

TABLE 4-4c

Citizenship, ethnicity, and race of doctoral students, by detailed field: 2022

(Number and percent)

Detailed field	Total		U.S. citizens and permanent residents																	Temporary visa holders	
			Hispanic or Latino		Not Hispanic or Latino												Unknown ethnicity and race				
					American Indian or Alaska Native		Asian		Black or African American		Native Hawaiian or Other Pacific Islander		White		More than one race						
					Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent			Number		
All detailed fields	297,223	100.0	21,318	100.0	751	100.0	20,553	100.0	12,618	100.0	197	100.0	107,445	100.0	7,329	100.0	8,083	100.0	118,929	100.0	
Science	206,183	69.4	16,549	77.6	583	77.6	14,336	69.8	8,904	70.6	155	78.7	80,702	75.1	5,517	75.3	5,986	74.1	73,451	61.8	
Agricultural and veterinary sciences	4,647	1.6	242	1.1	10	1.3	129	0.6	93	0.7	1	0.5	1,804	1.7	64	0.9	77	1.0	2,227	1.9	
Agricultural sciences	4,145	1.4	217	1.0	10	1.3	112	0.5	80	0.6	1	0.5	1,594	1.5	53	0.7	62	0.8	2,016	1.7	
Veterinary biomedical and clinical sciences	502	0.2	25	0.1	0	0.0	17	0.1	13	0.1	0	0.0	210	0.2	11	0.2	15	0.2	211	0.2	
Biological and biomedical sciences	59,638	20.1	5,738	26.9	146	19.4	5,423	26.4	2,606	20.7	54	27.4	26,223	24.4	1,846	25.2	1,721	21.3	15,881	13.4	
Biochemistry	4,994	1.7	512	2.4	19	2.5	430	2.1	193	1.5	6	3.0	2,172	2.0	171	2.3	86	1.1	1,405	1.2	
Biology	7,600	2.6	702	3.3	20	2.7	486	2.4	290	2.3	6	3.0	3,428	3.2	236	3.2	189	2.3	2,243	1.9	
Biomedical sciences	5,155	1.7	489	2.3	14	1.9	522	2.5	305	2.4	3	1.5	2,185	2.0	145	2.0	151	1.9	1,341	1.1	
Biophysics	887	0.3	85	0.4	0	0.0	113	0.5	20	0.2	0	0.0	348	0.3	31	0.4	15	0.2	275	0.2	
Biostatistics and bioinformatics	3,799	1.3	182	0.9	1	0.1	494	2.4	87	0.7	6	3.0	1,091	1.0	98	1.3	153	1.9	1,687	1.4	
Biotechnology	105	*	10	*	1	0.1	10	*	2	*	1	0.5	39	*	3	*	3	*	36	*	
Botany and plant biology	1,301	0.4	115	0.5	3	0.4	68	0.3	29	0.2	1	0.5	585	0.5	36	0.5	38	0.5	426	0.4	
Cell, cellular biology, and anatomical sciences	5,374	1.8	617	2.9	14	1.9	566	2.8	203	1.6	8	4.1	2,332	2.2	141	1.9	154	1.9	1,339	1.1	
Ecology and population biology	2,808	0.9	267	1.3	9	1.2	141	0.7	93	0.7	4	2.0	1,547	1.4	87	1.2	68	0.8	592	0.5	
Epidemiology	2,213	0.7	167	0.8	5	0.7	252	1.2	189	1.5	2	1.0	838	0.8	57	0.8	82	1.0	621	0.5	
Genetics	2,584	0.9	267	1.3	4	0.5	242	1.2	117	0.9	2	1.0	1,201	1.1	82	1.1	62	0.8	607	0.5	
Microbiological sciences and immunology	4,466	1.5	491	2.3	14	1.9	410	2.0	227	1.8	2	1.0	2,160	2.0	148	2.0	133	1.6	881	0.7	
Molecular biology	1,231	0.4	150	0.7	2	0.3	134	0.7	44	0.3	2	1.0	499	0.5	39	0.5	37	0.5	324	0.3	
Neurobiology and neuroscience	5,933	2.0	706	3.3	13	1.7	594	2.9	283	2.2	1	0.5	2,765	2.6	228	3.1	196	2.4	1,147	1.0	
Nutrition science	1,050	0.4	74	0.3	1	0.1	65	0.3	54	0.4	1	0.5	437	0.4	26	0.4	22	0.3	370	0.3	
Pathology and experimental pathology	917	0.3	88	0.4	3	0.4	80	0.4	44	0.3	2	1.0	418	0.4	22	0.3	52	0.6	208	0.2	
Pharmacology and toxicology	2,409	0.8	238	1.1	7	0.9	256	1.2	157	1.2	0	0.0	999	0.9	81	1.1	74	0.9	597	0.5	
Physiology	3,021	1.0	255	1.2	6	0.8	311	1.5	128	1.0	3	1.5	1,337	1.2	76	1.0	95	1.2	810	0.7	
Zoology and animal biology	1,198	0.4	86	0.4	1	0.1	43	0.2	37	0.3	0	0.0	674	0.6	40	0.5	35	0.4	282	0.2	
Biological and biomedical sciences nec	2,593	0.9	237	1.1	9	1.2	206	1.0	104	0.8	4	2.0	1,168	1.1	99	1.4	76	0.9	690	0.6	
Computer and information sciences	20,583	6.9	532	2.5	25	3.3	1,598	7.8	601	4.8	13	6.6	4,168	3.9	333	4.5	514	6.4	12,799	10.8	
Artificial intelligence, informatics, and computer and information science topics	763	0.3	12	0.1	1	0.1	48	0.2	22	0.2	0	0.0	191	0.2	12	0.2	28	0.3	449	0.4	
Computer and information sciences	6,432	2.2	159	0.7	2	0.3	398	1.9	149	1.2	4	2.0	1,284	1.2	78	1.1	134	1.7	4,224	3.6	
Computer and information systems security	441	0.1	32	0.2	9	1.2	52	0.3	101	0.8	0	0.0	160	0.1	13	0.2	16	0.2	58	*	
Computer science	10,832	3.6	232	1.1	7	0.9	917	4.5	156	1.2	7	3.6	1,992	1.9	178	2.4	284	3.5	7,059	5.9	

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(Number and percent)

Detailed field	Total		U.S. citizens and permanent residents																Temporary visa holders	
			Hispanic or Latino		Not Hispanic or Latino										Unknown ethnicity and race					
					American Indian or Alaska Native		Asian		Black or African American		Native Hawaiian or Other Pacific Islander		White				More than one race			
Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Information science and studies	1,394	0.5	69	0.3	6	0.8	120	0.6	120	1.0	2	1.0	382	0.4	33	0.5	32	0.4	630	0.5
Information technology	550	0.2	19	0.1	0	0.0	43	0.2	35	0.3	0	0.0	105	0.1	14	0.2	15	0.2	319	0.3
Computer and information sciences nec	171	0.1	9	*	0	0.0	20	0.1	18	0.1	0	0.0	54	0.1	5	0.1	5	0.1	60	0.1
Geosciences, atmospheric sciences, and ocean sciences	6,784	2.3	531	2.5	16	2.1	263	1.3	152	1.2	3	1.5	3,322	3.1	233	3.2	189	2.3	2,075	1.7
Atmospheric sciences and meteorology	945	0.3	63	0.3	0	0.0	25	0.1	27	0.2	0	0.0	463	0.4	28	0.4	26	0.3	313	0.3
Geological and earth sciences	4,285	1.4	352	1.7	13	1.7	182	0.9	92	0.7	1	0.5	2,009	1.9	128	1.7	95	1.2	1,413	1.2
Ocean and marine sciences	1,554	0.5	116	0.5	3	0.4	56	0.3	33	0.3	2	1.0	850	0.8	77	1.1	68	0.8	349	0.3
Geosciences, atmospheric sciences, and ocean sciences nec	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
Mathematics and statistics	13,589	4.6	654	3.1	14	1.9	967	4.7	223	1.8	4	2.0	4,239	3.9	251	3.4	380	4.7	6,857	5.8
Applied mathematics	2,127	0.7	108	0.5	1	0.1	120	0.6	52	0.4	0	0.0	680	0.6	52	0.7	52	0.6	1,062	0.9
Mathematics	8,117	2.7	456	2.1	7	0.9	594	2.9	130	1.0	2	1.0	2,899	2.7	162	2.2	238	2.9	3,629	3.1
Statistics	3,345	1.1	90	0.4	6	0.8	253	1.2	41	0.3	2	1.0	660	0.6	37	0.5	90	1.1	2,166	1.8
Multidisciplinary and interdisciplinary sciences	4,014	1.4	300	1.4	7	0.9	285	1.4	209	1.7	7	3.6	1,665	1.5	117	1.6	128	1.6	1,296	1.1
Biological and physical sciences	956	0.3	66	0.3	3	0.4	78	0.4	38	0.3	5	2.5	384	0.4	25	0.3	34	0.4	323	0.3
Computational science	335	0.1	24	0.1	1	0.1	19	0.1	8	0.1	0	0.0	115	0.1	8	0.1	14	0.2	146	0.1
Data science and data analytics	104	*	5	*	0	0.0	10	*	2	*	0	0.0	22	*	4	0.1	1	*	60	0.1
International and global studies	175	0.1	35	0.2	0	0.0	7	*	19	0.2	0	0.0	48	*	3	*	2	*	61	0.1
Multidisciplinary and interdisciplinary sciences nec	2,444	0.8	170	0.8	3	0.4	171	0.8	142	1.1	2	1.0	1,096	1.0	77	1.1	77	1.0	706	0.6
Natural resources and conservation	3,955	1.3	282	1.3	47	6.3	146	0.7	172	1.4	4	2.0	1,995	1.9	105	1.4	145	1.8	1,059	0.9
Environmental science and studies	1,980	0.7	168	0.8	20	2.7	94	0.5	111	0.9	3	1.5	952	0.9	50	0.7	81	1.0	501	0.4
Forestry, natural resources, and conservation	1,975	0.7	114	0.5	27	3.6	52	0.3	61	0.5	1	0.5	1,043	1.0	55	0.8	64	0.8	558	0.5
Physical sciences	37,836	12.7	2,551	12.0	37	4.9	2,343	11.4	829	6.6	13	6.6	14,570	13.6	868	11.8	845	10.5	15,780	13.3
Astronomy and astrophysics	1,603	0.5	151	0.7	4	0.5	112	0.5	46	0.4	1	0.5	769	0.7	77	1.1	48	0.6	395	0.3
Chemistry	19,695	6.6	1,462	6.9	19	2.5	1,314	6.4	470	3.7	11	5.6	7,540	7.0	439	6.0	430	5.3	8,010	6.7
Materials sciences	1,223	0.4	60	0.3	0	0.0	91	0.4	34	0.3	1	0.5	379	0.4	21	0.3	44	0.5	593	0.5
Physics	14,747	5.0	862	4.0	14	1.9	807	3.9	220	1.7	0	0.0	5,721	5.3	323	4.4	313	3.9	6,487	5.5
Physical sciences nec	568	0.2	16	0.1	0	0.0	19	0.1	59	0.5	0	0.0	161	0.1	8	0.1	10	0.1	295	0.2
Psychology	21,121	7.1	3,047	14.3	100	13.3	1,471	7.2	1,818	14.4	16	8.1	10,591	9.9	833	11.4	659	8.2	2,586	2.2
Applied psychology	5,104	1.7	804	3.8	37	4.9	291	1.4	588	4.7	4	2.0	2,486	2.3	193	2.6	146	1.8	555	0.5
Clinical psychology	3,274	1.1	679	3.2	11	1.5	261	1.3	212	1.7	3	1.5	1,673	1.6	126	1.7	169	2.1	140	0.1
Counseling psychology	1,400	0.5	192	0.9	3	0.4	110	0.5	247	2.0	0	0.0	634	0.6	62	0.8	36	0.4	116	0.1

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Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Human development	768	0.3	67	0.3	2	0.3	34	0.2	89	0.7	0	0.0	367	0.3	39	0.5	15	0.2	155	0.1
Psychology, general	5,835	2.0	788	3.7	36	4.8	360	1.8	433	3.4	9	4.6	3,150	2.9	244	3.3	205	2.5	610	0.5
Research and experimental psychology	4,740	1.6	517	2.4	11	1.5	415	2.0	249	2.0	0	0.0	2,281	2.1	169	2.3	88	1.1	1,010	0.8
Social sciences	34,016	11.4	2,672	12.5	181	24.1	1,711	8.3	2,201	17.4	40	20.3	12,125	11.3	867	11.8	1,328	16.4	12,891	10.8
Agricultural and natural resource economics	416	0.1	15	0.1	0	0.0	17	0.1	9	0.1	0	0.0	83	0.1	3	*	3	*	286	0.2
Anthropology	4,047	1.4	448	2.1	40	5.3	161	0.8	166	1.3	8	4.1	1,914	1.8	148	2.0	185	2.3	977	0.8
Area, ethnic, cultural, gender, and group studies	2,345	0.8	399	1.9	71	9.5	135	0.7	326	2.6	6	3.0	646	0.6	94	1.3	97	1.2	571	0.5
Criminal justice and safety studies	1,390	0.5	130	0.6	6	0.8	31	0.2	222	1.8	2	1.0	660	0.6	54	0.7	218	2.7	67	0.1
Criminology	322	0.1	45	0.2	0	0.0	9	*	20	0.2	0	0.0	184	0.2	10	0.1	6	0.1	48	*
Economics (except agricultural and natural resource)	8,201	2.8	211	1.0	2	0.3	463	2.3	115	0.9	3	1.5	1,701	1.6	75	1.0	160	2.0	5,471	4.6
Geography and cartography	1,547	0.5	122	0.6	12	1.6	62	0.3	56	0.4	1	0.5	598	0.6	36	0.5	43	0.5	617	0.5
International relations and national security studies	331	0.1	26	0.1	0	0.0	18	0.1	20	0.2	1	0.5	128	0.1	5	0.1	13	0.2	120	0.1
Linguistics	1,695	0.6	94	0.4	15	2.0	95	0.5	36	0.3	1	0.5	593	0.6	41	0.6	39	0.5	781	0.7
Political science and government	5,310	1.8	353	1.7	7	0.9	244	1.2	272	2.2	0	0.0	2,211	2.1	158	2.2	162	2.0	1,903	1.6
Public policy analysis	2,690	0.9	188	0.9	12	1.6	153	0.7	397	3.1	7	3.6	996	0.9	80	1.1	207	2.6	650	0.5
Sociology and population studies	4,655	1.6	574	2.7	12	1.6	271	1.3	466	3.7	5	2.5	1,934	1.8	145	2.0	153	1.9	1,095	0.9
Urban studies and affairs	398	0.1	25	0.1	2	0.3	19	0.1	56	0.4	1	0.5	162	0.2	2	*	10	0.1	121	0.1
Social sciences, other	669	0.2	42	0.2	2	0.3	33	0.2	40	0.3	5	2.5	315	0.3	16	0.2	32	0.4	184	0.2
Engineering	72,980	24.6	3,250	15.2	86	11.5	4,885	23.8	1,769	14.0	26	13.2	18,814	17.5	1,370	18.7	1,471	18.2	41,309	34.7
Aerospace, aeronautical, and astronautical engineering	2,832	1.0	167	0.8	2	0.3	236	1.1	62	0.5	2	1.0	1,153	1.1	95	1.3	49	0.6	1,066	0.9
Biological, biomedical, and biosystems engineering	9,265	3.1	680	3.2	13	1.7	1,112	5.4	345	2.7	6	3.0	3,244	3.0	258	3.5	299	3.7	3,308	2.8
Chemical, petroleum, and chemical-related engineering	7,590	2.6	333	1.6	13	1.7	622	3.0	144	1.1	3	1.5	2,194	2.0	126	1.7	115	1.4	4,040	3.4
Chemical engineering	7,069	2.4	327	1.5	13	1.7	607	3.0	131	1.0	3	1.5	2,137	2.0	125	1.7	110	1.4	3,616	3.0
Petroleum engineering	521	0.2	6	*	0	0.0	15	0.1	13	0.1	0	0.0	57	0.1	1	*	5	0.1	424	0.4
Civil, environmental, transportation and related engineering fields	7,754	2.6	302	1.4	16	2.1	263	1.3	164	1.3	6	3.0	1,518	1.4	101	1.4	108	1.3	5,276	4.4
Civil engineering	6,629	2.2	230	1.1	13	1.7	222	1.1	130	1.0	5	2.5	1,223	1.1	79	1.1	88	1.1	4,639	3.9
Architectural, environmental, construction and surveying engineering	1,125	0.4	72	0.3	3	0.4	41	0.2	34	0.3	1	0.5	295	0.3	22	0.3	20	0.2	637	0.5
Electrical, electronics, communications and computer engineering	17,585	5.9	494	2.3	8	1.1	1,031	5.0	315	2.5	2	1.0	3,050	2.8	230	3.1	306	3.8	12,149	10.2
Electrical, electronics, and communications engineering	14,780	5.0	437	2.0	7	0.9	876	4.3	260	2.1	1	0.5	2,568	2.4	195	2.7	256	3.2	10,180	8.6
Computer engineering	2,805	0.9	57	0.3	1	0.1	155	0.8	55	0.4	1	0.5	482	0.4	35	0.5	50	0.6	1,969	1.7
Industrial, manufacturing, systems engineering and operations research	3,856	1.3	115	0.5	4	0.5	208	1.0	145	1.1	1	0.5	860	0.8	55	0.8	82	1.0	2,386	2.0

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Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Industrial and manufacturing engineering	2,301	0.8	63	0.3	3	0.4	84	0.4	85	0.7	0	0.0	406	0.4	15	0.2	31	0.4	1,614	1.4
Systems engineering and operations research	1,555	0.5	52	0.2	1	0.1	124	0.6	60	0.5	1	0.5	454	0.4	40	0.5	51	0.6	772	0.6
Mechanical engineering	11,523	3.9	559	2.6	11	1.5	645	3.1	225	1.8	2	1.0	2,909	2.7	210	2.9	235	2.9	6,727	5.7
Metallurgical, mining, materials and related engineering fields	4,573	1.5	270	1.3	6	0.8	326	1.6	98	0.8	1	0.5	1,467	1.4	117	1.6	69	0.9	2,219	1.9
Other engineering	8,002	2.7	330	1.5	13	1.7	442	2.2	271	2.1	3	1.5	2,419	2.3	178	2.4	208	2.6	4,138	3.5
Agricultural engineering	631	0.2	17	0.1	1	0.1	22	0.1	13	0.1	1	0.5	137	0.1	12	0.2	10	0.1	418	0.4
Engineering mechanics, physics, and science	1,588	0.5	70	0.3	3	0.4	109	0.5	39	0.3	0	0.0	461	0.4	34	0.5	24	0.3	848	0.7
Nuclear engineering	1,085	0.4	76	0.4	1	0.1	53	0.3	24	0.2	0	0.0	538	0.5	43	0.6	41	0.5	309	0.3
Engineering, other	4,698	1.6	167	0.8	8	1.1	258	1.3	195	1.5	2	1.0	1,283	1.2	89	1.2	133	1.6	2,563	2.2
Health	18,060	6.1	1,519	7.1	82	10.9	1,332	6.5	1,945	15.4	16	8.1	7,929	7.4	442	6.0	626	7.7	4,169	3.5
Clinical medicine	5,966	2.0	652	3.1	61	8.1	538	2.6	793	6.3	9	4.6	2,337	2.2	182	2.5	206	2.5	1,188	1.0
Medical clinical sciences and clinical and medical laboratory sciences	954	0.3	110	0.5	10	1.3	92	0.4	62	0.5	0	0.0	471	0.4	19	0.3	54	0.7	136	0.1
Public health	5,012	1.7	542	2.5	51	6.8	446	2.2	731	5.8	9	4.6	1,866	1.7	163	2.2	152	1.9	1,052	0.9
Other health	12,094	4.1	867	4.1	21	2.8	794	3.9	1,152	9.1	7	3.6	5,592	5.2	260	3.5	420	5.2	2,981	2.5
Communication disorders sciences	821	0.3	89	0.4	0	0.0	42	0.2	38	0.3	0	0.0	455	0.4	19	0.3	20	0.2	158	0.1
Dental sciences	228	0.1	13	0.1	0	0.0	24	0.1	8	0.1	0	0.0	44	*	5	0.1	6	0.1	128	0.1
Kinesiology and exercise science	981	0.3	70	0.3	1	0.1	31	0.2	53	0.4	0	0.0	562	0.5	16	0.2	21	0.3	227	0.2
Nursing science	3,657	1.2	249	1.2	12	1.6	226	1.1	511	4.0	4	2.0	2,026	1.9	73	1.0	119	1.5	437	0.4
Pharmaceutical sciences	3,059	1.0	157	0.7	1	0.1	232	1.1	141	1.1	0	0.0	766	0.7	60	0.8	93	1.2	1,609	1.4
Other health nec	3,348	1.1	289	1.4	7	0.9	239	1.2	401	3.2	3	1.5	1,739	1.6	87	1.2	161	2.0	422	0.4

* = value < 0.05%.

nec = not elsewhere classified.

Note(s):

Percentages may not add to total because of rounding. Ethnicity and race data are available only for U.S. citizens and permanent residents. For more information on the mapping of Survey of Graduate Students and Postdoctorates in Science and Engineering fields and codes, see technical table A-17.

Source(s):

National Center for Science and Engineering Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2022.