

Table 9-4

Biological and biomedical sciences research doctorate recipients, postgraduation plans by sex and major field of doctorate: 2022

(Number and percent)

Characteristic	All biological and biomedical sciences fields	Biochemistry, biophysics, and molecular biology	Bioinformatics, biostatistics, and computational biology	Cell/ cellular biology and anatomy	Ecology, evolutionary biology, and epidemiology	Genetics and genomics	Microbiology and immunology	Neurobiology and neurosciences	Pharmacology and toxicology	Physiology, oncology, and cancer biology	Biological and biomedical sciences, other
Doctorate recipients reporting postgraduation status (number)	8,807	1,480	649	658	1,068	417	1,044	1,109	364	729	1,289
Definite postdoctoral training plans	42.3	42.8	24.7	39.5	47.3	44.1	44.6	49.8	37.9	43.2	39.7
Definite employment plans	28.4	27.3	50.5	26.3	26.2	24.9	24.6	20.9	36.3	29.5	29.4
Seeking employment or study	22.2	24.1	19.9	28.0	22.8	21.1	21.8	18.2	18.7	17.4	25.4
Other status ^a	6.8	5.4	4.9	5.6	3.7	9.6	8.4	10.8	6.6	9.2	5.3
Definite postdoctoral training plans (%) ^b											
Postdoc fellowship or research associateship	94.5	95.7	95.6	92.7	96.4	94.6	91.2	95.8	92.0	91.4	95.7
Other training or unknown ^c	5.5	4.3	4.4	7.3	3.6	5.4	8.8	4.2	8.0	8.6	4.3
Definite employment plans (%) ^d											
Academe	20.5	15.8	14.9	16.8	30.0	13.5	19.5	19.0	5.3	34.0	26.4
In tenure track faculty position (%)	26.8	20.3	26.5	D	31.0	D	22.0	22.7	D	34.2	32.0
Not in tenure track position (%)	70.6	76.6	71.4	D	67.9	D	76.0	75.0	D	60.3	67.0
Government	6.5	2.7	3.7	D	23.6	5.8	3.5	D	6.1	2.8	9.0
Industry or business ^e	64.5	76.0	75.0	76.3	25.7	69.2	70.4	71.1	82.6	55.3	55.9
Nonprofit organization	6.7	4.5	5.5	D	18.2	7.7	3.9	D	4.5	6.0	6.6
Other or unknown ^f	1.8	1.0	0.9	1.7	2.5	3.8	2.7	1.3	1.5	1.9	2.1
Primary activity ^g											
Research and development	60.7	69.7	77.7	56.0	52.4	62.1	62.7	51.4	56.3	50.5	55.4
Teaching	9.8	6.3	3.4	7.8	17.7	8.4	9.8	8.2	5.6	16.5	13.1
Management or administration	5.1	5.0	D	5.4	7.7	D	6.1	5.0	4.8	D	9.2
Professional services and other	24.4	19.1	D	30.7	22.1	D	21.3	35.5	33.3	D	22.3
Secondary activity ^g											
Research and development	14.8	11.2	13.0	9.6	22.1	D	15.2	12.3	D	17.5	18.9
Teaching	5.2	5.2	5.3	7.2	8.9	D	3.3	2.7	D	5.3	5.3
Management or administration	18.8	17.2	12.1	20.5	17.7	15.8	23.4	19.1	27.8	17.5	22.0
Professional services and other	9.8	5.7	19.8	5.4	13.3	5.3	8.6	9.5	4.0	9.2	9.2
No secondary activity	51.3	60.6	49.8	57.2	38.0	63.2	49.6	56.4	53.2	50.5	44.6
Activity unknown	4.4	5.2	1.5	4.0	3.2	8.7	5.1	5.2	4.5	4.2	5.3
Postgraduation location (%) ^h											
United States ⁱ	94.4	93.0	95.9	96.8	92.4	94.1	95.6	96.2	94.1	94.5	93.4
Midwest	14.4	14.1	12.9	10.2	13.1	17.0	16.3	12.2	13.7	17.2	16.7
Northeast	28.7	27.9	32.4	35.3	21.7	25.7	30.8	32.8	30.0	27.5	26.7
South	23.9	19.2	22.3	24.7	26.9	23.3	23.7	23.0	29.3	24.9	26.2
West	27.0	31.5	27.9	26.3	30.1	27.8	23.8	27.7	20.7	24.7	23.6
Outside the United States	5.5	6.7	3.5	3.2	7.5	5.9	4.4	3.8	5.9	5.5	6.6

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Biological and biomedical sciences research doctorate recipients, postgraduation plans by sex and major field of doctorate: 2022

(Number and percent)

Characteristic	All biological and biomedical sciences fields	Biochemistry, biophysics, and molecular biology	Bioinformatics, biostatistics, and computational biology	Cell/ cellular biology and anatomy	Ecology, evolutionary biology, and epidemiology	Genetics and genomics	Microbiology and immunology	Neurobiology and neurosciences	Pharmacology and toxicology	Physiology, oncology, and cancer biology	Biological and biomedical sciences, other
Location unknown	0.1	0.3	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Postgraduation location in same state as doctorate institution (%)	43.9	44.5	39.8	44.6	42.5	41.0	40.1	45.9	43.7	43.8	48.5
Male doctorate recipients reporting postgraduation status (number)	4,095	761	377	299	413	188	456	530	148	344	579
Definite postdoctoral training plans	43.0	45.7	26.0	37.8	47.5	43.1	45.0	51.7	39.2	42.7	41.8
Definite employment plans	27.6	24.2	49.6	26.1	25.7	27.1	23.0	20.0	29.1	30.2	28.5
Seeking employment or study	21.6	24.3	19.4	30.8	22.3	19.1	21.7	15.3	20.9	16.0	24.2
Other status ^a	7.4	5.3	5.0	4.7	4.6	10.1	10.1	12.5	10.8	10.2	5.4
Definite postdoctoral training plans (%) ^b											
Postdoc fellowship or research associateship	94.0	95.4	93.9	88.5	98.0	93.8	91.7	95.3	94.8	88.4	95.0
Other training or unknown ^c	6.0	4.6	6.1	11.5	2.0	6.2	8.3	4.7	5.2	11.6	5.0
Definite employment plans (%) ^d											
Academe	20.7	D	15.5	D	32.1	D	14.3	18.9	D	40.4	24.8
In tenure track faculty position (%)	31.2	25.0	D	D	32.4	D	D	25.0	D	35.7	39.0
Not in tenure track position (%)	67.1	D	D	84.6	64.7	D	D	70.0	0.0	61.9	61.0
Government	D	D	D	D	19.8	D	D	D	D	D	9.7
Industry or business ^e	64.7	72.8	74.9	75.6	18.9	70.6	75.2	71.7	83.7	52.9	57.6
Nonprofit organization	D	4.3	D	D	24.5	D	D	D	D	D	5.5
Other or unknown ^f	1.9	1.1	0.0	1.3	4.7	5.9	1.9	1.9	2.3	1.9	2.4
Primary activity ^g											
Research and development	63.8	72.8	79.6	57.9	49.5	58.1	67.7	55.0	56.1	54.0	60.5
Teaching	10.5	8.1	D	D	20.8	D	D	9.0	D	19.0	12.7
Management or administration	4.5	3.5	D	D	6.9	D	D	D	D	D	8.9
Professional services and other	21.2	15.6	14.5	25.0	22.8	D	20.2	D	D	D	17.8
Secondary activity ^g											
Research and development	15.4	11.6	12.9	9.2	25.7	D	14.1	19.0	D	D	17.8
Teaching	5.5	5.2	3.8	D	10.9	D	D	D	D	D	5.7
Management or administration	19.1	17.9	13.4	21.1	19.8	14.0	26.3	23.0	24.4	15.0	21.0
Professional services and other	11.2	8.1	19.4	D	10.9	D	D	D	0.0	12.0	12.1
No secondary activity	48.9	57.2	50.5	51.3	32.7	67.4	49.5	45.0	53.7	48.0	43.3
Activity unknown	4.7	6.0	0.5	2.6	4.7	15.7	5.7	5.7	4.7	3.8	4.8
Postgraduation location (%) ^h											
United States ⁱ	94.1	92.1	96.1	D	92.1	D	95.5	95.0	92.1	95.6	94.1
Midwest	14.4	13.3	12.6	9.9	11.9	19.7	15.5	12.6	15.8	16.7	17.9
Northeast	28.4	27.6	27.7	37.7	23.5	22.0	31.6	30.5	26.7	27.9	27.8
South	23.7	20.5	24.6	D	26.2	D	22.3	23.2	30.7	23.5	25.3

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West	27.0	30.3	30.9	23.0	29.5	28.0	24.8	28.2	18.8	27.1	22.6
Outside the United States	5.7	7.3	3.5	D	7.9	D	4.5	5.0	7.9	4.4	5.9
Location unknown	0.1	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Postgraduation location in same state as doctorate institution (%)	43.1	43.2	40.0	44.5	39.4	39.4	40.0	46.8	38.6	42.6	48.9
Female doctorate recipients reporting postgraduation status (number)	4,712	719	272	359	655	229	588	579	216	385	710
Definite postdoctoral training plans	41.7	39.8	22.8	40.9	47.2	45.0	44.4	48.0	37.0	43.6	38.0
Definite employment plans	29.2	30.6	51.8	26.5	26.6	23.1	25.9	21.8	41.2	28.8	30.1
Seeking employment or study	22.7	23.8	20.6	25.6	23.1	22.7	21.9	20.9	17.1	18.7	26.5
Other status ^a	6.2	5.6	4.8	6.4	3.2	9.2	7.1	9.3	3.7	8.3	5.2
Definite postdoctoral training plans (%) ^b											
Postdoc fellowship or research associateship	95.0	96.2	98.4	95.9	95.5	95.1	90.8	96.4	90.0	94.0	96.3
Other training or unknown ^c	5.0	3.8	1.6	4.1	4.5	4.9	9.2	3.6	10.0	6.0	3.7
Definite employment plans (%) ^d											
Academe	20.4	D	14.2	D	28.7	D	23.0	19.0	D	27.9	27.6
In tenure track faculty position (%)	23.2	15.6	D	D	30.0	0.0	D	20.8	0.0	32.3	27.1
Not in tenure track position (%)	73.6	D	D	D	70.0	D	79.2	79.2	D	58.1	71.2
Government	D	D	D	D	25.9	D	D	D	D	D	8.4
Industry or business ^e	64.4	78.6	75.2	76.8	29.9	67.9	67.1	70.6	82.0	57.7	54.7
Nonprofit organization	D	4.5	D	D	14.4	D	D	D	D	D	7.5
Other or unknown ^f	1.7	0.9	2.1	2.1	1.1	1.9	3.3	0.8	1.1	1.8	1.9
Primary activity ^g											
Research and development	58.1	67.1	75.2	54.4	54.1	65.4	59.3	48.3	56.5	47.2	51.5
Teaching	9.2	4.8	D	D	15.9	D	D	7.5	D	14.2	13.4
Management or administration	6.2	6.2	0.0	D	8.2	D	D	D	D	D	9.4
Professional services and other	27.0	21.9	D	35.6	21.8	D	22.1	D	D	D	25.7
Secondary activity ^g											
Research and development	14.4	11.0	13.1	10.0	20.0	13.5	15.9	6.7	D	D	19.8
Teaching	5.0	5.2	7.3	D	7.6	D	D	D	D	D	5.0
Management or administration	18.7	16.7	10.2	20.0	16.5	17.3	21.4	15.8	29.4	19.8	22.8
Professional services and other	8.7	3.8	20.4	D	14.7	D	D	D	5.9	6.6	6.9
No secondary activity	53.2	63.3	48.9	62.2	41.2	59.6	49.7	65.8	52.9	52.8	45.5
Activity unknown	4.2	4.5	2.8	5.3	2.3	1.9	4.6	4.8	4.5	4.5	5.6
Postgraduation location (%) ^h											
United States ⁱ	94.6	93.9	95.6	D	92.5	D	95.6	97.3	95.3	93.5	92.8
Midwest	14.4	14.8	13.3	10.3	13.9	14.7	16.9	11.9	12.4	17.6	15.7

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Northeast	29.0	28.3	38.9	33.5	20.5	28.8	30.3	34.9	32.0	27.2	25.8
South	24.0	17.8	19.2	D	27.3	D	24.7	22.8	28.4	26.2	26.9
West	26.9	32.8	23.6	28.9	30.4	27.6	23.0	27.2	21.9	22.6	24.4
Outside the United States	5.3	6.1	3.4	D	7.2	D	4.4	2.7	4.7	6.5	7.2
Location unknown	0.1	0.0	1.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Postgraduation location in same state as doctorate institution (%)	44.5	45.8	39.4	44.6	44.5	42.3	40.2	45.0	46.7	44.8	48.1

D = suppressed to avoid disclosure of confidential information.

^a Includes doctorate recipients reporting: no plans to work or study, some other type of postgraduation plans, or definite plans for other full-time degree program.^b Excludes doctorate recipients reporting plans for other full-time degree program. Percentages based on number of doctorate recipients reporting definite postdoctoral plans for study.^c Other includes doctorate recipients who reported definite postdoctoral plans for traineeship, internship or clinical residency, or other study.^d Percentages based on number of doctorate recipients reporting definite postgraduation plans for employment.^e Includes doctorate recipients reporting self-employment.^f Other is mainly composed of elementary and secondary schools.^g Percentages based on number of doctorate recipients reporting definite postgraduation plans for employment and primary or secondary work activity.^h Percentages based on number of doctorate recipients reporting definite postgraduation plans and type of plans.ⁱ Includes doctorate recipients with an unknown U.S. region of employment after doctorate, thus the percentages by regions will not sum to the value for United States; see the "Technical Notes" for states or territories included in regions.**Note(s):**A definite postgraduation commitment includes accepting new employment or a postdoctoral study (postdoc) position or returning to predoctoral employment, while postgraduation employment includes accepting new employment or returning to predoctoral employment that is not a postdoctoral study (postdoc) position. 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.