

**Table 3-2****Research doctorate recipients, by detailed field of doctorate and sex: 2022**

(Number)

Field of doctorate	Total <sup>a</sup>	Male	Female	% female
All fields	57,596	30,522	27,069	47.0
Science and engineering	45,924	25,680	20,243	44.1
Agricultural sciences and natural resources	1,305	626	679	52.0
Agricultural, animal, plant, and veterinary sciences	857	408	449	52.4
Agronomy and crop science	68	53	15	22.1
Animal sciences	174	74	100	57.5
Food science and technology	156	57	99	63.5
Plant sciences	162	88	74	45.7
Soil sciences	100	52	48	48.0
Veterinary biomedical and clinical sciences	77	28	49	63.6
Agricultural, animal, plant, and veterinary sciences nec	120	56	64	53.3
Natural resources and conservation	448	218	230	51.3
Environmental science	147	56	91	61.9
Environmental/ natural resources management and policy	71	43	28	39.4
Forestry	69	37	32	46.4
Natural resources conservation and research	72	35	37	51.4
Natural resources and conservation nec	89	47	42	47.2
Biological and biomedical sciences	9,386	4,372	5,014	53.4
Biochemistry, biophysics, and molecular biology	1,555	801	754	48.5
Biochemistry	465	217	248	53.3
Biochemistry and molecular biology	326	152	174	53.4
Biophysics	251	179	72	28.7
Molecular biology	274	130	144	52.6
Biochemistry, biophysics, and molecular biology nec	239	123	116	48.5
Bioinformatics, biostatistics, and computational biology	688	400	288	41.9
Bioinformatics	169	102	67	39.6
Biostatistics	260	126	134	51.5
Computational biology	154	105	49	31.8
Bioinformatics, biostatistics, and computational biology nec	105	67	38	36.2
Cell/ cellular biology and anatomy	689	312	377	54.7
Cell/ cellular and molecular biology	526	235	291	55.3
Developmental biology and embryology	115	62	53	46.1
Cell/ cellular biology and anatomy nec	48	15	33	68.8
Ecology, evolutionary biology, and epidemiology	1,120	431	689	61.5
Ecology	238	110	128	53.8
Ecology and evolutionary biology	270	104	166	61.5
Epidemiology	386	100	286	74.1
Epidemiology and biostatistics	45	22	23	51.1
Evolutionary biology	83	49	34	41.0
Ecology, evolutionary biology, and epidemiology nec	98	46	52	53.1
Genetics and genomics	436	197	239	54.8
Genetics, general	122	50	72	59.0
Genome sciences and genomics	97	52	45	46.4
Human/ medical genetics	81	32	49	60.5
Molecular genetics	66	33	33	50.0
Genetics and genomics nec	70	30	40	57.1
Microbiology and immunology	1,089	475	614	56.4
Immunology	343	157	186	54.2
Microbiology and immunology	266	108	158	59.4
Microbiology, general	270	116	154	57.0
Virology	123	62	61	49.6

**Table 3-2****Research doctorate recipients, by detailed field of doctorate and sex: 2022**

(Number)

Field of doctorate	Total <sup>a</sup>	Male	Female	% female
Microbiology and immunology nec	87	32	55	63.2
Neurobiology and neurosciences	1,177	561	616	52.3
Cognitive neuroscience	131	57	74	56.5
Neurobiology	79	37	42	53.2
Neuroscience	824	384	440	53.4
Neurobiology and neurosciences nec	143	83	60	42.0
Pharmacology and toxicology	386	159	227	58.8
Pharmacology	164	73	91	55.5
Toxicology	125	48	77	61.6
Pharmacology and toxicology nec	97	38	59	60.8
Physiology, oncology, and cancer biology	768	368	400	52.1
Biomechanics	69	41	28	40.6
Exercise physiology and kinesiology	96	54	42	43.8
Oncology and cancer biology	320	141	179	55.9
Physiology, general	99	48	51	51.5
Physiology, oncology, and cancer biology nec	184	84	100	54.3
Biological and biomedical sciences, other	1,478	668	810	54.8
Biology/ biological sciences, general	473	212	261	55.2
Biomedical sciences, general	374	154	220	58.8
Botany and plant biology	45	28	17	37.8
Entomology	134	70	64	47.8
Plant pathology and phytopathology	98	56	42	42.9
Plant physiology and biology nec	70	32	38	54.3
Zoology and animal biology	84	37	47	56.0
Biological and biomedical sciences nec	200	79	121	60.5
Computer and information sciences	2,188	1,654	534	24.4
Computer science	1,484	1,147	337	22.7
Computer science	1,484	1,147	337	22.7
Computer and information sciences, other	704	507	197	28.0
Artificial intelligence	205	162	43	21.0
Computer and information sciences, general	130	95	35	26.9
Computer systems networking and telecommunications	116	94	22	19.0
Informatics and information technology	94	57	37	39.4
Information sciences/ studies	92	51	41	44.6
Computer and information sciences nec	67	48	19	28.4
Engineering	10,763	7,832	2,931	27.2
Biological, biomedical, and biosystems engineering	1,236	676	560	45.3
Bioengineering and biomedical engineering	1,135	621	514	45.3
Biological/ biosystems engineering and biomedical technology	101	55	46	45.5
Chemical and petroleum engineering	1,255	840	415	33.1
Chemical and biomolecular engineering	205	135	70	34.1
Chemical engineering	885	578	307	34.7
Petroleum engineering	102	85	17	16.7
Chemical and petroleum engineering nec	63	42	21	33.3
Civil, environmental, and transportation engineering	1,315	897	418	31.8
Civil engineering	330	237	93	28.2
Civil and environmental engineering	503	311	192	38.2
Environmental/ environmental health engineering	65	34	31	47.7
Geotechnical and geoenvironmental engineering	87	65	22	25.3
Structural engineering	130	108	22	16.9
Transportation and highway engineering	112	75	37	33.0

**Table 3-2****Research doctorate recipients, by detailed field of doctorate and sex: 2022**

(Number)

Field of doctorate	Total <sup>a</sup>	Male	Female	% female
Civil, environmental, and transportation engineering nec	88	67	21	23.9
Electrical and computer engineering	2,132	1,735	397	18.6
Computer engineering	263	205	58	22.1
Electrical and computer engineering	1,357	1,107	250	18.4
Electrical and electronics engineering	438	366	72	16.4
Electrical and computer engineering nec	74	57	17	23.0
Engineering technologies	361	286	75	20.8
Electrical and electronic engineering technologies	55	46	9	16.4
Electromechanical technologies	90	84	6	6.7
Environmental control technologies	58	35	23	39.7
Engineering technologies nec	158	121	37	23.4
Industrial engineering and operations research	655	469	186	28.4
Industrial engineering	211	144	67	31.8
Industrial and systems engineering	127	84	43	33.9
Operations research	183	126	57	31.1
Systems and manufacturing engineering	134	115	19	14.2
Materials and mining engineering	925	637	288	31.1
Materials engineering	85	62	23	27.1
Materials science and engineering	783	527	256	32.7
Materials and mining engineering nec	57	48	9	15.8
Mechanical engineering	1,545	1,248	297	19.2
Mechanical engineering, general	1,440	1,163	277	19.2
Mechanical engineering nec	105	85	20	19.0
Engineering, other	1,339	1,044	295	22.0
Aerospace, aeronautical, astronautical, and space engineering	374	309	65	17.4
Engineering mechanics, physics, and science	166	137	29	17.5
Mechanical and aerospace engineering	213	180	33	15.5
Nanotechnology	54	42	12	22.2
Nuclear engineering	163	135	28	17.2
Engineering nec	369	241	128	34.7
Geosciences, atmospheric, and ocean sciences	1,165	627	538	46.2
Geological and earth sciences	658	381	277	42.1
Geochemistry	42	21	21	50.0
Geology	79	46	33	41.8
Geology/ earth science, general	121	76	45	37.2
Geophysics and seismology	118	81	37	31.4
Hydrology and water resources science	89	44	45	50.6
Geological and earth sciences nec	209	113	96	45.9
Ocean, marine, and atmospheric sciences	507	246	261	51.5
Atmospheric sciences and meteorology, general	120	72	48	40.0
Atmospheric sciences and meteorology nec	95	50	45	47.4
Climatology, atmospheric chemistry/ physics	67	41	26	38.8
Marine biology and biological oceanography	97	32	65	67.0
Marine sciences	63	23	40	63.5
Oceanography, chemical/ physical	65	28	37	56.9
Health sciences	2,808	874	1,934	68.9
Nursing and nursing science	623	73	550	88.3
Nursing education	81	8	73	90.1
Nursing science	382	49	333	87.2
Nursing specialties and practice	160	16	144	90.0
Pharmacy and pharmaceutical sciences	460	224	236	51.3

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(Number)

Field of doctorate	Total <sup>a</sup>	Male	Female	% female
Medicinal and pharmaceutical chemistry	75	39	36	48.0
Pharmaceutical sciences	281	137	144	51.2
Pharmacy, pharmaceutical sciences, and administration nec	104	48	56	53.8
Public health	795	252	543	68.3
Environmental health	68	27	41	60.3
Health services research	119	35	84	70.6
Health/ medical physics	68	48	20	29.4
Public health education and promotion	112	17	95	84.8
Public health, general	212	59	153	72.2
Public health nec	216	66	150	69.4
Health sciences, other	930	325	605	65.1
Communication disorders sciences	134	28	106	79.1
Exercise science and kinesiology	102	46	56	54.9
Health sciences, general	61	15	46	75.4
Marriage and family therapy/ counseling	68	17	51	75.0
Medical clinical sciences	75	34	41	54.7
Medical, biomedical, and health informatics	75	42	33	44.0
Mental health, counseling, and therapy services and sciences	93	19	74	79.6
Rehabilitation and therapeutic sciences	149	48	101	67.8
Health sciences nec	173	76	97	56.1
Mathematics and statistics	2,144	1,523	621	29.0
Applied mathematics	477	336	141	29.6
Applied mathematics, general	275	187	88	32.0
Computational and applied mathematics	139	105	34	24.5
Applied mathematics nec	63	44	19	30.2
Mathematics	980	753	227	23.2
Algebra and number theory	75	64	11	14.7
Mathematics, general	763	584	179	23.5
Mathematics nec	142	105	37	26.1
Statistics	687	434	253	36.8
Applied statistics, general	70	35	35	50.0
Mathematics and statistics	101	67	34	33.7
Statistics	469	310	159	33.9
Statistics nec	47	22	25	53.2
Multidisciplinary/ interdisciplinary sciences	1,788	1,132	656	36.7
Interdisciplinary computer sciences	625	471	154	24.6
Computer science and engineering	230	173	57	24.8
Electrical engineering and computer science	276	221	55	19.9
Interdisciplinary computer sciences nec	119	77	42	35.3
Multidisciplinary/ interdisciplinary sciences, other	1,163	661	502	43.2
Behavioral and cognitive sciences	89	34	55	61.8
Computational science and engineering	112	83	29	25.9
Data mining and machine learning	259	211	48	18.5
Data science and data analytics	94	61	33	35.1
History/ philosophy of science, technology, and society	67	39	28	41.8
Nanoscience/ nanoscale science	53	34	19	35.8
Nutrition sciences	129	29	100	77.5
Multidisciplinary/ interdisciplinary sciences nec	360	170	190	52.8
Physical sciences	5,428	3,651	1,777	32.7
Astronomy and astrophysics	289	183	106	36.7
Astronomy	109	60	49	45.0

**Table 3-2****Research doctorate recipients, by detailed field of doctorate and sex: 2022**

(Number)

Field of doctorate	Total <sup>a</sup>	Male	Female	% female
Astrophysics	115	80	35	30.4
Astronomy and astrophysics nec	65	43	22	33.8
Chemistry	2,782	1,645	1,137	40.9
Analytical chemistry	366	173	193	52.7
Chemical biology	163	96	67	41.1
Chemistry, general	582	313	269	46.2
Inorganic chemistry	324	200	124	38.3
Organic chemistry	612	406	206	33.7
Physical chemistry	315	197	118	37.5
Polymer chemistry	98	63	35	35.7
Theoretical and computational chemistry	159	118	41	25.8
Chemistry nec	163	79	84	51.5
Materials sciences	385	255	130	33.8
Materials science	176	123	53	30.1
Materials chemistry and materials sciences nec	209	132	77	36.8
Physics	1,972	1,568	404	20.5
Applied physics	161	119	42	26.1
Atomic/ molecular physics	87	71	16	18.4
Condensed matter and materials physics	433	358	75	17.3
Elementary particle physics	151	126	25	16.6
Nuclear physics	104	85	19	18.3
Optics/ optical sciences	138	109	29	21.0
Physics and astronomy	232	177	55	23.7
Physics, general	402	306	96	23.9
Plasma and high-temperature physics	51	49	2	3.9
Theoretical and mathematical physics	101	89	12	11.9
Physics and physical sciences nec	112	79	33	29.5
Psychology	3,900	982	2,918	74.8
Clinical psychology	1,144	234	910	79.5
Clinical child psychology	55	6	49	89.1
Clinical psychology	1,089	228	861	79.1
Counseling and applied psychology	1,438	348	1,090	75.8
Applied behavior analysis	44	7	37	84.1
Counseling psychology	399	108	291	72.9
Educational psychology	247	63	184	74.5
Industrial and organizational psychology	198	70	128	64.6
School psychology	247	33	214	86.6
Counseling and applied psychology nec	303	67	236	77.9
Research and experimental psychology	854	282	572	67.0
Behavioral neuroscience	105	39	66	62.9
Cognitive psychology and psycholinguistics	100	46	54	54.0
Developmental and child psychology	114	13	101	88.6
Experimental psychology	131	53	78	59.5
Social psychology	221	82	139	62.9
Research and experimental psychology nec	183	49	134	73.2
Psychology, other	464	118	346	74.6
Human development	145	23	122	84.1
Psychology, general	266	84	182	68.4
Psychology nec	53	11	42	79.2
Social sciences	5,049	2,407	2,641	52.3
Anthropology	409	128	281	68.7

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(Number)

Field of doctorate	Total <sup>a</sup>	Male	Female	% female
Anthropology, general	103	32	71	68.9
Cultural anthropology	197	73	124	62.9
Physical and biological anthropology	75	15	60	80.0
Anthropology nec	34	8	26	76.5
Area, ethnic, cultural, gender, and group studies	442	158	283	64.0
Area studies	245	105	140	57.1
Ethnic studies	101	39	61	60.4
Area, ethnic, cultural, gender, and group studies nec	96	14	82	85.4
Economics	1,391	894	497	35.7
Agricultural economics	97	46	51	52.6
Applied economics	131	66	65	49.6
Development economics and international development	50	27	23	46.0
Econometrics and quantitative economics	179	123	56	31.3
Economics, general	826	568	258	31.2
Environmental/ natural resource economics	50	27	23	46.0
Economics nec	58	37	21	36.2
Political science and government	678	399	279	41.2
Political science and government, general	553	320	233	42.1
Political science and government nec	125	79	46	36.8
Public policy analysis	433	157	276	63.7
Education policy analysis	130	38	92	70.8
Health policy analysis	53	11	42	79.2
Public policy analysis, general	120	53	67	55.8
Public policy nec	130	55	75	57.7
Sociology, demography, and population studies	626	238	388	62.0
Sociology, general	555	215	340	61.3
Sociology, demography, and population studies nec	71	23	48	67.6
Social sciences, other	1,070	433	637	59.5
Applied linguistics	71	16	55	77.5
Archeology	105	49	56	53.3
Criminology	118	43	75	63.6
Geography and cartography	220	95	125	56.8
International relations and national security studies	128	73	55	43.0
Linguistics	192	86	106	55.2
Social sciences nec	236	71	165	69.9
Non-science and engineering	11,672	4,842	6,826	58.5
Business	1,401	781	620	44.3
Business administration and management	445	239	206	46.3
Business management and administration	297	161	136	45.8
Organizational leadership	55	21	34	61.8
Business administration and management nec	93	57	36	38.7
Business, other	956	542	414	43.3
Accounting and accounting-related	159	66	93	58.5
Finance and financial management	210	156	54	25.7
Management information systems	92	59	33	35.9
Management sciences	77	53	24	31.2
Marketing	146	78	68	46.6
Organizational behavior studies	94	39	55	58.5
Business nec	178	91	87	48.9
Education	3,919	1,154	2,765	70.6
Education leadership and administration	1,167	378	789	67.6

**Table 3-2****Research doctorate recipients, by detailed field of doctorate and sex: 2022**

(Number)

Field of doctorate	Total <sup>a</sup>	Male	Female	% female
Educational leadership and administration, general	488	160	328	67.2
Higher education and community college administration	438	148	290	66.2
Education leadership and administration nec	241	70	171	71.0
Education research	1,189	348	841	70.7
Curriculum and instruction	413	114	299	72.4
Educational assessment, evaluation, and research methods	219	80	139	63.5
Educational/ instructional technology and media design	172	52	120	69.8
Higher education evaluation and research	61	20	41	67.2
Student counseling and personnel services	246	54	192	78.0
Education research nec	78	28	50	64.1
Teacher education	1,099	296	803	73.1
Adult, continuing, and workforce education and development	64	25	39	60.9
Bilingual, multilingual, and multicultural education	62	13	49	79.0
Mathematics teacher education	49	22	27	55.1
Music teacher education	73	35	38	52.1
Special education and teaching	258	53	205	79.5
STEM educational methods	84	19	65	77.4
Teacher education, science and engineering	76	28	48	63.2
Teacher education, specific levels and methods	188	38	150	79.8
Teacher education, specific subject areas	245	63	182	74.3
Education, other	464	132	332	71.6
Education, general	327	99	228	69.7
Education nec	137	33	104	75.9
Humanities	3,369	1,709	1,658	49.2
English language and literature, letters	1,062	393	668	62.9
American literature (United States)	138	48	90	65.2
Creative writing	75	36	38	50.7
English language and literature, general	397	158	239	60.2
English literature (British and Commonwealth)	160	52	108	67.5
Rhetoric, composition, and writing studies	217	71	146	67.3
English language and literature nec	75	28	47	62.7
Foreign languages, literatures, and linguistics	538	223	315	58.6
Comparative literature	91	44	47	51.6
Hispanic/ Latin American languages, literatures, and linguistics	92	33	59	64.1
Romance languages, literatures, and linguistics	104	42	62	59.6
Spanish language and literature	92	36	56	60.9
Foreign languages, literatures, and linguistics nec	159	68	91	57.2
History	732	382	350	47.8
American history (United States)	245	131	114	46.5
European history	120	56	64	53.3
History, general	146	71	75	51.4
History, regional focus	145	85	60	41.4
History nec	76	39	37	48.7
Philosophy and religious studies	642	415	226	35.2
Philosophy	432	292	139	32.2
Religion/ religious studies	140	85	55	39.3
Philosophy and religious studies nec	70	38	32	45.7
Humanities, other	395	296	99	25.1
Bible/ biblical studies	90	79	11	12.2
Humanities and humanistic studies	79	33	46	58.2
Theological and ministerial studies	226	184	42	18.6

**Table 3-2****Research doctorate recipients, by detailed field of doctorate and sex: 2022**

(Number)

Field of doctorate	Total <sup>a</sup>	Male	Female	% female
Visual and performing arts	842	363	479	56.9
Performing arts	495	267	228	46.1
Dance, drama, theatre arts, and stagecraft	85	28	57	67.1
Music performance	120	67	53	44.2
Music theory and composition	94	67	27	28.7
Musicology and ethnomusicology	112	54	58	51.8
Music nec	84	51	33	39.3
Visual arts, media studies, and design	347	96	251	72.3
Art history, criticism, and conservation	208	39	169	81.3
Film, cinema, and media studies	74	36	38	51.4
Visual arts, media studies, and design nec	65	21	44	67.7
Other non-science and engineering	2,141	835	1,304	60.9
Communications and journalism	586	199	387	66.0
Applied communication, advertising, and public relations	103	26	77	74.8
Communication and media studies	145	48	97	66.9
Communication, general	166	54	112	67.5
Mass communication/ media studies	94	41	53	56.4
Communications and journalism nec	78	30	48	61.5
Multidisciplinary/ interdisciplinary studies	391	171	220	56.3
Classical and ancient studies	100	47	53	53.0
Interdisciplinary leadership/ leadership studies	124	59	65	52.4
Multidisciplinary/ interdisciplinary studies nec	167	65	102	61.1
Public administration and social services	468	150	316	67.5
Public administration	178	85	93	52.2
Social work and human services	290	65	223	76.9
Non-science and engineering, other	696	315	381	54.7
Architecture and architectural studies	99	42	57	57.6
City/ urban, community, and regional planning	103	50	53	51.5
Family, consumer, and human sciences	128	22	106	82.8
Homeland security and protective services	154	81	73	47.4
Law/ legal studies and research	71	44	27	38.0
Parks, recreation, leisure, fitness, and sport studies and management	115	65	50	43.5
Other non-science and engineering nec	26	11	15	57.7

nec = not elsewhere classified; STEM = science, technology, engineering, and mathematics.

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

Due to rounding, percentages may not sum to 100. Beginning in 2021, a modified version of the 2020 Classification of Instructional Programs (CIP) codes was used in the survey data collection, and new broad, major, and detailed fields are used in tables reporting data from 2021 to the present; see the field list in table A-4. 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.