

Table 3-2**Research doctorate recipients, by detailed field of doctorate and sex: 2021**

(Number and percent)

Field of doctorate	Total ^a	Male	Female	% female
All fields	52,250	28,082	24,156	46.2
Science and engineering	41,356	23,408	17,939	43.4
Agricultural sciences and natural resources	1,223	602	621	50.8
Agricultural, animal, plant, and veterinary sciences	807	404	403	49.9
Agronomy and crop science	69	46	23	33.3
Animal sciences	160	82	78	48.8
Food science and technology	175	76	99	56.6
Plant sciences	152	86	66	43.4
Soil sciences	79	35	44	55.7
Veterinary biomedical and clinical sciences	78	31	47	60.3
Agricultural, animal, plant, and veterinary sciences nec	94	48	46	48.9
Natural resources and conservation	416	198	218	52.4
Environmental science	117	54	63	53.8
Environmental/ natural resources management and policy	78	39	39	50.0
Forestry	74	38	36	48.6
Natural resources conservation and research	74	25	49	66.2
Natural resources and conservation nec	73	42	31	42.5
Biological and biomedical sciences	8,259	3,946	4,312	52.2
Biochemistry, biophysics, and molecular biology	1,348	718	630	46.7
Biochemistry	417	215	202	48.4
Biochemistry and molecular biology	263	130	133	50.6
Biophysics	206	143	63	30.6
Molecular biology	260	113	147	56.5
Biochemistry, biophysics, and molecular biology nec	202	117	85	42.1
Bioinformatics, biostatistics, and computational biology	563	329	234	41.6
Bioinformatics	136	85	51	37.5
Biostatistics	224	115	109	48.7
Computational biology	106	67	39	36.8
Bioinformatics, biostatistics, and computational biology nec	97	62	35	36.1
Cell/ cellular biology and anatomy	657	311	346	52.7
Cell/ cellular and molecular biology	482	233	249	51.7
Developmental biology and embryology	103	45	58	56.3
Cell/ cellular biology and anatomy nec	72	33	39	54.2
Ecology, evolutionary biology, and epidemiology	984	395	589	59.9
Ecology	227	91	136	59.9
Ecology and evolutionary biology	243	115	128	52.7
Epidemiology	298	86	212	71.1
Epidemiology and biostatistics	54	22	32	59.3
Evolutionary biology	68	36	32	47.1
Ecology, evolutionary biology, and epidemiology nec	94	45	49	52.1
Genetics and genomics	398	189	209	52.5
Genetics, general	121	52	69	57.0
Genome sciences and genomics	72	38	34	47.2
Human/ medical genetics	62	25	37	59.7
Molecular genetics	72	33	39	54.2
Genetics nec	71	41	30	42.3
Microbiology and immunology	974	425	549	56.4
Immunology	303	141	162	53.5
Microbiology and immunology	217	93	124	57.1
Microbiology, general	257	105	152	59.1

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(Number and percent)

Field of doctorate	Total ^a	Male	Female	% female
Virology	107	50	57	53.3
Microbiology and immunology nec	90	36	54	60.0
Neurobiology and neurosciences	1,014	458	556	54.8
Cognitive neuroscience	102	40	62	60.8
Neurobiology and anatomy	94	38	56	59.6
Neuroscience	686	309	377	55.0
Neurobiology and neurosciences nec	132	71	61	46.2
Pharmacology and toxicology	311	147	164	52.7
Pharmacology	131	67	64	48.9
Toxicology	106	43	63	59.4
Pharmacology and toxicology nec	74	37	37	50.0
Physiology, oncology and cancer biology	713	372	341	47.8
Biomechanics	77	48	29	37.7
Exercise physiology and kinesiology	76	48	28	36.8
Oncology and cancer biology	315	148	167	53.0
Physiology, general	76	49	27	35.5
Physiology, oncology and cancer biology nec	169	79	90	53.3
Biological and biomedical sciences, other	1,297	602	694	53.5
Biology/ biological sciences, general	331	148	182	55.0
Biomedical sciences, general	331	147	184	55.6
Botany and plant biology	62	31	31	50.0
Entomology	114	57	57	50.0
Plant physiology and biology nec	60	29	31	51.7
Plant pathology and phytopathology	119	57	62	52.1
Zoology and animal biology	96	43	53	55.2
Biological and biomedical sciences nec	184	90	94	51.1
Computer and information sciences	2,195	1,669	526	24.0
Computer science	1,545	1,209	336	21.7
Computer science	1,545	1,209	336	21.7
Computer and information sciences, other	650	460	190	29.2
Artificial intelligence	167	140	27	16.2
Computer and information sciences, general	110	81	29	26.4
Computer systems networking and telecommunications	113	87	26	23.0
Informatics and information technology	88	53	35	39.8
Information science/ studies	103	53	50	48.5
Computer and information sciences nec	69	46	23	33.3
Engineering	9,563	7,050	2,511	26.3
Biological, biomedical, and biosystems engineering	1,071	636	434	40.5
Bioengineering and biomedical engineering	978	573	404	41.3
Biological/ biosystems engineering and biomedical technology	93	63	30	32.3
Chemical and petroleum engineering	1,292	912	380	29.4
Chemical and biomolecular engineering	189	122	67	35.4
Chemical engineering	803	556	247	30.8
Petroleum engineering	132	114	18	13.6
Chemical and petroleum engineering nec	168	120	48	28.6
Civil, environmental, and transportation engineering	1,020	703	317	31.1
Civil engineering	571	391	180	31.5
Environmental/ environmental health engineering	93	53	40	43.0
Geotechnical and geoenvironmental engineering	76	54	22	28.9
Structural engineering	135	105	30	22.2

Table 3-2**Research doctorate recipients, by detailed field of doctorate and sex: 2021**

(Number and percent)

Field of doctorate	Total ^a	Male	Female	% female
Transportation and highway engineering	76	58	18	23.7
Civil, environmental, and transportation engineering nec	69	42	27	39.1
Electrical and computer engineering	2,047	1,681	366	17.9
Computer engineering	264	208	56	21.2
Electrical and computer engineering	1,205	1,000	205	17.0
Electrical and electronics engineering	512	420	92	18.0
Electrical and computer engineering nec	66	53	13	19.7
Engineering technologies	452	322	130	28.8
Electrical and electronic engineering technologies	80	67	13	16.3
Electromechanical technologies	59	47	12	20.3
Environmental control technologies	148	75	73	49.3
Engineering technologies nec	165	133	32	19.4
Industrial engineering and operations research	604	434	170	28.1
Industrial engineering	325	218	107	32.9
Operations research	160	123	37	23.1
Systems and manufacturing engineering	119	93	26	21.8
Materials and mining engineering	672	459	212	31.5
Materials engineering	194	141	52	26.8
Materials science and engineering	429	286	143	33.3
Materials and mining engineering nec	49	32	17	34.7
Mechanical engineering	1,413	1,154	259	18.3
Mechanical engineering, general	1,413	1,154	259	18.3
Engineering, other	992	749	243	24.5
Aerospace, aeronautical, astronautical, and space engineering	350	294	56	16.0
Engineering mechanics, physics, and science	111	78	33	29.7
Nanotechnology	61	41	20	32.8
Nuclear engineering	156	137	19	12.2
Engineering nec	314	199	115	36.6
Geosciences, atmospheric, and ocean sciences	1,044	583	461	44.2
Geological and earth sciences	613	359	254	41.4
Geochemistry	60	28	32	53.3
Geology	109	62	47	43.1
Geology/ earth science, general	104	55	49	47.1
Geophysics and seismology	101	63	38	37.6
Hydrology and water resources science	81	55	26	32.1
Geological and earth sciences nec	158	96	62	39.2
Ocean/ marine sciences and atmospheric science	431	224	207	48.0
Atmospheric sciences and meteorology, general	94	54	40	42.6
Climatology, atmospheric chemistry and physics	60	31	29	48.3
Marine biology and biological oceanography	89	38	51	57.3
Marine sciences	57	28	29	50.9
Oceanography, chemical and physical	84	46	38	45.2
Atmospheric sciences and meteorology nec	47	27	20	42.6
Health sciences	2,582	806	1,776	68.8
Nursing and nursing science	603	66	537	89.1
Nursing education	89	7	82	92.1
Nursing science	357	38	319	89.4
Nursing specialties and practice	157	21	136	86.6
Pharmacy and pharmaceutical sciences	408	194	214	52.5
Medicinal and pharmaceutical chemistry	64	35	29	45.3

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(Number and percent)

Field of doctorate	Total ^a	Male	Female	% female
Pharmaceutical sciences	243	116	127	52.3
Pharmacy, pharmaceutical sciences, and administration nec	101	43	58	57.4
Public health	696	222	474	68.1
Environmental health	66	21	45	68.2
Health services research	86	30	56	65.1
Health/ medical physics	70	45	25	35.7
Public health education and promotion	95	24	71	74.7
Public health, general	179	45	134	74.9
Public health nec	200	57	143	71.5
Health sciences, other	875	324	551	63.0
Communication disorders sciences	127	20	107	84.3
Exercise science and kinesiology	92	55	37	40.2
Health sciences, general	66	18	48	72.7
Marriage and family therapy/ counseling	58	20	38	65.5
Medical clinical science	60	29	31	51.7
Medical, biomedical, and health informatics	61	37	24	39.3
Mental health, counseling, and therapy services and sciences	91	22	69	75.8
Rehabilitation and therapeutic sciences	121	45	76	62.8
Health sciences nec	199	78	121	60.8
Mathematics and statistics	1,915	1,381	534	27.9
Applied mathematics	475	332	143	30.1
Applied mathematics, general	265	176	89	33.6
Computational and applied mathematics	141	107	34	24.1
Applied mathematics nec	69	49	20	29.0
Mathematics	827	641	186	22.5
Algebra and number theory	69	53	16	23.2
Mathematics, general	640	495	145	22.7
Mathematics nec	118	93	25	21.2
Statistics	613	408	205	33.4
Applied statistics, general	56	36	20	35.7
Mathematics and statistics	90	61	29	32.2
Statistics	402	267	135	33.6
Statistics nec	65	44	21	32.3
Multidisciplinary/ interdisciplinary sciences	1,299	762	536	41.3
Interdisciplinary computer sciences	448	349	99	22.1
Computer science and engineering	119	95	24	20.2
Electrical engineering and computer science	224	188	36	16.1
Interdisciplinary computer sciences nec	105	66	39	37.1
Multidisciplinary/ interdisciplinary sciences, other	851	413	437	51.4
Behavioral and cognitive sciences	79	32	47	59.5
Computational science and engineering	104	80	24	23.1
Data science and data analytics	106	72	34	32.1
History/ philosophy of science, technology and society	68	35	33	48.5
Nanoscience/ nanoscale science	57	39	18	31.6
Nutrition sciences	138	31	107	77.5
Multidisciplinary/ interdisciplinary sciences nec	299	124	174	58.2
Physical sciences	4,811	3,246	1,563	32.5
Astronomy and astrophysics	263	162	101	38.4
Astronomy	71	36	35	49.3
Astrophysics	113	79	34	30.1

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(Number and percent)

Field of doctorate	Total ^a	Male	Female	% female
Astronomy and astrophysics nec	79	47	32	40.5
Chemistry	2,369	1,369	1,000	42.2
Analytical chemistry	321	153	168	52.3
Chemical biology	151	84	67	44.4
Chemistry, general	495	280	215	43.4
Inorganic chemistry	283	169	114	40.3
Organic chemistry	454	286	168	37.0
Physical chemistry	293	185	108	36.9
Polymer chemistry	121	75	46	38.0
Theoretical chemistry	108	76	32	29.6
Chemistry nec	143	61	82	57.3
Materials sciences	429	299	130	30.3
Materials science	276	200	76	27.5
Materials chemistry and materials science nec	153	99	54	35.3
Physics	1,750	1,416	332	19.0
Applied physics	133	100	33	24.8
Atomic/ molecular physics	89	82	7	7.9
Condensed matter and materials physics	358	286	72	20.1
Elementary particle physics	166	139	27	16.3
Nuclear physics	79	62	17	21.5
Optics/ optical sciences	120	99	21	17.5
Physics and astronomy	193	149	44	22.8
Physics, general	339	273	64	18.9
Plasma and high-temperature physics	57	50	7	12.3
Theoretical and mathematical physics	99	89	10	10.1
Physics and physical sciences nec	117	87	30	25.6
Psychology	3,716	1,005	2,711	73.0
Clinical psychology	1,256	317	939	74.8
Clinical child psychology	52	9	43	82.7
Clinical psychology	1,204	308	896	74.4
Counseling and applied psychology	1,338	334	1,004	75.0
Applied behavior analysis	59	19	40	67.8
Counseling psychology	365	93	272	74.5
Educational psychology	229	56	173	75.5
Industrial and organizational psychology	181	64	117	64.6
School psychology	259	37	222	85.7
Counseling and applied psychology nec	245	65	180	73.5
Research and experimental psychology	651	229	422	64.8
Behavioral neuroscience	87	29	58	66.7
Cognitive psychology and psycholinguistics	106	40	66	62.3
Developmental and child psychology	78	16	62	79.5
Experimental psychology	98	40	58	59.2
Social psychology	143	57	86	60.1
Research and experimental psychology nec	139	47	92	66.2
Psychology, other	471	125	346	73.5
Human development	142	26	116	81.7
Psychology, general	261	75	186	71.3
Psychology nec	68	24	44	64.7
Social sciences	4,749	2,358	2,388	50.3
Anthropology	388	117	271	69.8

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(Number and percent)

Field of doctorate	Total ^a	Male	Female	% female
Anthropology, general	80	26	54	67.5
Cultural anthropology	186	55	131	70.4
Physical and biological anthropology	71	25	46	64.8
Anthropology nec	51	11	40	78.4
Area, ethnic, cultural, gender, and group studies	383	135	247	64.5
Area studies	224	88	135	60.3
Ethnic studies	81	33	48	59.3
Area, ethnic, cultural, gender, and group studies nec	78	14	64	82.1
Economics	1,317	870	446	33.9
Agricultural economics	76	42	34	44.7
Applied economics	134	75	59	44.0
Development economics and international development	54	27	27	50.0
Econometrics and quantitative economics	145	101	44	30.3
Economics, general	802	555	246	30.7
Environmental/ natural resource economics	54	35	19	35.2
Economics nec	52	35	17	32.7
Political science and government	581	339	242	41.7
Political science and government, general	488	282	206	42.2
Political science and government nec	93	57	36	38.7
Public policy analysis	399	169	230	57.6
Education policy analysis	131	47	84	64.1
Health policy analysis	52	18	34	65.4
Public policy analysis, general	158	80	78	49.4
Public policy nec	58	24	34	58.6
Sociology, demography, and population studies	578	219	359	62.1
Sociology, general	501	195	306	61.1
Sociology, demography, and population studies nec	77	24	53	68.8
Social sciences, other	1,103	509	593	53.8
Applied linguistics	74	33	41	55.4
Archeology	83	36	47	56.6
Criminal justice and corrections	126	56	70	55.6
Criminology	97	39	58	59.8
Geography and cartography	223	119	104	46.6
International relations and national security studies	105	66	39	37.1
Linguistics	203	92	111	54.7
Social sciences nec	192	68	123	64.1
Non-science and engineering	10,894	4,674	6,217	57.1
Business	1,340	756	584	43.6
Business administration and management	456	259	197	43.2
Business management and administration	235	142	93	39.6
Organizational leadership	117	48	69	59.0
Business administration and management nec	104	69	35	33.7
Business, other	884	497	387	43.8
Accounting and accounting-related	135	71	64	47.4
Finance and financial management	192	138	54	28.1
Management information systems	88	52	36	40.9
Management sciences	73	49	24	32.9
Marketing	119	50	69	58.0
Organizational behavior studies	103	53	50	48.5
Business nec	174	84	90	51.7

Table 3-2**Research doctorate recipients, by detailed field of doctorate and sex: 2021**

(Number and percent)

Field of doctorate	Total ^a	Male	Female	% female
Education	3,711	1,111	2,599	70.0
Education leadership and administration	1,082	377	705	65.2
Educational leadership and administration, general	500	188	312	62.4
Higher education and community college administration	391	138	253	64.7
Education leadership and administration nec	191	51	140	73.3
Education research	1,204	370	834	69.3
Curriculum and instruction	425	127	298	70.1
Educational assessment, evaluation, and research methods	222	83	139	62.6
Educational/ instructional technology and media design	155	56	99	63.9
Higher education evaluation and research	61	21	40	65.6
Student counseling and personnel services	267	67	200	74.9
Education research nec	74	16	58	78.4
Teacher education	1,010	252	757	75.0
Adult, continuing, and workforce education and development	66	17	49	74.2
Bilingual, multilingual, and multicultural education	77	9	68	88.3
Mathematics teacher education	75	21	54	72.0
Music teacher education	73	35	38	52.1
Special education and teaching	235	45	190	80.9
STEM educational methods	70	25	45	64.3
Teacher education, science and engineering	68	26	42	61.8
Teacher education, specific levels and methods	154	25	129	83.8
Teacher education, specific subject areas	192	49	142	74.0
Education, other	415	112	303	73.0
Education, general	268	78	190	70.9
Education nec	147	34	113	76.9
Humanities	3,076	1,619	1,455	47.3
English language and literature, letters	933	363	568	60.9
American literature (United States)	113	49	64	56.6
Creative writing	68	25	43	63.2
English language and literature, general	362	147	213	58.8
English literature (British and commonwealth)	131	55	76	58.0
Rhetoric and composition, and writing studies	190	61	129	67.9
English language and literature nec	69	26	43	62.3
Foreign languages, literatures, and linguistics	505	217	288	57.0
Comparative literature	118	44	74	62.7
Hispanic/ Latin American languages, literatures, and linguistics	70	35	35	50.0
Romance languages, literatures, and linguistics	72	26	46	63.9
Spanish language and literature	79	33	46	58.2
Foreign languages, literatures, and linguistics nec	166	79	87	52.4
History	672	381	291	43.3
American history (United States)	209	114	95	45.5
European history	88	50	38	43.2
History, general	169	95	74	43.8
History, regional focus	133	78	55	41.4
History nec	73	44	29	39.7
Philosophy and religious studies	592	379	213	36.0
Philosophy	399	264	135	33.8
Religion/ religious studies	126	76	50	39.7
Philosophy and religious studies nec	67	39	28	41.8
Humanities, other	374	279	95	25.4

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(Number and percent)

Field of doctorate	Total ^a	Male	Female	% female
Bible/ biblical studies	71	59	12	16.9
Humanities and humanistic studies	62	22	40	64.5
Theological and ministerial studies	241	198	43	17.8
Visual and performing arts	771	349	422	54.7
Performing arts	491	263	228	46.4
Dance, drama, theatre arts and stagecraft	82	31	51	62.2
Music performance	128	70	58	45.3
Music theory and composition	86	63	23	26.7
Music nec	79	48	31	39.2
Musicology and ethnomusicology	116	51	65	56.0
Visual arts, media studies/ design	280	86	194	69.3
Art history, criticism and conservation	167	37	130	77.8
Film, cinema, and media studies	62	27	35	56.5
Visual arts, media studies/ design, and arts management nec	51	22	29	56.9
Other non-science and engineering	1,996	839	1,157	58.0
Communications and journalism	520	221	299	57.5
Applied communication, advertising, and public relations	94	35	59	62.8
Communication and media studies	160	69	91	56.9
Communication, general	85	36	49	57.6
Mass communication/ media studies	95	49	46	48.4
Communications and journalism nec	86	32	54	62.8
Multidisciplinary/ interdisciplinary studies	331	151	180	54.4
Classical and ancient studies	91	54	37	40.7
Multidisciplinary/ interdisciplinary studies nec	240	97	143	59.6
Public administration and social services	490	159	331	67.6
Public administration	202	96	106	52.5
Social work and human services	288	63	225	78.1
Non-science and engineering, other	655	308	347	53.0
Architecture and architectural studies	134	72	62	46.3
City/ urban, community, and regional planning	101	40	61	60.4
Family, consumer sciences and human sciences	140	35	105	75.0
Homeland security and protective services	50	34	16	32.0
Law, legal studies and research	80	44	36	45.0
Parks, recreation, leisure, fitness, and sport studies and management	87	38	49	56.3
Other non-science and engineering nec	63	45	18	28.6

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

^a Includes respondents 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 the new broad, major, and detailed fields were used in tables reporting only the most recent data year. 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, table A-5 for a full list of SED-CIP codes in the new field taxonomy, and table A-6 for the SED-CIP code crosswalk to the historical field taxonomy.

Source(s):

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