	1,681	9,200	789	586	234	57,082	7,683	42,048	3,606	2,678	1,067
1960		13,711	1,801	10,032	910	705	264	61,790	8,115	45,210	4,101	3,175	1,190
1961		14,564	1,987	10,353	1,087	834	304	64,903	8,856	46,136	4,842	3,714	1,355
1962		15,636	2,188	11,037	1,056	993	363	68,761	9,620	48,536	4,644	4,365	1,596
1963		17,519	2,558	12,216	1,159	1,178	408	76,169	11,124	53,113	5,037	5,122	1,774
1964		19,103	2,965	13,049	1,297	1,375	417	81,846	12,705	55,908	5,557	5,889	1,787
1965		20,252	3,156	13,812	1,218	1,595	472	85,165	13,272	58,082	5,120	6,705	1,985
1966		22,072	3,308	15,193	1,217	1,818	537	90,236	13,523	62,114	4,974	7,433	2,193
1967		23,346	3,444	15,966	1,340	2,035	561	92,608	13,663	63,332	5,316	8,072	2,225
1968		24,666	3,497	17,014	1,372	2,187	596	93,788	13,297	64,692	5,217	8,316	2,266
1969		25,996	3,790	17,844	1,440	2,280	642	94,222	13,738	64,676	5,220	8,264	2,325
1970		26,271	4,154	17,594	1,430	2,418	677	90,404	14,294	60,544	4,919	8,319	2,328
1971		26,952	4,409	17,829	1,441	2,565	709	88,308	14,445	58,417	4,720	8,404	2,321
1972		28,740	4,676	19,004	1,533	2,757	771	90,321	14,694	59,723	4,818	8,664	2,421
1973		30,952	4,837	20,704	1,576	2,953	882	92,118	14,394	61,619	4,690	8,789	2,625
1974		33,359	5,132	22,239	1,784	3,216	988	91,095	14,015	60,729	4,872	8,781	2,698
1975		35,671	5,561	23,460	2,019	3,570	1,062	89,112	13,893	58,606	5,044	8,917	2,652
1976		39,435	5,890	26,107	2,401	3,899	1,139	93,227	13,925	61,719	5,675	9,216	2,692
1977		43,338	6,211	28,863	2,704	4,346	1,213	96,264	13,797	64,112	6,007	9,653	2,695
1978		48,719	6,962	32,222	3,187	4,996	1,353	101,014	14,435	66,809	6,605	10,358	2,806
1979		55,379	7,471	37,062	3,567	5,715	1,564	105,988	14,299	70,932	6,826	10,937	2,994
1980		63,213	7,831	43,228	4,058	6,455	1,641	110,822	13,728	75,785	7,115	11,317	2,877
1981		72,269	8,605	50,425	4,407	7,085	1,747	115,871	13,796	80,848	7,066	11,360	2,801
1982		80,783	9,501	57,166	4,553	7,603	1,961	121,937	14,342	86,288	6,871	11,475	2,960
1983		89,971	10,830	63,683	5,025	8,251	2,182	130,620	15,722	92,455	7,295	11,979	3,169
1984		102,251	11,916	73,061	5,607	9,154	2,513	143,128	16,679	102,269	7,849	12,813	3,518
1985		114,685	13,093	82,376	6,142	10,308	2,767	155,631	17,767	111,787	8,334	13,988	3,755
1986		120,569	13,504	85,932	6,402	11,540	2,882	159,686	17,932	114,104	8,500	15,323	3,826
1987		126,217	13,588	90,160	6,783	12,807	2,878	162,693	17,515	116,216	8,744	16,508	3,710
1988		133,880	14,342	94,893	7,213	14,220	3,213	166,912	17,881	118,306	8,992	17,728	4,005
1989		141,889	15,231	99,860	7,498	15,632	3,669	170,396	18,291	119,923	9,004	18,773	4,406

See explanatory information and SOURCE at end of table.

TABLE B-21. U.S. research and development, by performing sector: 1953–2003

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		2003						2002						2001						2000						1999						1998						1997						1996						1995						1994						1993						1992						1991						1990																																																																																																																			
Year ^c	Data column: ^d	Total	Federal	Industry	FFRDCs ^a	U&C ^b	Other nonprofit	Total	Federal	Industry	FFRDCs ^a	U&C ^b	Other nonprofit	Total	Federal	Industry	FFRDCs ^a	U&C ^b	Other nonprofit	Total	Federal	Industry	FFRDCs ^a	U&C ^b	Other nonprofit	Total	Federal	Industry	FFRDCs ^a	U&C ^b	Other nonprofit	Total	Federal	Industry	FFRDCs ^a	U&C ^b	Other nonprofit	Total	Federal	Industry	FFRDCs ^a	U&C ^b	Other nonprofit	Total	Federal	Industry	FFRDCs ^a	U&C ^b	Other nonprofit																																																																																																																																																		
		[1]	[2]	[3]	[6]+[13]+[18]	[7]	[14]	[19]	[20]	[21]	[24]+[31]+[36]	[25]	[32]	[37]	[38]	[39]	[42]+[49]+[54]	[43]	[50]	[57]	[61]	[62]	[63]	[66]+[73]+[78]	[67]	[74]	[81]	[82]	[83]	[86]+[93]+[98]	[87]	[94]	[101]	[102]	[103]	[106]+[113]+[118]	[107]	[114]	[121]	[122]	[123]	[126]+[133]+[138]	[127]	[134]	[141]	[142]	[143]	[146]+[153]+[158]	[147]	[154]	[161]	[162]	[163]																																																																																																																																														
		Millions of current dollars						Millions of constant 1996 dollars						Millions of current dollars						Millions of constant 1996 dollars						Millions of current dollars						Millions of constant 1996 dollars						Millions of current dollars						Millions of constant 1996 dollars						Millions of current dollars						Millions of constant 1996 dollars						Millions of current dollars						Millions of constant 1996 dollars																																																																																																																															
1990		151,990	15,671	107,404	7,853	16,936	4,126	175,690	18,115	124,152	9,077	19,577	4,769	1991		160,872	15,249	114,675	8,093	18,203	4,652	179,425	17,008	127,900	9,027	20,302	5,189	1992		165,347	15,853	116,757	8,360	19,385	4,993	180,038	17,261	127,131	9,102	21,107	5,436	1993		165,723	16,531	115,435	8,003	20,487	5,267	176,207	17,576	122,738	8,509	21,783	5,601	1994		169,195	16,355	117,392	8,254	21,595	5,599	176,226	17,035	122,271	8,598	22,492	5,831	1995		183,611	16,904	129,830	8,448	22,603	5,827	187,168	17,231	132,345	8,611	23,041	5,940	1996		197,330	16,585	142,371	8,464	23,702	6,209	197,330	16,585	142,371	8,464	23,702	6,209	1997		212,134	16,819	155,409	8,414	24,866	6,626	208,076	16,497	152,436	8,252	24,391	6,500	1998		226,321	17,362	167,102	8,480	26,151	7,225	219,303	16,824	161,921	8,218	25,340	7,001	1999		243,517	17,851	180,682	8,684	28,135	8,175	232,697	17,058	172,653	8,298	26,885	7,812	2000		264,634	17,917	197,548	9,207	30,566	9,404	247,578	16,763	184,816	8,614	28,596	8,798	2001		274,211	21,048	198,505	10,437	33,518	10,702	250,614	19,237	181,423	9,540	30,634	9,781	2002 preliminary		276,434	23,788	192,379	11,655	36,846	11,766	249,903	21,505	173,915	10,537	33,310	10,637	2003 preliminary		283,795	24,959	193,729	12,185	40,262	12,661	253,161	22,264	172,817	10,870	35,916	11,294

FFRDC federally funded research and development center

U&C universities and colleges

^aExpenditures of industry FFRDCs for 1953–54 are included in industrial sector. Expenditures of nonprofit FFRDCs for 1953–54 are included in nonprofit sector.^bAdjustments have been made to university research and development for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 and later years are not directly comparable with data for 1997 and earlier years. For fiscal year (FY) 1998, \$479 million in passed-through funds were reported. For FY 2003, \$990 million in passed-through funds are estimated.^cExpenditure levels for academic and Federal Government performers are calendar-year approximations based on FY data. For Federal Government expenditures starting in 1977, approximation is equal to 75 percent of amount reported in same FY plus 25 percent of amount reported in subsequent FY. For academic expenditures in all years and for Federal Government expenditures prior to 1977, respective percentages are 50 and 50, because those FYs (for most academic institutions and Federal Government before 1977) begin on July 1 instead of October 1.^dSee historical database, table D, which is available in online version of this report at <http://www.nsf.gov/sbe/srs/nprdr/start.htm>, for complete series of historical data arranged in same data columns defined in this and other tables.NOTES: Technical notes explaining methodological issues of measurement will be provided in NSF, *The Methodology Underlying the Measurement of R&D Expenditures: 2003* (Arlington, VA, forthcoming). Data are based on annual reports by performers except for nonprofit sector. For trend comparisons, use only historical data reported here. Do not use data published earlier.SOURCES: Data were derived from National Science Foundation, Division of Science Resources Statistics (NSF/SRS), *Research and Development in Industry, 2001* (Arlington, VA, forthcoming); NSF/SRS, *Academic Research and Development Expenditures: Fiscal Year 2001* (Arlington, VA, 2003); NSF/SRS, *Federal Funds for Research and Development: 'FY 2001, 2002, and 2003* (Arlington, VA, forthcoming); and NSF/SRS, *Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97*.

TABLE B-22. U.S. research and development funding sources, by funding sector: 1953–2003

Year ^c	Data column: ^d	Total	Federal	Industry	U&C ^a	Nonprofit	Other government ^b	Total	Federal	Industry	U&C ^a	Nonprofit	Other government ^b
		[1]	[37]	[38]	[11]	[39]	[9]	[19]	[40]	[41]	[29]	[42]	[27]
Millions of current dollars							Millions of constant 1996 dollars						
1953		5,160	2,783	2,247	37	55	40	26,805	14,455	11,670	190	286	205
1954		5,621	3,102	2,375	40	60	45	28,912	15,957	12,215	203	309	229
1955		6,281	3,603	2,522	42	64	50	31,756	18,217	12,750	212	324	253
1956		8,500	4,978	3,346	46	74	57	41,565	24,342	16,359	225	362	276
1957		9,908	6,233	3,470	51	91	64	46,892	29,497	16,420	241	431	303
1958		10,915	6,974	3,707	56	107	72	50,439	32,228	17,130	256	492	333
1959		12,490	8,167	4,065	61	117	81	57,082	37,327	18,576	279	532	368
1960		13,711	8,915	4,516	67	123	90	61,790	40,176	20,352	302	554	406
1961		14,564	9,484	4,757	75	148	101	64,903	42,265	21,199	332	660	448
1962		15,636	10,138	5,124	84	179	112	68,761	44,583	22,531	369	785	493
1963		17,519	11,645	5,456	96	197	125	76,169	50,632	23,720	417	857	543
1964		19,103	12,764	5,888	114	200	138	81,846	54,688	25,225	486	857	589
1965		20,252	13,194	6,549	136	225	150	85,165	55,482	27,538	572	944	629
1966		22,072	14,165	7,331	165	252	160	90,236	57,910	29,971	673	1,028	654
1967		23,346	14,563	8,146	200	271	168	92,608	57,766	32,311	791	1,073	666
1968		24,666	14,964	9,008	221	290	185	93,788	56,898	34,249	838	1,101	702
1969		25,996	15,228	10,011	233	316	208	94,222	55,195	36,283	845	1,145	754
1970		26,271	14,984	10,449	259	343	237	90,404	51,563	35,955	890	1,180	816
1971		26,952	15,210	10,824	290	366	262	88,308	49,837	35,465	949	1,199	858
1972		28,740	16,039	11,715	312	393	282	90,321	50,406	36,816	979	1,234	886
1973		30,952	16,587	13,299	343	422	302	92,118	49,366	39,579	1,021	1,254	897
1974		33,359	17,287	14,885	393	474	320	91,095	47,206	40,648	1,072	1,295	874
1975		35,671	18,533	15,824	432	534	348	89,112	46,299	39,531	1,078	1,335	869
1976		39,435	20,292	17,702	480	592	369	93,227	47,971	41,849	1,135	1,399	872
1977		43,338	22,071	19,642	569	662	394	96,264	49,026	43,629	1,263	1,472	875
1978		48,719	24,414	22,457	679	727	443	101,014	50,619	46,561	1,408	1,507	919
1979		55,379	27,225	26,097	785	791	482	105,988	52,105	49,946	1,502	1,513	922
1980		63,213	29,975	30,929	920	871	519	110,822	52,551	54,223	1,612	1,527	909
1981		72,269	33,715	35,948	1,058	967	581	115,871	54,057	57,637	1,696	1,550	932
1982		80,783	37,168	40,692	1,207	1,095	621	121,937	56,103	61,422	1,821	1,653	937
1983		89,971	41,472	45,264	1,357	1,220	658	130,620	60,209	65,714	1,969	1,772	955
1984		102,251	46,477	52,187	1,514	1,351	721	143,128	65,058	73,050	2,119	1,892	1,009
1985		114,685	52,655	57,962	1,743	1,491	834	155,631	71,455	78,656	2,365	2,023	1,131
1986		120,259	54,633	60,991	2,019	1,647	969	159,686	72,544	80,987	2,680	2,188	1,287
1987		126,217	58,466	62,576	2,262	1,849	1,065	162,693	75,363	80,660	2,916	2,383	1,372
1988		133,880	60,130	67,977	2,527	2,081	1,165	166,912	74,966	84,749	3,150	2,595	1,452
1989		141,889	60,463	74,966	2,852	2,333	1,274	170,396	72,611	90,028	3,425	2,802	1,530
1990		151,990	61,607	83,208	3,187	2,589	1,399	175,690	71,214	96,183	3,683	2,993	1,617
1991		160,872	60,780	92,300	3,457	2,852	1,483	179,425	67,789	102,945	3,856	3,181	1,653
1992		165,347	60,912	96,229	3,568	3,113	1,525	180,038	66,324	104,779	3,885	3,390	1,660
1993		165,723	60,522	96,549	3,708	3,387	1,557	176,207	64,351	102,657	3,943	3,601	1,655

See explanatory information and SOURCE at end of table.

TABLE B-22. U.S. research and development funding sources, by funding sector: 1953–2003

Page 2 of 2

Year ^c	Data column: ^d	Total	Federal	Industry	U&C ^a	Nonprofit	Other government ^b	Total	Federal	Industry	U&C ^a	Nonprofit	Other government ^b
		[1]	[37]	[38]	[11]	[39]	[9]	[19]	[40]	[41]	[29]	[42]	[27]
		Millions of current dollars						Millions of constant 1996 dollars					
1994		169,195	60,769	99,203	3,937	3,664	1,622	176,226	63,294	103,326	4,101	3,816	1,689
1995		183,611	62,959	110,870	4,109	3,924	1,750	187,168	64,178	113,017	4,188	4,000	1,784
1996		197,330	63,383	123,416	4,434	4,238	1,860	197,330	63,383	123,416	4,434	4,238	1,860
1997		212,134	64,561	136,227	4,836	4,589	1,921	208,076	63,326	133,622	4,744	4,501	1,885
1998		226,321	66,356	147,843	5,168	4,984	1,970	219,303	64,298	143,258	5,008	4,829	1,909
1999		243,517	67,015	163,229	5,630	5,549	2,095	232,697	64,037	155,976	5,380	5,303	2,002
2000		264,634	66,327	183,688	6,211	6,170	2,238	247,578	62,052	171,849	5,811	5,772	2,094
2001		274,211	73,341	184,892	6,778	6,818	2,382	250,614	67,030	168,982	6,195	6,231	2,177
2002 preliminary		276,434	80,490	178,514	7,332	7,550	2,548	249,903	72,765	161,381	6,628	6,825	2,304
2003 preliminary		283,795	85,279	179,615	7,944	8,247	2,710	253,161	76,074	160,227	7,087	7,357	2,417

U&C universities and colleges

^a Adjustments have been made to university research and development (R&D) for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 and later years are not directly comparable with data for 1997 and earlier years. For fiscal year (FY) 1998, \$479 million in passed-through funds were reported. For FY 2003, \$990 million in passed-through funds are estimated.

^b Because of limitations in survey information, data on other government funding to other performers are not available and are consequently included in other sectors' support for their own R&D performance. For example, other government support to nonprofits is included in nonprofits' support for their own R&D.

^c Expenditure levels for academic and Federal Government performers are calendar-year approximations based on FY data. For Federal Government expenditures starting in 1977, approximation is equal to 75 percent of amount reported in same FY plus 25 percent of amount reported in subsequent FY. For academic expenditures in all years and Federal Government expenditures prior to 1977, respective percentages are 50 and 50, because those FYs (for most academic institutions and Federal Government before 1977) begin on July 1 instead of October 1.

^d See historical database, table D, which is available in online version of this report at <http://www.nsf.gov/sbe/srs/nprdr/start.htm>, for complete series of historical data arranged in same data columns defined in this and other tables.

NOTES: Technical notes explaining methodological issues of measurement will be provided in NSF, *The Methodology Underlying the Measurement of R&D Expenditures: 2003* (Arlington, VA, forthcoming). Data are based on annual reports by performers except for nonprofit sector. For trend comparisons, use only historical data reported here. Do not use data published earlier.

SOURCES: Data were derived from National Science Foundation, Division of Science Resources Statistics (NSF/SRS), *Research and Development in Industry, 2001* (Arlington, VA, forthcoming); NSF/SRS, *Academic Research and Development Expenditures: Fiscal Year 2001* (Arlington, VA, 2003); NSF/SRS, *Federal Funds for Research and Development: FY 2001, 2002, and 2003* (Arlington, VA, forthcoming); and NSF/SRS, Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97.

