

Table 1-7

## Research doctorate recipients, by historical major field of doctorate and citizenship status: 2012–22

(Number)

Field and citizenship status	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	% change 2012–22
All doctorate recipients <sup>a</sup>	50,943	52,703	53,986	54,886	54,809	54,552	55,078	55,609	55,208	52,194	57,596	13.1
Life sciences	11,964	12,207	12,484	12,493	12,539	12,554	12,754	12,748	12,541	11,800	13,211	10.4
Agricultural sciences and natural resources	1,255	1,324	1,338	1,434	1,379	1,493	1,442	1,488	1,469	1,334	1,434	14.3
Biological and biomedical sciences	8,322	8,354	8,868	8,783	8,863	8,566	8,782	8,678	8,403	8,138	9,218	10.8
Health sciences	2,387	2,529	2,278	2,276	2,297	2,495	2,530	2,582	2,669	2,328	2,559	7.2
Physical sciences and earth sciences	5,419	5,584	5,910	5,916	6,251	6,082	6,329	6,579	6,241	5,776	6,649	22.7
Chemistry	2,416	2,484	2,673	2,666	2,703	2,699	2,807	2,939	2,761	2,552	3,060	26.7
Geosciences, atmospheric sciences, and ocean sciences	941	989	1,098	1,057	1,227	1,169	1,185	1,272	1,241	1,064	1,181	25.5
Physics and astronomy	2,062	2,111	2,139	2,193	2,321	2,214	2,337	2,368	2,239	2,160	2,408	16.8
Mathematics and computer sciences	3,496	3,660	3,862	3,818	3,954	3,842	4,022	4,230	4,387	4,370	4,854	38.8
Computer and information sciences	1,793	1,843	1,988	2,003	2,082	1,998	2,000	2,220	2,363	2,360	2,606	45.3
Mathematics and statistics	1,703	1,817	1,874	1,815	1,872	1,844	2,022	2,010	2,024	2,010	2,248	32.0
Psychology and social sciences	8,498	8,580	8,748	9,073	9,037	9,034	8,875	9,043	8,928	8,655	9,235	8.7
Psychology	3,599	3,592	3,724	3,776	3,910	3,925	3,821	3,909	3,868	3,779	3,990	10.9
Anthropology	547	550	523	492	460	446	424	445	447	400	415	-24.1
Economics	1,243	1,183	1,196	1,255	1,236	1,239	1,244	1,247	1,212	1,229	1,287	3.5
Political science and government	724	803	775	859	745	743	734	707	636	581	678	-6.4
Sociology	633	636	678	741	613	683	668	632	605	560	611	-3.5
Other social sciences	1,752	1,816	1,852	1,950	2,073	1,998	1,984	2,103	2,160	2,106	2,254	28.7
Engineering	8,469	9,000	9,626	9,875	9,459	9,776	10,164	10,298	10,468	10,233	11,530	36.1
Aerospace, aeronautical, and astronautical engineering	307	348	386	361	370	379	383	379	399	372	374	21.8
Bioengineering and biomedical engineering	943	1,039	1,046	1,125	1,089	1,032	1,133	1,163	1,082	1,064	1,228	30.2
Chemical engineering	840	824	973	1,002	921	931	981	980	994	1,022	1,142	36.0
Civil engineering	495	542	617	632	564	713	675	700	795	621	898	81.4
Electrical, electronics, and communications engineering	1,938	1,897	1,952	1,997	1,823	1,879	1,943	1,799	1,971	2,081	2,193	13.2
Industrial and manufacturing engineering	226	241	298	243	256	249	272	234	304	361	381	68.6
Materials science engineering	743	815	832	871	984	937	992	992	879	934	1,136	52.9
Mechanical engineering	1,220	1,277	1,331	1,466	1,297	1,398	1,503	1,532	1,633	1,444	1,676	37.4
Other engineering	1,757	2,017	2,191	2,178	2,155	2,258	2,282	2,519	2,411	2,334	2,502	42.4
Education	4,802	4,934	4,789	5,098	5,146	4,826	4,818	4,633	4,714	4,252	4,509	-6.1
Education administration	1,057	965	893	920	824	922	895	839	931	710	734	-30.6
Education research	2,516	2,638	2,490	2,717	2,328	2,373	2,457	2,253	2,275	2,198	2,289	-9.0
Teacher education	156	109	152	156	180	114	96	104	113	111	110	-29.5
Teaching fields	757	892	915	953	1,166	925	959	957	938	797	890	17.6
Other education	316	330	339	352	648	492	411	480	457	436	486	53.8
Humanities and arts	5,561	5,715	5,524	5,594	5,482	5,286	5,139	5,051	4,924	4,134	4,464	-19.7

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(Number)

Field and citizenship status	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	% change 2012–22
Foreign languages and literature	684	701	674	656	599	618	617	610	564	377	442	-35.4
History	1,086	1,148	1,186	1,146	1,148	1,058	948	912	884	725	750	-30.9
Letters	1,638	1,606	1,551	1,583	1,531	1,462	1,439	1,386	1,389	1,192	1,292	-21.1
Other humanities and arts	2,153	2,260	2,113	2,209	2,204	2,148	2,135	2,143	2,087	1,840	1,980	-8.0
Other	2,734	3,023	3,043	3,019	2,941	3,152	2,977	3,027	3,005	2,974	3,144	15.0
Business management and administration	1,404	1,551	1,584	1,582	1,509	1,565	1,473	1,533	1,468	1,389	1,450	3.3
Communication	595	645	663	667	672	622	630	543	591	508	580	-2.5
Non-science and engineering fields nec	735	827	796	770	760	965	874	951	946	1,077	1,114	51.6
U.S. citizen or permanent resident	32,981	33,964	34,003	35,071	35,678	35,736	35,349	35,227	34,462	31,891	35,311	7.1
Life sciences	8,184	8,352	8,390	8,470	8,683	8,827	9,028	9,035	8,699	8,261	9,230	12.8
Agricultural sciences and natural resources	675	737	754	774	771	822	792	821	796	747	817	21.0
Biological and biomedical sciences	5,790	5,768	5,993	6,029	6,215	6,147	6,396	6,368	5,999	5,833	6,633	14.6
Health sciences	1,719	1,847	1,643	1,667	1,697	1,858	1,840	1,846	1,904	1,681	1,780	3.5
Physical sciences and earth sciences	3,148	3,247	3,300	3,481	3,669	3,715	3,768	3,900	3,739	3,366	3,868	22.9
Chemistry	1,385	1,443	1,447	1,572	1,581	1,696	1,710	1,780	1,696	1,515	1,800	30.0
Geosciences, atmospheric sciences, and ocean sciences	623	654	722	704	803	790	760	808	809	683	740	18.8
Physics and astronomy	1,140	1,150	1,131	1,205	1,285	1,229	1,298	1,312	1,234	1,168	1,328	16.5
Mathematics and computer sciences	1,627	1,631	1,738	1,663	1,729	1,748	1,736	1,785	1,734	1,681	1,911	17.5
Computer and information sciences	785	758	807	774	783	801	742	799	807	783	909	15.8
Mathematics and statistics	842	873	931	889	946	947	994	986	927	898	1,002	19.0
Psychology and social sciences	6,319	6,464	6,389	6,685	6,798	6,843	6,691	6,702	6,594	6,218	6,670	5.6
Psychology	3,046	3,067	3,042	3,103	3,341	3,376	3,309	3,326	3,309	3,155	3,366	10.5
Anthropology	445	457	405	397	360	349	336	360	366	301	334	-24.9
Economics	517	505	469	552	522	547	483	491	458	438	476	-7.9
Political science and government	536	593	574	621	579	572	544	504	459	408	465	-13.2
Sociology	512	516	544	596	506	562	557	511	487	460	485	-5.3
Other social sciences	1,263	1,326	1,355	1,416	1,490	1,437	1,462	1,510	1,515	1,456	1,544	22.2
Engineering	3,579	3,767	4,066	4,219	4,181	4,311	4,213	4,251	4,153	4,095	4,729	32.1
Aerospace, aeronautical, and astronautical engineering	181	194	246	216	233	241	221	212	221	187	192	6.1
Bioengineering and biomedical engineering	602	637	674	723	746	695	743	771	688	734	841	39.7
Chemical engineering	377	365	445	488	470	469	469	480	465	464	546	44.8
Civil engineering	159	182	229	231	219	231	200	200	244	191	295	85.5
Electrical, electronics, and communications engineering	614	603	575	632	548	581	543	518	552	595	608	-1.0
Industrial and manufacturing engineering	75	77	91	65	82	85	62	84	82	115	111	48.0
Materials science engineering	350	349	363	381	456	470	462	501	399	415	539	54.0
Mechanical engineering	505	547	558	620	585	591	608	600	601	580	734	45.3

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## Research doctorate recipients, by historical major field of doctorate and citizenship status: 2012–22

(Number)

Field and citizenship status	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	% change 2012–22
Other engineering	716	813	885	863	842	948	905	885	901	814	863	20.5
Education	4,040	4,118	3,934	4,196	4,303	4,052	4,025	3,848	3,897	3,478	3,679	-8.9
Education administration	936	844	763	797	727	792	783	755	822	613	643	-31.3
Education research	2,107	2,165	2,064	2,234	1,942	1,995	2,026	1,874	1,853	1,800	1,857	-11.9
Teacher education	134	90	132	134	158	97	87	87	94	90	91	-32.1
Teaching fields	613	741	732	762	950	763	785	769	750	630	703	14.7
Other education	250	278	243	269	526	405	344	363	378	345	385	54.0
Humanities and arts	4,434	4,535	4,361	4,478	4,450	4,297	4,145	3,988	3,908	3,155	3,462	-21.9
Foreign languages and literature	472	467	469	463	399	430	405	383	350	237	271	-42.6
History	889	947	968	944	950	890	800	741	745	570	604	-32.1
Letters	1,383	1,354	1,304	1,353	1,314	1,277	1,232	1,187	1,163	950	1,073	-22.4
Other humanities and arts	1,690	1,767	1,620	1,718	1,787	1,700	1,708	1,677	1,650	1,398	1,514	-10.4
Other	1,650	1,850	1,825	1,879	1,865	1,943	1,743	1,718	1,738	1,637	1,762	6.8
Business management and administration	736	831	849	892	845	859	740	748	710	609	662	-10.1
Communication	426	471	473	479	472	458	434	349	411	347	377	-11.5
Non-science and engineering fields nec	488	548	503	508	548	626	569	621	617	681	723	48.2
Temporary visa holder	14,784	15,674	15,839	16,129	16,477	16,288	17,582	18,324	18,473	17,771	19,633	32.8
Life sciences	3,197	3,177	3,169	3,264	3,352	3,331	3,360	3,395	3,427	3,089	3,493	9.3
Agricultural sciences and natural resources	529	516	504	555	561	607	607	646	632	548	575	8.7
Biological and biomedical sciences	2,166	2,154	2,229	2,266	2,304	2,180	2,157	2,129	2,173	2,029	2,289	5.7
Health sciences	502	507	436	443	487	544	596	620	622	512	629	25.3
Physical sciences and earth sciences	1,959	2,032	2,196	2,099	2,313	2,160	2,373	2,484	2,311	2,197	2,533	29.3
Chemistry	880	888	1,000	929	1,000	919	1,021	1,071	993	944	1,150	30.7
Geosciences, atmospheric sciences, and ocean sciences	281	290	326	307	390	332	392	429	391	345	392	39.5
Physics and astronomy	798	854	870	863	923	909	960	984	927	908	991	24.2
Mathematics and computer sciences	1,617	1,833	1,850	1,917	2,053	1,926	2,128	2,303	2,475	2,472	2,741	69.5
Computer and information sciences	870	990	1,029	1,094	1,201	1,105	1,163	1,328	1,455	1,431	1,587	82.4
Mathematics and statistics	747	843	821	823	852	821	965	975	1,020	1,041	1,154	54.5
Psychology and social sciences	1,601	1,634	1,549	1,622	1,753	1,668	1,768	1,915	1,834	1,904	2,071	29.4
Psychology	254	282	249	260	305	286	284	339	257	338	347	36.6
Anthropology	74	76	86	68	76	65	70	66	63	81	60	-18.9
Economics	656	615	627	606	656	641	707	708	690	731	760	15.9
Political science and government	150	163	145	178	128	140	159	173	152	139	187	24.7
Sociology	85	92	90	101	89	93	88	104	102	83	109	28.2
Other social sciences	382	406	352	409	499	443	460	525	570	532	608	59.2
Engineering	4,355	4,759	4,961	5,108	4,842	5,037	5,575	5,680	5,950	5,673	6,253	43.6

**Table 1-7****Research doctorate recipients, by historical major field of doctorate and citizenship status: 2012–22**

(Number)

Field and citizenship status	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	% change 2012–22
Aerospace, aeronautical, and astronautical engineering	107	138	124	132	121	123	146	153	163	163	152	42.1
Bioengineering and biomedical engineering	292	352	318	348	301	300	362	359	364	302	343	17.5
Chemical engineering	414	409	482	461	401	426	478	478	482	517	555	34.1
Civil engineering	303	333	339	359	307	427	442	461	513	386	549	81.2
Electrical, electronics, and communications engineering	1,181	1,160	1,217	1,237	1,160	1,215	1,316	1,198	1,342	1,400	1,482	25.5
Industrial and manufacturing engineering	140	156	185	161	164	157	196	140	199	235	251	79.3
Materials science engineering	334	435	419	448	494	428	500	461	463	478	544	62.9
Mechanical engineering	631	664	686	783	652	741	831	879	983	793	884	40.1
Other engineering	953	1,112	1,191	1,179	1,242	1,220	1,304	1,551	1,441	1,399	1,493	56.7
Education	460	515	478	539	562	534	611	615	659	557	581	26.3
Education administration	46	44	39	35	33	51	52	54	59	47	55	19.6
Education research	269	307	255	313	266	297	353	303	370	310	310	15.2
Teacher education	13	17	14	13	13	12	8	16	18	20	17	30.8
Teaching fields	101	116	134	145	181	132	155	165	163	134	141	39.6
Other education	31	31	36	33	69	42	43	77	49	46	58	87.1
Humanities and arts	761	779	731	713	712	692	739	826	742	738	765	0.5
Foreign languages and literature	160	179	142	151	164	159	181	202	185	120	154	-3.8
History	136	134	147	131	142	125	112	130	120	130	109	-19.9
Letters	141	150	140	122	126	122	139	149	132	175	162	14.9
Other humanities and arts	324	316	302	309	280	286	307	345	305	313	340	4.9
Other	834	945	905	867	890	940	1,028	1,106	1,075	1,141	1,196	43.4
Business management and administration	542	600	589	546	553	588	642	689	658	689	703	29.7
Communication	107	133	137	137	160	122	165	163	153	142	174	62.6
Non-science and engineering fields nec	185	212	179	184	177	230	221	254	264	310	319	72.4

nec = not elsewhere classified.

<sup>a</sup> Includes doctorate recipients who did not report citizenship status.**Note(s):**

Beginning in 2021, a modified version of the 2020 Classification of Instructional Programs (CIP) codes was used in the survey data collection; the historical fields were constructed using the SED-CIP code crosswalk in table A-6. Therefore, the field of doctorate data prior to 2021 may not be comparable to subsequent years. For more information, see the "Technical Notes" and the SED 2021 Taxonomy Changes Working Paper (available at <https://nces.nsf.gov/pubs/nces23200>).

**Source(s):**

National Center for Science and Engineering Statistics, Survey of Earned Doctorates.