

Table 1-5

Research doctorate recipients, by historical major field of doctorate and sex: 2011–21

(Number and percent)

Field and sex	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	% change 2011–21
All doctorate recipients ^a	48,909	50,943	52,703	53,986	54,886	54,809	54,552	55,080	55,609	55,224	52,250	6.8
Life sciences	11,535	11,964	12,207	12,484	12,493	12,539	12,554	12,754	12,748	12,549	11,814	2.4
Agricultural sciences and natural resources	1,206	1,255	1,324	1,338	1,434	1,379	1,493	1,442	1,488	1,470	1,334	10.6
Biological and biomedical sciences	8,152	8,322	8,354	8,868	8,783	8,863	8,566	8,782	8,678	8,410	8,149	0.0
Health sciences	2,177	2,387	2,529	2,278	2,276	2,297	2,495	2,530	2,582	2,669	2,331	7.1
Physical sciences and earth sciences	5,271	5,419	5,584	5,910	5,916	6,251	6,082	6,330	6,579	6,241	5,757	9.2
Chemistry	2,432	2,416	2,484	2,673	2,666	2,703	2,699	2,807	2,939	2,761	2,555	5.1
Geosciences, atmospheric sciences, and ocean sciences	852	941	989	1,098	1,057	1,227	1,169	1,185	1,272	1,241	1,064	24.9
Physics and astronomy	1,987	2,062	2,111	2,139	2,193	2,321	2,214	2,338	2,368	2,239	2,138	7.6
Mathematics and computer sciences	3,273	3,496	3,660	3,862	3,818	3,954	3,842	4,022	4,230	4,387	4,373	33.6
Computer and information sciences	1,667	1,793	1,843	1,988	2,003	2,082	1,998	2,000	2,220	2,363	2,361	41.6
Mathematics and statistics	1,606	1,703	1,817	1,874	1,815	1,872	1,844	2,022	2,010	2,024	2,012	25.3
Psychology and social sciences	8,220	8,498	8,580	8,748	9,073	9,037	9,034	8,876	9,043	8,932	8,675	5.5
Psychology	3,576	3,599	3,592	3,724	3,776	3,910	3,925	3,821	3,909	3,871	3,797	6.2
Anthropology	553	547	550	523	492	460	446	424	445	447	400	-27.7
Economics	1,121	1,243	1,183	1,196	1,255	1,236	1,239	1,245	1,247	1,212	1,230	9.7
Political science and government	685	724	803	775	859	745	743	734	707	636	581	-15.2
Sociology	656	633	636	678	741	613	683	668	632	606	560	-14.6
Other social sciences	1,629	1,752	1,816	1,852	1,950	2,073	1,998	1,984	2,103	2,160	2,107	29.3
Engineering	8,032	8,469	9,000	9,626	9,875	9,459	9,776	10,164	10,298	10,471	10,240	27.5
Aerospace, aeronautical, and astronautical engineering	262	307	348	386	361	370	379	383	379	399	373	42.4
Bioengineering and biomedical engineering	898	943	1,039	1,046	1,125	1,089	1,032	1,133	1,163	1,082	1,064	18.5
Chemical engineering	823	840	824	973	1,002	921	931	981	980	994	1,024	24.4
Civil engineering	634	495	542	617	632	564	713	675	700	795	621	-2.1
Electrical, electronics, and communications engineering	1,886	1,938	1,897	1,952	1,997	1,823	1,879	1,943	1,799	1,973	2,081	10.3
Industrial and manufacturing engineering	258	226	241	298	243	256	249	272	234	304	361	39.9
Materials science engineering	662	743	815	832	871	984	937	992	992	879	936	41.4
Mechanical engineering	1,084	1,220	1,277	1,331	1,466	1,297	1,398	1,503	1,532	1,633	1,444	33.2
Other engineering	1,525	1,757	2,017	2,191	2,178	2,155	2,258	2,282	2,519	2,412	2,336	53.2
Education	4,670	4,802	4,934	4,789	5,098	5,146	4,826	4,818	4,633	4,715	4,252	-9.0
Education administration	924	1,057	965	893	920	824	922	895	839	931	710	-23.2
Education research	2,378	2,516	2,638	2,490	2,717	2,328	2,373	2,457	2,253	2,275	2,167	-8.9
Teacher education	204	156	109	152	156	180	114	96	104	113	111	-45.6
Teaching fields	805	757	892	915	953	1,166	925	959	957	939	797	-1.0
Other education	359	316	330	339	352	648	492	411	480	457	467	30.1

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(Number and percent)

Field and sex	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	% change 2011–21
Humanities and arts	5,225	5,561	5,715	5,524	5,594	5,482	5,286	5,139	5,051	4,924	4,137	-20.8
Foreign languages and literature	644	684	701	674	656	599	618	617	610	564	377	-41.5
History	1,065	1,086	1,148	1,186	1,146	1,148	1,058	948	912	884	725	-31.9
Letters	1,513	1,638	1,606	1,551	1,583	1,531	1,462	1,439	1,386	1,389	1,192	-21.2
Other humanities and arts	2,003	2,153	2,260	2,113	2,209	2,204	2,148	2,135	2,143	2,087	1,843	-8.0
Other	2,683	2,734	3,023	3,043	3,019	2,941	3,152	2,977	3,027	3,005	3,002	11.9
Business management and administration	1,327	1,404	1,551	1,584	1,582	1,509	1,565	1,473	1,533	1,468	1,392	4.9
Communication	650	595	645	663	667	672	622	630	543	591	507	-22.0
Non-science and engineering fields nec	706	735	827	796	770	760	965	874	951	946	1,103	56.2
Male	26,188	27,362	28,326	29,008	29,532	29,572	29,446	29,743	30,111	29,855	28,082	7.2
Life sciences	5,243	5,335	5,492	5,514	5,563	5,628	5,662	5,648	5,806	5,547	5,236	-0.1
Agricultural sciences and natural resources	652	698	702	691	746	755	763	746	758	745	671	2.9
Biological and biomedical sciences	3,878	3,891	3,941	4,088	4,100	4,154	4,088	4,079	4,192	3,887	3,816	-1.6
Health sciences	713	746	849	735	717	719	811	823	856	915	749	5.0
Physical sciences and earth sciences	3,629	3,684	3,717	3,968	3,928	4,285	4,103	4,211	4,363	4,173	3,737	3.0
Chemistry	1,508	1,521	1,497	1,642	1,592	1,712	1,676	1,741	1,788	1,668	1,474	-2.3
Geosciences, atmospheric sciences, and ocean sciences	522	538	539	622	600	716	657	659	738	736	594	13.8
Physics and astronomy	1,599	1,625	1,681	1,704	1,736	1,857	1,770	1,811	1,837	1,769	1,669	4.4
Mathematics and computer sciences	2,456	2,638	2,792	2,912	2,877	2,994	2,906	3,036	3,137	3,295	3,230	31.5
Computer and information sciences	1,312	1,419	1,502	1,580	1,581	1,662	1,566	1,565	1,711	1,861	1,775	35.3
Mathematics and statistics	1,144	1,219	1,290	1,332	1,296	1,332	1,340	1,471	1,426	1,434	1,455	27.2
Psychology and social sciences	3,332	3,539	3,501	3,507	3,757	3,741	3,718	3,635	3,666	3,583	3,488	4.7
Psychology	1,003	1,040	997	1,063	1,057	1,133	1,132	1,095	1,113	1,080	1,070	6.7
Anthropology	223	187	188	195	185	171	159	126	155	144	120	-46.2
Economics	734	840	767	785	821	819	827	849	818	808	821	11.9
Political science and government	389	420	469	433	527	462	456	429	433	387	339	-12.9
Sociology	254	230	259	247	284	257	266	250	229	243	211	-16.9
Other social sciences	729	822	821	784	883	899	878	886	918	921	927	27.2
Engineering	6,242	6,565	6,946	7,401	7,578	7,267	7,449	7,710	7,830	7,878	7,582	21.5
Aerospace, aeronautical, and astronautical engineering	228	268	293	330	308	314	337	337	323	329	311	36.4
Bioengineering and biomedical engineering	563	608	684	660	698	686	613	687	720	652	631	12.1
Chemical engineering	566	583	566	682	685	624	665	688	664	695	696	23.0
Civil engineering	486	388	417	465	457	437	520	505	541	586	429	-11.7
Electrical, electronics, and communications engineering	1,579	1,594	1,616	1,614	1,704	1,529	1,550	1,599	1,501	1,630	1,721	9.0
Industrial and manufacturing engineering	180	164	176	209	154	185	169	204	172	209	245	36.1
Materials science engineering	496	556	598	617	648	721	698	718	701	637	649	30.8

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(Number and percent)

Field and sex	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	% change 2011–21
Mechanical engineering	934	1,042	1,081	1,126	1,265	1,096	1,179	1,285	1,283	1,372	1,182	26.6
Other engineering	1,210	1,362	1,515	1,698	1,659	1,675	1,718	1,687	1,925	1,768	1,718	42.0
Education	1,432	1,500	1,570	1,468	1,605	1,545	1,535	1,494	1,422	1,458	1,239	-13.5
Education administration	349	389	372	371	344	304	349	323	342	349	247	-29.2
Education research	678	751	802	701	837	703	764	751	644	664	633	-6.6
Teacher education	38	43	22	35	36	43	21	18	20	28	18	-52.6
Teaching fields	250	229	275	265	294	313	265	271	259	292	215	-14.0
Other education	117	88	99	96	94	182	136	131	157	125	126	7.7
Humanities and arts	2,571	2,741	2,829	2,760	2,763	2,639	2,606	2,564	2,478	2,506	2,115	-17.7
Foreign languages and literature	248	238	271	248	238	228	239	247	215	223	170	-31.5
History	586	602	632	664	632	621	602	513	529	510	409	-30.2
Letters	615	659	665	657	647	600	593	585	560	587	489	-20.5
Other humanities and arts	1,122	1,242	1,261	1,191	1,246	1,190	1,172	1,219	1,174	1,186	1,047	-6.7
Other	1,283	1,360	1,479	1,478	1,461	1,473	1,467	1,445	1,409	1,415	1,455	13.4
Business management and administration	792	837	909	909	934	932	900	863	872	851	795	0.4
Communication	233	244	244	277	256	261	200	234	205	228	213	-8.6
Non-science and engineering fields nec	258	279	326	292	271	280	367	348	332	336	447	73.3
Female	22,699	23,526	24,365	24,813	25,347	25,222	25,084	25,309	25,488	25,364	24,156	6.4
Life sciences	6,289	6,614	6,712	6,930	6,929	6,908	6,887	7,100	6,941	7,001	6,576	4.6
Agricultural sciences and natural resources	554	554	622	646	688	623	728	693	730	724	663	19.7
Biological and biomedical sciences	4,272	4,422	4,410	4,747	4,682	4,707	4,476	4,700	4,485	4,523	4,331	1.4
Health sciences	1,463	1,638	1,680	1,537	1,559	1,578	1,683	1,707	1,726	1,754	1,582	8.1
Physical sciences and earth sciences	1,640	1,730	1,864	1,924	1,987	1,963	1,978	2,116	2,212	2,066	2,018	23.0
Chemistry	922	894	985	1,021	1,074	991	1,022	1,066	1,151	1,091	1,081	17.2
Geosciences, atmospheric sciences, and ocean sciences	330	403	449	475	457	510	512	526	533	505	470	42.4
Physics and astronomy	388	433	430	428	456	462	444	524	528	470	467	20.4
Mathematics and computer sciences	813	855	868	934	939	959	935	982	1,092	1,092	1,143	40.6
Computer and information sciences	353	374	341	400	422	420	432	434	508	502	586	66.0
Mathematics and statistics	460	481	527	534	517	539	503	548	584	590	557	21.1
Psychology and social sciences	4,887	4,955	5,077	5,217	5,315	5,295	5,312	5,239	5,377	5,349	5,184	6.1
Psychology	2,573	2,558	2,594	2,648	2,719	2,776	2,793	2,726	2,796	2,791	2,727	6.0
Anthropology	330	360	362	328	307	289	287	298	290	303	280	-15.2
Economics	387	402	416	404	434	417	410	396	429	404	408	5.4
Political science and government	296	303	333	341	332	283	287	304	274	249	242	-18.2
Sociology	402	402	377	431	457	356	416	418	403	363	349	-13.2
Other social sciences	899	930	995	1,065	1,066	1,174	1,119	1,097	1,185	1,239	1,178	31.0

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(Number and percent)

Field and sex	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	% change 2011–21
Engineering	1,782	1,887	2,052	2,184	2,297	2,189	2,321	2,450	2,466	2,592	2,656	49.0
Aerospace, aeronautical, and astronautical engineering	34	39	55	55	53	56	42	46	56	70	62	82.4
Bioengineering and biomedical engineering	335	335	355	384	427	403	419	445	443	430	432	29.0
Chemical engineering	256	256	258	290	317	296	265	293	316	299	328	28.1
Civil engineering	147	106	125	147	175	127	191	170	159	209	192	30.6
Electrical, electronics, and communications engineering	301	336	279	325	293	293	329	344	297	343	360	19.6
Industrial and manufacturing engineering	78	62	65	89	89	71	79	68	62	95	116	48.7
Materials science engineering	166	184	217	211	223	262	239	274	290	242	286	72.3
Mechanical engineering	150	177	196	197	201	201	219	216	249	261	262	74.7
Other engineering	315	392	502	486	519	480	538	594	594	643	618	96.2
Education	3,234	3,298	3,364	3,311	3,492	3,601	3,289	3,323	3,211	3,256	3,012	-6.9
Education administration	574	665	593	522	576	520	573	572	497	581	463	-19.3
Education research	1,697	1,765	1,836	1,783	1,879	1,625	1,608	1,705	1,609	1,611	1,534	-9.6
Teacher education	166	113	87	117	120	137	92	78	84	85	93	-44.0
Teaching fields	555	527	617	649	659	853	660	688	698	647	581	4.7
Other education	242	228	231	240	258	466	356	280	323	332	341	40.9
Humanities and arts	2,654	2,818	2,885	2,760	2,830	2,842	2,679	2,572	2,571	2,418	2,020	-23.9
Foreign languages and literature	396	446	430	424	418	371	379	370	394	341	207	-47.7
History	479	484	516	521	514	527	456	435	383	374	316	-34.0
Letters	898	978	941	894	936	931	869	853	826	802	701	-21.9
Other humanities and arts	881	910	998	921	962	1,013	975	914	968	901	796	-9.6
Other	1,400	1,369	1,543	1,553	1,558	1,465	1,683	1,527	1,618	1,590	1,547	10.5
Business management and administration	535	564	641	669	648	575	664	607	661	617	597	11.6
Communication	417	350	401	383	411	410	422	395	338	363	294	-29.5
Non-science and engineering fields nec	448	455	501	501	499	480	597	525	619	610	656	46.4

nec = not elsewhere classified.

^a Includes respondents who did not report sex.**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 in 2021 may not be comparable to prior years; see the "Technical Notes" for more information, table A-4 for a summary of SED-CIP codes in the new SED field taxonomy, and table A-5 for a full list of SED-CIP codes in the new field taxonomy.

Source(s):

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