

TABLE 2

Summary of federal obligations and outlays for research, experimental development, and R&D plant, by type of R&D, performer, and field of R&D: FYs 2021–23

(Dollars in millions)

Type of R&D, performer, and field	2021	2022	2023 (preliminary)	% change FY 2021– 22	% change FY 2022–23 (preliminary)
Outlays for R&D and R&D plant	178,334	183,064	177,595	2.7	-3.0
R&D	174,529	178,880	171,890	2.5	-3.9
R&D plant	3,805	4,185	5,706	10.0	36.3
Obligations for R&D and R&D plant	193,896	196,595	192,969	1.4	-1.8
R&D	189,614	190,422	186,448	0.4	-2.1
Performer					
Federal agencies ^a	72,826	70,780	52,795	-2.8	-25.4
FFRDCs	14,791	15,381	17,459	4.0	13.5
Businesses	50,225	50,205	57,898	0.0	15.3
Higher education ^b	39,766	42,179	45,431	6.1	7.7
Nonprofit organizations	10,287	10,136	11,174	-1.5	10.2
State and local governments	966	925	895	-4.3	-3.2
Non-U.S. performers	753	818	797	8.6	-2.5
Research	85,896	93,807	99,481	9.2	6.0
Performer					
Federal agencies ^a	17,532	20,651	22,913	17.8	11.0
FFRDCs	10,529	11,133	12,865	5.7	15.6
Businesses	10,790	12,679	11,542	17.5	-9.0
Higher education ^b	37,027	39,069	41,529	5.5	6.3
Nonprofit organizations	8,644	8,797	9,257	1.8	5.2
State and local governments	887	862	850	-2.8	-1.5
Non-U.S. performers	488	615	524	26.2	-14.8
Field of R&D					
Computer and information sciences	5,350	4,831	5,459	-9.7	13.0
Geosciences, atmospheric sciences, and ocean sciences	5,042	5,566	6,712	10.4	20.6
Life sciences	38,249	41,610	42,330	8.8	1.7
Mathematics and statistics	715	904	929	26.4	2.8
Physical sciences	10,048	12,099	12,665	20.4	4.7
Psychology	3,770	4,588	4,880	21.7	6.4
Social sciences	1,370	1,917	2,160	39.9	12.7
Engineering	14,650	15,497	16,758	5.8	8.1
Other fields	6,703	6,796	7,587	1.4	11.6
Basic research	42,266	45,393	48,467	7.4	6.8
Performer					
Federal agencies ^a	6,523	7,820	8,378	19.9	7.1
FFRDCs	5,805	6,731	7,904	16.0	17.4
Businesses	3,785	3,858	4,560	1.9	18.2
Higher education ^b	21,441	22,260	22,751	3.8	2.2
Nonprofit organizations	3,948	3,982	4,114	0.9	3.3
State and local governments	533	544	555	2.0	2.2
Non-U.S. performers	232	199	204	-14.2	2.7
Field of R&D					
Computer and information sciences	2,264	2,298	2,431	1.5	5.8
Geosciences, atmospheric sciences, and ocean sciences	3,057	3,441	3,991	12.6	16.0
Life sciences	19,016	19,052	20,388	0.2	7.0
Mathematics and statistics	503	608	616	20.9	1.2
Physical sciences	8,184	9,449	9,751	15.5	3.2

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Psychology	1,934	2,288	2,434	18.3	6.4
Social sciences	537	766	822	42.6	7.3
Engineering	3,212	3,739	3,923	16.4	4.9
Other fields	3,558	3,752	4,112	5.5	9.6
Applied research	43,630	48,414	51,014	11.0	5.4
Performer					
Federal agencies ^a	11,008	12,831	14,535	16.6	13.3
FFRDCs	4,724	4,402	4,961	-6.8	12.7
Businesses	7,004	8,822	6,982	25.9	-20.9
Higher education ^b	15,586	16,809	18,778	7.8	11.7
Nonprofit organizations	4,697	4,816	5,143	2.5	6.8
State and local governments	354	319	294	-10.1	-7.6
Non-U.S. performers	256	416	320	62.8	-23.1
Field of R&D					
Computer and information sciences	3,086	2,533	3,029	-17.9	19.6
Geosciences, atmospheric sciences, and ocean sciences	1,985	2,125	2,721	7.0	28.1
Life sciences	19,232	22,558	21,942	17.3	-2.7
Mathematics and statistics	212	296	313	39.3	6.0
Physical sciences	1,864	2,650	2,914	42.2	10.0
Psychology	1,836	2,300	2,446	25.3	6.4
Social sciences	832	1,151	1,338	38.3	16.3
Engineering	11,438	11,758	12,835	2.8	9.2
Other fields	3,145	3,045	3,475	-3.2	14.1
Experimental development	103,718	96,615	86,967	-6.8	-10.0
Performer					
Federal agencies ^a	55,294	50,129	29,882	-9.3	-40.4
FFRDCs	4,263	4,248	4,593	-0.3	8.1
Businesses	39,435	37,526	46,356	-4.8	23.5
Higher education ^b	2,740	3,110	3,902	13.5	25.5
Nonprofit organizations	1,642	1,338	1,917	-18.5	43.2
State and local governments	79	62	45	-21.1	-27.5
Non-U.S. performers	265	202	273	-23.8	34.8
Field of R&D					
Computer and information sciences	3,175	2,442	3,071	-23.1	25.8
Geosciences, atmospheric sciences, and ocean sciences	2,160	724	815	-66.5	12.5
Life sciences	39,394	30,408	5,769	-22.8	-81.0
Mathematics and statistics	292	226	289	-22.6	28.1
Physical sciences	3,552	3,415	4,325	-3.9	26.6
Psychology	364	383	493	5.3	28.8
Social sciences	139	149	209	7.4	40.1
Engineering	44,333	44,427	54,070	0.2	21.7
Other fields	10,310	14,440	17,926	40.1	24.1
R&D plant	4,282	6,173	6,521	44.2	5.6
Performer					
Federal agencies ^a	883	1,096	2,138	24.1	95.1
FFRDCs	2,019	3,437	2,409	70.2	-29.9
Businesses	858	1,020	1,144	18.9	12.1

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Higher education ^b	360	463	633	28.4	36.7
Nonprofit organizations	155	149	190	-4.3	28.0
State and local governments	6	8	7	21.2	-7.1
Non-U.S. performers	*	1	*	267.1	-62.6

* = amount greater than \$0 but less than \$500,000.

FFRDC = federally funded research and development center.

^a Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.^b Higher education includes both public and private institutions as well as University Affiliated Research Centers.**Note(s):**

Because of rounding, detail may not add to total. Percentages are computed using actual dollars reported. FYs 2021 and 2022 data include obligations from supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.