

Table 9-4

## Biological and biomedical sciences research doctorate recipients, postgraduation plans by sex and major field of doctorate: 2021

(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)	7,726	1,286	538	614	936	368	937	953	278	666	1,150
Definite postdoctoral training plans	45.5	46.2	29.2	46.6	47.2	42.4	48.9	50.6	44.2	44.1	45.8
Definite employment plans	23.5	21.4	46.7	21.0	25.4	24.2	22.6	15.8	23.4	21.9	22.8
Seeking employment or study	24.3	27.1	21.0	25.9	26.0	24.2	21.1	22.1	26.3	22.1	25.9
Other status <sup>a</sup>	6.4	5.1	3.0	6.4	1.4	9.2	7.0	11.2	5.8	11.9	5.0
Definite postdoctoral training plans (%) <sup>b</sup>											
Postdoc fellowship or research associateship	94.4	96.0	94.9	94.4	96.8	92.3	93.9	92.9	95.9	91.2	94.3
Other training or unknown <sup>c</sup>	5.6	4.0	5.1	5.6	3.2	7.7	6.1	7.1	4.1	8.8	5.7
Definite employment plans (%) <sup>d</sup>											
Academe	24.4	17.5	15.5	31.0	34.5	23.6	24.1	21.2	18.5	32.2	27.5
In tenure track faculty position (%)	30.4	35.4	33.3	32.5	19.5	D	29.4	15.6	D	57.4	31.9
Not in tenure track position (%)	66.0	52.1	64.1	65.0	78.0	81.0	66.7	84.4	66.7	42.6	65.3
Government	8.5	4.4	6.8	D	21.4	D	7.5	4.6	D	D	10.3
Industry or business <sup>e</sup>	58.8	70.9	71.7	58.9	30.3	67.4	60.8	66.2	64.6	57.5	50.0
Nonprofit organization	5.8	4.4	4.8	D	10.5	D	5.2	6.6	D	D	9.2
Other or unknown <sup>f</sup>	2.5	2.9	1.2	3.1	3.4	2.2	2.4	1.3	3.1	2.1	3.1
Primary activity <sup>g</sup>											
Research and development	58.5	64.7	76.4	43.0	50.2	61.9	60.7	52.9	51.7	53.5	54.8
Teaching	13.7	11.6	4.5	21.9	19.2	13.1	10.9	5.7	10.0	23.9	17.6
Management or administration	4.2	3.1	D	D	8.7	D	D	6.4	10.0	D	5.2
Professional services and other	23.6	20.5	D	D	21.8	D	D	35.0	28.3	D	22.4
Secondary activity <sup>g</sup>											
Research and development	17.0	14.7	12.4	18.0	24.9	D	13.4	17.9	D	23.9	14.8
Teaching	5.0	3.9	5.8	4.7	5.7	D	3.0	4.3	D	6.3	6.8
Management or administration	19.1	19.0	9.1	16.4	23.6	9.5	25.4	18.6	28.3	18.3	22.8
Professional services and other	11.4	7.4	20.7	7.8	16.6	16.7	5.0	12.9	15.0	10.6	5.6
No secondary activity	47.6	55.0	52.1	53.1	29.3	59.5	53.2	46.4	28.3	40.8	50.0
Activity unknown	4.6	6.2	3.6	0.8	3.8	5.6	5.2	7.3	7.7	2.7	4.6
Postgraduation location (%) <sup>h</sup>											
United States <sup>i</sup>	93.6	93.8	92.4	94.0	91.8	93.5	95.2	94.9	94.7	95.5	91.9
Midwest	15.6	15.8	13.7	16.6	14.6	20.8	15.2	12.3	20.2	17.5	16.0
Northeast	26.0	26.5	31.6	30.4	21.2	24.1	25.2	32.9	19.7	23.0	23.4
South	26.4	25.1	21.1	19.8	25.0	25.3	28.5	24.2	33.5	32.3	30.4
West	25.2	25.9	25.7	27.0	30.9	23.3	25.7	25.0	20.7	22.3	21.5

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## Biological and biomedical sciences research doctorate recipients, postgraduation plans by sex and major field of doctorate: 2021

(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
Outside the United States	6.3	6.2	7.4	5.8	8.2	6.1	4.6	5.1	5.3	4.5	8.1
Location unknown	0.1	0.0	0.2	0.2	0.0	0.4	0.1	0.0	0.0	0.0	0.0
Postgraduation location in same state as doctorate institution (%)	44.4	47.5	41.7	46.7	39.9	48.2	45.4	42.5	47.3	38.2	47.5
Male doctorate recipients reporting postgraduation status (number)	3,697	689	313	291	376	172	409	434	127	350	536
Definite postdoctoral training plans	46.2	48.0	29.7	49.1	47.6	39.5	48.4	53.7	41.7	45.7	46.5
Definite employment plans	23.1	20.8	45.7	16.5	23.1	29.1	23.2	15.0	24.4	21.7	21.6
Seeking employment or study	23.6	26.6	21.1	27.8	27.1	24.4	20.0	18.7	22.8	19.7	25.4
Other status <sup>a</sup>	7.0	4.5	3.5	6.5	2.1	7.0	8.1	12.4	11.0	12.9	6.2
Definite postdoctoral training plans (%) <sup>b</sup>											
Postdoc fellowship or research associateship	93.1	94.6	94.6	93.0	96.6	97.1	91.4	89.3	96.2	90.6	93.2
Other training or unknown <sup>c</sup>	6.9	5.4	5.4	7.0	3.4	2.9	8.6	10.7	3.8	9.4	6.8
Definite employment plans (%) <sup>d</sup>											
Academe	25.2	D	17.5	D	39.1	D	26.3	26.2	D	D	25.0
In tenure track faculty position (%)	32.6	D	32.0	D	29.4	D	36.0	D	D	D	31.0
Not in tenure track position (%)	62.8	55.0	64.0	46.2	67.6	78.6	56.0	D	D	46.7	69.0
Government	8.3	D	7.7	D	19.5	D	D	D	D	D	14.7
Industry or business <sup>e</sup>	60.1	74.1	69.9	66.7	28.7	62.0	63.2	61.5	58.1	53.9	51.7
Nonprofit organization	4.2	3.5	4.2	D	8.0	D	D	D	D	0.0	6.0
Other or unknown <sup>f</sup>	2.2	2.8	0.7	0.0	4.6	4.0	2.1	0.0	3.2	2.6	2.6
Primary activity <sup>g</sup>											
Research and development	62.1	67.9	80.3	51.1	45.2	67.4	65.6	61.7	51.7	50.0	56.0
Teaching	13.4	D	3.6	14.9	25.0	D	13.3	D	D	29.7	16.5
Management or administration	3.5	D	D	D	9.5	D	D	D	D	D	D
Professional services and other	21.1	22.1	D	D	20.2	10.9	D	31.7	24.1	D	D
Secondary activity <sup>g</sup>											
Research and development	17.0	15.3	D	D	31.0	10.9	11.1	13.3	24.1	29.7	15.6
Teaching	6.1	D	D	D	7.1	D	D	D	D	D	8.3
Management or administration	20.1	19.8	8.0	21.3	28.6	17.4	26.7	11.7	37.9	20.3	23.9
Professional services and other	13.0	D	22.6	D	14.3	D	D	D	D	D	6.4
No secondary activity	43.9	50.4	48.9	51.1	19.0	43.5	53.3	53.3	17.2	35.1	45.9
Activity unknown	5.5	8.4	4.2	2.1	3.4	8.0	5.3	7.7	6.5	2.6	6.0
Postgraduation location (%) <sup>h</sup>											
United States <sup>i</sup>	93.0	93.7	91.9	93.7	90.6	91.5	93.2	94.0	94.0	96.6	91.5
Midwest	15.5	16.5	14.0	13.1	15.4	20.3	12.6	13.4	25.0	17.8	15.3

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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
Northeast	26.9	25.3	30.1	35.1	21.1	24.6	29.4	31.9	22.6	24.6	24.1
South	25.0	24.1	20.8	15.2	23.7	28.0	24.6	24.5	22.6	32.2	30.7
West	25.5	27.4	26.7	30.4	30.5	18.6	26.6	24.2	23.8	22.0	20.8
Outside the United States	6.8	6.3	8.1	5.8	9.4	7.6	6.5	6.0	6.0	3.4	8.5
Location unknown	0.1	0.0	0.0	0.5	0.0	0.8	0.3	0.0	0.0	0.0	0.0
Postgraduation location in same state as doctorate institution (%)	43.3	44.7	40.7	45.5	36.8	51.7	43.0	44.0	40.5	39.4	47.1
Female doctorate recipients reporting postgraduation status (number)	4,029	597	225	323	560	196	528	519	151	316	614
Definite postdoctoral training plans	45.0	44.1	28.4	44.3	47.0	44.9	49.2	48.0	46.4	42.4	45.3
Definite employment plans	23.9	22.1	48.0	25.1	27.0	19.9	22.2	16.6	22.5	22.2	23.8
Seeking employment or study	25.0	27.8	20.9	24.1	25.2	24.0	22.0	25.0	29.1	24.7	26.4
Other status <sup>a</sup>	5.8	5.9	2.2	6.2	0.9	11.2	6.3	10.2	1.3	10.8	4.1
Definite postdoctoral training plans (%) <sup>b</sup>											
Postdoc fellowship or research associateship	95.6	97.7	95.3	95.8	97.0	88.6	95.8	96.4	95.7	91.8	95.3
Other training or unknown <sup>c</sup>	4.4	2.3	4.7	4.2	3.0	11.4	4.2	3.6	4.3	8.2	4.7
Definite employment plans (%) <sup>d</sup>											
Academe	23.8	D	13.0	D	31.8	D	22.2	17.4	D	D	29.5
In tenure track faculty position (%)	28.4	D	35.7	D	12.5	D	23.1	D	D	D	32.6
Not in tenure track position (%)	69.0	50.0	64.3	74.1	85.4	85.7	76.9	D	D	35.3	62.8
Government	8.6	D	5.6	D	22.5	D	D	D	D	7.1	6.8
Industry or business <sup>e</sup>	57.7	67.4	74.1	54.3	31.1	74.4	59.0	69.8	70.6	61.4	48.6
Nonprofit organization	7.3	5.3	5.6	D	11.9	D	D	D	0.0	D	11.6
Other or unknown <sup>f</sup>	2.7	3.0	1.9	4.9	2.6	0.0	2.6	2.3	2.9	1.4	3.4
Primary activity <sup>g</sup>											
Research and development	55.3	61.4	71.4	38.3	53.1	55.3	56.8	46.3	51.6	57.4	53.9
Teaching	14.0	D	5.7	25.9	15.9	D	9.0	D	D	17.6	18.4
Management or administration	4.7	D	0.0	D	8.3	D	D	D	D	D	D
Professional services and other	25.9	18.9	22.9	D	22.8	D	D	37.5	32.3	D	D
Secondary activity <sup>g</sup>											
Research and development	16.9	14.2	D	D	21.4	D	15.3	21.3	D	17.6	14.2
Teaching	4.1	D	D	D	4.8	D	D	D	D	D	5.7
Management or administration	18.2	18.1	10.5	13.6	20.7	0.0	24.3	23.8	19.4	16.2	22.0
Professional services and other	9.9	D	18.1	D	17.9	D	D	D	D	D	5.0
No secondary activity	50.8	59.8	56.2	54.3	35.2	78.9	53.2	41.3	38.7	47.1	53.2
Activity unknown	3.8	3.8	2.8	0.0	4.0	2.6	5.1	7.0	8.8	2.9	3.4

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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
Postgraduation location (%) <sup>h</sup>											
United States <sup>i</sup>	94.2	93.9	93.0	94.2	92.5	95.3	96.8	95.8	95.2	94.1	92.2
Midwest	15.7	14.9	13.4	19.6	14.0	21.3	17.2	11.3	16.3	17.2	16.5
Northeast	25.2	27.8	33.7	26.3	21.3	23.6	22.0	33.7	17.3	21.1	22.9
South	27.6	26.3	21.5	23.7	25.8	22.8	31.6	23.9	42.3	32.4	30.2
West	25.0	24.1	24.4	24.1	31.2	27.6	24.9	25.7	18.3	22.5	22.2
Outside the United States	5.8	6.1	6.4	5.8	7.5	4.7	3.2	4.2	4.8	5.9	7.8
Location unknown	*	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Postgraduation location in same state as doctorate institution (%)	45.4	50.9	43.0	47.8	41.8	44.9	47.2	41.2	52.9	36.8	47.9

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

<sup>a</sup> 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.<sup>b</sup> Excludes doctorate recipients reporting plans for other full-time degree program. Percentages based on number of doctorate recipients reporting definite postdoctoral plans for study.<sup>c</sup> Other includes doctorate recipients who reported definite postdoctoral plans for traineeship, internship or clinical residency, or other study.<sup>d</sup> Percentages based on number of doctorate recipients reporting definite postgraduation plans for employment.<sup>e</sup> Includes doctorate recipients reporting self-employment.<sup>f</sup> Other is mainly composed of elementary and secondary schools.<sup>g</sup> Percentages based on number of doctorate recipients reporting definite postgraduation plans for employment and primary or secondary work activity.<sup>h</sup> Percentages based on number of doctorate recipients reporting definite postgraduation plans and type of plans.<sup>i</sup> Includes cases 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):**

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 the new broad, major, and detailed fields were used in tables reporting only the most recent data year. Therefore, the field of doctorate data in 2021 may not be comparable to prior years; see the "Technical Notes" for more information, table A-4 for a summary of SED-CIP codes in the new SED field taxonomy, table A-5 for a full list of SED-CIP codes in the new field taxonomy, and table A-6 for the SED-CIP code crosswalk to the historical field taxonomy.

**Source(s):**

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