

TABLE 8-4

Biological and biomedical sciences research doctorate recipients, statistical profile by sex and major field of doctorate: 2023

(Number, percent, and median years)

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
All doctorate recipients (number) ^a	9,724	1,509	735	907	761	1,144	477	1,092	1,200	409	821	669
Sex (%)												
Male	45.6	51.7	56.2	40.8	41.1	39.1	47.2	45.3	43.7	44.0	50.3	40.8
Female	54.4	48.2	43.8	59.2	58.9	60.9	52.8	54.7	56.3	56.0	49.7	59.2
Unknown	*	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Citizenship status (%)												
U.S. citizen or permanent resident	72.0	68.3	55.9	68.7	71.7	79.3	75.3	77.4	78.9	72.1	70.6	68.8
Temporary visa holder	24.2	28.2	41.0	23.8	23.9	18.7	21.0	19.6	18.2	22.7	24.1	28.4
Unknown	3.8	3.4	3.1	7.5	4.3	2.0	3.8	3.0	2.9	5.1	5.2	2.8
Marital status (%)												
Never married	42.8	46.1	47.9	39.1	45.2	38.2	43.6	42.0	44.1	45.2	40.9	39.8
Married	33.9	33.1	33.5	30.4	34.0	37.9	34.2	35.7	31.3	30.3	36.1	34.8
Marriage-like relationship	12.5	10.5	9.8	10.8	12.2	15.6	12.2	14.4	14.9	11.0	11.3	12.6
Separated, divorced, widowed	1.9	1.6	1.8	2.0	1.4	2.4	1.9	1.4	2.0	2.0	2.3	1.9
Unknown	8.9	8.7	7.1	17.6	7.1	5.9	8.2	6.5	7.7	11.5	9.4	10.9
Has dependent age 18 or younger (%)	13.3	11.7	14.2	12.6	11.9	16.4	14.8	12.5	10.5	14.2	16.4	14.3
Has one or more functional limitations (%)	14.9	15.7	13.6	14.7	12.6	15.9	15.4	15.8	15.2	12.2	13.3	17.0
Age at doctorate (median years)	30.4	29.8	30.2	30.7	30.3	31.7	30.2	30.2	30.2	30.3	30.5	31.0
Bachelor's in same field as doctorate (%) ^b	64.2	61.6	39.2	71.0	81.4	58.2	75.1	80.2	61.6	60.9	56.4	61.4
Master's earned (%)	44.6	36.1	62.4	42.0	34.7	66.2	34.5	33.7	36.4	46.7	50.4	53.2
Master's earned at same doctorate institution (%)	38.5	41.3	43.3	40.1	34.4	35.6	36.1	34.1	50.4	44.1	33.2	29.6
Time to doctorate (median years)												
Years since earning bachelor's degree	7.8	7.2	7.8	8.0	7.8	9.0	7.6	7.6	7.6	7.6	7.9	8.0
From graduate school start	6.4	6.2	6.7	6.5	6.3	7.3	6.4	6.1	6.3	6.3	6.6	6.8
From doctoral program start ^c	5.8	5.8	5.3	5.8	5.8	5.7	5.8	5.5	5.8	5.3	5.3	5.6
Received tuition remission (%)	90.4	92.2	90.0	91.8	90.4	87.1	87.3	90.8	92.1	91.6	91.5	87.0
Male doctorate recipients (number)	4,433	780	413	370	313	447	225	495	524	180	413	273
Citizenship status (%)												
U.S. citizen or permanent resident	70.2	67.1	56.4	66.8	71.2	77.6	75.6	76.4	75.2	73.9	69.2	64.5
Temporary visa holder	25.7	29.2	40.7	25.7	22.4	20.6	19.6	21.2	21.4	19.4	24.9	32.2
Unknown	4.1	3.7	2.9	7.6	6.4	1.8	4.9	2.4	3.4	6.7	5.8	3.3
Marital status (%)												
Never married	44.1	47.6	49.6	41.1	D	38.0	D	43.8	45.0	43.3	38.7	D
Married	33.2	31.9	31.5	28.4	27.8	39.6	29.3	37.6	30.3	34.4	37.8	34.4
Marriage-like relationship	11.8	10.3	9.9	10.8	13.1	14.3	13.8	12.1	13.7	9.4	11.1	11.4
Separated, divorced, widowed	1.6	1.4	1.7	1.6	D	2.7	D	1.0	1.7	0.0	1.9	D

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(Number, percent, and median years)

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
Unknown	9.3	8.8	7.3	18.1	9.9	5.4	8.9	5.5	9.2	12.8	10.4	11.7
Has dependent age 18 or younger (%)	14.2	12.5	12.5	12.5	12.5	17.1	13.6	12.8	10.9	17.8	20.0	18.8
Has one or more functional limitations (%)	13.3	13.8	12.9	11.9	11.2	13.2	13.9	14.2	13.0	13.5	13.7	14.4
Age at doctorate (median years)	30.8	30.3	30.5	31.0	30.8	32.0	30.6	30.3	30.8	30.3	31.1	31.6
Bachelor's in same field as doctorate (%) ^b	62.3	59.5	41.0	71.7	80.0	62.3	71.4	79.0	56.0	60.2	52.7	60.1
Master's earned (%)	45.0	36.0	60.1	43.6	33.9	64.2	33.8	33.2	38.9	48.8	55.9	53.8
Master's earned at same doctorate institution (%)	36.5	40.1	40.6	35.1	33.7	33.8	35.2	31.9	44.3	42.0	33.3	27.9
Time to doctorate (median years)												
Years since earning bachelor's degree	8.0	7.5	8.0	8.3	8.0	9.0	8.0	7.6	8.0	7.6	8.0	8.4
From graduate school start	6.7	6.3	6.8	6.8	6.8	7.8	6.6	6.1	6.7	6.0	6.7	6.8
From doctoral program start ^c	5.8	5.8	5.3	5.8	5.8	5.8	6.0	5.5	5.8	5.3	5.3	5.6
Received tuition remission (%)	90.5	91.6	88.9	93.1	90.1	88.3	88.9	91.2	93.1	90.1	92.5	83.5
Female doctorate recipients (number)	5,290	728	322	537	448	697	252	597	676	229	408	396
Citizenship status (%)												
U.S. citizen or permanent resident	73.6	69.6	55.3	70.0	72.1	80.3	75.0	78.2	81.8	70.7	72.1	71.7
Temporary visa holder	22.9	27.2	41.3	22.5	25.0	17.5	22.2	18.3	15.7	25.3	23.3	25.8
Unknown	3.5	3.2	3.4	7.4	2.9	2.2	2.8	3.5	2.5	3.9	4.7	2.5
Marital status (%)												
Never married	41.8	44.5	45.7	37.8	D	38.3	D	40.5	43.3	46.7	43.1	D
Married	34.5	31.8	36.0	31.8	38.4	36.9	38.5	34.2	32.1	27.1	34.3	35.1
Marriage-like relationship	13.1	10.9	9.6	10.8	11.6	16.4	10.7	16.2	15.8	12.2	11.5	13.4
Separated, divorced, widowed	2.1	1.8	1.9	2.2	D	2.2	D	1.7	2.2	3.5	2.7	D
Unknown	8.5	8.5	6.8	17.3	5.1	6.3	7.5	7.4	6.5	10.5	8.3	10.4
Has dependent age 18 or younger (%)	12.6	10.6	16.3	12.6	11.5	16.0	15.9	12.2	10.2	11.3	12.8	11.2
Has one or more functional limitations (%)	16.3	17.8	14.6	16.5	13.5	17.7	16.8	17.1	16.9	11.3	12.9	18.8
Age at doctorate (median years)	30.1	29.4	29.6	30.3	30.0	31.4	29.8	30.2	29.8	30.1	30.1	30.4
Bachelor's in same field as doctorate (%) ^b	65.7	63.9	36.9	70.6	82.4	55.6	78.2	81.2	65.8	61.5	60.0	62.4
Master's earned (%)	44.3	36.1	65.4	40.9	35.2	67.6	35.1	34.2	34.5	45.1	44.9	52.7
Master's earned at same doctorate institution (%)	40.1	42.5	46.5	43.8	34.9	36.7	36.9	35.9	55.7	45.8	32.9	30.7
Time to doctorate (median years)												
Years since earning bachelor's degree	7.6	7.0	7.3	7.8	7.5	9.0	7.3	7.7	7.4	7.6	7.6	7.7
From graduate school start	6.3	6.0	6.3	6.3	6.3	7.3	6.3	6.2	6.2	6.3	6.3	6.6
From doctoral program start ^c	5.7	5.8	5.3	5.6	5.8	5.7	5.7	5.5	5.8	5.3	5.3	5.5
Received tuition remission (%)	90.3	92.9	91.4	90.9	90.7	86.3	86.0	90.4	91.4	92.7	90.4	89.4

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

^a All doctorate recipients includes doctorate recipients who did not report sex.

^b A bachelor's and doctoral degree are considered to be in the same field if doctorate recipient's first or most recent bachelor's degree is in the same broad field as their doctoral degree.

^c Time to doctorate from doctoral program start is based on master's degree entry if the master's degree was at the same doctoral institution in the same field of study or was a prerequisite to the doctorate; otherwise, it is based on doctoral program entry.

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 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.