

TABLE 93

## Federal obligations for basic 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	31,588	31,527	32,293	33,271	36,195	40,017	41,547	42,266	45,393	48,467
Computer and information sciences	NA	NA	NA	NA	NA	NA	NA	2,264	2,298	2,431
Computer sciences and mathematics	1,918	1,984	2,110	1,877	2,085	2,306	2,524	NA	NA	NA
Computer sciences	959	1,025	997	999	1,032	1,151	1,230	NA	NA	NA
Mathematics	824	874	1,019	824	943	1,039	504	NA	NA	NA
Other computer sciences and mathematics	134	86	93	55	110	116	791	NA	NA	NA
Geosciences, atmospheric sciences, and ocean sciences (formerly Environmental sciences)	2,753	2,738	2,765	2,687	2,996	3,252	3,167	3,057	3,441	3,991
Atmospheric science and meteorology (formerly Atmospheric sciences)	1,037	1,051	1,080	1,088	508	514	563	561	557	NA
Geological and earth sciences (formerly Geological sciences)	418	433	433	439	183	200	262	315	302	NA
Ocean sciences and marine sciences (formerly Oceanography)	483	432	442	385	419	432	470	489	519	NA
Other geosciences, atmospheric sciences, and ocean sciences (formerly Other environmental sciences)	816	822	810	776	1,887	2,106	1,872	1,692	2,064	NA
Life sciences	16,019	15,210	15,577	16,574	18,176	18,881	20,805	19,016	19,052	20,388
Agricultural sciences	514	554	566	584	597	635	682	587	648	NA
Biological and biomedical sciences	NA	NA	NA	NA	NA	NA	NA	9,762	9,780	NA
Biological sciences (excluding environmental biology)	8,284	7,758	8,026	8,573	9,159	9,786	10,326	NA	NA	NA
Environmental biology	395	399	381	372	514	490	471	NA	NA	NA
Health sciences (formerly Medical sciences)	5,564	5,270	5,337	5,717	6,415	6,389	7,460	6,832	6,611	NA
Natural resources and conservation	NA	NA	NA	NA	NA	NA	NA	32	44	NA
Other life sciences	1,263	1,228	1,267	1,327	1,492	1,581	1,866	1,803	1,968	NA
Mathematics and statistics	NA	NA	NA	NA	NA	NA	NA	503	608	616
Physical sciences	4,637	4,621	4,707	4,717	5,931	7,907	6,513	8,184	9,449	9,751
Astronomy and astrophysics (formerly Astronomy)	1,036	1,073	1,093	1,139	879	1,577	870	964	1,112	NA
Chemistry	722	672	688	694	739	691	754	792	1,260	NA
Material science	NA	NA	NA	NA	NA	NA	NA	337	355	NA
Physics	2,576	2,569	2,593	2,597	2,518	2,571	2,516	2,537	2,658	NA
Other physical sciences	303	306	333	286	1,795	3,068	2,373	3,554	4,064	NA
Psychology	1,038	1,000	990	1,027	1,147	1,366	1,612	1,934	2,288	2,434
Biological aspects	14	14	16	10	19	16	13	13	18	NA
Social aspects	13	14	12	13	10	11	12	17	14	NA
Other psychological sciences	1,011	972	962	1,004	1,118	1,339	1,587	1,904	2,256	NA
Social sciences	386	345	378	359	374	451	440	537	766	822
Anthropology	24	28	29	29	31	33	18	22	36	NA
Economics	58	47	51	56	53	86	39	53	58	NA
Political science and government (formerly Political science)	12	12	14	12	9	10	5	1	*	NA
Sociology, demography, and population studies (formerly Sociology)	31	27	24	23	24	37	20	43	33	NA
Other social sciences <sup>a</sup>	261	230	260	239	258	286	358	418	639	NA
Engineering	3,545	3,694	3,658	3,686	3,586	3,618	2,898	3,212	3,739	3,923
Aeronautical engineering	447	469	479	450	99	71	70	NA	NA	NA
Aerospace, aeronautical, and astronautical engineering	NA	NA	NA	NA	NA	NA	NA	270	293	NA
Astronautical engineering	93	99	99	101	8	9	15	NA	NA	NA
Bioengineering and biomedical engineering	NA	NA	NA	NA	NA	NA	NA	27	84	NA

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(Dollars in millions)

Field	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 (preliminary)
Chemical engineering	104	60	70	76	72	75	94	121	124	NA
Civil engineering	28	54	38	27	14	12	16	70	70	NA
Electrical, electronics, and communications engineering (formerly Electrical engineering)	248	228	228	225	238	219	205	200	211	NA
Industrial and manufacturing engineering	NA	NA	NA	NA	NA	NA	NA	41	45	NA
Mechanical engineering	129	126	123	124	111	103	116	114	135	NA
Metallurgical and materials engineering (formerly Metallurgy and materials engineering)	1,233	1,290	1,279	1,306	1,364	1,223	281	238	201	NA
Other engineering	1,264	1,368	1,342	1,376	1,680	1,906	2,100	2,131	2,575	NA
Other fields	NA	NA	NA	NA	NA	NA	NA	3,558	3,752	4,112
Business management and business administration	NA	NA	NA	NA	NA	NA	NA	34	27	NA
Communication and communications technologies	NA	NA	NA	NA	NA	NA	NA	0	1	NA
Education research	NA	NA	NA	NA	NA	NA	NA	360	357	NA
Humanities, including History	NA	NA	NA	NA	NA	NA	NA	*	*	NA
Law	NA	NA	NA	NA	NA	NA	NA	7	6	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	3,158	3,361	NA
Other sciences nec	1,292	1,935	2,108	2,344	1,900	2,237	3,588	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 no longer includes Education research or Law; 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.