

TABLE 3-2

Research doctorate recipients, by detailed field of doctorate and sex: 2023

(Number)

Field of doctorate	Total ^a	Male	Female	% female
All fields	57,862	30,356	27,499	47.5
Science and engineering	45,973	25,480	20,486	44.6
Agricultural sciences and natural resources	1,278	572	706	55.2
Agricultural, animal, plant, and veterinary sciences	856	371	485	56.7
Agronomy and crop science	76	47	29	38.2
Animal sciences	173	69	104	60.1
Food science and technology	178	56	122	68.5
Plant sciences	149	92	57	38.3
Soil sciences	86	35	51	59.3
Veterinary biomedical and clinical sciences	93	30	63	67.7
Agricultural, animal, plant, and veterinary sciences nec	101	42	59	58.4
Natural resources and conservation	422	201	221	52.4
Environmental science	132	58	74	56.1
Environmental/ natural resources management and policy	63	32	31	49.2
Forestry	69	39	30	43.5
Natural resources conservation and research	81	29	52	64.2
Natural resources and conservation nec	77	43	34	44.2
Biological and biomedical sciences	9,724	4,433	5,290	54.4
Biochemistry, biophysics, and molecular biology	1,509	780	728	48.2
Biochemistry	440	229	211	48.0
Biochemistry and molecular biology	311	136	175	56.3
Biophysics	254	178	76	29.9
Molecular biology	268	116	151	56.3
Biochemistry, biophysics, and molecular biology nec	236	121	115	48.7
Bioinformatics, biostatistics, and computational biology	735	413	322	43.8
Bioinformatics	181	116	65	35.9
Biostatistics	283	129	154	54.4
Computational biology	151	100	51	33.8
Bioinformatics, biostatistics, and computational biology nec	120	68	52	43.3
Biological and biomedical sciences, general	907	370	537	59.2
Biology/ biological sciences, general	522	219	303	58.0
Biomedical sciences, general	385	151	234	60.8
Cell/ cellular biology and anatomy	761	313	448	58.9
Cell/ cellular and molecular biology	583	242	341	58.5
Developmental biology and embryology	96	39	57	59.4
Cell/ cellular biology and anatomy nec	82	32	50	61.0
Ecology, evolutionary biology, and epidemiology	1,144	447	697	60.9
Ecology	246	98	148	60.2
Ecology and evolutionary biology	277	128	149	53.8
Epidemiology	382	95	287	75.1
Epidemiology and biostatistics	39	12	27	69.2
Evolutionary biology	84	54	30	35.7
Ecology, evolutionary biology, and epidemiology nec	116	60	56	48.3
Genetics and genomics	477	225	252	52.8
Genetics, general	128	62	66	51.6
Genome sciences and genomics	116	66	50	43.1
Human/ medical genetics	71	20	51	71.8
Molecular genetics	77	37	40	51.9
Genetics and genomics nec	85	40	45	52.9
Microbiology and immunology	1,092	495	597	54.7
Immunology	342	170	172	50.3

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Research doctorate recipients, by detailed field of doctorate and sex: 2023

(Number)

Field of doctorate	Total ^a	Male	Female	% female
Microbiology and immunology	271	116	155	57.2
Microbiology, general	275	122	153	55.6
Virology	111	47	64	57.7
Microbiology and immunology nec	93	40	53	57.0
Neurobiology and neurosciences	1,200	524	676	56.3
Cognitive neuroscience	114	58	56	49.1
Neurobiology	68	31	37	54.4
Neuroscience	877	359	518	59.1
Neurobiology and neurosciences nec	141	76	65	46.1
Pharmacology and toxicology	409	180	229	56.0
Pharmacology	186	88	98	52.7
Toxicology	95	37	58	61.1
Pharmacology and toxicology nec	128	55	73	57.0
Physiology, oncology, and cancer biology	821	413	408	49.7
Biomechanics	85	48	37	43.5
Exercise physiology and kinesiology	103	66	37	35.9
Oncology and cancer biology	336	158	178	53.0
Physiology, general	78	33	45	57.7
Physiology, oncology, and cancer biology nec	219	108	111	50.7
Biological and biomedical sciences, other	669	273	396	59.2
Botany and plant biology	59	26	33	55.9
Entomology	124	50	74	59.7
Plant pathology and phytopathology	105	47	58	55.2
Plant physiology and biology nec	67	30	37	55.2
Zoology and animal biology	88	30	58	65.9
Biological and biomedical sciences nec	226	90	136	60.2
Computer and information sciences	2,297	1,710	587	25.6
Computer science	1,605	1,234	371	23.1
Computer science	1,605	1,234	371	23.1
Computer and information sciences, other	692	476	216	31.2
Artificial intelligence	211	168	43	20.4
Computer and information sciences, general	108	77	31	28.7
Computer systems networking and telecommunications	91	74	17	18.7
Informatics and information technology	105	59	46	43.8
Information sciences/ studies	119	55	64	53.8
Computer and information sciences nec	58	43	15	25.9
Engineering	10,724	7,873	2,851	26.6
Aerospace, aeronautical, astronautical, and space engineering	584	489	95	16.3
Aerospace, aeronautical, astronautical, and space engineering, general	235	202	33	14.0
Mechanical and aerospace engineering	207	177	30	14.5
Aerospace, aeronautical, astronautical, and space engineering nec	142	110	32	22.5
Biological, biomedical, and biosystems engineering	1,313	743	570	43.4
Bioengineering and biomedical engineering	1,222	695	527	43.1
Biological/ biosystems engineering and biomedical technology	91	48	43	47.3
Chemical and petroleum engineering	1,245	889	356	28.6
Chemical and biomolecular engineering	211	151	60	28.4
Chemical engineering	862	611	251	29.1
Petroleum engineering	103	89	14	13.6
Chemical and petroleum engineering nec	69	38	31	44.9
Civil, environmental, and transportation engineering	1,279	863	416	32.5
Civil engineering	342	246	96	28.1

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Research doctorate recipients, by detailed field of doctorate and sex: 2023

(Number)

Field of doctorate	Total ^a	Male	Female	% female
Civil and environmental engineering	505	306	199	39.4
Environmental/ environmental health engineering	58	30	28	48.3
Geotechnical and geoenvironmental engineering	82	62	20	24.4
Structural engineering	133	106	27	20.3
Transportation and highway engineering	81	61	20	24.7
Civil, environmental, and transportation engineering nec	78	52	26	33.3
Electrical and computer engineering	2,119	1,719	400	18.9
Computer engineering	256	200	56	21.9
Electrical and computer engineering	1,359	1,112	247	18.2
Electrical and electronics engineering	436	352	84	19.3
Electrical and computer engineering nec	68	55	13	19.1
Engineering technologies	402	317	85	21.1
Electrical and electronic engineering technologies	71	64	7	9.9
Electromechanical technologies	90	77	13	14.4
Environmental control technologies	70	40	30	42.9
Engineering technologies nec	171	136	35	20.5
Industrial engineering and operations research	627	436	191	30.5
Industrial engineering	174	112	62	35.6
Industrial and systems engineering	134	86	48	35.8
Operations research	186	134	52	28.0
Systems and manufacturing engineering	133	104	29	21.8
Materials and mining engineering	912	649	263	28.8
Materials engineering	102	75	27	26.5
Materials science and engineering	762	536	226	29.7
Materials and mining engineering nec	48	38	10	20.8
Mechanical engineering	1,552	1,277	275	17.7
Mechanical engineering, general	1,472	1,213	259	17.6
Mechanical engineering nec	80	64	16	20.0
Engineering, other	691	491	200	28.9
Engineering mechanics, physics, and science	105	87	18	17.1
Nanotechnology	47	33	14	29.8
Nuclear engineering	162	125	37	22.8
Engineering nec	377	246	131	34.7
Geosciences, atmospheric, and ocean sciences	1,216	668	547	45.0
Geological and earth sciences	682	384	298	43.7
Geochemistry	47	30	17	36.2
Geology	91	52	39	42.9
Geology/ earth science, general	142	82	60	42.3
Geophysics and seismology	105	66	39	37.1
Hydrology and water resources science	96	55	41	42.7
Geological and earth sciences nec	201	99	102	50.7
Ocean, marine, and atmospheric sciences	534	284	249	46.6
Atmospheric sciences and meteorology, general	111	75	35	31.5
Atmospheric sciences and meteorology nec	123	67	56	45.5
Climatology, atmospheric chemistry/ physics	67	45	22	32.8
Marine biology and biological oceanography	92	30	62	67.4
Marine sciences	66	29	37	56.1
Oceanography, chemical/ physical	75	38	37	49.3
Health sciences	2,746	789	1,957	71.3
Nursing and nursing science	638	69	569	89.2
Nursing education	84	12	72	85.7

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Research doctorate recipients, by detailed field of doctorate and sex: 2023

(Number)

Field of doctorate	Total ^a	Male	Female	% female
Nursing science	396	42	354	89.4
Nursing specialties and practice	158	15	143	90.5
Pharmacy and pharmaceutical sciences	442	211	231	52.3
Medicinal and pharmaceutical chemistry	74	43	31	41.9
Pharmaceutical sciences	262	116	146	55.7
Pharmacy, pharmaceutical sciences, and administration nec	106	52	54	50.9
Public health	766	218	548	71.5
Environmental health	70	24	46	65.7
Health services research	105	29	76	72.4
Health/ medical physics	72	45	27	37.5
Public health education and promotion	112	23	89	79.5
Public health, general	203	43	160	78.8
Public health nec	204	54	150	73.5
Health sciences, other	900	291	609	67.7
Communication disorders sciences	109	19	90	82.6
Exercise science and kinesiology	90	41	49	54.4
Health sciences, general	61	21	40	65.6
Marriage and family therapy/ counseling	54	13	41	75.9
Medical clinical sciences	67	30	37	55.2
Medical, biomedical, and health informatics	59	25	34	57.6
Mental health, counseling, and therapy services and sciences	100	20	80	80.0
Rehabilitation and therapeutic sciences	159	42	117	73.6
Health sciences nec	201	80	121	60.2
Mathematics and statistics	2,056	1,480	575	28.0
Applied mathematics	490	342	148	30.2
Applied mathematics, general	267	187	80	30.0
Computational and applied mathematics	165	119	46	27.9
Applied mathematics nec	58	36	22	37.9
Mathematics	890	703	186	20.9
Algebra and number theory	71	63	8	11.3
Mathematics, general	687	539	147	21.4
Mathematics nec	132	101	31	23.5
Statistics	676	435	241	35.7
Applied statistics, general	58	37	21	36.2
Mathematics and statistics	70	52	18	25.7
Statistics	484	312	172	35.5
Statistics nec	64	34	30	46.9
Multidisciplinary/ interdisciplinary sciences	1,704	1,044	660	38.7
Interdisciplinary computer sciences	583	409	174	29.8
Computer science and engineering	188	139	49	26.1
Electrical engineering and computer science	250	186	64	25.6
Interdisciplinary computer sciences nec	145	84	61	42.1
Multidisciplinary/ interdisciplinary sciences, other	1,121	635	486	43.4
Behavioral and cognitive sciences	117	50	67	57.3
Computational science and engineering	132	109	23	17.4
Data mining and machine learning	234	177	57	24.4
Data science and data analytics	86	55	31	36.0
History/ philosophy of science, technology, and society	68	31	37	54.4
Nanoscience/ nanoscale science	33	22	11	33.3
Nutrition sciences	128	26	102	79.7
Multidisciplinary/ interdisciplinary sciences nec	323	165	158	48.9

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Research doctorate recipients, by detailed field of doctorate and sex: 2023

(Number)

Field of doctorate	Total ^a	Male	Female	% female
Physical sciences	5,443	3,594	1,848	34.0
Astronomy and astrophysics	323	219	104	32.2
Astronomy	107	70	37	34.6
Astrophysics	133	90	43	32.3
Astronomy and astrophysics nec	83	59	24	28.9
Chemistry	2,731	1,550	1,180	43.2
Analytical chemistry	344	162	182	52.9
Chemical biology	191	100	91	47.6
Chemistry, general	611	315	295	48.3
Inorganic chemistry	266	158	108	40.6
Organic chemistry	566	366	200	35.3
Physical chemistry	294	181	113	38.4
Polymer chemistry	81	44	37	45.7
Theoretical and computational chemistry	202	138	64	31.7
Chemistry nec	176	86	90	51.1
Materials sciences	389	248	141	36.2
Materials science	188	125	63	33.5
Materials chemistry and materials sciences nec	201	123	78	38.8
Physics	2,000	1,577	423	21.2
Applied physics	124	99	25	20.2
Atomic/ molecular physics	103	84	19	18.4
Condensed matter and materials physics	365	302	63	17.3
Elementary particle physics	164	126	38	23.2
Nuclear physics	91	77	14	15.4
Optics/ optical sciences	135	109	26	19.3
Physics and astronomy	280	207	73	26.1
Physics, general	430	324	106	24.7
Plasma and high-temperature physics	67	56	11	16.4
Theoretical and mathematical physics	117	100	17	14.5
Physics and physical sciences nec	124	93	31	25.0
Psychology	3,793	885	2,907	76.6
Clinical psychology	1,203	242	961	79.9
Clinical child psychology	53	2	51	96.2
Clinical psychology	1,150	240	910	79.1
Counseling and applied psychology	1,293	288	1,005	77.7
Applied behavior analysis	49	18	31	63.3
Counseling psychology	366	86	280	76.5
Educational psychology	247	59	188	76.1
Industrial and organizational psychology	171	53	118	69.0
School psychology	223	15	208	93.3
Counseling and applied psychology nec	237	57	180	75.9
Research and experimental psychology	803	245	558	69.5
Behavioral neuroscience	82	25	57	69.5
Cognitive psychology and psycholinguistics	111	41	70	63.1
Developmental and child psychology	103	15	88	85.4
Experimental psychology	111	37	74	66.7
Social psychology	189	63	126	66.7
Research and experimental psychology nec	207	64	143	69.1
Psychology, other	494	110	383	77.5
Human development	155	16	138	89.0
Psychology, general	283	82	201	71.0

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Research doctorate recipients, by detailed field of doctorate and sex: 2023

(Number)

Field of doctorate	Total ^a	Male	Female	% female
Psychology nec	56	12	44	78.6
Social sciences	4,992	2,432	2,558	51.2
Anthropology	379	134	245	64.6
Anthropology, general	99	41	58	58.6
Cultural anthropology	161	56	105	65.2
Physical and biological anthropology	69	20	49	71.0
Anthropology nec	50	17	33	66.0
Area, ethnic, cultural, gender, and group studies	452	155	296	65.5
Area studies	266	114	152	57.1
Ethnic studies	103	33	69	67.0
Area, ethnic, cultural, gender, and group studies nec	83	8	75	90.4
Economics	1,393	907	485	34.8
Agricultural economics	90	54	36	40.0
Applied economics	130	68	62	47.7
Development economics and international development	41	23	18	43.9
Econometrics and quantitative economics	202	144	58	28.7
Economics, general	815	550	264	32.4
Environmental/ natural resource economics	62	33	29	46.8
Economics nec	53	35	18	34.0
Political science and government	665	384	281	42.3
Political science and government, general	556	318	238	42.8
Political science and government nec	109	66	43	39.4
Public policy analysis	407	161	246	60.4
Education policy analysis	111	31	80	72.1
Health policy analysis	45	16	29	64.4
Public policy analysis, general	113	45	68	60.2
Public policy nec	138	69	69	50.0
Sociology, demography, and population studies	627	240	387	61.7
Sociology, general	556	216	340	61.2
Sociology, demography, and population studies nec	71	24	47	66.2
Social sciences, other	1,069	451	618	57.8
Applied linguistics	70	18	52	74.3
Archeology	91	45	46	50.5
Criminology	135	50	85	63.0
Geography and cartography	213	102	111	52.1
International relations and national security studies	115	71	44	38.3
Linguistics	194	80	114	58.8
Social sciences nec	251	85	166	66.1
Non-science and engineering	11,889	4,876	7,013	59.0
Business	1,510	822	688	45.6
Business administration and management	493	265	228	46.2
Business management and administration	312	161	151	48.4
Organizational leadership	68	28	40	58.8
Business administration and management nec	113	76	37	32.7
Business, other	1,017	557	460	45.2
Accounting and accounting-related	163	93	70	42.9
Finance and financial management	219	160	59	26.9
Management information systems	82	43	39	47.6
Management sciences	88	54	34	38.6
Marketing	145	66	79	54.5
Organizational behavior studies	100	36	64	64.0

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(Number)

Field of doctorate	Total ^a	Male	Female	% female
Business nec	220	105	115	52.3
Education	3,988	1,089	2,899	72.7
Education leadership and administration	1,179	396	783	66.4
Educational leadership and administration, general	501	169	332	66.3
Higher education and community college administration	452	146	306	67.7
Education leadership and administration nec	226	81	145	64.2
Education research	1,253	317	936	74.7
Curriculum and instruction	413	91	322	78.0
Educational assessment, evaluation, and research methods	203	62	141	69.5
Educational/ instructional technology and media design	199	65	134	67.3
Higher education evaluation and research	62	13	49	79.0
Student counseling and personnel services	283	56	227	80.2
Education research nec	93	30	63	67.7
Teacher education and teaching fields	1,098	273	825	75.1
Adult, continuing, and workforce education and development	61	24	37	60.7
Bilingual, multilingual, and multicultural education	72	13	59	81.9
Mathematics teacher education	73	23	50	68.5
Music teacher education	78	39	39	50.0
Special education and teaching	246	42	204	82.9
STEM educational methods	75	19	56	74.7
Teacher education, science and engineering	55	18	37	67.3
Teacher education, specific levels and methods	202	37	165	81.7
Teacher education, specific subject areas	236	58	178	75.4
Education, other	458	103	355	77.5
Education, general	324	71	253	78.1
Education nec	134	32	102	76.1
Humanities	3,358	1,731	1,627	48.5
English language and literature, letters	1,039	420	619	59.6
American literature (United States)	113	55	58	51.3
Creative writing	103	35	68	66.0
English language and literature, general	398	174	224	56.3
English literature (British and Commonwealth)	141	50	91	64.5
Rhetoric, composition, and writing studies	199	78	121	60.8
English language and literature nec	85	28	57	67.1
Foreign languages, literatures, and linguistics	571	233	338	59.2
Comparative literature	129	60	69	53.5
Hispanic/ Latin American languages, literatures, and linguistics	97	42	55	56.7
Romance languages, literatures, and linguistics	97	38	59	60.8
Spanish language and literature	97	35	62	63.9
Foreign languages, literatures, and linguistics nec	151	58	93	61.6
History	733	404	329	44.9
American history (United States)	240	126	114	47.5
European history	109	60	49	45.0
History, general	175	99	76	43.4
History, regional focus	139	80	59	42.4
History nec	70	39	31	44.3
Philosophy and religious studies	619	397	222	35.9
Philosophy	415	271	144	34.7
Religion/ religious studies	143	88	55	38.5
Philosophy and religious studies nec	61	38	23	37.7
Humanities, other	396	277	119	30.1

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Research doctorate recipients, by detailed field of doctorate and sex: 2023

(Number)

Field of doctorate	Total ^a	Male	Female	% female
Bible/ biblical studies	99	85	14	14.1
Humanities and humanistic studies	98	42	56	57.1
Theological and ministerial studies	199	150	49	24.6
Visual and performing arts	824	356	468	56.8
Performing arts	487	257	230	47.2
Dance, drama, theatre arts, and stagecraft	83	23	60	72.3
Music performance	122	67	55	45.1
Music theory and composition	94	65	29	30.9
Musicology and ethnomusicology	109	53	56	51.4
Music nec	79	49	30	38.0
Visual arts, media studies, and design	337	99	238	70.6
Art history, criticism, and conservation	185	40	145	78.4
Film, cinema, and media studies	84	38	46	54.8
Visual arts, media studies, and design nec	68	21	47	69.1
Other non-science and engineering	2,209	878	1,331	60.3
Communications and journalism	635	247	388	61.1
Applied communication, advertising, and public relations	87	25	62	71.3
Communication and media studies	167	68	99	59.3
Communication, general	194	65	129	66.5
Mass communication/ media studies	94	49	45	47.9
Communications and journalism nec	93	40	53	57.0
Multidisciplinary/ interdisciplinary studies	380	160	220	57.9
Classical and ancient studies	126	60	66	52.4
Interdisciplinary leadership/ leadership studies	110	41	69	62.7
Multidisciplinary/ interdisciplinary studies nec	144	59	85	59.0
Public administration and social services	505	143	362	71.7
Public administration	169	75	94	55.6
Social work and human services	336	68	268	79.8
Non-science and engineering, other	689	328	361	52.4
Architecture and architectural studies	118	56	62	52.5
City/ urban, community, and regional planning	103	51	52	50.5
Family, consumer, and human sciences	132	27	105	79.5
Homeland security and protective services	138	73	65	47.1
Law/ legal studies and research	73	48	25	34.2
Parks, recreation, leisure, fitness, and sport studies and management	93	55	38	40.9
Other non-science and engineering nec	32	18	14	43.8

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

^a Total 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 about the 2021 taxonomy change, see the "Technical Notes."

Source(s):

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