

TABLE 8-6

Engineering research doctorate recipients, statistical profile by sex and major field of doctorate: 2023

(Number, percent, and median years)

Characteristic	All engineering fields	Aerospace, aeronautical, astronautical, and space engineering	Biological, biomedical, and biosystems engineering	Chemical and petroleum engineering	Civil, environmental, and transportation engineering	Electrical and computer engineering	Engineering technologies	Industrial engineering and operations research	Materials and mining engineering	Mechanical engineering	Engineering, other
All doctorate recipients (number) ^a	10,724	584	1,313	1,245	1,279	2,119	402	627	912	1,552	691
Sex (%)											
Male	73.4	83.7	56.6	71.4	67.5	81.1	78.9	69.5	71.2	82.3	71.1
Female	26.6	16.3	43.4	28.6	32.5	18.9	21.1	30.5	28.8	17.7	28.9
Unknown	0.0	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	42.4	55.1	65.5	48.2	34.7	27.7	30.6	37.2	45.7	40.9	46.7
Temporary visa holder	52.6	38.7	29.9	47.7	60.1	67.2	67.7	57.9	49.0	54.1	46.3
Unknown	5.0	6.2	4.6	4.1	5.2	5.2	1.7	4.9	5.3	5.0	6.9
Marital status (%)											
Never married	46.0	47.1	50.4	52.0	39.7	45.4	45.0	39.2	48.2	47.3	39.7
Married	33.5	30.3	27.0	29.7	40.3	36.0	40.0	37.3	29.6	32.9	34.9
Marriage-like relationship	7.3	8.9	12.3	7.1	5.6	5.7	7.2	7.3	8.8	5.7	5.6
Separated, divorced, widowed	1.3	0.9	0.6	1.0	2.6	1.0	2.7	2.7	0.8	0.8	1.7
Unknown	12.0	12.8	9.7	10.2	11.8	11.9	5.0	13.4	12.6	13.3	18.1
Has dependent age 18 or younger (%)	14.3	12.2	8.4	10.7	19.1	16.7	17.4	17.2	11.4	13.9	18.3
Has one or more functional limitations (%)	10.2	7.3	12.5	11.5	10.4	8.8	9.4	10.3	11.0	9.5	10.7
Age at doctorate (median years)	30.1	29.7	29.3	29.1	31.2	30.7	31.0	30.8	29.3	30.0	30.8
Bachelor's in same field as doctorate (%) ^b	78.4	85.0	72.4	84.2	83.7	77.6	70.2	61.9	71.3	88.9	72.3
Master's earned (%)	74.4	83.5	53.7	55.2	90.9	83.0	84.1	83.7	61.4	79.1	76.3
Master's earned at same doctorate institution (%)	51.2	61.2	52.8	52.2	43.2	52.7	42.5	49.9	47.6	55.9	50.9
Time to doctorate (median years)											
Years since earning bachelor's degree	7.4	7.2	7.0	6.6	8.4	8.1	8.2	8.0	6.8	7.3	7.9
From graduate school start	6.6	6.5	6.0	5.8	7.3	7.0	7.3	7.0	6.0	6.4	6.8
From doctoral program start ^c	5.3	5.3	5.3	5.3	5.0	5.4	5.3	5.0	5.0	5.3	5.2
Received tuition remission (%)	86.5	81.1	87.8	88.4	88.7	85.6	82.2	83.7	86.6	88.4	84.0
Male doctorate recipients (number)	7,873	489	743	889	863	1,719	317	436	649	1,277	491
Citizenship status (%)											
U.S. citizen or permanent resident	40.4	55.2	66.4	47.5	30.4	27.3	28.4	35.3	43.9	39.2	46.8
Temporary visa holder	55.0	39.1	29.1	49.0	65.0	68.1	70.0	60.6	50.7	56.0	46.6
Unknown	4.6	5.7	4.6	3.5	4.6	4.6	1.6	4.1	5.4	4.8	6.5
Marital status (%)											
Never married	46.9	48.5	51.7	52.4	41.1	46.2	47.6	41.1	47.3	48.0	41.1
Married	33.7	31.3	26.9	29.7	40.3	35.6	39.4	37.6	30.8	32.5	35.8
Marriage-like relationship	6.6	D	D	D	4.6	5.9	6.3	6.9	D	D	3.9
Separated, divorced, widowed	1.1	D	D	D	2.5	0.9	1.6	2.3	D	D	1.4

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(Number, percent, and median years)

Characteristic	All engineering fields	Aerospace, aeronautical, astronautical, and space engineering	Biological, biomedical, and biosystems engineering	Chemical and petroleum engineering	Civil, environmental, and transportation engineering	Electrical and computer engineering	Engineering technologies	Industrial engineering and operations research	Materials and mining engineering	Mechanical engineering	Engineering, other
Unknown	11.6	12.5	9.4	9.9	11.4	11.4	5.0	12.2	12.6	13.0	17.7
Has dependent age 18 or younger (%)	15.7	13.3	8.9	12.1	22.3	17.4	17.4	18.2	13.3	14.8	20.1
Has one or more functional limitations (%)	9.3	6.6	12.6	11.0	9.3	8.5	8.9	8.4	11.0	8.2	8.8
Age at doctorate (median years)	30.3	29.8	29.6	29.3	31.4	30.8	31.0	30.8	29.4	30.2	30.8
Bachelor's in same field as doctorate (%) ^b	80.1	85.8	72.0	85.3	87.0	78.0	74.5	65.3	72.8	89.8	74.1
Master's earned (%)	75.3	82.7	54.4	55.2	92.2	82.4	85.0	82.8	62.6	78.6	77.0
Master's earned at same doctorate institution (%)	50.6	59.9	53.2	51.8	44.0	52.2	43.4	47.9	46.3	53.3	50.0
Time to doctorate (median years)											
Years since earning bachelor's degree	7.6	7.2	7.0	6.7	8.4	8.2	8.2	8.0	6.9	7.4	8.0
From graduate school start	6.7	6.6	6.1	6.0	7.3	7.0	7.3	6.9	6.0	6.5	6.8
From doctoral program start ^c	5.3	5.3	5.3	5.3	5.0	5.5	5.3	5.0	5.0	5.3	5.3
Received tuition remission (%)	86.0	81.0	88.5	88.0	87.1	84.9	82.6	81.7	86.7	88.4	83.7
Female doctorate recipients (number)	2,851	95	570	356	416	400	85	191	263	275	200
Citizenship status (%)											
U.S. citizen or permanent resident	47.9	54.7	64.4	50.0	43.8	29.0	38.8	41.4	50.2	48.4	46.5
Temporary visa holder	46.1	36.8	30.9	44.4	50.0	63.3	58.8	51.8	44.9	45.5	45.5
Unknown	6.1	8.4	4.7	5.6	6.3	7.8	2.4	6.8	4.9	6.2	8.0
Marital status (%)											
Never married	43.5	40.0	48.8	50.8	36.8	41.8	35.3	35.1	50.6	44.0	36.0
Married	33.0	25.3	27.0	29.8	40.4	37.8	42.4	36.6	26.6	34.9	32.5
Marriage-like relationship	9.0	D	D	D	7.5	5.0	10.6	8.4	D	D	10.0
Separated, divorced, widowed	1.7	D	D	D	2.6	1.5	7.1	3.7	D	D	2.5
Unknown	12.8	14.7	10.0	11.0	12.7	14.0	4.7	16.2	12.5	14.5	19.0
Has dependent age 18 or younger (%)	10.3	6.2	7.8	6.9	12.4	13.4	17.3	14.8	6.9	9.7	13.6
Has one or more functional limitations (%)	12.6	11.3	12.3	12.8	12.7	10.2	11.3	15.0	11.0	15.5	15.7
Age at doctorate (median years)	29.6	29.3	29.1	28.8	30.6	30.1	31.0	30.6	28.9	29.3	30.5
Bachelor's in same field as doctorate (%) ^b	73.5	80.5	72.9	81.2	76.7	75.6	54.2	54.0	67.6	84.7	67.6
Master's earned (%)	71.7	87.8	52.8	55.1	88.4	85.4	80.7	85.6	58.3	81.5	74.6
Master's earned at same doctorate institution (%)	52.8	68.1	52.2	53.4	41.4	54.8	38.8	54.4	51.1	67.5	53.2
Time to doctorate (median years)											
Years since earning bachelor's degree	7.1	7.0	6.8	6.3	8.4	7.5	8.2	8.1	6.5	7.0	7.3
From graduate school start	6.3	6.4	6.0	5.8	7.0	7.0	7.4	7.2	5.8	6.3	6.8
From doctoral program start ^c	5.3	5.6	5.3	5.1	5.0	5.3	5.3	5.1	5.0	5.3	5.0
Received tuition remission (%)	87.9	81.7	86.8	89.6	92.2	88.6	80.5	88.3	86.3	88.4	84.8

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.