

TABLE 95

## Federal obligations for applied research, by detailed field of R&amp;D: FYs 2014–23

(Dollars in millions)

Field	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 (preliminary)
All fields	31,604	32,298	34,812	36,600	38,392	41,101	43,758	43,630	48,414	51,014
Computer and information sciences	NA	NA	NA	NA	NA	NA	NA	3,086	2,533	3,029
Computer sciences and mathematics	1,965	1,878	2,113	2,017	2,122	2,024	3,388	NA	NA	NA
Computer sciences	1,654	1,621	1,818	1,736	1,856	1,746	3,050	NA	NA	NA
Mathematics	155	132	141	118	113	118	178	NA	NA	NA
Other computer sciences and mathematics	157	125	154	163	154	160	160	NA	NA	NA
Geosciences, atmospheric sciences, and ocean sciences (formerly Environmental sciences)	1,613	1,675	1,685	1,783	1,571	1,823	1,873	1,985	2,125	2,721
Atmospheric science and meteorology (formerly Atmospheric sciences)	531	516	517	564	288	310	345	327	403	NA
Geological and earth sciences (formerly Geological sciences)	143	211	129	141	45	39	44	287	320	NA
Ocean sciences and marine sciences (formerly Oceanography)	365	294	331	390	359	387	476	606	608	NA
Other geosciences, atmospheric sciences, and ocean sciences (formerly Other environmental sciences)	573	654	708	688	879	1,086	1,007	764	793	NA
Life sciences	14,932	15,415	16,468	17,516	18,818	19,423	21,720	19,232	22,558	21,942
Agricultural sciences	491	766	717	769	728	811	731	486	620	NA
Biological and biomedical sciences	NA	NA	NA	NA	NA	NA	NA	8,466	11,547	NA
Biological sciences (excluding environmental biology)	7,027	7,081	7,897	7,982	8,670	9,125	9,839	NA	NA	NA
Environmental biology	426	420	408	412	409	434	431	NA	NA	NA
Health sciences (formerly Medical sciences)	5,721	5,816	6,021	6,931	7,150	7,386	8,722	8,176	8,095	NA
Natural resources and conservation	NA	NA	NA	NA	NA	NA	NA	195	203	NA
Other life sciences	1,267	1,331	1,426	1,421	1,862	1,668	1,997	1,909	2,092	NA
Mathematics and statistics	NA	NA	NA	NA	NA	NA	NA	212	296	313
Physical sciences	1,846	1,889	1,999	1,864	1,951	1,909	1,907	1,864	2,650	2,914
Astronomy and astrophysics (formerly Astronomy)	156	157	154	153	8	6	1	1	*	NA
Chemistry	291	295	311	275	382	434	390	349	755	NA
Material science	NA	NA	NA	NA	NA	NA	NA	215	179	NA
Physics	989	471	1,139	1,079	1,023	875	1,061	618	1,019	NA
Other physical sciences	410	966	395	358	537	593	455	681	698	NA
Psychology	930	995	1,032	1,054	1,180	1,387	1,664	1,836	2,300	2,446
Biological aspects	1	5	4	*	1	1	1	*	11	NA
Social aspects	46	45	44	43	38	42	30	34	34	NA
Other psychological sciences	883	945	983	1,011	1,141	1,344	1,634	1,801	2,255	NA
Social sciences	1,049	792	849	668	665	704	698	832	1,151	1,338
Anthropology	2	2	2	3	4	2	1	20	21	NA
Economics	286	290	320	238	230	209	164	175	187	NA
Political science and government (formerly Political science)	1	4	1	5	2	4	8	9	8	NA
Sociology, demography, and population studies (formerly Sociology)	127	102	173	155	119	187	132	68	69	NA
Other social sciences <sup>a</sup>	632	395	352	267	311	302	393	560	866	NA
Engineering	8,343	8,290	9,314	9,522	10,173	11,661	10,324	11,438	11,758	12,835
Aeronautical engineering	1,386	1,356	1,357	1,442	1,019	1,128	1,023	NA	NA	NA
Aerospace, aeronautical, and astronautical engineering	NA	NA	NA	NA	NA	NA	NA	2,334	2,099	NA
Astronautical engineering	576	562	551	550	788	821	901	NA	NA	NA
Bioengineering and biomedical engineering	NA	NA	NA	NA	NA	NA	NA	13	64	NA

TABLE 95

**Federal obligations for applied research, by detailed field of R&D: FYs 2014–23**

(Dollars in millions)

Field	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 (preliminary)
Chemical engineering	432	314	303	226	621	379	694	612	624	NA
Civil engineering	417	403	424	579	462	555	459	579	574	NA
Electrical, electronics, and communications engineering (formerly Electrical engineering)	992	669	835	878	772	751	675	691	661	NA
Industrial and manufacturing engineering	NA	NA	NA	NA	NA	NA	NA	250	2,029	NA
Mechanical engineering	374	198	251	326	388	527	407	175	294	NA
Metallurgical and materials engineering (formerly Metallurgy and materials engineering)	536	467	696	635	552	620	423	573	345	NA
Other engineering	3,629	4,320	4,895	4,886	5,573	6,881	5,741	6,212	5,067	NA
Other fields	NA	NA	NA	NA	NA	NA	NA	3,145	3,045	3,475
Business management and business administration	NA	NA	NA	NA	NA	NA	NA	86	79	NA
Communication and communications technologies	NA	NA	NA	NA	NA	NA	NA	12	21	NA
Education research	NA	NA	NA	NA	NA	NA	NA	627	707	NA
Humanities, including History	NA	NA	NA	NA	NA	NA	NA	*	*	NA
Law	NA	NA	NA	NA	NA	NA	NA	*	*	NA
Social work	NA	NA	NA	NA	NA	NA	NA	0	0	NA
Visual and performing arts	NA	NA	NA	NA	NA	NA	NA	0	0	NA
All other fields	NA	NA	NA	NA	NA	NA	NA	2,419	2,238	NA
Other sciences nec	925	1,364	1,352	2,176	1,912	2,168	2,185	NA	NA	NA

\* = amount greater than \$0 but less than \$500,000. NA = not available; data were not collected at that level for that fiscal year.

nec = not elsewhere classified.

<sup>a</sup> As of volume 71 (FYs 2021–22), Other social sciences does not include Education research or Law as of volume 71; those categories were moved to Other fields.

**Note(s):**

Because of rounding, detail may not add to total. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. 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.