

Table 65

Statistical profile of postgraduation plans of doctorate recipients in engineering fields, by sex and field of doctorate: 2019

(Number and percent)

Characteristic	All engineering fields	Aerospace, aeronautical, and astronautical engineering	Bioengineering and biomedical engineering	Chemical engineering	Civil engineering	Electrical, electronics, and communications engineering	Industrial and manufacturing engineering	Materials science engineering	Mechanical engineering	Other engineering
All doctorate recipients (number) ^a	10,303	379	1,164	981	701	1,799	234	992	1,533	2,520
Postgraduation status (number) ^b										
Definite postgraduation study	2,170	67	365	224	131	241	28	265	371	478
Definite employment	4,149	188	283	372	266	901	127	317	560	1,135
Seeking employment or study	2,893	78	380	299	204	463	50	313	433	673
Other ^c	233	7	56	18	17	42	4	10	28	51
Definite postgraduation study (%) ^d										
Postdoc fellowship or research associateship	95.3	98.5	95.1	96.9	94.7	95.9	92.9	97.4	96.2	92.5
Other or unknown ^e	4.7	1.5	4.9	3.1	5.3	4.1	7.1	2.6	3.8	7.5
Definite employment (%) ^f										
Academe	16.7	16.5	15.2	8.3	28.6	11.5	26.0	6.6	17.9	22.3
Government	8.3	18.6	2.1	2.2	12.0	6.1	7.9	7.6	12.5	9.1
Industry or business ^g	69.6	53.2	76.7	86.0	54.9	76.4	58.3	81.1	65.4	63.3
Nonprofit organization	3.2	8.5	3.9	D	D	3.7	4.7	3.2	2.9	2.6
Other or unknown ^h	2.3	3.2	2.1	D	D	2.3	3.1	1.6	1.4	2.7
Primary activity ⁱ										
R&D	71.4	80.5	61.7	79.3	36.5	83.1	57.0	81.2	75.4	65.7
Teaching	10.0	5.9	6.2	5.1	22.5	7.7	14.9	4.4	11.5	12.6
Management or administration	3.9	4.7	5.5	2.3	6.4	1.6	9.1	2.7	2.5	5.6
Professional services	13.7	7.7	24.1	13.3	32.9	7.1	17.4	11.1	10.1	15.0
Other	0.9	1.2	2.6	0.0	1.6	0.6	1.7	0.7	0.6	1.1

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Secondary activity ^j										
R&D	13.1	10.7	12.4	9.3	25.3	9.0	15.7	7.4	13.4	16.6
Teaching	6.8	D	3.6	4.0	10.8	D	19.8	1.7	7.1	10.7
Management or administration	12.6	18.9	21.2	13.9	10.0	8.2	11.6	20.5	14.9	10.1
Professional services	4.9	D	4.0	5.1	6.8	D	7.4	5.0	4.6	6.3
Other	0.6	0.0	0.0	0.8	0.4	0.5	1.7	1.7	0.0	0.6
No secondary activity	61.9	64.5	58.8	66.9	46.6	75.8	43.8	63.8	60.1	55.6
Activity unknown	5.2	10.1	3.2	5.1	6.4	4.3	4.7	6.0	6.4	4.7
Postgraduation location (%) ^k										
United States ^l	89.0	91.4	92.6	89.6	81.9	90.5	89.0	91.8	89.3	86.4
New England	8.0	6.3	14.4	9.2	3.0	6.7	3.2	7.0	8.8	7.9
Middle Atlantic	9.2	4.7	13.1	10.9	10.3	8.4	11.6	9.5	6.8	8.9
East North Central	11.3	12.9	9.0	13.3	11.6	9.9	17.4	11.3	17.1	8.2
West North Central	3.4	2.0	4.0	D	5.3	2.0	D	3.6	2.9	3.7
South Atlantic	12.6	20.4	15.4	8.7	10.8	7.5	21.9	13.4	13.3	14.0
East South Central	2.7	3.5	2.2	2.5	3.5	1.3	8.4	2.7	2.6	3.0
West South Central	7.7	5.5	6.6	9.7	8.6	7.5	7.7	5.0	7.9	8.6
Mountain	6.9	10.2	2.9	D	7.6	7.1	D	8.2	7.5	6.8
Pacific and insular	26.4	25.1	24.5	22.0	19.9	39.1	11.6	30.2	21.3	24.8
Not in United States	10.9	8.2	7.4	10.1	17.6	9.2	11.0	7.9	10.6	13.6
Location unknown	0.2	0.4	0.0	0.3	0.5	0.4	0.0	0.3	0.1	0.0
Male doctorate recipients (number)	7,833	323	720	665	542	1,501	172	701	1,283	1,926
Postgraduation status (number) ^b										
Definite postgraduation study	1,643	58	235	169	100	206	23	194	309	349

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Characteristic	All engineering fields	Aerospace, aeronautical, and astronautical engineering	Bioengineering and biomedical engineering	Chemical engineering	Civil engineering	Electrical, electronics, and communications engineering	Industrial and manufacturing engineering	Materials science engineering	Mechanical engineering	Other engineering
Definite employment	3,252	159	181	244	207	776	92	211	477	905
Seeking employment or study	2,133	68	226	197	155	372	36	227	358	494
Other ^c	172	6	34	12	15	31	2	7	27	38
Definite postgraduation study (%) ^d										
Postdoc fellowship or research associateship	95.6	98.3	94.0	98.2	D	96.1	D	97.4	97.1	92.8
Other or unknown ^e	4.4	1.7	6.0	1.8	D	3.9	D	2.6	2.9	7.2
Definite employment (%) ^f										
Academe	15.6	15.1	13.8	7.4	29.5	11.2	21.7	4.7	17.4	19.9
Government	8.6	D	D	D	11.1	6.3	D	8.1	11.7	9.4
Industry or business ^g	70.4	52.2	77.9	87.3	54.6	76.5	63.0	82.5	67.3	65.6
Nonprofit organization	3.0	D	D	2.0	D	3.5	D	2.4	2.1	2.4
Other or unknown ^h	2.3	3.8	1.7	D	D	2.4	4.3	2.4	1.5	2.7
Primary activity ⁱ										
R&D	72.7	80.9	66.3	80.4	37.8	83.5	60.9	85.0	74.8	66.4
Teaching	9.9	D	5.7	3.9	23.3	7.5	11.5	D	11.9	12.6
Management or administration	4.0	5.7	5.7	D	8.3	D	D	D	D	5.8
Professional services	12.6	D	20.0	D	29.5	D	17.2	9.5	10.4	14.1
Other	0.8	1.4	2.3	0.0	1.0	0.4	D	0.5	D	1.0
Secondary activity ^j										
R&D	13.3	D	14.3	D	25.9	9.0	13.8	7.0	14.2	16.7
Teaching	6.5	D	D	D	11.4	3.5	21.8	D	6.8	9.3

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Management or administration	13.1	D	21.7	13.0	D	8.7	D	22.0	15.8	11.0
Professional services	5.2	D	D	5.7	D	3.2	D	D	4.3	6.9
Other	0.5	0.0	0.0	0.4	0.5	0.5	0.0	2.5	0.0	0.5
No secondary activity	61.4	63.1	55.4	68.3	44.6	75.0	44.8	60.5	59.0	55.7
Activity unknown	5.5	11.3	3.3	5.7	6.8	4.1	5.4	5.2	6.9	5.2
Postgraduation location (%) ^k										
United States ^l	88.1	D	92.3	88.1	80.5	89.7	D	91.1	88.7	85.3
New England	7.7	D	13.9	9.4	D	7.2	D	5.2	9.2	7.2
Middle Atlantic	8.5	5.5	11.8	9.2	10.1	8.7	8.7	8.6	6.4	8.5
East North Central	11.3	D	D	11.9	10.7	10.1	19.1	12.8	17.4	8.1
West North Central	3.6	D	4.6	5.1	D	D	D	4.0	D	4.2
South Atlantic	12.2	19.8	16.8	8.7	9.4	7.4	18.3	13.6	13.7	12.8
East South Central	2.7	D	D	D	2.9	D	11.3	2.2	2.4	3.0
West South Central	7.7	D	7.2	9.2	8.5	7.2	D	5.4	7.6	8.7
Mountain	7.1	D	2.6	D	7.8	D	D	8.4	7.9	6.5
Pacific and insular	26.5	24.4	24.5	22.3	20.2	37.8	D	30.1	D	25.9
Not in United States	11.8	D	7.7	11.4	19.2	10.1	D	8.4	11.2	14.7
Location unknown	0.2	0.0	0.0	0.5	0.3	0.2	0.0	0.5	0.1	0.0
Female doctorate recipients (number)	2,468	56	444	316	159	297	62	290	250	594
Postgraduation status (number) ^b										
Definite postgraduation study	527	9	130	55	31	35	5	71	62	129

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Definite employment	897	29	102	128	59	125	35	106	83	230
Seeking employment or study	760	10	154	102	49	91	14	86	75	179
Other ^c	61	1	22	6	2	11	2	3	1	13
Definite postgraduation study (%) ^d										
Postdoc fellowship or research associateship	94.3	100.0	96.9	92.7	D	94.3	D	97.2	91.9	91.5
Other or unknown ^e	5.7	0.0	3.1	7.3	D	5.7	D	2.8	8.1	8.5
Definite employment (%) ^f										
Academe	20.5	24.1	17.6	10.2	25.4	13.6	37.1	10.4	20.5	31.7
Government	7.0	D	D	D	15.3	4.8	D	6.6	16.9	7.8
Industry or business ^g	66.4	58.6	74.5	83.6	55.9	75.2	45.7	78.3	54.2	54.3
Nonprofit organization	3.9	D	D	D	D	4.8	D	4.7	7.2	3.0
Other or unknown ^h	2.1	0.0	2.9	D	D	1.6	0.0	0.0	1.2	3.0
Primary activity ⁱ										
R&D	66.9	78.6	53.5	77.2	32.1	80.5	47.1	73.5	78.8	62.9
Teaching	10.3	D	7.1	7.3	19.6	8.5	23.5	D	8.8	12.5
Management or administration	3.6	0.0	5.1	D	0.0	D	D	D	D	4.9
Professional services	17.7	D	31.3	D	44.6	D	17.6	14.3	8.8	18.3
Other	1.5	0.0	3.0	0.0	3.6	1.7	D	1.0	D	1.3
Secondary activity ^j										
R&D	12.7	D	9.1	D	23.2	9.3	20.6	8.2	8.8	16.5
Teaching	7.7	D	D	D	8.9	D	14.7	D	8.8	16.1

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Management or administration	11.2	D	20.2	15.4	D	5.1	D	17.3	10.0	6.7
Professional services	4.0	D	D	4.1	D	D	D	D	6.3	4.0
Other	0.8	0.0	0.0	1.6	0.0	0.0	5.9	0.0	0.0	1.3
No secondary activity	63.7	71.4	64.6	64.2	53.6	80.5	41.2	70.4	66.3	55.4
Activity unknown	4.1	3.4	2.9	3.9	5.1	5.6	2.9	7.5	3.6	2.6
Postgraduation location (%) ^k										
United States ^l	92.0	D	93.1	92.9	86.7	95.0	D	93.2	92.4	90.0
New England	9.1	D	15.1	8.7	D	3.8	D	11.3	6.9	10.3
Middle Atlantic	11.4	0.0	15.5	14.8	11.1	6.9	20.0	11.3	9.0	10.6
East North Central	11.2	D	D	16.4	14.4	8.8	12.5	7.9	15.2	8.6
West North Central	2.5	D	3.0	D	D	D	D	2.8	D	1.9
South Atlantic	14.0	23.7	12.9	8.7	15.6	8.1	32.5	13.0	11.0	18.1
East South Central	2.6	D	D	D	5.6	D	0.0	4.0	3.4	3.1
West South Central	7.9	D	5.6	10.9	8.9	9.4	D	4.0	9.7	8.4
Mountain	6.5	D	3.4	7.7	6.7	D	0.0	7.9	5.5	7.8
Pacific and insular	26.3	28.9	24.6	21.3	18.9	46.9	D	30.5	D	20.9
Not in United States	7.7	D	6.9	7.1	12.2	3.8	D	6.8	7.6	10.0
Location unknown	0.3	2.6	0.0	0.0	1.1	1.3	0.0	0.0	0.0	0.0

D = suppressed to avoid disclosure of confidential information.

^a Includes respondents who did not report sex.^b Includes only respondents who reported postgraduation status.^c Includes respondents who indicated that they did not plan to work or study, respondents who indicated some other type of postgraduation plans, and respondents who indicated definite plans for other full-time degree program.^d Excludes respondents who indicated plans for other full-time degree program. Percentages based on number of doctorate recipients reporting definite postgraduation plans for study.

^e Other includes respondents who indicated definite postgraduation study plans for traineeship, internship or clinical residency, or other study.

^f Percentages based on number of doctorate recipients reporting definite postgraduation plans for employment.

^g Includes doctorate recipients who indicated self-employment.

^h Other is mainly composed of elementary and secondary schools.

ⁱ Percentages based on number of doctorate recipients reporting definite postgraduation plans for employment and primary work activity.

^j Percentages based on number of doctorate recipients reporting definite postgraduation plans for employment and secondary work activity.

^k Percentages based on number of doctorate recipients reporting definite postgraduation plans and type of plans.

^l Includes cases with an unknown U.S. region of employment after doctorate; see technical notes for states or territories included in regions.

Note(s):

Due to rounding, percentages may not sum to 100. See table A-6 in the technical notes for a listing of major fields and their constituent subfields.

Source(s):

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