

Table 9-4. Biological and biomedical sciences research doctorate recipients, postgraduation plans by sex and major field of doctorate: 2024

(Number and percent)

Characteristic	All biological and biomedical sciences fields	Biochemistry, biophysics, and molecular biology	Bioinformatics, biostatistics, and computational biology	Biological and biomedical sciences, general	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)	9,098	1,428	681	726	734	1,109	446	1,039	1,172	340	804	619
Definite postdoctoral training plans	41.2	39.1	25.0	40.6	36.9	46.4	41.0	43.3	48.2	35.3	43.7	43.0
Definite employment plans	21.9	20.5	44.1	18.6	19.6	25.8	20.0	16.2	17.2	24.7	20.1	21.8
Seeking employment or study	30.6	35.0	27.2	36.9	35.6	24.7	30.0	30.2	26.6	34.4	28.0	30.7
Other status ^a	6.1	5.2	3.5	3.6	7.2	3.1	9.0	10.2	7.8	5.3	8.1	4.5
Definite postdoctoral training plans (%) ^b												
Postdoc fellowship or research associateship	95.1	95.7	97.1	94.9	92.3	97.9	92.3	92.9	95.0	94.2	95.4	95.9
Other training or unknown ^c	4.9	4.3	2.9	5.1	7.7	2.1	7.7	7.1	5.0	5.8	4.6	4.1
Definite employment plans (%) ^d												
Academe	32.0	22.2	24.7	39.3	38.2	41.3	29.2	33.3	25.9	20.2	43.2	39.3
In tenure track faculty position (%)	21.8	D	25.7	26.4	10.9	13.6	D	21.4	19.2	35.3	42.9	22.6
Not in tenure track position (%)	74.5	D	70.3	69.8	83.6	82.2	D	66.1	78.8	58.8	55.7	77.4
Government	8.6	2.0	8.3	7.4	D	22.0	9.0	8.3	5.0	D	4.3	14.8
Industry or business ^e	50.9	68.6	59.0	45.9	56.3	22.4	53.9	48.8	59.7	69.0	43.8	38.5
Nonprofit organization	7.1	5.5	7.0	5.2	D	12.9	7.9	7.1	7.0	D	7.4	6.7
Other or unknown ^f	1.5	1.7	1.0	2.2	0.7	1.4	0.0	2.4	2.5	1.2	1.2	0.7
Primary activity ^g												
Research and development	56.2	60.8	73.0	44.5	51.8	62.6	67.4	49.1	42.9	43.9	43.3	55.0
Teaching	13.9	11.2	4.1	21.1	17.7	16.4	8.1	14.7	12.2	13.4	24.8	18.3
Management or administration	5.8	D	D	9.4	7.1	6.0	9.3	8.0	6.6	12.2	5.7	6.9
Professional services and other	24.1	24.5	22.2	25.0	23.4	14.9	15.1	28.2	38.3	30.5	26.1	19.8
Secondary activity ^g												
Research and development	18.1	14.7	18.1	18.8	21.3	15.7	17.4	16.6	16.3	22.0	29.3	15.3
Teaching	6.3	D	8.2	6.3	4.3	8.9	7.0	6.1	5.6	D	7.0	9.9
Management or administration	16.7	12.6	9.9	14.1	14.2	26.7	22.1	19.6	16.3	20.7	17.2	14.5
Professional services and other	10.7	11.5	15.7	6.3	8.5	11.7	8.1	4.3	10.7	7.3	11.5	13.0
No secondary activity	48.3	59.1	48.1	54.7	51.8	37.0	45.3	53.4	51.0	46.3	35.0	47.3
Activity unknown	2.7	2.4	2.3	5.2	2.1	1.7	3.4	3.0	2.5	2.4	3.1	3.0
Postgraduation location (%) ^h												
United States ⁱ	95.3	D	94.9	D	94.9	93.5	94.1	96.0	96.7	94.6	95.7	95.3
Midwest	16.4	16.2	15.1	12.1	15.7	14.6	22.4	16.7	14.6	19.6	19.9	20.0
Northeast	28.3	D	32.1	D	30.1	22.2	27.2	26.5	33.8	25.0	26.9	22.9
South	26.8	24.2	24.3	32.8	24.3	28.0	23.2	30.9	24.4	29.4	27.9	26.4
West	23.6	24.8	22.1	20.0	24.6	28.7	20.6	21.7	23.5	20.6	20.9	25.4

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(Number and percent)

Characteristic	All biological and biomedical sciences fields	Biochemistry, biophysics, and molecular biology	Bioinformatics, biostatistics, and computational biology	Biological and biomedical sciences, general	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
Outside the United States	4.6	D	5.1	D	5.1	6.4	5.9	3.9	3.3	5.4	4.3	4.7
Location unknown	*	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0
Postgraduation location in same state as doctorate institution (%)	48.3	48.6	41.9	55.8	49.9	46.6	48.5	50.3	48.2	48.5	47.6	46.4
Male doctorate recipients reporting postgraduation status (number)	3,999	717	369	313	317	392	199	417	518	119	359	279
Definite postdoctoral training plans	43.4	41.6	28.5	44.4	38.2	51.5	41.7	45.6	49.4	39.5	47.1	45.2
Definite employment plans	21.6	19.9	39.6	15.3	18.0	20.9	20.1	16.8	18.7	26.9	23.4	23.3
Seeking employment or study	28.2	33.1	27.9	36.1	34.4	24.0	27.6	27.1	22.8	28.6	21.4	26.9
Other status ^a	6.6	5.3	3.8	4.2	8.5	3.6	10.6	10.3	8.9	5.0	8.1	4.7
Definite postdoctoral training plans (%) ^b												
Postdoc fellowship or research associateship	94.8	95.3	97.1	95.7	88.4	98.5	94.0	91.6	94.9	95.7	94.7	95.2
Other training or unknown ^c	5.2	4.7	2.9	4.3	11.6	1.5	6.0	8.4	5.1	4.3	5.3	4.8
Definite employment plans (%) ^d												
Academe	31.3	D	28.1	33.3	D	41.5	D	D	32.0	D	D	D
In tenure track faculty position (%)	21.9	D	26.8	31.3	D	D	D	D	D	D	D	D
Not in tenure track position (%)	74.8	85.7	68.3	68.8	87.5	D	D	69.6	D	83.3	56.4	72.7
Government	7.8	D	4.8	D	0.0	23.2	D	12.9	D	D	D	16.9
Industry or business ^e	54.5	73.4	60.3	52.1	66.7	20.7	55.0	45.7	58.8	68.8	42.9	44.6
Nonprofit organization	5.2	4.2	6.2	D	D	11.0	D	D	D	D	6.0	D
Other or unknown ^f	1.3	0.7	0.7	2.1	1.8	3.7	0.0	2.9	1.0	0.0	1.2	0.0
Primary activity ^g												
Research and development	59.3	66.4	73.8	51.1	57.1	56.3	65.8	50.0	52.6	46.9	43.2	66.1
Teaching	13.5	7.9	D	13.3	D	20.0	D	D	13.7	D	D	D
Management or administration	4.8	D	D	11.1	D	8.8	D	D	8.4	D	D	D
Professional services and other	22.4	23.6	19.9	24.4	23.2	15.0	21.1	27.9	25.3	31.3	25.9	14.5
Secondary activity ^g												
Research and development	17.9	15.0	17.7	13.3	21.4	20.0	21.1	17.6	14.7	18.8	29.6	9.7
Teaching	6.7	D	9.9	D	D	12.5	D	D	D	D	7.4	D
Management or administration	18.0	13.6	12.8	24.4	D	22.5	D	25.0	23.2	25.0	14.8	21.0
Professional services and other	12.1	12.9	13.5	D	8.9	12.5	D	D	15.8	D	13.6	14.5
No secondary activity	45.3	56.4	46.1	46.7	48.2	32.5	42.1	50.0	42.1	43.8	34.6	48.4
Activity unknown	3.0	2.1	3.4	6.3	1.8	2.4	5.0	2.9	2.1	0.0	3.6	4.6
Postgraduation location (%) ^h												
United States ⁱ	94.8	D	94.8	D	91.0	90.8	91.1	93.8	96.9	100.0	95.3	94.8
Midwest	16.3	17.2	17.1	12.8	14.6	14.8	17.1	14.6	15.3	19.0	20.2	17.8

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Northeast	29.9	D	33.5	D	31.5	22.2	30.1	29.2	34.3	32.9	24.1	29.3
South	25.4	22.9	22.7	29.9	21.3	25.7	24.4	30.0	23.8	27.8	29.2	24.6
West	22.9	25.9	21.5	19.8	23.6	28.2	18.7	20.0	22.7	20.3	21.7	22.5
Outside the United States	5.2	D	5.2	D	9.0	9.2	8.9	6.2	3.1	0.0	4.7	5.2
Location unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Postgraduation location in same state as doctorate institution (%)	46.5	49.7	43.4	56.7	43.8	40.5	48.0	46.9	47.0	50.6	42.3	46.6
Female doctorate recipients reporting postgraduation status (number)	5,099	711	312	413	417	717	247	622	654	221	445	340
Definite postdoctoral training plans	39.4	36.7	20.8	37.8	36.0	43.7	40.5	41.8	47.2	33.0	40.9	41.2
Definite employment plans	22.2	21.1	49.4	21.1	20.9	28.5	19.8	15.8	15.9	23.5	17.5	20.6
Seeking employment or study	32.4	37.0	26.3	37.5	36.5	25.1	32.0	32.3	29.7	37.6	33.3	33.8
Other status ^a	5.8	5.1	3.2	3.1	6.2	2.8	7.7	10.1	6.9	5.4	8.1	4.4
Definite postdoctoral training plans (%) ^b												
Postdoc fellowship or research associateship	95.4	96.2	96.9	94.2	95.3	97.4	91.0	93.8	95.1	93.2	96.2	96.4
Other training or unknown ^c	4.6	3.8	3.1	5.8	4.7	2.6	9.0	6.2	4.9	6.8	3.8	3.6
Definite employment plans (%) ^d												
Academe	32.6	D	21.4	42.5	D	41.2	D	D	20.2	D	D	D
In tenure track faculty position (%)	21.7	21.6	24.2	24.3	D	D	D	D	D	D	D	D
Not in tenure track position (%)	74.3	D	72.7	70.3	82.1	D	91.7	63.6	D	45.5	54.8	80.6
Government	9.3	D	11.7	D	D	21.6	D	5.1	D	D	D	12.9
Industry or business ^e	48.1	64.0	57.8	42.5	49.4	23.0	53.1	51.0	60.6	69.2	44.9	32.9
Nonprofit organization	8.5	6.7	7.8	D	D	13.7	D	D	D	D	9.0	D
Other or unknown ^f	1.6	2.7	1.3	2.3	0.0	0.5	0.0	2.0	3.8	1.9	1.3	1.4
Primary activity ^g												
Research and development	53.8	55.5	72.4	41.0	48.2	65.2	68.8	48.4	33.7	42.0	43.4	44.9
Teaching	14.3	14.4	D	25.3	D	14.9	D	D	10.9	D	D	D
Management or administration	6.6	4.8	D	8.4	D	5.0	D	D	5.0	D	D	D
Professional services and other	25.3	25.3	24.3	25.3	23.5	14.9	10.4	28.4	50.5	30.0	26.3	24.6
Secondary activity ^g												
Research and development	18.2	14.4	18.4	21.7	21.2	13.9	14.6	15.8	17.8	24.0	28.9	20.3
Teaching	6.1	D	6.6	D	D	7.5	D	D	D	D	6.6	D
Management or administration	15.6	11.6	7.2	8.4	D	28.4	D	15.8	9.9	18.0	19.7	8.7
Professional services and other	9.7	10.3	17.8	D	8.2	11.4	D	D	5.9	D	9.2	11.6
No secondary activity	50.5	61.6	50.0	59.0	54.1	38.8	47.9	55.8	59.4	48.0	35.5	46.4
Activity unknown	2.4	2.7	1.3	4.6	2.3	1.5	2.0	3.1	2.9	3.8	2.6	1.4

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Postgraduation location (%) ^h												
United States ⁱ	95.7	D	95.0	D	97.9	95.0	96.6	97.5	96.6	91.2	96.2	95.7
Midwest	16.5	15.1	12.8	11.5	16.5	14.5	26.8	18.2	14.0	20.0	19.6	21.9
Northeast	26.9	D	30.6	D	29.1	22.2	24.8	24.6	33.4	20.0	29.6	17.1
South	27.9	25.5	26.0	35.0	26.6	29.2	22.1	31.6	24.9	30.4	26.5	28.1
West	24.1	23.6	22.8	20.2	25.3	29.0	22.1	22.9	24.2	20.8	20.0	28.1
Outside the United States	4.2	D	5.0	D	2.1	4.8	3.4	2.2	3.4	8.8	3.8	4.3
Location unknown	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.0	0.0	0.0	0.0
Postgraduation location in same state as doctorate institution (%)	49.7	47.4	40.2	55.1	54.4	49.9	49.0	52.8	49.2	47.2	52.7	46.2

* = value between 0.00% and 0.05%; D = suppressed to avoid disclosure of confidential information.

^a Other status 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 Definite postdoctoral training plans excludes doctorate recipients reporting plans for other full-time degree program. Percentages are based on the number of doctorate recipients reporting definite postdoctoral plans for study.^c Other training includes doctorate recipients who reported definite postdoctoral plans for traineeship, internship or clinical residency, or other study.^d Percentages are based on the number of doctorate recipients reporting definite postgraduation plans for employment.^e Industry or business includes doctorate recipients reporting self-employment.^f Other is mainly composed of elementary and secondary schools.^g Percentages are based on the number of doctorate recipients reporting definite postgraduation plans for employment and primary or secondary work activity.^h Percentages are based on the number of doctorate recipients reporting definite postgraduation plans and type of plans.ⁱ United States 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 about the 2021 taxonomy change, see the "Technical Notes."

Source(s):

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