

TABLE 91

## Federal obligations for 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	63,191	63,825	67,105	69,871	74,588	81,118	85,305	85,896	93,807	99,481
Computer and information sciences	NA	NA	NA	NA	NA	NA	NA	5,350	4,831	5,459
Computer sciences and mathematics	3,883	3,863	4,223	3,894	4,207	4,330	5,912	NA	NA	NA
Computer sciences	2,613	2,646	2,815	2,735	2,888	2,897	4,280	NA	NA	NA
Mathematics	979	1,006	1,160	942	1,055	1,157	681	NA	NA	NA
Other computer sciences and mathematics	291	211	247	218	264	276	950	NA	NA	NA
Geosciences, atmospheric sciences, and ocean sciences (formerly Environmental sciences)	4,366	4,414	4,450	4,470	4,568	5,075	5,039	5,042	5,566	6,712
Atmospheric science and meteorology (formerly Atmospheric sciences)	1,567	1,568	1,597	1,651	796	824	908	888	960	NA
Geological and earth sciences (formerly Geological sciences)	561	643	562	580	227	239	306	602	622	NA
Ocean sciences and marine sciences (formerly Oceanography)	848	726	773	774	778	819	946	1,096	1,127	NA
Other geosciences, atmospheric sciences, and ocean sciences (formerly Other environmental sciences)	1,389	1,477	1,518	1,464	2,766	3,192	2,879	2,456	2,857	NA
Life sciences	30,951	30,625	32,045	34,090	36,994	38,304	42,525	38,249	41,610	42,330
Agricultural sciences	1,004	1,320	1,283	1,353	1,325	1,446	1,413	1,073	1,268	NA
Biological and biomedical sciences	NA	NA	NA	NA	NA	NA	NA	18,228	21,327	NA
Biological sciences (excluding environmental biology)	15,311	14,840	15,923	16,556	17,829	18,910	20,165	NA	NA	NA
Environmental biology	821	819	788	783	922	924	902	NA	NA	NA
Health sciences (formerly Medical sciences)	11,285	11,087	11,359	12,649	13,564	13,775	16,182	15,008	14,707	NA
Natural resources and conservation	NA	NA	NA	NA	NA	NA	NA	227	247	NA
Other life sciences	2,530	2,559	2,693	2,748	3,354	3,249	3,863	3,712	4,060	NA
Mathematics and statistics	NA	NA	NA	NA	NA	NA	NA	715	904	929
Physical sciences	6,483	6,510	6,706	6,581	7,881	9,816	8,420	10,048	12,099	12,665
Astronomy and astrophysics (formerly Astronomy)	1,192	1,230	1,247	1,292	887	1,583	871	964	1,113	NA
Chemistry	1,013	968	999	969	1,121	1,125	1,144	1,141	2,014	NA
Material science	NA	NA	NA	NA	NA	NA	NA	552	533	NA
Physics	3,565	3,040	3,732	3,676	3,541	3,446	3,577	3,156	3,677	NA
Other physical sciences	714	1,272	728	644	2,332	3,661	2,828	4,235	4,762	NA
Psychology	1,968	1,995	2,021	2,081	2,327	2,754	3,276	3,770	4,588	4,880
Biological aspects	15	19	20	10	20	18	14	14	29	NA
Social aspects	59	59	56	56	48	53	42	50	48	NA
Other psychological sciences	1,894	1,917	1,946	2,014	2,259	2,683	3,220	3,706	4,511	NA
Social sciences	1,435	1,136	1,227	1,027	1,039	1,156	1,137	1,370	1,917	2,160
Anthropology	26	30	32	32	35	35	19	42	57	NA
Economics	344	337	371	294	282	295	203	228	245	NA
Political science and government (formerly Political science)	13	16	15	18	11	14	12	11	8	NA
Sociology, demography, and population studies (formerly Sociology)	158	128	197	178	143	224	152	111	102	NA
Other social sciences <sup>a</sup>	893	625	612	505	568	588	751	978	1,505	NA
Engineering	11,888	11,984	12,972	13,207	13,759	15,279	13,222	14,650	15,497	16,758
Aeronautical engineering	1,833	1,825	1,836	1,892	1,118	1,199	1,093	NA	NA	NA
Aerospace, aeronautical, and astronautical engineering	NA	NA	NA	NA	NA	NA	NA	2,604	2,391	NA
Astronautical engineering	669	661	651	651	796	830	916	NA	NA	NA
Bioengineering and biomedical engineering	NA	NA	NA	NA	NA	NA	NA	40	148	NA

TABLE 91

**Federal obligations for 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	535	375	373	302	692	454	788	733	749	NA
Civil engineering	445	458	462	606	476	566	476	649	644	NA
Electrical, electronics, and communications engineering (formerly Electrical engineering)	1,240	897	1,063	1,103	1,010	971	881	891	872	NA
Industrial and manufacturing engineering	NA	NA	NA	NA	NA	NA	NA	291	2,075	NA
Mechanical engineering	503	324	374	450	498	630	523	289	429	NA
Metallurgical and materials engineering (formerly Metallurgy and materials engineering)	1,769	1,757	1,975	1,941	1,915	1,843	704	811	546	NA
Other engineering	4,894	5,688	6,237	6,262	7,253	8,787	7,841	8,343	7,642	NA
Other fields	NA	NA	NA	NA	NA	NA	NA	6,703	6,796	7,587
Business management and business administration	NA	NA	NA	NA	NA	NA	NA	120	106	NA
Communication and communications technologies	NA	NA	NA	NA	NA	NA	NA	12	21	NA
Education research	NA	NA	NA	NA	NA	NA	NA	987	1,063	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	5,576	5,600	NA
Other sciences nec	2,218	3,299	3,461	4,521	3,812	4,405	5,773	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.