

Table 1-5. Distribution of doctorate-holding nonfaculty researchers across science, engineering, and health fields: 2017–24

(Number)

| Detailed field | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| All fields | 28,180 | 29,284 | 30,349 | 29,661 | 30,548 | 32,279 | 34,342 | 35,142 |
| Science | 17,268 | 18,278 | 18,819 | 18,212 | 18,728 | 19,423 | 20,600 | 20,566 |
| Agricultural and veterinary sciences ^a | 496 | 565 | 645 | 964 | 902 | 1,068 | 1,238 | 1,234 |
| Agricultural sciences | 496 | 565 | 645 | 650 | 602 | 755 | 824 | 900 |
| Veterinary biomedical and clinical sciences ^b | na | na | na | 314 | 300 | 313 | 414 | 334 |
| Biological and biomedical sciences ^a | 8,203 | 8,250 | 8,229 | 8,112 | 8,187 | 8,207 | 8,589 | 8,795 |
| Biochemistry | 757 | 723 | 755 | 800 | 822 | 843 | 841 | 913 |
| Biology | 847 | 897 | 766 | 776 | 784 | 754 | 772 | 827 |
| Biomedical sciences | 533 | 588 | 622 | 406 | 419 | 571 | 571 | 632 |
| Biophysics | 46 | 25 | 36 | 66 | 77 | 79 | 79 | 81 |
| Biostatistics and bioinformatics | 357 | 393 | 400 | 380 | 338 | 357 | 366 | 417 |
| Biotechnology | 91 | 102 | 91 | 95 | 87 | 87 | 96 | 85 |
| Botany and plant biology | 228 | 343 | 314 | 258 | 230 | 218 | 227 | 191 |
| Cell, cellular biology, and anatomical sciences | 600 | 610 | 579 | 548 | 533 | 590 | 675 | 681 |
| Ecology and population biology | 242 | 248 | 183 | 230 | 250 | 221 | 236 | 206 |
| Epidemiology | 107 | 99 | 99 | 126 | 128 | 122 | 145 | 168 |
| Genetics | 510 | 405 | 501 | 545 | 591 | 551 | 557 | 612 |
| Microbiological sciences and immunology | 863 | 773 | 764 | 750 | 711 | 708 | 718 | 761 |
| Molecular biology | 133 | 186 | 233 | 225 | 239 | 210 | 222 | 240 |
| Neurobiology and neuroscience | 852 | 732 | 726 | 789 | 795 | 800 | 920 | 802 |
| Nutrition science | 113 | 165 | 136 | 143 | 137 | 98 | 100 | 93 |
| Pathology and experimental pathology | 444 | 398 | 422 | 401 | 382 | 308 | 329 | 385 |
| Pharmacology and toxicology | 436 | 372 | 377 | 394 | 433 | 387 | 358 | 474 |
| Physiology | 616 | 681 | 723 | 731 | 663 | 714 | 708 | 702 |
| Zoology and animal biology | 127 | 160 | 168 | 137 | 174 | 187 | 196 | 138 |
| Biological and biomedical sciences nec | 301 | 350 | 334 | 312 | 394 | 402 | 473 | 387 |
| Computer and information sciences | 476 | 515 | 510 | 458 | 457 | 507 | 631 | 653 |
| Computer science | 279 | 261 | 274 | 218 | 209 | 192 | 194 | 181 |
| Computer and information sciences ^c | 134 | 143 | 137 | 147 | 150 | 174 | 269 | 310 |
| Computer and information sciences ^d | NA | NA | NA | 104 | 111 | 134 | 217 | 249 |
| Artificial intelligence, informatics, and computer and information science topics ^d | NA | NA | NA | 43 | 39 | 40 | 52 | 61 |
| Computer and information sciences nec ^c | 63 | 111 | 99 | 93 | 98 | 141 | 168 | 162 |
| Computer and information systems security ^d | NA | NA | NA | 2 | 18 | 18 | 16 | 16 |
| Information science and studies ^d | NA | NA | NA | 21 | 19 | 30 | 44 | 61 |
| Information technology ^d | NA | NA | NA | 14 | 13 | 11 | 16 | 18 |
| Computer and information sciences nec ^d | NA | NA | NA | 56 | 48 | 82 | 92 | 67 |
| Geosciences, atmospheric, and ocean sciences | 1,794 | 2,106 | 2,177 | 2,150 | 2,308 | 2,448 | 2,455 | 2,253 |

Table 1-5. Distribution of doctorate-holding nonfaculty researchers across science, engineering, and health fields: 2017–24

(Number)

| Detailed field | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Atmospheric sciences and meteorology | 402 | 426 | 434 | 461 | 471 | 515 | 512 | 425 |
| Geological and earth sciences | 603 | 991 | 1,104 | 1,046 | 1,121 | 1,127 | 1,247 | 1,069 |
| Ocean and marine sciences | 399 | 365 | 321 | 330 | 360 | 385 | 418 | 359 |
| Geosciences, atmospheric, and ocean sciences nec | 390 | 324 | 318 | 313 | 356 | 421 | 278 | 400 |
| Mathematics and statistics | 240 | 266 | 305 | 201 | 235 | 251 | 307 | 199 |
| Mathematics and applied mathematics ^c | 195 | 207 | 226 | 144 | 176 | 198 | 241 | 164 |
| Applied mathematics ^d | NA | NA | NA | 50 | 66 | 73 | 99 | 64 |
| Mathematics ^d | NA | NA | NA | 94 | 110 | 125 | 142 | 100 |
| Statistics | 45 | 59 | 79 | 57 | 59 | 53 | 66 | 35 |
| Multidisciplinary and interdisciplinary sciences ^c | 806 | 832 | 820 | 679 | 816 | 931 | 818 | 890 |
| Biological and physical sciences ^d | NA | NA | NA | 56 | 38 | 43 | 42 | 45 |
| Computational science ^d | NA | NA | NA | 38 | 56 | 62 | 58 | 72 |
| Data science and data analytics ^d | NA | NA | NA | 22 | 26 | 32 | 56 | 71 |
| International and global studies ^d | NA | NA | NA | 16 | 14 | 17 | 15 | 19 |
| Multidisciplinary and interdisciplinary sciences nec ^d | NA | NA | NA | 547 | 682 | 777 | 647 | 683 |
| Natural resources and conservation | 364 | 580 | 582 | 573 | 620 | 605 | 663 | 649 |
| Environmental science and studies | 147 | 217 | 215 | 167 | 204 | 201 | 226 | 234 |
| Forestry, natural resources, and conservation | 217 | 363 | 367 | 406 | 416 | 404 | 437 | 415 |
| Physical sciences | 2,871 | 3,056 | 3,316 | 2,890 | 2,895 | 2,894 | 3,095 | 3,093 |
| Astronomy and astrophysics | 494 | 472 | 602 | 569 | 558 | 573 | 600 | 635 |
| Chemistry | 931 | 974 | 983 | 906 | 848 | 876 | 845 | 877 |
| Materials sciences | 82 | 73 | 64 | 73 | 64 | 77 | 69 | 70 |
| Physics | 1,306 | 1,354 | 1,458 | 1,151 | 1,235 | 1,162 | 1,210 | 1,150 |
| Physical sciences nec | 58 | 183 | 209 | 191 | 190 | 206 | 371 | 361 |
| Psychology ^a | 494 | 507 | 576 | 749 | 803 | 786 | 950 | 892 |
| Clinical psychology | 40 | 9 | 11 | 16 | 23 | 9 | 20 | 17 |
| Counseling and applied psychology ^c | 47 | 38 | 120 | 90 | 75 | 81 | 126 | 112 |
| Applied psychology ^d | NA | NA | NA | 64 | 60 | 70 | 118 | 104 |
| Counseling psychology ^d | NA | NA | NA | 26 | 15 | 11 | 8 | 8 |
| Human development ^b | na | na | na | 137 | 110 | 148 | 158 | 156 |
| Psychology, general | 247 | 302 | 328 | 348 | 389 | 417 | 472 | 415 |
| Research and experimental psychology | 160 | 158 | 117 | 158 | 206 | 131 | 174 | 192 |
| Social sciences ^a | 1,524 | 1,601 | 1,659 | 1,436 | 1,505 | 1,726 | 1,854 | 1,908 |
| Agricultural and natural resource economics | 44 | 62 | 51 | 52 | 41 | 31 | 51 | 41 |
| Anthropology | 85 | 76 | 99 | 81 | 79 | 74 | 70 | 75 |
| Criminal justice and safety studies | 5 | 10 | 13 | 12 | 8 | 21 | 22 | 23 |

Table 1-5. Distribution of doctorate-holding nonfaculty researchers across science, engineering, and health fields: 2017–24

(Number)

| Detailed field | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Economics (except agricultural and natural resource) | 166 | 156 | 155 | 176 | 164 | 152 | 152 | 139 |
| Geography and cartography | 98 | 105 | 110 | 103 | 106 | 100 | 118 | 114 |
| Human development ^b | 160 | 130 | 164 | na | na | na | na | na |
| International relations and national security studies | 45 | 59 | 50 | 51 | 76 | 92 | 139 | 103 |
| Linguistics | 46 | 37 | 29 | 39 | 40 | 55 | 59 | 53 |
| Political science and government | 72 | 72 | 83 | 64 | 74 | 87 | 93 | 94 |
| Public policy analysis | 292 | 311 | 337 | 361 | 358 | 468 | 475 | 518 |
| Sociology and population studies | 143 | 154 | 164 | 148 | 145 | 168 | 196 | 227 |
| Social sciences nec ^c | 368 | 429 | 404 | 349 | 414 | 478 | 479 | 521 |
| Area, ethnic, cultural, gender, and group studies ^d | NA | NA | NA | 134 | 122 | 96 | 143 | 183 |
| Criminology ^d | NA | NA | NA | 7 | 11 | 15 | 10 | 10 |
| Urban studies and affairs ^d | NA | NA | NA | 18 | 28 | 37 | 21 | 51 |
| Social sciences, other ^d | na | na | na | 190 | 253 | 330 | 305 | 277 |
| History and philosophy of science and technology ^e | 9 | 1 | 3 | na | na | na | na | na |
| Social sciences nec ^c | 359 | 428 | 401 | na | na | na | na | na |
| Engineering | 3,274 | 3,570 | 3,909 | 3,921 | 3,992 | 4,355 | 4,575 | 4,436 |
| Aerospace, aeronautical, and astronautical engineering | 102 | 115 | 124 | 149 | 144 | 153 | 166 | 167 |
| Biological, biomedical, and biosystems engineering | 451 | 491 | 545 | 525 | 589 | 685 | 674 | 680 |
| Bioengineering and biomedical engineering ^e | 415 | 440 | 492 | na | na | na | na | na |
| Biological and biosystems engineering ^e | 36 | 51 | 53 | na | na | na | na | na |
| Chemical, petroleum, and chemical-related engineering | 340 | 337 | 410 | 330 | 307 | 313 | 349 | 363 |
| Chemical engineering | 281 | 257 | 328 | 274 | 257 | 265 | 303 | 317 |
| Petroleum engineering | 59 | 80 | 82 | 56 | 50 | 48 | 46 | 46 |
| Civil, environmental, transportation and related engineering fields ^c | 422 | 414 | 492 | 488 | 479 | 569 | 654 | 583 |
| Civil engineering ^d | 422 | 414 | 492 | 451 | 446 | 497 | 571 | 497 |
| Architectural, environmental, construction and surveying engineering ^d | NA | NA | NA | 37 | 33 | 72 | 83 | 86 |
| Electrical, electronics, communications and computer engineering | 557 | 588 | 637 | 706 | 755 | 734 | 799 | 698 |
| Electrical, electronics, and communications engineering ^c | 557 | 588 | 637 | 647 | 684 | 673 | 731 | 630 |
| Computer engineering ^d | NA | NA | NA | 59 | 71 | 61 | 68 | 68 |
| Industrial, manufacturing, systems engineering and operations research | 119 | 105 | 137 | 155 | 107 | 197 | 221 | 164 |
| Industrial and manufacturing engineering ^c | 119 | 105 | 137 | 53 | 53 | 74 | 83 | 84 |
| Systems engineering and operations research ^d | NA | NA | NA | 102 | 54 | 123 | 138 | 80 |
| Mechanical engineering | 458 | 489 | 531 | 469 | 529 | 527 | 560 | 566 |
| Metallurgical, mining, materials and related engineering fields | 233 | 267 | 303 | 299 | 259 | 280 | 249 | 260 |
| Metallurgical and materials engineering ^e | 181 | 215 | 242 | na | na | na | na | na |
| Mining engineering ^e | 52 | 52 | 61 | na | na | na | na | na |

Table 1-5. Distribution of doctorate-holding nonfaculty researchers across science, engineering, and health fields: 2017–24

(Number)

| Detailed field | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|--|-------|-------|-------|-------|-------|-------|-------|--------|
| Other engineering | 592 | 764 | 730 | 800 | 823 | 897 | 903 | 955 |
| Agricultural engineering | 52 | 60 | 55 | 54 | 55 | 48 | 53 | 51 |
| Engineering mechanics, physics, and science | 200 | 220 | 186 | 177 | 193 | 199 | 190 | 185 |
| Nuclear engineering | 22 | 41 | 41 | 45 | 40 | 41 | 35 | 32 |
| Engineering, other | na | na | na | 524 | 535 | 609 | 625 | 687 |
| Engineering nec ^c | 285 | 400 | 372 | na | na | na | na | na |
| Nanotechnology ^e | 33 | 43 | 76 | na | na | na | na | na |
| Health | 7,638 | 7,436 | 7,621 | 7,528 | 7,828 | 8,501 | 9,167 | 10,140 |
| Clinical medicine | 6,448 | 6,159 | 6,273 | 6,500 | 6,751 | 7,351 | 7,798 | 8,618 |
| Medical clinical sciences and clinical and medical laboratory sciences | NA | NA | NA | 167 | 134 | 128 | 477 | 383 |
| Public health | 611 | 646 | 687 | 616 | 656 | 742 | 911 | 799 |
| Anesthesiology | 147 | 139 | 155 | 122 | 108 | 129 | 129 | 181 |
| Cardiology and cardiovascular disease | 248 | 238 | 200 | 182 | 215 | 227 | 228 | 230 |
| Endocrinology, diabetes, and metabolism | 98 | 102 | 107 | 91 | 103 | 109 | 122 | 123 |
| Gastroenterology | 96 | 92 | 98 | 96 | 112 | 105 | 89 | 76 |
| Hematology | 111 | 114 | 160 | 164 | 180 | 199 | 168 | 174 |
| Neurology and neurosurgery | 493 | 425 | 496 | 469 | 527 | 580 | 533 | 730 |
| Obstetrics and gynecology | 117 | 94 | 104 | 93 | 106 | 107 | 121 | 137 |
| Oncology and cancer research | 620 | 637 | 630 | 644 | 549 | 648 | 587 | 642 |
| Ophthalmology | 377 | 297 | 261 | 287 | 259 | 303 | 295 | 349 |
| Otorhinolaryngology | 116 | 142 | 121 | 125 | 119 | 119 | 148 | 180 |
| Pediatrics | 657 | 624 | 597 | 643 | 632 | 742 | 743 | 769 |
| Psychiatry | 236 | 235 | 241 | 307 | 279 | 351 | 346 | 424 |
| Pulmonary disease | 144 | 136 | 107 | 119 | 100 | 116 | 118 | 107 |
| Radiological sciences | 395 | 436 | 391 | 401 | 381 | 444 | 465 | 555 |
| Surgery | 505 | 523 | 527 | 507 | 561 | 572 | 608 | 697 |
| Clinical medicine nec | 1,477 | 1,279 | 1,391 | 1,467 | 1,730 | 1,730 | 1,710 | 2,062 |
| Other health ^a | 1,190 | 1,277 | 1,348 | 1,028 | 1,077 | 1,150 | 1,369 | 1,522 |
| Communication disorders sciences | 66 | 68 | 46 | 49 | 83 | 86 | 85 | 103 |
| Dental sciences | 78 | 92 | 110 | 103 | 123 | 140 | 159 | 159 |
| Nursing science | 101 | 96 | 97 | 103 | 117 | 166 | 187 | 180 |
| Pharmaceutical sciences | 368 | 344 | 392 | 377 | 372 | 379 | 469 | 523 |
| Veterinary biomedical and clinical sciences ^b | 260 | 330 | 290 | na | na | na | na | na |
| Other health nec ^c | na | na | na | 396 | 382 | 379 | 469 | 557 |
| Kinesiology and exercise science ^d | NA | NA | NA | 46 | 31 | 49 | 50 | 63 |
| Other health nec ^d | 317 | 347 | 413 | 350 | 351 | 330 | 419 | 494 |

na = not applicable. NA = not available; data not collected at this level of detail.

nec = not elsewhere classified.

^a The following broad fields are not directly comparable between 2019 and 2020 due to changes in detailed fields: Agricultural and veterinary sciences, Biological and biomedical sciences, Psychology, Social sciences, and Other health.

^b The following detailed fields moved between broad fields between 2019 and 2020: Veterinary biomedical and clinical sciences moved from Other health to Agricultural and veterinary sciences; Human development moved from Social sciences to Psychology.

^c The following detailed fields from 2017 split into multiple fields in 2020; data after 2020 represent the aggregate counts of the new detailed fields split from the original detailed field: Computer and information sciences; Computer and information sciences nec; Mathematics and applied mathematics; Multidisciplinary and interdisciplinary sciences; Counseling and applied psychology; Social sciences nec; Civil, environmental, transportation and related engineering fields; Electrical, electronics, and communications engineering; Industrial and manufacturing engineering; Engineering nec; and Other health nec.

^d The following detailed fields were added or significantly modified in 2020: Computer and information sciences; Artificial intelligence, informatics, and computer and information science topics; Computer and information systems security; Information science and studies; Information technology; Computer and information sciences nec; Applied mathematics; Mathematics; Biological and physical sciences; Computational science; Data science and data analytics; International and global studies; Multidisciplinary and interdisciplinary sciences nec; Applied psychology; Counseling psychology; Area, ethnic, cultural, gender, and group studies; Criminology; Urban studies and affairs; Social sciences, other; Civil engineering; Computer engineering; Systems engineering and operations research; Kinesiology and exercise science; and Other health nec.

^e The following detailed fields from 2017 were moved or consolidated with other detailed fields starting in 2020: History and philosophy of science and technology; Bioengineering and biomedical engineering; Biological and biosystems engineering; Metallurgical and materials engineering; Mining engineering; and Nanotechnology.

Note(s):

Percentages may not add to total because of rounding. In the cases where field titles in the Survey of Graduate Students and Postdoctorates in Science and Engineering (GSS) changed between 2019 and 2020, the titles in this table match the GSS 2020 and later titles. Prior to 2020, there were no broad fields in engineering. All fields have been moved to match the current broad field organization. For information on the current fields and codes in the GSS, see table A-5 and table A-6.

Source(s):

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