

Table 9-1

Science and engineering research doctorate recipients, postgraduation plans by sex and broad field of doctorate: 2022

(Number and percent)

Characteristic	All fields	Science and engineering											
		Total	Agricultural sciences and natural resources	Biological and biomedical sciences	Computer and information sciences	Engineering	Geosciences, atmospheric, and ocean sciences	Health sciences	Mathematics and statistics	Multidisciplinary/ interdisciplinary sciences	Physical sciences	Psychology	Social sciences
Doctorate recipients reporting postgraduation status (number)	52,232	41,921	1,193	8,807	1,977	9,776	1,078	2,502	1,952	1,592	5,012	3,357	4,675
Definite postdoctoral training plans	28.1	32.3	33.6	42.3	16.4	24.0	49.6	22.1	36.7	23.7	37.5	47.7	22.8
Definite employment plans	44.9	41.5	37.6	28.4	62.7	48.4	26.0	51.6	39.4	52.4	36.2	32.4	51.3
Seeking employment or study	23.5	22.8	26.9	22.2	18.6	25.5	22.4	22.5	21.8	21.7	23.9	16.7	23.2
Other status ^a	3.4	3.3	1.9	6.8	2.3	2.0	2.0	3.7	1.9	2.2	2.3	3.0	2.5
Definite postdoctoral training plans (%) ^b													
Postdoc fellowship or research associateship	95.1	95.0	98.3	94.5	98.1	96.3	98.5	88.3	98.0	96.8	98.0	86.9	97.6
Other training or unknown ^c	4.9	5.0	1.7	5.5	1.9	3.7	1.5	11.7	2.0	3.2	2.0	13.1	2.4
Definite employment plans (%) ^d													
Academe	34.7	25.3	30.6	20.5	20.9	13.6	23.2	45.4	29.9	24.0	11.2	36.6	48.6
In tenure track faculty position (%)	43.5	43.4	36.5	26.8	64.1	46.2	29.2	41.9	34.3	50.5	26.1	37.7	52.5
Not in tenure track position (%)	53.6	53.2	60.6	70.6	33.2	48.7	66.2	52.3	64.3	45.5	67.5	60.1	45.5
Government	7.0	7.8	14.3	6.5	3.5	6.9	25.4	8.9	3.8	4.8	4.0	10.5	13.6
Industry or business ^e	46.0	58.0	45.5	64.5	71.0	74.9	42.9	28.5	60.0	62.4	79.7	32.4	24.4
Nonprofit organization	6.5	5.9	6.7	6.7	2.6	2.9	5.7	13.1	3.4	5.3	3.3	10.7	9.6
Other or unknown ^f	5.8	2.9	2.9	1.8	2.0	1.7	2.9	4.1	3.0	3.6	1.9	9.8	3.8
Primary activity ^g													
Research and development	46.7	56.2	56.8	60.7	70.9	62.9	50.5	32.5	51.0	64.5	70.5	29.3	43.6
Teaching	23.2	15.4	16.4	9.8	11.7	7.2	D	32.0	D	13.5	9.3	22.7	28.8
Management or administration	9.0	5.1	8.1	5.1	2.0	2.6	D	12.2	D	5.0	1.6	8.6	9.4
Professional services and other	21.0	23.4	18.7	24.4	15.3	27.2	28.2	23.3	23.2	17.0	18.6	39.3	18.2
Secondary activity ^g													
Research and development	23.2	20.6	22.4	14.8	18.8	18.3	27.5	30.6	26.5	17.6	12.7	24.9	28.8
Teaching	12.0	8.8	10.6	5.2	10.2	5.5	7.7	13.5	6.0	9.5	2.0	13.6	19.1
Management or administration	12.7	13.2	21.0	18.8	7.0	12.2	11.4	14.7	6.2	10.6	15.0	14.6	11.8
Professional services and other	12.7	14.3	11.5	9.8	16.1	19.6	12.5	11.8	16.3	16.8	12.3	11.5	10.9
No secondary activity	39.4	43.1	34.4	51.3	48.0	44.4	41.0	29.3	45.0	45.4	58.1	35.5	29.4
Activity unknown	4.2	4.1	3.3	4.4	3.1	4.2	2.5	5.0	4.3	4.2	3.9	5.2	3.5
Postgraduation location (%) ^h													
United States ⁱ	91.1	91.4	88.6	94.4	91.2	91.8	91.0	93.0	85.1	90.3	91.3	96.9	84.0
Midwest	15.3	14.5	23.8	14.4	9.1	14.1	7.2	18.0	14.4	11.5	14.4	18.9	13.2
Northeast	21.6	22.5	10.7	28.7	19.9	18.5	18.4	23.2	24.4	21.6	24.2	23.3	21.2
South	26.4	24.3	30.5	23.9	17.6	22.8	27.5	33.9	20.6	22.0	19.2	29.6	27.7
West	27.2	29.6	23.3	27.0	44.1	35.8	37.2	17.3	25.1	34.5	32.9	24.6	21.5

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(Number and percent)

Characteristic	All fields	Science and engineering											
		Total	Agricultural sciences and natural resources	Biological and biomedical sciences	Computer and information sciences	Engineering	Geosciences, atmospheric, and ocean sciences	Health sciences	Mathematics and statistics	Multidisciplinary/ interdisciplinary sciences	Physical sciences	Psychology	Social sciences
Outside the United States	8.8	8.5	11.3	5.5	8.7	8.0	9.0	6.9	14.7	9.3	8.6	3.1	15.9
Location unknown	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.3	0.1	0.1	0.1
Postgraduation location in same state as doctorate institution (%)	38.1	36.8	44.3	43.9	31.6	36.8	38.4	45.9	23.4	36.7	31.3	35.3	31.8
Male doctorate recipients reporting postgraduation status (number)	27,771	23,503	578	4,095	1,503	7,128	582	772	1,388	1,014	3,379	851	2,213
Definite postdoctoral training plans	28.2	31.3	38.4	43.0	16.0	23.9	52.2	26.3	38.5	21.8	38.9	43.4	21.9
Definite employment plans	45.4	43.0	35.1	27.6	63.8	49.1	25.9	48.3	37.2	55.5	35.8	35.4	53.7
Seeking employment or study	23.1	22.5	24.9	21.6	18.1	24.9	20.1	21.5	22.3	20.5	23.3	17.7	22.0
Other status ^a	3.1	3.1	1.6	7.4	2.1	2.0	1.7	3.9	1.7	2.2	2.0	3.5	2.3
Definite postdoctoral training plans (%) ^b													
Postdoc fellowship or research associateship	95.3	95.3	98.2	94.0	97.5	96.3	98.0	80.3	98.1	97.7	97.7	82.9	97.5
Other training or unknown ^c	4.7	4.7	1.8	6.0	2.5	3.7	2.0	19.7	1.9	2.3	2.3	17.1	2.5
Definite employment plans (%) ^d													
Academe	29.1	21.0	31.5	20.7	18.1	12.9	23.2	37.3	29.0	19.4	10.1	34.2	45.2
In tenure track faculty position (%)	46.6	46.9	51.6	31.2	64.9	47.2	34.3	51.1	27.3	53.2	25.4	38.8	57.4
Not in tenure track position (%)	50.6	49.8	45.3	67.1	33.3	47.2	62.9	44.6	70.7	42.2	68.0	58.3	40.7
Government	7.0	7.4	9.4	D	3.2	7.0	D	8.6	4.1	4.6	3.9	11.0	15.6
Industry or business ^e	54.5	65.1	51.2	64.7	75.0	76.1	47.7	39.4	60.9	68.7	81.0	38.9	27.9
Nonprofit organization	5.2	4.1	5.4	D	2.3	2.4	D	9.4	2.7	4.4	3.1	8.0	7.8
Other or unknown ^f	4.3	2.4	2.5	1.9	1.4	1.6	4.6	5.4	3.3	2.8	2.0	8.0	3.4
Primary activity ^g													
Research and development	53.4	61.5	56.7	63.8	73.1	64.3	54.8	43.6	51.0	69.1	72.2	30.8	46.1
Teaching	19.1	12.4	18.0	10.5	9.7	6.6	D	25.2	D	10.0	7.6	23.3	25.9
Management or administration	6.6	3.7	7.2	4.5	1.8	2.8	D	11.2	D	4.4	1.5	6.5	7.2
Professional services and other	20.8	22.4	18.0	21.2	15.4	26.3	26.7	20.1	23.2	16.5	18.6	39.4	20.8
Secondary activity ^g													
Research and development	21.9	19.3	25.3	15.4	17.0	18.1	26.0	28.4	24.6	15.7	12.7	31.2	26.8
Teaching	10.8	7.9	10.3	5.5	9.2	5.4	8.2	13.2	5.5	9.1	2.1	13.6	19.6
Management or administration	12.5	12.8	22.7	19.1	7.7	12.0	12.3	14.0	7.7	10.0	16.0	15.1	11.5
Professional services and other	14.4	16.2	9.3	11.2	15.9	20.5	15.1	14.0	16.9	18.9	14.0	14.0	11.5
No secondary activity	40.5	43.8	32.5	48.9	50.2	44.0	38.4	30.4	45.3	46.3	55.3	26.2	30.6
Activity unknown	4.5	4.4	4.4	4.7	2.9	4.5	3.3	6.4	4.8	4.1	4.6	7.3	3.7
Postgraduation location (%) ^h													
United States ⁱ	89.8	90.1	88.5	94.1	91.4	91.1	90.1	91.0	83.8	90.6	90.4	96.3	80.5
Midwest	14.6	14.0	25.4	14.4	8.8	14.5	7.5	17.2	14.5	11.6	14.0	20.3	11.6

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Characteristic	All fields	Science and engineering											
		Total	Agricultural sciences and natural resources	Biological and biomedical sciences	Computer and information sciences	Engineering	Geosciences, atmospheric, and ocean sciences	Health sciences	Mathematics and statistics	Multidisciplinary/ interdisciplinary sciences	Physical sciences	Psychology	Social sciences
Northeast	20.8	21.5	11.5	28.4	19.6	17.6	18.0	23.4	24.1	21.9	23.5	22.7	20.3
South	24.6	22.9	30.1	23.7	17.7	23.0	26.8	28.6	20.1	19.5	18.9	27.0	27.5
West	29.2	31.3	20.9	27.0	45.0	35.6	37.1	21.2	24.6	37.0	33.5	25.7	20.6
Outside the United States	10.1	9.7	11.3	5.7	8.4	8.8	9.9	8.9	16.0	9.2	9.5	3.7	19.5
Location unknown	0.1	0.1	0.2	0.1	0.2	0.2	0.0	0.2	0.2	0.3	0.1	0.0	0.1
Postgraduation location in same state as doctorate institution (%)	36.0	35.4	45.2	43.1	31.9	36.9	38.2	42.0	22.9	36.4	31.7	34.3	28.3
Female doctorate recipients reporting postgraduation status (number)	24,456	18,417	615	4,712	474	2,648	496	1,730	564	578	1,633	2,506	2,461
Definite postdoctoral training plans	28.0	33.5	29.1	41.7	17.7	24.4	46.6	20.3	32.3	27.0	34.7	49.2	23.7
Definite employment plans	44.4	39.6	39.8	29.2	59.3	46.3	26.0	53.1	44.9	46.9	37.1	31.3	49.2
Seeking employment or study	23.8	23.1	28.8	22.7	20.0	27.1	25.0	22.9	20.4	23.7	25.2	16.4	24.3
Other status ^a	3.6	3.6	2.3	6.2	2.7	2.1	2.4	3.6	2.5	2.2	2.9	2.9	2.7
Definite postdoctoral training plans (%) ^b													
Postdoc fellowship or research associateship	94.8	94.6	98.3	95.0	100.0	96.1	99.1	92.9	97.8	95.5	98.8	88.1	97.6
Other training or unknown ^c	5.2	5.4	1.7	5.0	0.0	3.9	0.9	7.1	2.2	4.5	1.2	11.9	2.4
Definite employment plans (%) ^d													
Academe	41.1	31.3	29.8	20.4	30.2	15.7	23.3	48.7	31.6	33.6	13.4	37.6	51.9
In tenure track faculty position (%)	41.0	40.2	23.3	23.2	62.4	43.8	23.3	39.1	47.5	47.3	27.2	37.3	48.2
Not in tenure track position (%)	56.0	56.3	74.0	73.6	32.9	52.1	70.0	54.7	52.5	49.5	66.7	60.7	49.7
Government	7.1	8.5	18.4	D	4.3	6.6	D	9.0	3.2	5.2	4.1	10.3	11.7
Industry or business ^e	36.1	48.3	40.8	64.4	57.7	71.5	37.2	24.0	58.1	49.1	77.1	29.9	20.9
Nonprofit organization	8.1	8.3	7.8	D	3.6	4.3	D	14.6	4.7	7.0	3.6	11.7	11.4
Other or unknown ^f	7.6	3.6	3.3	1.7	4.3	1.9	0.8	3.6	2.4	5.2	1.8	10.4	4.1
Primary activity ^g													
Research and development	38.9	48.9	56.9	58.1	63.3	59.1	45.7	28.1	51.0	54.8	67.1	28.8	41.1
Teaching	28.0	19.4	15.1	9.2	18.9	8.9	D	34.7	D	20.8	12.7	22.5	31.7
Management or administration	11.8	6.9	8.8	5.7	2.6	2.0	D	12.6	D	6.2	1.9	9.5	11.5
Professional services and other	21.3	24.8	19.2	27.0	15.2	30.0	29.9	24.6	23.3	18.1	18.4	39.3	15.7
Secondary activity ^g													
Research and development	24.6	22.4	20.1	14.4	25.2	19.0	29.1	31.5	30.2	21.6	12.7	22.5	30.7
Teaching	13.5	10.0	10.9	5.0	13.3	5.7	7.1	13.7	6.9	10.4	1.9	13.6	18.6
Management or administration	13.0	13.7	19.7	18.7	4.4	12.6	10.2	15.0	3.3	12.0	13.2	14.4	12.1
Professional services and other	10.7	11.7	13.4	8.7	16.7	17.1	9.4	10.9	15.1	12.4	9.0	10.5	10.4
No secondary activity	38.2	42.2	36.0	53.2	40.4	45.5	44.1	28.9	44.5	43.6	63.3	39.0	28.2
Activity unknown	3.9	3.7	2.4	4.2	3.9	3.4	1.6	4.4	3.2	4.4	2.3	4.3	3.4

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Characteristic	All fields	Science and engineering																
		Total	Agricultural sciences and natural resources	Biological and biomedical sciences	Computer and information sciences	Engineering	Geosciences, atmospheric, and ocean sciences	Health sciences	Mathematics and statistics	Multidisciplinary/ interdisciplinary sciences	Physical sciences	Psychology	Social sciences					
Postgraduation location (%) ^h																		
United States ⁱ	92.6	93.0	88.7	94.6	90.4	94.0	92.2	93.9	88.0	89.9	93.1	97.1	87.4					
Midwest	16.1	15.2	22.2	14.4	10.1	13.2	6.9	18.4	14.3	11.2	15.3	18.4	14.7					
Northeast	22.6	23.9	9.9	29.0	20.8	21.1	18.9	23.1	25.3	21.1	25.7	23.5	22.1					
South	28.5	26.2	30.9	24.0	17.3	22.4	28.3	36.2	21.8	26.7	19.8	30.5	27.9					
West	24.9	27.3	25.7	26.9	41.1	36.6	37.2	15.6	26.2	30.0	31.6	24.3	22.4					
Outside the United States	7.3	6.9	11.3	5.3	9.6	5.9	7.8	6.0	11.7	9.6	6.8	2.8	12.5					
Location unknown	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.2	0.5	0.1	0.1	0.1					
Postgraduation location in same state as doctorate institution (%)	40.5	38.4	43.4	44.5	31.0	36.4	38.6	47.7	24.4	37.2	30.5	35.6	35.1					

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.