



State Agency Research and Development Expenditures: Fiscal Year 2006

Detailed Statistical Tables | NSF 08-310 | May 2008

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General Notes

These tables present the results of the National Science Foundation (NSF) FY 2006 Survey of State R&D Expenditures, conducted for NSF by the U.S. Census Bureau. The Census Bureau employed a methodology similar to the one used to collect data from state and local governments on other censuses and surveys.

The survey was distributed to more than 400 departments, agencies, commissions, and dependent entities within the 50 states, Puerto Rico, and the District of Columbia that were considered likely to conduct or fund R&D activities. Respondents that did not have qualifying R&D activity were not required to complete the questionnaire beyond a screening question. All states participated in the survey, and 416 of their agencies responded. Of those, 252 reported conducting or funding R&D in FY 2006. Respondents were requested to provide statistics on total R&D expenditures and amounts for internal and external performers, the original source of funds (federal or nonfederal), and the amount devoted to basic research activities. An additional question was asked on the amount of expenditures for the construction and acquisition of R&D facilities.

Because of differences in the survey populations, definition of covered R&D activities, and collection methods, the results of previous NSF surveys on state government R&D are not comparable with the statistics collected on the FY 2006 Survey of State R&D Expenditures.

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Table	State Agency Expenditures for R&D R&D and R&D plant: FY 2006
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TABLE 1. State agency expenditures for R&D and R&D plant, by state and performer: FY 2006
(Dollars)

State or equivalent	R&D expenditures			R&D plant
	Total	Internal performers	External performers	
United States	1,022,475,684	261,469,260	761,006,425	73,198,491
Alabama	7,269,319	4,339,426	2,929,893	1,191,780
Alaska	10,019,060	5,356,472	4,662,588	0
Arizona	37,151,471	8,576,436	28,575,035	0
Arkansas	4,869,648	1,073,285	3,796,363	0
California	107,793,045	16,494,016	91,299,029	0
Colorado	8,997,236	6,594,969	2,402,267	3,000
Connecticut	19,209,064	14,519,731	4,689,333	0
Delaware	2,812,102	1,207,011	1,605,091	0
District of Columbia	1,173,076	302,000	871,076	0
Florida	42,329,624	10,013,516	32,316,108	0
Georgia	10,620,188	861,231	9,758,957	0
Hawaii	12,067,849	2,329,186	9,738,663	0
Idaho	2,280,873	257,926	2,022,947	0
Illinois	37,184,281	17,617,332	19,566,949	15,146,506
Indiana	6,220,575	2,364,046	3,856,529	1,000,000
Iowa	13,564,062	5,754,032	7,810,030	0
Kansas	14,348,384	2,137,741	12,210,643	0
Kentucky	17,558,997	3,702,849	13,856,148	0
Louisiana	11,216,568	7,530,897	3,685,671	0
Maine	17,509,051	0	17,509,051	12,000,000
Maryland	24,945,119	6,086,183	18,858,937	825,000
Massachusetts	10,729,419	3,623,773	7,105,646	0
Michigan	75,016,589	1,527,314	73,489,275	5,500,000
Minnesota	6,219,201	2,132,277	4,086,924	0
Mississippi	2,744,882	1,484,612	1,260,270	0
Missouri	18,465,303	12,171,794	6,293,509	0
Montana	8,606,319	2,404,391	6,201,928	0
Nebraska	5,602,163	436,000	5,166,163	0
Nevada	1,397,463	323,042	1,074,421	0
New Hampshire	2,040,544	424,762	1,615,782	471,000
New Jersey	25,900,482	5,483,784	20,416,698	4,881,065
New Mexico	3,105,000	3,000,000	105,000	0
New York	103,597,135	42,047,823	61,549,312	6,741,864
North Carolina	14,344,310	3,789,289	10,555,021	0
North Dakota	21,062,090	762,297	20,299,793	2,500,000
Ohio	55,068,629	1,515,058	53,553,571	8,750,000
Oklahoma	8,922,036	83,333	8,838,703	0
Oregon	7,382,722	3,318,194	4,064,527	1,692,030
Pennsylvania	117,320,158	3,310,731	114,009,428	11,564,981
Rhode Island	150,000	0	150,000	0
South Carolina	22,427,746	15,780,585	6,647,161	18,750
South Dakota	5,791,586	2,318,754	3,472,832	0
Tennessee	5,355,000	704,000	4,651,000	0
Texas	28,019,645	5,870,258	22,149,387	605,257
Utah	3,214,170	964,170	2,250,000	100,000
Vermont	1,680,533	848,787	831,746	0
Virginia	11,579,623	5,045,794	6,533,829	0
Washington	22,834,218	12,187,408	10,646,810	2,500
West Virginia	6,024,577	1,767,688	4,256,889	67,258

TABLE 1. State agency expenditures for R&D and R&D plant, by state and performer: FY 2006
(Dollars)

State or equivalent	R&D expenditures			R&D plant
	Total	Internal performers	External performers	
Wisconsin	10,949,155	5,534,273	5,414,882	137,500
Wyoming	6,326,604	4,216,426	2,110,178	0
Puerto Rico	1,458,790	1,274,358	184,432	0

NOTES: Because of rounding, detail may not add to total. Internal performers include state agency and department employees and services performed by others in support of an internal R&D project. External performers include academic institutions, companies and individuals, and other non-internal performers.

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures.

TABLE 2. All state government expenditures and state agency expenditures for R&D and R&D plant, by state: FY 2005, FY 2006
(Dollars)

State or equivalent	All state government expenditures (FY 2005)	State agency expenditures	
		R&D (FY 2006)	R&D plant (FY 2006)
United States	1,479,562,054,000	1,022,475,684	73,198,491
Alabama	21,046,841,000	7,269,319	1,191,780
Alaska	8,055,975,000	10,019,060	0
Arizona	23,957,058,000	37,151,471	0
Arkansas	13,634,214,000	4,869,648	0
California	209,771,313,000	107,793,045	0
Colorado	18,769,570,000	8,997,236	3,000
Connecticut	20,203,170,000	19,209,064	0
Delaware	5,904,256,000	2,812,102	0
District of Columbia	9,099,596,000	1,173,076	0
Florida	70,417,744,000	42,329,624	0
Georgia	33,806,582,000	10,620,188	0
Hawaii	8,405,444,000	12,067,849	0
Idaho	6,137,489,000	2,280,873	0
Illinois	55,666,989,000	37,184,281	15,146,506
Indiana	26,451,543,000	6,220,575	1,000,000
Iowa	14,142,676,000	13,564,062	0
Kansas	11,765,208,000	14,348,384	0
Kentucky	20,091,176,000	17,558,997	0
Louisiana	21,402,115,000	11,216,568	0
Maine	7,484,638,000	17,509,051	12,000,000
Maryland	26,803,282,000	24,945,119	825,000
Massachusetts	38,025,089,000	10,729,419	0
Michigan	51,408,421,000	75,016,589	5,500,000
Minnesota	30,169,448,000	6,219,201	0
Mississippi	14,704,763,000	2,744,882	0
Missouri	23,147,448,000	18,465,303	0
Montana	4,800,120,000	8,606,319	0
Nebraska	7,273,406,000	5,602,163	0
Nevada	9,158,273,000	1,397,463	0
New Hampshire	5,783,853,000	2,040,544	471,000
New Jersey	49,230,773,000	25,900,482	4,881,065
New Mexico	12,599,040,000	3,105,000	0
New York	136,786,401,000	103,597,135	6,741,864
North Carolina	39,482,250,000	14,344,310	0
North Dakota	3,490,904,000	21,062,090	2,500,000
Ohio	60,554,060,000	55,068,629	8,750,000
Oklahoma	15,710,022,000	8,922,036	0
Oregon	19,216,554,000	7,382,722	1,692,030
Pennsylvania	62,833,258,000	117,320,158	11,564,981
Rhode Island	6,753,641,000	150,000	0
South Carolina	22,708,996,000	22,427,746	18,750
South Dakota	3,261,813,000	5,791,586	0
Tennessee	23,989,642,000	5,355,000	0
Texas	81,368,646,000	28,019,645	605,257
Utah	11,148,591,000	3,214,170	100,000
Vermont	4,435,774,000	1,680,533	0
Virginia	32,790,458,000	11,579,623	0
Washington	33,059,244,000	22,834,218	2,500
West Virginia	9,826,128,000	6,024,577	67,258

TABLE 2. All state government expenditures and state agency expenditures for R&D and R&D plant, by state: FY 2005, FY 2006
(Dollars)

State or equivalent	All state government expenditures (FY 2005)	State agency expenditures	
		R&D (FY 2006)	R&D plant (FY 2006)
Wisconsin	28,828,334,000	10,949,155	137,500
Wyoming	3,999,825,000	6,326,604	0
Puerto Rico	NA	1,458,790	0

NA = not available.

SOURCES: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures; U.S. Census Bureau, Governments Division, FY 2005 Survey of State Government Finances, February 2007.

TABLE 3. State agency expenditures for R&D by all performers, by state and source of funds: FY 2006

(Dollars)

State or equivalent	All R&D expenditures	Source of funds	
		Federal government	State and other ^a
United States	1,022,475,684	255,504,186	766,971,498
Alabama	7,269,319	3,636,117	3,633,202
Alaska	10,019,060	5,647,941	4,371,119
Arizona	37,151,471	5,659,756	31,491,715
Arkansas	4,869,648	2,066,318	2,803,330
California	107,793,045	27,867,854	79,925,191
Colorado	8,997,236	4,044,780	4,952,456
Connecticut	19,209,064	6,735,926	12,473,138
Delaware	2,812,102	277,211	2,534,891
District of Columbia	1,173,076	938,460	234,616
Florida	42,329,624	9,887,481	32,442,143
Georgia	10,620,188	5,545,780	5,074,408
Hawaii	12,067,849	8,578,749	3,489,100
Idaho	2,280,873	652,451	1,628,422
Illinois	37,184,281	1,521,332	35,662,949
Indiana	6,220,575	4,428,024	1,792,551
Iowa	13,564,062	4,388,234	9,175,828
Kansas	14,348,384	4,864,624	9,483,760
Kentucky	17,558,997	6,823,866	10,735,131
Louisiana	11,216,568	6,382,762	4,833,806
Maine	17,509,051	0	17,509,051
Maryland	24,945,119	5,053,001	19,892,118
Massachusetts	10,729,419	1,125,989	9,603,430
Michigan	75,016,589	4,127,849	70,888,740
Minnesota	6,219,201	2,002,686	4,216,515
Mississippi	2,744,882	2,285,202	459,680
Missouri	18,465,303	5,473,754	12,991,549
Montana	8,606,319	2,913,589	5,692,730
Nebraska	5,602,163	1,940,130	3,662,033
Nevada	1,397,463	505,000	892,463
New Hampshire	2,040,544	1,793,026	247,518
New Jersey	25,900,482	2,927,179	22,973,303
New Mexico	3,105,000	0	3,105,000
New York	103,597,135	11,175,919	92,421,216
North Carolina	14,344,310	8,043,625	6,300,685
North Dakota	21,062,090	5,957,704	15,104,386
Ohio	55,068,629	8,767,534	46,301,095
Oklahoma	8,922,036	643,333	8,278,703
Oregon	7,382,722	2,245,190	5,137,532
Pennsylvania	117,320,158	4,278,736	113,041,422
Rhode Island	150,000	150,000	0
South Carolina	22,427,746	19,731,986	2,695,760
South Dakota	5,791,586	3,011,796	2,779,790
Tennessee	5,355,000	4,658,000	697,000
Texas	28,019,645	20,318,659	7,700,986
Utah	3,214,170	1,800,000	1,414,170
Vermont	1,680,533	1,282,280	398,253
Virginia	11,579,623	6,387,630	5,191,993
Washington	22,834,218	7,728,621	15,105,597
West Virginia	6,024,577	2,663,801	3,360,776

TABLE 3. State agency expenditures for R&D by all performers, by state and source of funds: FY 2006

(Dollars)

State or equivalent	All R&D expenditures	Source of funds	
		Federal government	State and other ^a
Wisconsin	10,949,155	4,772,502	6,176,653
Wyoming	6,326,604	1,688,296	4,638,308
Puerto Rico	1,458,790	103,503	1,355,287

^a "Other" includes companies, nonprofit organizations, other state governments, and city, county, regional, or other local governments.

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures.

TABLE 4. State agency expenditures for R&D by internal performers, by state and source of funds: FY 2006
(Dollars)

State or equivalent	All R&D by internal performers	Source of funds		
		Federal government	State	Other ^a
United States	261,469,260	95,215,574	149,872,194	16,381,492
Alabama	4,339,426	2,164,043	2,084,017	91,366
Alaska	5,356,472	3,411,983	1,839,489	105,000
Arizona	8,576,436	4,361,339	3,726,530	488,567
Arkansas	1,073,285	689,886	383,399	0
California	16,494,016	7,958,590	8,504,931	30,495
Colorado	6,594,969	2,871,287	2,649,791	1,073,891
Connecticut	14,519,731	4,069,197	10,054,727	395,807
Delaware	1,207,011	277,211	610,000	319,800
District of Columbia	302,000	241,600	60,400	0
Florida	10,013,516	3,180,864	4,487,758	2,344,894
Georgia	861,231	683,317	177,914	0
Hawaii	2,329,186	1,419,765	841,091	68,330
Idaho	257,926	151,742	106,184	0
Illinois	17,617,332	1,521,332	16,096,000	0
Indiana	2,364,046	1,337,988	1,026,058	0
Iowa	5,754,032	1,259,833	2,906,184	1,588,015
Kansas	2,137,741	1,480,193	657,548	0
Kentucky	3,702,849	406,133	3,296,716	0
Louisiana	7,530,897	4,819,862	2,711,035	0
Maine	0	0	0	0
Maryland	6,086,183	2,018,197	3,909,986	158,000
Massachusetts	3,623,773	552,319	3,067,954	3,500
Michigan	1,527,314	489,815	1,037,499	0
Minnesota	2,132,277	1,118,639	490,638	523,000
Mississippi	1,484,612	1,284,844	199,768	0
Missouri	12,171,794	2,352,917	9,818,877	0
Montana	2,404,391	1,787,327	424,973	192,091
Nebraska	436,000	336,000	100,000	0
Nevada	323,042	5,000	318,042	0
New Hampshire	424,762	348,732	35,830	40,200
New Jersey	5,483,784	1,801,347	3,682,437	0
New Mexico	3,000,000	0	3,000,000	0
New York	42,047,823	2,831,250	34,953,000	4,263,573
North Carolina	3,789,289	849,051	2,880,684	59,554
North Dakota	762,297	266,797	476,000	19,500
Ohio	1,515,058	639,107	875,951	0
Oklahoma	83,333	23,333	60,000	0
Oregon	3,318,194	1,341,481	1,726,713	250,000
Pennsylvania	3,310,731	1,069,095	2,191,636	50,000
Rhode Island	0	0	0	0
South Carolina	15,780,585	14,770,956	1,009,629	0
South Dakota	2,318,754	287,519	805,772	1,225,463
Tennessee	704,000	613,000	91,000	0
Texas	5,870,258	3,577,232	2,293,026	0
Utah	964,170	754,889	209,281	0
Vermont	848,787	699,538	149,249	0
Virginia	5,045,794	2,789,270	2,198,476	58,048
Washington	12,187,408	4,223,649	5,342,334	2,621,425
West Virginia	1,767,688	1,265,231	502,457	0

TABLE 4. State agency expenditures for R&D by internal performers, by state and source of funds: FY 2006
(Dollars)

State or equivalent	All R&D by internal performers	Source of funds		
		Federal government	State	Other ^a
Wisconsin	5,534,273	3,261,000	1,890,773	382,500
Wyoming	4,216,426	1,448,371	2,739,582	28,473
Puerto Rico	1,274,358	103,503	1,170,855	0

^aIncludes companies, nonprofit organizations, other state governments, and city, county, regional, or other local governments.

NOTE: Internal performers include state agency and department employees, and services performed by others in support of an internal R&D project.

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures.

TABLE 5. State agency expenditures for R&D by external performers, by state and type of performer: FY 2006
(Dollars)

State or equivalent	All R&D by external performers	Type of performer		
		Academic institutions	Companies and individuals ^a	Other ^b
United States	761,006,425	503,973,268	136,375,131	120,658,026
Alabama	2,929,893	1,829,893	0	1,100,000
Alaska	4,662,588	621,263	4,041,325	0
Arizona	28,575,035	20,913,769	7,091,266	570,000
Arkansas	3,796,363	2,296,286	722,818	777,259
California	91,299,029	57,223,320	17,807,334	16,268,375
Colorado	2,402,267	1,197,899	1,192,343	12,025
Connecticut	4,689,333	3,969,388	0	719,945
Delaware	1,605,091	718,600	886,491	0
District of Columbia	871,076	781,076	90,000	0
Florida	32,316,108	21,161,651	7,001,544	4,152,913
Georgia	9,758,957	2,936,630	4,595,009	2,227,318
Hawaii	9,738,663	2,503,558	6,230,412	1,004,693
Idaho	2,022,947	1,313,475	96,362	613,110
Illinois	19,566,949	15,428,249	3,060,700	1,078,000
Indiana	3,856,529	3,701,842	154,687	0
Iowa	7,810,030	6,932,030	0	878,000
Kansas	12,210,643	9,482,683	1,641,509	1,086,451
Kentucky	13,856,148	12,249,144	1,592,004	15,000
Louisiana	3,685,671	3,605,457	80,214	0
Maine	17,509,051	0	5,509,051	12,000,000
Maryland	18,858,937	14,712,396	4,091,541	55,000
Massachusetts	7,105,646	5,906,938	174,708	1,024,000
Michigan	73,489,275	37,931,086	1,258,189	34,300,000
Minnesota	4,086,924	3,732,015	162,409	192,500
Mississippi	1,260,270	453,948	252,158	554,164
Missouri	6,293,509	4,771,453	229,792	1,292,264
Montana	6,201,928	2,915,357	2,741,779	544,792
Nebraska	5,166,163	2,343,663	72,500	2,750,000
Nevada	1,074,421	1,053,634	20,787	0
New Hampshire	1,615,782	1,086,632	368,900	160,250
New Jersey	20,416,698	18,120,682	300,000	1,996,016
New Mexico	105,000	65,000	15,000	25,000
New York	61,549,312	57,387,143	2,767,169	1,395,000
North Carolina	10,555,021	9,750,227	268,859	535,935
North Dakota	20,299,793	8,976,984	10,910,500	412,309
Ohio	53,553,571	33,955,619	17,578,352	2,019,600
Oklahoma	8,838,703	4,561,139	2,408,547	1,869,017
Oregon	4,064,528	2,871,985	154,679	1,037,864
Pennsylvania	114,009,427	68,742,952	24,580,021	20,686,454
Rhode Island	150,000	150,000	0	0
South Carolina	6,647,161	3,838,107	199,739	2,609,315
South Dakota	3,472,832	2,090,336	1,382,496	0
Tennessee	4,651,000	4,348,000	303,000	0
Texas	22,149,387	22,106,387	0	43,000
Utah	2,250,000	2,000,000	200,000	50,000
Vermont	831,746	609,641	141,105	81,000
Virginia	6,533,829	5,567,471	947,485	18,873
Washington	10,646,810	5,667,295	1,656,138	3,323,377
West Virginia	4,256,889	4,113,412	73,477	70,000

TABLE 5. State agency expenditures for R&D by external performers, by state and type of performer: FY 2006
(Dollars)

State or equivalent	All R&D by external performers	Type of performer		
		Academic institutions	Companies and individuals ^a	Other ^b
Wisconsin	5,414,882	3,308,775	996,900	1,109,207
Wyoming	2,110,178	1,968,778	141,400	0
Puerto Rico	184,432	0	184,432	0

^aIncludes individuals under contract for research projects.

^bIncludes federal government, nonprofit organizations, city, county, regional, or other local governments; other departments/agencies within state; and other state governments.

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures.

TABLE 6. State agency expenditures for R&D and basic research, by state: FY 2006

(Dollars)

State or equivalent	All R&D expenditures	Basic research	
		Total	% all R&D expenditures
United States	1,022,475,684	213,570,882	20.9
Alabama	7,269,319	1,275,804	17.6
Alaska	10,019,060	598,622	6.0
Arizona	37,151,471	21,409,583	57.6
Arkansas	4,869,648	1,460,380	30.0
California	107,793,045	5,097,948	4.7
Colorado	8,997,236	304,940	3.4
Connecticut	19,209,064	4,574,818	23.8
Delaware	2,812,102	375,166	13.3
District of Columbia	1,173,076	0	0.0
Florida	42,329,624	10,625,638	25.1
Georgia	10,620,188	55,000	0.5
Hawaii	12,067,849	880,750	7.3
Idaho	2,280,873	441,267	19.3
Illinois	37,184,281	533,330	1.4
Indiana	6,220,575	437,800	7.0
Iowa	13,564,062	2,051,118	15.1
Kansas	14,348,384	1,301,792	9.1
Kentucky	17,558,997	4,351,476	24.8
Louisiana	11,216,568	5,890,434	52.5
Maine	17,509,051	5,509,051	31.5
Maryland	24,945,119	4,631,600	18.6
Massachusetts	10,729,419	234,173	2.2
Michigan	75,016,589	5,205,204	6.9
Minnesota	6,219,201	750,000	12.1
Mississippi	2,744,882	215,173	7.8
Missouri	18,465,303	85,500	0.5
Montana	8,606,319	1,500,000	17.4
Nebraska	5,602,163	1,715,663	30.6
Nevada	1,397,463	0	0.0
New Hampshire	2,040,544	88,180	4.3
New Jersey	25,900,482	14,292,912	55.2
New Mexico	3,105,000	50,000	1.6
New York	103,597,135	17,595,669	17.0
North Carolina	14,344,310	371,000	2.6
North Dakota	21,062,090	4,458,386	21.2
Ohio	55,068,629	2,980,234	5.4
Oklahoma	8,922,036	3,464,239	38.8
Oregon	7,382,722	626,391	8.5
Pennsylvania	117,320,158	67,655,969	57.7
Rhode Island	150,000	0	0.0
South Carolina	22,427,746	3,712,659	16.6
South Dakota	5,791,586	160,000	2.8
Tennessee	5,355,000	1,750,000	32.7
Texas	28,019,645	1,946,166	6.9
Utah	3,214,170	300,000	9.3
Vermont	1,680,533	113,273	6.7
Virginia	11,579,623	5,991,859	51.7
Washington	22,834,218	1,297,250	5.7
West Virginia	6,024,577	3,553,349	59.0

TABLE 6. State agency expenditures for R&D and basic research, by state: FY 2006
(Dollars)

State or equivalent	All R&D expenditures	Basic research	
		Total	% all R&D expenditures
Wisconsin	10,949,155	0	0.0
Wyoming	6,326,604	1,210,138	19.1
Puerto Rico	1,458,790	440,978	30.2

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures.

TABLE 7. State agency expenditures for R&D from federal funds, by state: FY 2006
(Dollars)

State or equivalent	All R&D expenditures	Federal funds	
		Total	% all R&D expenditures
United States	1,022,475,684	255,504,186	25.0
Alabama	7,269,319	3,636,117	50.0
Alaska	10,019,060	5,647,941	56.4
Arizona	37,151,471	5,659,756	15.2
Arkansas	4,869,648	2,066,318	42.4
California	107,793,045	27,867,854	25.9
Colorado	8,997,236	4,044,780	45.0
Connecticut	19,209,064	6,735,926	35.1
Delaware	2,812,102	277,211	9.9
District of Columbia	1,173,076	938,460	80.0
Florida	42,329,624	9,887,481	23.4
Georgia	10,620,188	5,545,780	52.2
Hawaii	12,067,849	8,578,749	71.1
Idaho	2,280,873	652,451	28.6
Illinois	37,184,281	1,521,332	4.1
Indiana	6,220,575	4,428,024	71.2
Iowa	13,564,062	4,388,234	32.4
Kansas	14,348,384	4,864,624	33.9
Kentucky	17,558,997	6,823,866	38.9
Louisiana	11,216,568	6,382,762	56.9
Maine	17,509,051	0	0.0
Maryland	24,945,119	5,053,001	20.3
Massachusetts	10,729,419	1,125,989	10.5
Michigan	75,016,589	4,127,849	5.5
Minnesota	6,219,201	2,002,686	32.2
Mississippi	2,744,882	2,285,202	83.3
Missouri	18,465,303	5,473,754	29.6
Montana	8,606,319	2,913,589	33.9
Nebraska	5,602,163	1,940,130	34.6
Nevada	1,397,463	505,000	36.1
New Hampshire	2,040,544	1,793,026	87.9
New Jersey	25,900,482	2,927,179	11.3
New Mexico	3,105,000	0	0.0
New York	103,597,135	11,175,919	10.8
North Carolina	14,344,310	8,043,625	56.1
North Dakota	21,062,090	5,957,704	28.3
Ohio	55,068,629	8,767,534	15.9
Oklahoma	8,922,036	643,333	7.2
Oregon	7,382,722	2,245,190	30.4
Pennsylvania	117,320,158	4,278,736	3.6
Rhode Island	150,000	150,000	100.0
South Carolina	22,427,746	19,731,986	88.0
South Dakota	5,791,586	3,011,796	52.0
Tennessee	5,355,000	4,658,000	87.0
Texas	28,019,645	20,318,659	72.5
Utah	3,214,170	1,800,000	56.0
Vermont	1,680,533	1,282,280	76.3
Virginia	11,579,623	6,387,630	55.2
Washington	22,834,218	7,728,621	33.8
West Virginia	6,024,577	2,663,801	44.2

TABLE 7. State agency expenditures for R&D from federal funds, by state: FY 2006
(Dollars)

State or equivalent	All R&D expenditures	Federal funds	
		Total	% all R&D expenditures
Wisconsin	10,949,155	4,772,502	43.6
Wyoming	6,326,604	1,688,296	26.7
Puerto Rico	1,458,790	103,503	7.1

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures.

TABLE 8. State agency expenditures for R&D and gross domestic product, by state: FY 2006
(Millions of dollars)

State or equivalent	All R&D expenditures	Gross domestic product
United States	1,022.5	13,149,033
Alabama	7.3	160,569
Alaska	10.0	41,105
Arizona	37.2	232,463
Arkansas	4.9	91,837
California	107.8	1,727,355
Colorado	9.0	230,478
Connecticut	19.2	204,134
Delaware	2.8	60,361
District of Columbia	1.2	87,664
Florida	42.3	713,505
Georgia	10.6	379,550
Hawaii	12.1	58,307
Idaho	2.3	49,907
Illinois	37.2	589,598
Indiana	6.2	248,915
Iowa	13.6	123,970
Kansas	14.3	111,699
Kentucky	17.6	145,959
Louisiana	11.2	193,138
Maine	17.5	46,973
Maryland	24.9	257,815
Massachusetts	10.7	337,570
Michigan	75.0	381,003
Minnesota	6.2	244,546
Mississippi	2.7	84,225
Missouri	18.5	225,876
Montana	8.6	32,322
Nebraska	5.6	75,700
Nevada	1.4	118,399
New Hampshire	2.0	56,276
New Jersey	25.9	453,177
New Mexico	3.1	75,910
New York	103.6	1,021,944
North Carolina	14.3	374,525
North Dakota	21.1	26,385
Ohio	55.1	461,302
Oklahoma	8.9	134,651
Oregon	7.4	151,301
Pennsylvania	117.3	510,293
Rhode Island	0.2	45,660
South Carolina	22.4	149,214
South Dakota	5.8	32,330
Tennessee	5.4	238,029
Texas	28.0	1,065,891
Utah	3.2	97,749
Vermont	1.7	24,213
Virginia	11.6	369,260
Washington	22.8	293,531
West Virginia	6.0	55,658

TABLE 8. State agency expenditures for R&D and gross domestic product, by state: FY 2006
(Millions of dollars)

State or equivalent	All R&D expenditures	Gross domestic product
Wisconsin	10.9	227,230
Wyoming	6.3	29,561
Puerto Rico	1.5	NA

NA = not available.

NOTE: Because of rounding, detail may not add to total.

SOURCES: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures; Bureau of Economic Analysis, News Release 07-24 *State Economic Growth Widespread in 2006* (7 June 2007).

TABLE 9. State agency expenditures for R&D, ranked by all R&D expenditures:

FY 2006

(Dollars)

Rank	State or equivalent	All R&D expenditures
	United States	1,022,475,684
1	Pennsylvania	117,320,158
2	California	107,793,045
3	New York	103,597,135
4	Michigan	75,016,589
5	Ohio	55,068,629
6	Florida	42,329,624
7	Illinois	37,184,281
8	Arizona	37,151,471
9	Texas	28,019,645
10	New Jersey	25,900,482
11	Maryland	24,945,119
12	Washington	22,834,218
13	South Carolina	22,427,746
14	North Dakota	21,062,090
15	Connecticut	19,209,064
16	Missouri	18,465,303
17	Kentucky	17,558,997
18	Maine	17,509,051
19	Kansas	14,348,384
20	North Carolina	14,344,310
21	Iowa	13,564,062
22	Hawaii	12,067,849
23	Virginia	11,579,623
24	Louisiana	11,216,568
25	Wisconsin	10,949,155
26	Massachusetts	10,729,419
27	Georgia	10,620,188
28	Alaska	10,019,060
29	Colorado	8,997,236
30	Oklahoma	8,922,036
31	Montana	8,606,319
32	Oregon	7,382,722
33	Alabama	7,269,319
34	Wyoming	6,326,604
35	Indiana	6,220,575
36	Minnesota	6,219,201
37	West Virginia	6,024,577
38	South Dakota	5,791,586
39	Nebraska	5,602,163
40	Tennessee	5,355,000
41	Arkansas	4,869,648
42	Utah	3,214,170
43	New Mexico	3,105,000
44	Delaware	2,812,102
45	Mississippi	2,744,882
46	Idaho	2,280,873
47	New Hampshire	2,040,544
48	Vermont	1,680,533
49	Puerto Rico	1,458,790

TABLE 9. State agency expenditures for R&D, ranked by all R&D expenditures:

FY 2006

(Dollars)

Rank	State or equivalent	All R&D expenditures
50	Nevada	1,397,463
51	District of Columbia	1,173,076
52	Rhode Island	150,000

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures.

TABLE 10. State agency expenditures for R&D, ranked by basic research expenditures: FY 2006

(Dollars)

Rank	State or equivalent	Basic research expenditures
	United States	213,570,882
1	Pennsylvania	67,655,969
2	Arizona	21,409,583
3	New York	17,595,669
4	New Jersey	14,292,912
5	Florida	10,625,638
6	Virginia	5,991,859
7	Louisiana	5,890,434
8	Maine	5,509,051
9	Michigan	5,205,204
10	California	5,097,948
11	Maryland	4,631,600
12	Connecticut	4,574,818
13	North Dakota	4,458,386
14	Kentucky	4,351,476
15	South Carolina	3,712,659
16	West Virginia	3,553,349
17	Oklahoma	3,464,239
18	Ohio	2,980,234
19	Iowa	2,051,118
20	Texas	1,946,166
21	Tennessee	1,750,000
22	Nebraska	1,715,663
23	Montana	1,500,000
24	Arkansas	1,460,380
25	Kansas	1,301,792
26	Washington	1,297,250
27	Alabama	1,275,804
28	Wyoming	1,210,138
29	Hawaii	880,750
30	Minnesota	750,000
31	Oregon	626,391
32	Alaska	598,622
33	Illinois	533,330
34	Idaho	441,267
35	Puerto Rico	440,978
36	Indiana	437,800
37	Delaware	375,166
38	North Carolina	371,000
39	Colorado	304,940
40	Utah	300,000
41	Massachusetts	234,173
42	Mississippi	215,173
43	South Dakota	160,000
44	Vermont	113,273
45	New Hampshire	88,180
46	Missouri	85,500
47	Georgia	55,000
48	New Mexico	50,000
49	District of Columbia	0

TABLE 10. State agency expenditures for R&D, ranked by basic research expenditures: FY 2006

(Dollars)

Rank	State or equivalent	Basic research expenditures
49	Nevada	0
49	Rhode Island	0
49	Wisconsin	0

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures.

TABLE 11. State agency expenditures for R&D, ranked by expenditures from federal sources: FY 2006

(Dollars)

Rank	State	Expenditures from federal sources
	United States	255,504,186
1	California	27,867,854
2	Texas	20,318,659
3	South Carolina	19,731,986
4	New York	11,175,919
5	Florida	9,887,481
6	Ohio	8,767,534
7	Hawaii	8,578,749
8	North Carolina	8,043,625
9	Washington	7,728,621
10	Kentucky	6,823,866
11	Connecticut	6,735,926
12	Virginia	6,387,630
13	Louisiana	6,382,762
14	North Dakota	5,957,704
15	Arizona	5,659,756
16	Alaska	5,647,941
17	Georgia	5,545,780
18	Missouri	5,473,754
19	Maryland	5,053,001
20	Kansas	4,864,624
21	Wisconsin	4,772,502
22	Tennessee	4,658,000
23	Indiana	4,428,024
24	Iowa	4,388,234
25	Pennsylvania	4,278,736
26	Michigan	4,127,849
27	Colorado	4,044,780
28	Alabama	3,636,117
29	South Dakota	3,011,796
30	New Jersey	2,927,179
31	Montana	2,913,589
32	West Virginia	2,663,801
33	Mississippi	2,285,202
34	Oregon	2,245,190
35	Arkansas	2,066,318
36	Minnesota	2,002,686
37	Nebraska	1,940,130
38	Utah	1,800,000
39	New Hampshire	1,793,026
40	Wyoming	1,688,296
41	Illinois	1,521,332
42	Vermont	1,282,280
43	Massachusetts	1,125,989
44	District of Columbia	938,460
45	Idaho	652,451
46	Oklahoma	643,333
47	Nevada	505,000
48	Delaware	277,211
49	Rhode Island	150,000

TABLE 11. State agency expenditures for R&D, ranked by expenditures from federal sources: FY 2006

(Dollars)

Rank	State	Expenditures from federal sources
50	Puerto Rico	103,503
51	Maine	0
51	New Mexico	0

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures.

Appendix A. Technical Notes

The National Science Foundation (NSF) Survey of State R&D Expenditures measures the extent of R&D activity performed and funded by each of the nation's 50 states and the District of Columbia and Puerto Rico (treated as state equivalents in this report). The FY 2006 survey inaugurated this data collection effort; it collected amounts expended for R&D activities by state agencies for state fiscal years ending in 2006. A survey of FY 2007 expenditures will be conducted.

NSF provided funding to the U.S. Census Bureau to develop and conduct the FY 2006 survey, via a Web-based instrument. The survey was launched in November 2006 with a letter from the NSF Director, Dr. Arden Bement, to governors asking for each state's participation. The survey materials also included a letter of endorsement from the National Governors Association chair, Governor Janet Napolitano. (See appendix B.) Responses were collected through October 2007.

Scope of Survey

The survey covered state government departments, agencies, independent commissions, and other entities determined to be state-run. It excluded state-run colleges and universities, which are canvassed as part of the NSF Survey of R&D Expenditures at Colleges and Universities (see "Data Comparability," below, for more detail). It also excluded entities determined to be nonprofit or private, as defined by Census Bureau government classification.

Survey Methodology

The universe of interest covered all state departments, agencies, commissions, and dependent entities, with the exception of state-run colleges and universities; however, evidence existed that not all state agencies needed to be surveyed, as many were clearly not involved in R&D activity. Governors' offices identified a central coordinator in each state to assist in collecting data from state agencies. Each state coordinator was given a list of preselected agencies in their state that were to be surveyed with certainty. These agencies were identified in advance by the Census Bureau and NSF as having names that indicated a strong likelihood for providing R&D support, on the basis of reported R&D funding from a state survey conducted in 1996.[1] State coordinators were encouraged to add agencies they believed were also involved with R&D to the preselected list. State coordinators were allowed to add agencies until final survey closeout. The total preselected agency count was 320. State coordinators added 103 agencies to the respondent universe, for a total agency respondent universe of 423.[2]

Before officially submitting the data for their state, coordinators performed a final verification of aggregated agency data. All responses, including the initial agency data submissions and final state coordinator verifications, were received via the Web form or e-mail. Basic logical edit checks, review of respondent comments, and comparisons of data from previous surveys allowed staff to detect and work with state respondents to correct data errors.

Survey Instrument

The respondent questionnaire consisted of one screening and four R&D expenditures data questions (appendix B). The four R&D expenditures questions contained a total of 10 items.

Screening Question. The purpose of this question was to reduce the burden on agency respondents who did not have qualifying R&D expenditures during FY 2006

and to further clarify the scope of the survey for those agencies with R&D expenditures data to report. All 423 state agencies were asked whether they conducted or funded R&D activities during FY 2006. Respondents were provided definitions and examples (appendix B), including the following definition of R&D: creative work conducted systematically to (1) extend scientific knowledge, or (2) devise new or improved applications, including materials, products, devices, processes, systems, or services. Respondents who answered "No" to the screening question were not required to complete the remaining questions.

Question 1. The first seven data items were grouped as one question on the survey form. The purpose of this question was to allow the respondent to report all R&D expenditures for the agency, with the exception of R&D plant expenditures. The first three items asked for "Internal Performer" expenditures, by source of funds (state, federal, other). The second three items asked the respondent to report expenditures according to three types of "External Performers." The final data item, the agency's "Total R&D Expenditures," was calculated automatically as the respondent entered data.

Question 2. This question asked the respondent to provide the total amount of basic research expenditures for the agency. Respondents were provided with the "Total R&D Expenditures" amount calculated in Question 1.

Question 3. The next data item was also a subset of the "Total R&D Expenditures" amount calculated in Question 1. This question requested total R&D expenditures from federal sources, regardless of whether the R&D was performed internally or externally.

Question 4. The final data item asked the respondent to report R&D plant expenditures for FY 2006. This item was requested separately to avoid including large, one-time agency expenditures for construction projects or the purchase of land or buildings in "Total R&D Expenditures."

The instrument also allowed respondents to provide comments for each question.

Response Rates

The FY 2006 Survey of State R&D Expenditures calculated two response rates: one at the agency level and one for official data verification at the state level. Of the 52 states and state equivalents, 48 (92.3%) provided officially verified final state data. The four entities that did not officially verify data had some or all agencies submit data. The final agency response was 416 out of 423, for a rate of 98.3%. One state, Maine, did not submit individual agency data but submitted state totals via the state coordinator. For this reason, the 10 preselected agencies in Maine were not counted in the final response rates. Table A-1 displays final agency response rates, as well as counts of agencies that identified themselves as not having qualifying R&D expenditures for FY 2006. Table A-2 displays the progression of response rates throughout data collection for both state and agency responses.

Of the 416 agencies that responded to the survey, 164 (39.4%) reported conducting and funding no R&D in FY 2006; 252 reported having FY 2006 R&D activity. Of the 315 agencies preselected for the survey who responded, 103 (32.7%) reported having no R&D. Of the 101 respondent agencies added to the survey by a state coordinator, 61 (60.4%) reported having no R&D, which indicated that the preselection process for identifying R&D activities of state agencies was generally successful but not complete.

National Totals and Imputations

All state and national totals are aggregates of reported agency data or amounts revised at the state level by state coordinators. No statistical methods were used to account for nonresponding agencies.

Data Limitations

State coordinators in Massachusetts, Michigan, New Mexico, and Rhode Island did not verify the aggregated agency data. Their agencies' data are included in totals reported here. At least one agency in each of the following states did not respond to the survey: Colorado (1), New Hampshire (1), New Jersey (1), New Mexico (2), and Rhode Island (2).

Although every effort was made to exclude out-of-scope amounts, it is likely that some reported data include expenditures for non-R&D activities, such as commercialization, environmental testing, or routine survey work. Some state data may also exclude minor R&D expenditure amounts from agencies not surveyed.

Data Comparability

The last two previous NSF-supported surveys of state government R&D were undertaken more than a decade ago. The first collected data for fiscal years 1987 and 1988,[3] and the second, for fiscal year 1995.[4] Both data collections were conducted by nonfederal organizations that were supported by NSF grants. Because of differences in the survey populations, definition of covered R&D activities, and collection methods, the results of those surveys are not comparable with the statistics collected on the FY 2006 Survey of State R&D Expenditures.

The data reported here focus exclusively on R&D expenditures of state departments, agencies, commissions, and dependent entities, with the exception of state-run colleges and universities. Universities, colleges, or other higher education entities surveyed under the NSF Survey of R&D Expenditures at Universities and Colleges were out of scope, as respondents, for this effort. State-run laboratories or experiment stations controlled by state universities were excluded. Any entities determined to be nonprofit or private, as defined by Census Bureau government classification, were also excluded from the respondent universe. Several industry-specific state commissions, which are generally chartered by state legislatures but are administered independently, were considered state agencies and included in the survey.

The data exclude R&D expenditures of states that did not flow through state agencies' budgets. The state totals do not include direct appropriations from state legislatures to colleges and universities. In FY 2006, universities and colleges reported expending \$3.0 billion on separately budgeted R&D activities that were funded from all sources of state and local government support.[5] State agencies reported \$0.5 billion in expenditures used to support R&D performance by academic institutions. A major factor for the difference between totals reported in the Academic and the State R&D surveys is due to direct appropriations/grants to state-run universities that are included in the former, but not the latter. Another likely factor is the exclusion of R&D at agricultural experiment stations from the state survey totals. Table A-3 provides state-specific comparisons.

Data Availability

Data from this and other NSF R&D surveys are available at <http://www.nsf.gov/statistics/>.

Notes

[1] Battelle Memorial Institute and State Science & Technology Institute. 1998. *Survey of State Research and Development Expenditures: Fiscal Year 1995*. Columbus, OH.

[2] Ten agencies in Maine were preselected to receive the survey questionnaire. However, the state coordinator opted to submit aggregate state totals, rather than individual state agency data. Consequently, those 10 agencies are not included in the counts of agencies.

[3] National Science Foundation, Division of Science Resources Studies. 1990. *Research and Development Expenditures of State Government Agencies: Fiscal Years 1987 and 1988*. Special Report NSF 90-309. Washington, DC. (Report based on data collected by Syracuse Research Corporation.)

[4] National Science Foundation, Division of Science Resources Studies. 1999. *What is the State Government Role in the R&D Enterprise?* NSF 99-348. Arlington, VA. Available at <http://www.nsf.gov/statistics/nsf99348/>. (Report based on Survey of State Research and Development Expenditures: Fiscal Year 1995, conducted by Battelle Memorial Institute and State Science & Technology Institute.)

[5] National Science Foundation, Division of Science Resources Statistics. 2007. *Academic Research and Development Expenditures: Fiscal Year 2006*. Detailed Statistical Tables NSF 08-300. Arlington, VA. Available at <http://www.nsf.gov/statistics/nsf08300/>.

Technical Tables

- A-1 Final response rates and agencies reporting "no R&D" for Survey of State R&D Expenditures: FY 2006
- A-2 Monthly cumulative response rates during calendar year 2007
- A-3 State-funded R&D expenditures at universities and colleges, reported by academic and state agency survey respondents: FY 2006

TABLE A-1. Final response rates and agencies reporting "no R&D" for Survey of State R&D Expenditures: FY 2006

Agencies selected	Agencies surveyed	Responses		No R&D reported	
		Agencies	Rate (%)	Agencies	% of responses
All agencies	423	416	98.3	164	39.4
Preselected	320	315	98.4	103	32.7
Added	103	101	98.1	61	60.4

NOTES: Ten agencies in Maine were preselected to receive the survey questionnaire. However, the state coordinator opted to submit aggregate state totals, rather than individual state agency data. Consequently, those 10 agencies are not included in this table.

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures.

TABLE A-2. Monthly cumulative response rates during calendar year 2007

Date (last day of each month)	Agencies completed		States completed	
	Number	Percent	Number	Percent
January	171	40.4	5	9.6
February	232	54.8	20	38.4
March	323	76.4	29	55.8
April	349	82.5	36	69.2
May	370	87.5	40	76.9
June	384	90.8	42	80.8
July	397	93.9	43	82.7
August	410	96.9	46	88.5
September	412	97.4	47	90.4
October	416	98.3	48	92.3

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of FY 2006 State R&D Expenditures.

TABLE A-3. State-funded R&D expenditures at universities and colleges, reported by academic and state agency survey respondents: FY 2006

(Dollars in thousands)

State	Academic survey ^a	State agency survey ^b
United States	3,013,112	503,973
Alabama	9,989	1,830
Alaska	2,392	621
Arizona	29,386	20,914
Arkansas	50,625	2,296
California	266,911	57,223
Colorado	18,030	1,198
Connecticut	9,334	3,969
Delaware	4,989	719
District of Columbia	4,477	781
Florida	169,020	21,162
Georgia	82,124	2,937
Hawaii	8,933	2,504
Idaho	25,643	1,313
Illinois	67,523	15,428
Indiana	62,201	3,702
Iowa	50,318	6,932
Kansas	49,150	9,483
Kentucky	54,237	12,249
Louisiana	105,588	3,605
Maine	8,811	0
Maryland	63,874	14,712
Massachusetts	53,406	5,907
Michigan	74,737	37,931
Minnesota	53,684	3,732
Mississippi	35,180	454
Missouri	33,429	4,771
Montana	22,218	2,915
Nebraska	10,881	2,344
Nevada	7,695	1,054
New Hampshire	9,425	1,087
New Jersey	57,502	18,121
New Mexico	27,164	65
New York	201,728	57,387
North Carolina	138,796	9,750
North Dakota	32,349	8,977
Ohio	150,297	33,956
Oklahoma	39,099	4,561
Oregon	44,585	2,872
Pennsylvania	121,023	68,743
Rhode Island	8,032	150
South Carolina	34,467	3,838
South Dakota	15,848	2,090
Tennessee	64,384	4,348
Texas	409,255	22,106
Utah	20,632	2,000
Vermont	5,679	610
Virginia	104,458	5,567
Washington	42,391	5,667
West Virginia	5,220	4,113

TABLE A-3. State-funded R&D expenditures at universities and colleges, reported by academic and state agency survey respondents: FY 2006

(Dollars in thousands)

State	Academic survey ^a	State agency survey ^b
Wisconsin	36,584	3,309
Wyoming	2,616	1,969
Puerto Rico	6,793	0

^aIncludes academic R&D support from local government sources.

^bExcludes direct legislative appropriations to academic institutions.

SOURCE: National Science Foundation/Division of Science Resources Statistics (NSF/SRS), Survey of FY 2006 State R&D Expenditures; NSF/SRS Survey of Research and Development Expenditures at Universities and Colleges: FY 2006.

Appendix B. Survey Materials

- National Governors Association letter
- NSF Director's letter
- Survey Questionnaire



Janet Napolitano
Governor of Arizona
Chair

Tim Pawlenty
Governor of Minnesota
Vice Chair

Raymond C. Scheppach
Executive Director

October 26, 2006

TO ALL GOVERNORS:

I write to request your cooperation with a joint endeavor by the U.S. Census Bureau and the National Science Foundation (NSF) to update NSF's State R&D Expenditures Survey. As you know, my Chair's Initiative, *Innovation America*, focuses on what we as governors can do to enhance our state's competitiveness through improving its capacity to innovate. The NSF survey is an important source of relevant data, focusing as it does on states' efforts to strengthen their science and technology base.

The Census Bureau is collecting this information from specific departments and agencies in each state that contribute to state's R&D investments. This information will be compiled and forwarded to NSF, the federal agency charged with collecting and reporting national R&D statistics. In turn, NSF will incorporate states' information into their R&D publications as well as reports to international organizations on overall R&D activities for the United States. If you wish to examine the survey, you can find it at <http://harvester.census.gov/nsf/preview/>.

I am pleased to endorse this FY 2006 State R&D Expenditures Survey and ask that you quickly appoint a state coordinator to assist in this important effort. The accompanying letter to you from Arden Bement, Director of NSF, provides additional detail. Thank you for your assistance.

Sincerely,


Governor Janet Napolitano

[Use Director's stationery]

The Honorable GOVNAME1 GOVNAME2
ADDRESS1
ADDRESS2
CITY, STATE ZIP-ZIP4

Dear Governor GOVNAME2:

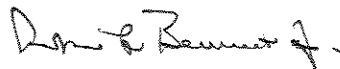
The National Science Foundation (NSF) and the U.S. Census Bureau are collaborating on the FY 2006 State R&D Expenditures Survey. I am including a letter of support from Governor Janet Napolitano of Arizona in her capacity as Chair of the National Governors Association. In it, she expresses her support for the survey and asks that you join her to make this data-collection effort a success. States' survey responses will be included in the national R&D statistics published by NSF as well as in a special report on the State R&D Expenditures Survey.

To facilitate the data collection process, we are asking that each governor appoint a state coordinator. The state coordinator will provide the names and contact information for each of the departments and agencies that are most likely to fund your state government's total R&D activities. Working with your state coordinator, we will provide each of these departments and agencies with individualized access to the Census Bureau Web based survey. We will also give your state's coordinator Web access to track your state's progress and obtain up-to-the-minute totals for your state's answers to the survey.

To help you make this appointment, we would like to recommend CONTACTNAME in the DEPARTMENT as your state coordinator. Of course, you may also appoint a different state coordinator if you prefer. Please contact James Berry, project manager for this survey at the Census Bureau, with your state coordinator selection by e-mail at james.r.berry.jr@census.gov or by phone at 800-622-6193.

Thank you in advance for your help in completing a picture of our nation's R&D expenditures.

Sincerely,



Arden L. Bement, Jr.
Director

cc: [name and job title of proposed state coordinator]



Survey of FY 2006 State R&D Expenditures



Survey Questions Definitions & Examples

The purpose of the State R&D Expenditures Survey is to measure your state's contributions toward scientific advancement and technological innovation. The survey is conducted in conjunction with ongoing collections of R&D data from private industry, academic institutions, and the Federal government.

This document is available electronically on the survey website at <http://harvester.census.gov/nsf>.

Results of this survey will be published by the National Science Foundation at www.nsf.gov/statistics.

OMB: 0607-0933

Expires: October 31, 2009

R&D Screener Question

Did your department/agency do any of the following during FY 2006? Your answer will only determine whether you continue to the R&D Expenditure questions and will not be released publicly.

- Had a division, branch, or office devoted to research or development
- Conducted research or development activities using department/agency staff
- Funded research or development at another state or local government
- Funded universities or other nonprofit organizations to perform research or development activities
- Funded companies or individuals to perform research or development activities
- Conducted or funded other research or development activities not specified above

Yes

No

If you select "No" your state survey coordinator will be notified that your department or agency does not have qualifying R&D activities for the FY 2006 survey.

R&D Expenditure Questions

Question 1

What were your department/agency R&D expenditures for FY 2006 by the following types of performers?

- Include R&D from all sources, and report sources separately when your department/agency performs the R&D internally.
- Do NOT report expenditures for construction and acquisition of facilities used primarily for R&D; use Question 4.

Internal Performers

- R&D performed by your department's/agency's employees
- Services performed by others in support of an internal R&D project (e.g., lab testing)

Examples of expenditures:

- Salaries
- Benefits
- Supplies
- Travel
- Equipment
- Indirect Costs
- Purchased Services

Expenditures by Internal Performers

Source of Expenditures

Examples of Sources

\$ <input style="width: 100%;" type="text"/>	State Funds	State appropriations, state grants, tobacco settlement funds, lottery proceeds
\$ <input style="width: 100%;" type="text"/>	Federal Funds	Federal awards
\$ <input style="width: 100%;" type="text"/>	Other Funds	Funds from all other sources, such as: nonprofit organizations, companies, other state/local governments

External Performers

- R&D done for your department/agency by:
- Academic institutions
 - Companies and individuals
 - Others

Examples of expenditures:

- Grants
- Payments for contracted R&D projects
- Reimbursable costs for R&D projects

Exclude pass-through grants for which you have no administrative oversight or control.

Expenditures by External Performers

Source of Expenditures

Academic Institutions \$ <input style="width: 100%;" type="text"/>	All Funds (federal, state, other)	
Companies and Individuals \$ <input style="width: 100%;" type="text"/>	All Funds (federal, state, other)	
Others \$ <input style="width: 100%;" type="text"/>	All Funds (federal, state, other)	
\$ <input style="width: 100%;" type="text"/>	Total R&D Expenditures (automatically calculated)	

R&D Expenditure Questions

Question 2

How much of your total department/agency R&D expenditures reported in Question 1 were for basic research? You may provide an estimate, if necessary.

- **Basic research** is conducted primarily to acquire new knowledge without any specific product or process in mind. (The other two categories of R&D, applied and development, are not reported separately on this survey. Applied research is conducted with a specific practical objective.)

\$ Basic research expenditures (if none, enter "0")

R&D Expenditure Questions

Question 3

How much of your total department/agency R&D expenditures reported in Question 1 were from federal funds? You may provide an estimate, if necessary.

- Include expenditures for internal and external performers
- Federal sources include grants, contracts, and appropriations from the United States government.
- **Exclude** any nonfederal matching amounts.

\$ R&D expenditures from federal funds (if none, enter "0")

R&D Expenditure Questions

Question 4

What were your department/agency FY 2006 expenditures for construction and acquisition of facilities used primarily for R&D?

Please include:

- Construction projects
- Major renovations of buildings
- Purchasing land and buildings

\$ **Expenditures for construction and acquisition of facilities used primarily for R&D (if none, enter "0")**

Definitions & Examples

- A. What does R&D mean?
- B. What should be included/excluded in R&D?
- C. What makes it R&D?
- D. What are sources of R&D funding?
- E. What does R&D performer mean?
- F. What expenditures should be included/excluded?
- G. What are some other survey definitions that may be helpful?

A. What does R&D mean?

Research and development (R&D) is creative work conducted systematically to:

- 1) extend scientific knowledge, or
- 2) devise new or improved applications.

Applications can include materials, products, devices, processes, systems or services.

B. What should be included/excluded in R&D?

<u>R&D includes, but is not limited to, activities that produce:</u>	<u>R&D does NOT include:</u>
<ul style="list-style-type: none">• Ideas that might be patented• Findings that could be published in academic journals• New or improved products or applications	<ul style="list-style-type: none">• Management information systems• Economic / policy / feasibility studies• Program planning and evaluation• Strategic planning• Market research or analysis• Routine data collection / dissemination• Routine monitoring / testing• Technology transfer• Technical assistance• Consulting services• Commercialization• General patient services

C. What makes it R&D?

What makes it R&D	When it is R&D	When it is NOT R&D
<p>R&D is novel.</p> <ul style="list-style-type: none"> • It increases our knowledge of the subject • It hasn't been done before. 	<p>You are testing blood samples as part of a research project to find out the side effects of a new cancer treatment.</p>	<p>You are collecting information from samples of patients to estimate the incidence of chicken pox in the state's population.</p> <p>(You are using a standard approach to estimate the spread of chicken pox.)</p>
<p>R&D creates solutions useful to others.</p> <ul style="list-style-type: none"> • Others might benefit from the findings. • The findings can be generalized to other situations and locations. 	<p>You are testing a pavement on your highways that is currently used only at airports. Other states will want the results.</p>	<p>You are testing pavement on your state's highways to estimate how much you need to budget for pavement replacement over the next five years.</p> <p>(Other states will not benefit from your specific state information.)</p>
<p>The outcome of R&D is uncertain.</p> <ul style="list-style-type: none"> • The solution isn't obvious to an expert in that field. 	<p>Your research involves monitoring streams to determine whether a new program is increasing the population of a particular type of fish.</p>	<p>You are monitoring streams as part of plan to implement long-term monitoring for a particular type of fish.</p> <p>(The monitoring plan has already been tested and you are certain of the quality of the plan.)</p>

D. What are sources of R&D funding?

Sources of R&D funding include:

State	State appropriations and grants, tobacco settlement funds, state lottery proceeds
Federal	Grants, contracts, and appropriations from the United States government
All other	Grants and contracts from: <ul style="list-style-type: none">• Companies• Nonprofit organizations• Other state governments• City, county, regional, or other local governments

E. What does R&D performer mean?

Internal Performers:

Within your department/agency	R&D performed by your department's/agency's employees Services performed by others in support of an internal R&D project (e.g., lab testing)
-------------------------------	---

External Performers:

Academic institutions	R&D performed for your department/agency by public or private universities and colleges
Companies and individuals	R&D performed for your department/agency by companies or individuals under contract for research projects
Others	R&D performed for your department/agency by: <ul style="list-style-type: none">• Nonprofit organizations• Other departments/agencies within your state• Other state governments• City, county, regional, or other local governments• Federal government

F. What expenditures should be included/excluded?

Expenditures are amounts paid for current operations and capital outlays.

Respondents to this survey will be asked to report expenditures by performer of R&D. Please refer below for guidance on the types of expenditures to report for internal and external performers.

Expenditures for your Department/Agency as Performer (Internal)

Include:	Do NOT include:
<ul style="list-style-type: none">• Salaries, wages, and benefits• Supplies• Purchased services (e.g. lab testing)• Travel• Indirect or overhead costs for R&D activities• Equipment	<ul style="list-style-type: none">• Agency and other fiduciary fund expenditures• Intra-governmental transactions• Non-cash payments

Expenditures for Academic Institutions, Companies or Individuals, or Others as Performers (External)

Include:	Do NOT include:
<ul style="list-style-type: none">• Grants• Payments for contracted R&D projects• Reimbursable costs for R&D projects	<ul style="list-style-type: none">• Pass-through grants over which you have no administrative oversight or control

G. What are some other survey definitions that may be helpful?

Your State should include your state's departments, agencies, boards, and commissions.

Fiscal Year is your state's fiscal year ending in 2006.

Construction and Acquisition of Facilities Used Primarily for R&D includes major costs for construction and purchase of buildings to be primarily used as R&D facilities. Include new construction, major renovations, and purchase of land or buildings.

Basic Research

In order to understand the definition of basic research, it may be helpful to compare it to the other two components of R&D—applied research and development. Below are definitions and examples.

Basic research is conducted primarily to acquire new knowledge without any specific product or process in mind. (The other two categories of R&D, applied research and development, are not reported separately in this survey. Applied research is conducted with a specific practical objective.)

Examples		
Basic research	Applied research	Development
You are studying the properties of blood to determine what affects coagulation.	You are conducting research on how a new chicken pox vaccine affects blood coagulation.	You are testing a newly developed chicken pox vaccine with various ages of school children before implementing it statewide.
You are studying the properties of molecules under various heat and cold conditions.	You are conducting research on the properties of particular substances under various heat and cold conditions with the objective of finding longer lasting components for pavement.	You are testing a newly developed pavement under various types of heat and cold conditions prior to using it on your state's highways.
You are studying the heart chambers of various fish species.	You are examining various levels of a toxic substance to determine the maximum safe level for fish in a stream.	You are designing a new system for monitoring a stream that will try out the results of your recent research in a real world situation.

Suggested Citation, Acknowledgments

National Science Foundation, Division of Science Resources Statistics. 2008. *State Agency Research and Development Expenditures: Fiscal Year 2006*. Detailed Statistical Tables NSF 08-310. Arlington, VA. Available at <http://www.nsf.gov/statistics/nsf08310/>.

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