

**Doctoral Production in Mathematics Education in the United States:
1960-2005**

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Doctoral Production in Mathematics Education in the United States: 1960-2005

Prior to the 1999 *Conference on Doctoral Programs in Mathematics Education* a survey was conducted to provide information on issues and trends with regard to programs in the U.S. (Reys, Glasgow, Ragan, & Simms, 2002). In preparation for the 2007 *National Conference on Doctoral Programs in Mathematics Education: Progress in the Past Decade* a more comprehensive set of data were collected. This paper reports a summary of doctoral graduate production in mathematics education from 1960 to 2005.

Production of Doctorates in Mathematics Education: NORC Data

Identifying current doctoral programs in mathematics education is not an easy task, and the reasons are varied (Glasgow, 2000). Institutional priorities are constantly changing and, as a result, new programs are added and other programs are discontinued. For example, since 2000 new doctoral programs have been established at Montclair State University and Texas State University, while doctoral programs in mathematics education at American University and the University of Chicago have been discontinued.

Another deterrent to having accurate information about programs is that individuals receiving doctorates with an emphasis in mathematics education are difficult to track. The most complete and reliable data on doctoral graduates are summarized annually in a report titled *Doctoral Recipients from United States Universities* published by the National Opinion Research Center (NORC). This effort to monitor earned doctorates in United States universities is supported by the National Science Foundation (NSF). The annual reports provide the number of doctorates in various academic areas, including mathematics education, along with some demographic information on the graduates.

The NORC reports are based on self-reported data provided by graduate students upon completion of their doctorate. Every Graduate School in the United States requires their students to complete the doctoral survey prior to graduation. Students must identify their major area of emphasis, and there is a unique code for mathematics education (#874). However, there are also codes for Mathematics, Education, Curriculum and Instruction, Elementary Education, and Secondary Education. Some graduates who pursue the study of mathematics education report that they do not mark “mathematics education” as their major emphasis. Instead, they indicate the department within which the mathematics education program resides (e.g., Curriculum and Instruction). In other cases, a graduate may mark mathematics education because it is the primary focus of their dissertation although their program of study is in another area (e.g., Educational Psychology). Despite these issues, the data summarized in this report is based on graduates who coded “mathematics education” as their major area of emphasis on the NORC survey.

A special request was made to NORC for a summary of the production of doctorates in mathematics education from 1960 (the earliest data available) to 2005 (most recent data available). Since 1960, 167 different institutions have produced doctoral graduates with

mathematics education as their designated major area of emphasis. Figure 1 summarizes the number of institutions graduating doctorates in mathematics education over the past 45 years.

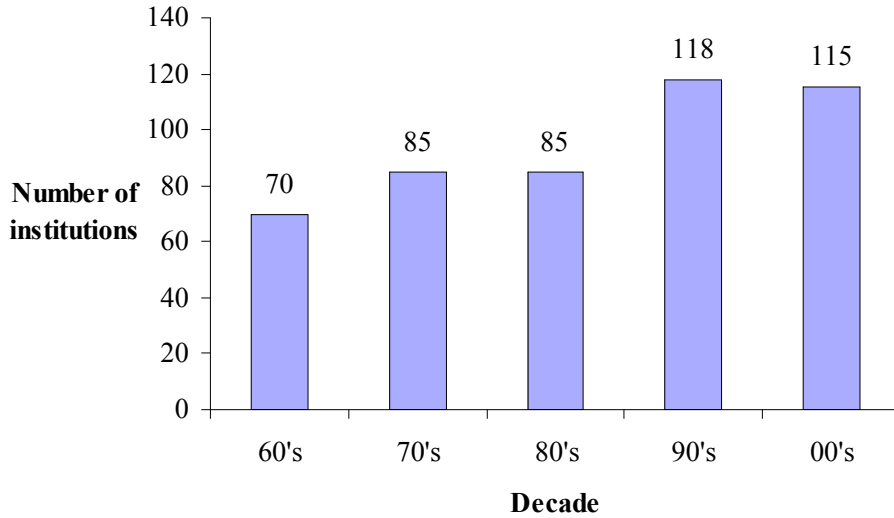


Figure 1. Number of Institutions Graduating Doctorates in Mathematics Education by Decade (Source: NSF/NIH/USED/NEH/USDA/NASA, 1960-2005 Surveys of Earned Doctorates.)

Figure 2 reports the number of graduates listing mathematics education as their emphasis area by decade. The era with the largest production was the 1970s (1095 students). While many reasons may account for this significant bump in graduates during the 1970s, it is likely that the NSF institutes (both summer and year-long) played a significant role in encouraging more people to pursue doctorates in the sciences, including mathematics education.

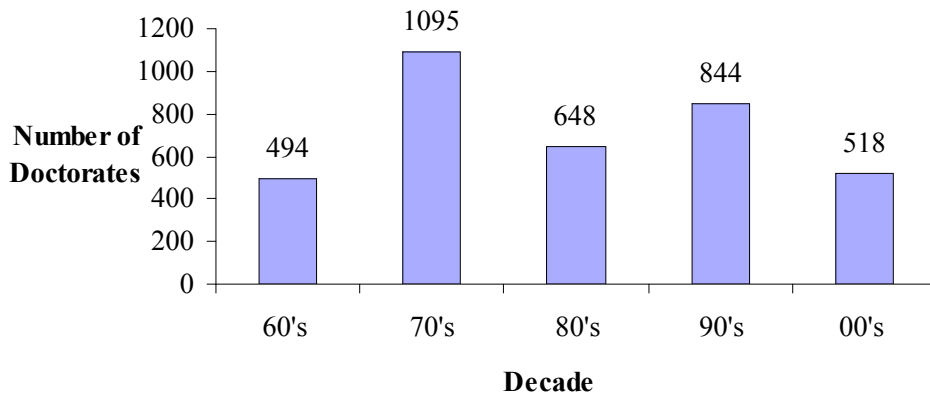


Figure 2. Number of Doctorates in Mathematics Education Granted by Decade (Source: NSF/NIH/USED/NEH/USDA/NASA, 1960-2005 Survey of Earned Doctorates.)

The data from the current decade span 6 years (2000-05). Assuming the same rate of annual graduations for the entire decade, the results are shown in Figure 3. If the current production rate continues throughout this decade, Figure 3 shows the averages over the last two decades are stable.

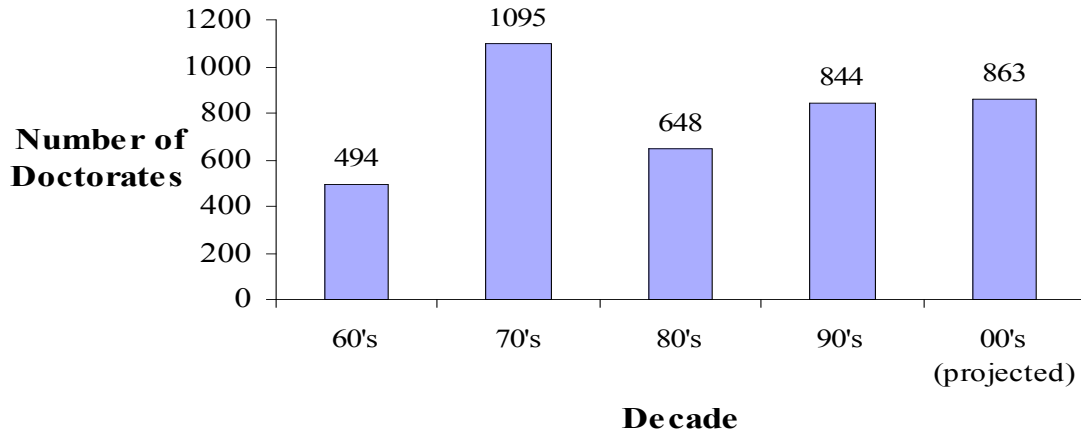


Figure 3. Number of Doctorates in Mathematics Education Granted by Decade (Source: NSF/NIH/USED/NEH/USDA/NASA, 1960-2005 Survey of Earned Doctorates.)

These data suggest that the 70's were the boom era for producing doctorates in mathematics education, and the degrees during this decade were awarded by 85 different institutions. Figures 1 & 2 show that although more institutions began to graduate doctorates in mathematics education after the 1980s, the number of graduates did not rise significantly. Using the average number of doctorates produced per institution for each decade and the projected figures for the current decade Figure 4 results.

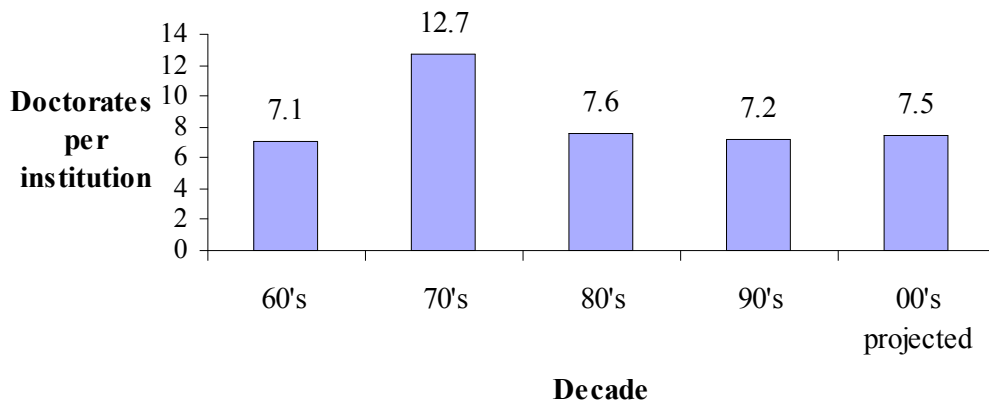


Figure 4. Number of Mathematics Doctorates produced per institution by decade. (Source: NSF/NIH/USED/NEH/USDA/NASA, 1960-2005 Survey of Earned Doctorates.)

Mathematics has often been characterized as a male dominated domain. Indeed, an examination of the annual production of doctorates in mathematics provides evidence of the dominance of degrees awarded to males. Over the last decade the ratio of males to females receiving PhDs in mathematics is between 2 to 1 and 4 to 1. However a look at gender differences in doctorates in mathematics education provides a very different picture, and one that has changed dramatically over the years.

Figure 5 reports the number of males and females receiving doctorates in mathematics education over a 45-year period. In the 1960s, the ratio of male to female doctorates graduating in mathematics education was 5 to 1, and in the 1970s about 3 to 1. The ratio of male to female has shrunk in recent years and currently is about 2 to 3, or two males graduating with a doctorate in mathematics education for every three females.

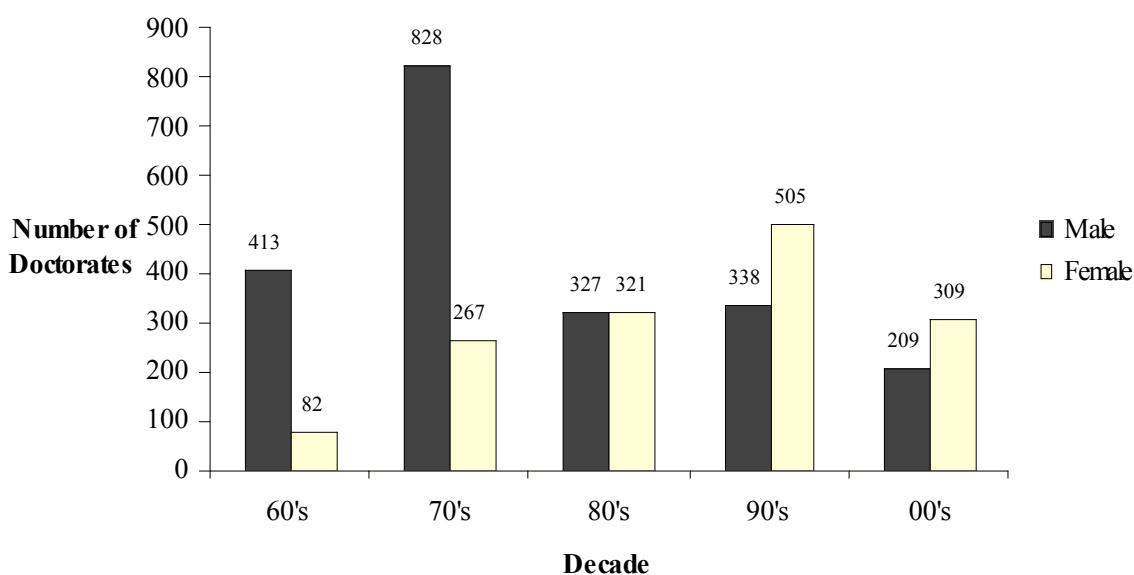


Figure 5. Number of doctorates (by gender) in mathematics education awarded from 1960 to 2005. (Source: NSF/NIH/USED/NEH/USDA/NASA, 1960-2005 Survey of Earned Doctorates.)

Minorities are also greatly underrepresented in mathematics education at both the undergraduate and graduate levels. While Figures 1-5 report NORC data from 1960, the collection of data on the ethnicity/racial background of mathematics education degree recipients (Asian, Hispanic, Black, and Native American) began in 1973. Figure 6 reports frequencies of Caucasian and underrepresented group degree recipients from 1973 to the present. In 1973, six graduates representing various minority populations and 78 Caucasian graduates received doctorates in mathematics education.

While there has been a slow decline in the number of doctorates awarded to Caucasians since 1973, there has been a steady increase in total graduates from underrepresented groups with a peak of 17 in 1999. During the lean period of the 1980s, the Caucasian graduate levels fell sharply, while the minority graduate levels stayed relatively constant.

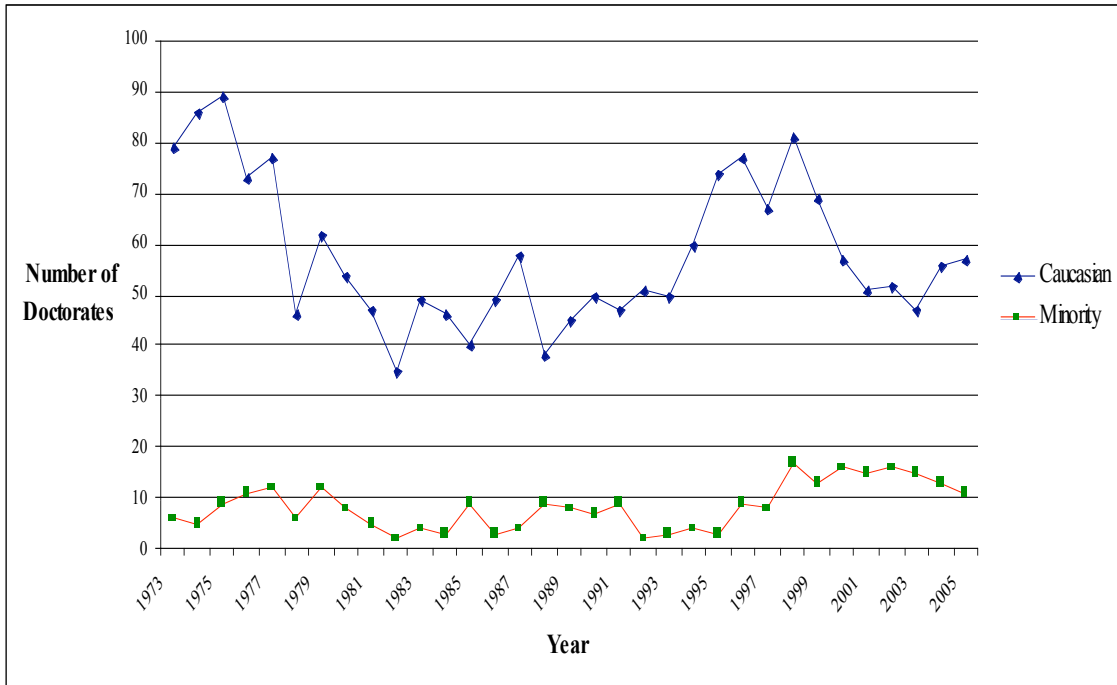


Figure 6. Total frequency of Caucasian and minorities receiving doctorates in mathematics education. (Source: NSF/NIH/USED/NEH/USDA/NASA, 1960-2005 Survey of Earned Doctorates.)

Figures 1-6 provide an overall summary of the number of doctorates awarded in mathematics education over the last 45 years. Next, let's look at the role different institutions have played during this time in producing doctorates in mathematics education.

Production of Doctorates in Mathematics Education by Institutions

Figure 1 shows the number of institutions awarding doctorates in mathematics education grew from 70 in the 1960s to 115 in 2000s. These programs vary greatly in the number of graduates produced. An examination of the number of doctorates awarded over time by institutions is constantly changing. Table 1 shows the largest producers of doctorates during the last fifteen years and Table 2 reports institutions that have awarded the most doctorates in mathematics education from 1960 to 2005. Examining these tables reveals that seven of the institutions in Table 1 were not in Table 2, yet they are now the institutions awarding the largest number of doctorates in mathematics education. This is a reminder that programs are constantly evolving, and these changes impact their production of the number of doctorates in mathematics education awarded. While these changes impact many programs, an examination of the largest producers of each decade shown in Table 3 reveals stability in the top five producers over the 4.5 decades.

Table 1. Top 30 Institutions in Production of Mathematics Education Doctorates, 1990-2005. (Source: NSF/NIH/USED/NEH/USDA/NASA, 1960-2005 Survey of Earned Doctorates.)

Rank	Institution	Number of Graduates in 90's	Number of Graduates in 00's	Total
1	Teachers College-Columbia U/NY	77	41	118
2	University of Georgia	56	33	89
3	University of Texas-Austin	49	17	66
4	Ohio State University	38	13	51
5	Georgia State University	33	7	40
6	Florida State University	26	13	39
6	Illinois State University-Normal	11	28	39
8	North Carolina State University	16	20	36
9	Rutgers University/NJ	21	14	35
10	University of Oklahoma	18	13	31
10	American University/DC	19	12	31
11	University of Maryland	17	11	28
12	State University of New York-Buffalo	17	7	24
13	Indiana University-Bloomington	16	6	22
13	University of Wisconsin-Madison	18	4	22
13	Temple University/PA	13	9	22
16	University of Northern Colorado	12	9	21
16	Oregon State University	10	11	21
18	University of Iowa	14	5	19
19	Syracuse University/NY	11	7	18
20	New York University	13	4	17
20	Vanderbilt University/TN	13	4	17
20	University of Missouri-Columbia	6	11	17
23	University of Minnesota-Twin Cities	10	5	15
23	University of Pittsburgh/PA	12	3	15
23	University of California-Berkeley	8	7	15
23	University of South Carolina	12	3	15
27	University of Illinois-Urbana-Champaign	6	8	14
27	University of Virginia	6	8	14
27	University of Tennessee-Knoxville	9	5	14
27	University of South Florida	9	5	14

Table 2. Top 30 Institutions in Production of Mathematics Education Doctorates, 1960-2005. (Source: NSF/NIH/USED/NEH/USDA/NASA, 1960-2005 Survey of Earned Doctorates.)

Rank	Institution	Number of Doctorates Granted	Average Doctorates Per Year
1	Teachers College-Columbia U/NY	309	7.02
2	University of Georgia	179	4.07
3	Ohio State University	165	3.75
4	University of Texas-Austin	158	3.59
5	Florida State University	130	2.95
6	New York University	124	2.82
7	Indiana University-Bloomington	98	2.23
8	Rutgers University/NJ	95	2.16
9	University of Maryland	94	2.14
10	University of Illinois-Urbana-Champaign	89	2.02
11	University of Northern Colorado	88	2.00
12	Oklahoma State University	83	1.89
13	Georgia State University	79	1.80
14	University of Wisconsin-Madison	77	1.75
15	University of Michigan-Ann Arbor	73	1.66
16	Temple University/PA	68	1.55
17	State University of New York-Buffalo	62	1.41
18	University of Oklahoma	57	1.30
19	Vanderbilt University	56	1.27
20	Michigan State University	53	1.20
21	University of Minnesota-Twin Cities	51	1.16
22	North Carolina State University	47	1.07
22	University of Virginia	47	1.07
24	The Pennsylvania State University	45	1.02
25	Purdue University	43	0.98
25	University of Iowa	43	0.98
27	American University/DC	42	0.95
28	Boston University	41	0.93
28	Illinois State University-Normal	41	0.93
28	University of Missouri-Columbia	41	0.93

Teachers College, Columbia University has consistently been the largest producer of doctorates in mathematics education since 1960. The top 5 overall producers also ranked among the top 20 for each decade. Three of the overall top 5 institutions (Teachers College, Ohio State University and Florida State University) were among the top 10 producers for each decade, with the other two institutions (University of Georgia and

University of Texas) among the top 10 for all but one decade (1960's). Seven of the top 10 producers were among the top 20 for all 5 decades.

A total of thirty-nine institutions graduated doctorates in each of the five decades from 1960 to 2005. These institutions, along with the number of doctorates in mathematics education awarded, are shown in Table 3.

Table 3. Institutions graduating doctorates in mathematics education in each decade from 1960 to 2005. (Source: NSF/NIH/USED/NEH/USDA/NASA, 1960-2005 Survey of Earned Doctorates.)

Rank	Institution	Number of Mathematics Education Doctorates from 1960-2005
1	Teachers College / Columbia University	309
2	University of Georgia	179
3	Ohio State University	165
4	University of Texas-Austin	158
5	Florida State University	130
6	New York University	124
7	Indiana University-Bloomington	98
8	Rutgers University	95
9	University of Maryland	94
10	University of Illinois-Urbana-Champaign	89
11	University of Northern Colorado	88
12	Oklahoma State University	83
13	University of Wisconsin-Madison	77
14	University of Michigan-Ann Arbor	73
15	Temple University	68
16	State University of New York-Buffalo	62
17	University of Oklahoma	57
18	Vanderbilt University	56
19	Michigan State University	53
20	University of Minnesota-Twin Cities	51
21	University of Virginia	47
22	The Pennsylvania State University	45
23	Purdue University	43
23	University of Iowa	43
25	Boston University	41
25	University of Missouri-Columbia	41
27	Syracuse University	38
27	University of California-Berkeley	38
29	Auburn University	35
30	Oregon State University	33
30	University of Houston	33

32	Stanford University	31
33	University of Tennessee-Knoxville	28
34	University of Florida	22
35	University of Colorado	20
36	University of Oregon	19
37	Harvard University	17
38	Arizona State University	15
39	University of Alabama	13

While many institutions produce graduates, the majority of institutions produce only a few graduates each decade. On the other hand, Table 4 shows the five institutions that produced the most graduates from 1960-2005 contributed about a fourth of all graduates during this 45 year period. Furthermore, the top 30 producers contributed about three-fourths of the doctorates in mathematics education over this time period.

Table 4. Percent of doctoral graduates in mathematics education produced by the largest producing institutions for each decade. (Source: NSF/NIH/USED/NEH/USDA/NASA, 1960-2005 Survey of Earned Doctorates.)

	1960's	1970's	1980's	1990's	2000's	1960-2005
% of doctorates from top 5 institutions	36%	26%	34%	30%	27%	26%
% of doctorates from top 10 institutions	55%	47%	52%	42%	39%	40%
% of doctorates from top 20 institutions	73%	70%	70%	60%	61%	59%
% of doctorates from top 30 institutions	86%	82%	83%	74%	71%	72%

The percentages reported in Table 4 are fairly stable across decades. If there is any trend, it appears that the percentage of doctorates produced by the top producers may be decreasing slightly. If so, this is probably related to the increase in the number of different institutions offering a doctoral program in mathematics education in later decades.

Table 5 provides a summary of each of the 167 institutions that NORC reported graduating at least one doctoral student with an emphasis in mathematics education. It reports the number of doctorates in mathematics education awarded each decade by institution. Among other things Table 5 shows that since 1960 only 24 institutions have averaged awarding one or more doctorates a year with an emphasis in mathematics education.

Table 5. Institution and number of doctorates in mathematics education awarded per decade. (Source: NSF/NIH/USED/NEH/USDA/NASA, 1960-2005 Survey of Earned Doctorates.)

Rank	Institution	60's	70's	80's	90's	00's	Total	Avg. per year
1	Teachers College-Columbia U/NY	44	80	67	77	41	309	7.02
2	University of Georgia	8	46	36	56	33	179	4.07
3	Ohio State University	34	55	25	38	13	165	3.75
4	University of Texas-Austin	10	49	33	49	17	158	3.59
5	Florida State University	19	53	19	26	13	130	2.95
6	New York University	23	51	33	13	4	124	2.82
7	Indiana University-Bloomington	9	49	18	16	6	98	2.23
8	Rutgers University/NJ	10	34	16	21	14	95	2.16
9	University of Maryland	7	38	21	17	11	94	2.14
10	University of Illinois-Urbana-Champaign	25	41	9	6	8	89	2.02
11	University of Northern Colorado	14	50	3	12	9	88	2.00
12	Oklahoma State University	43	29	5	3	3	83	1.89
13	Georgia State University	0	14	25	33	7	79	1.80
14	University of Wisconsin-Madison	21	22	12	18	4	77	1.75
15	University of Michigan-Ann Arbor	33	26	2	10	2	73	1.66
16	Temple University/PA	4	21	21	13	9	68	1.55
17	State University of New York-Buffalo	3	23	12	17	7	62	1.41
18	University of Oklahoma	5	14	7	18	13	57	1.30
19	Vanderbilt University/TN	9	24	6	13	4	56	1.27
20	Michigan State University	5	25	11	6	6	53	1.20
21	University of Minnesota-Twin Cities	7	19	10	10	5	51	1.16
22	North Carolina State University	0	3	8	16	20	47	1.07
22	University of Virginia	14	14	5	6	8	47	1.07
24	The Pennsylvania State University	5	25	6	4	5	45	1.02
25	Purdue University/IN	8	19	8	5	3	43	0.98
25	University of Iowa	2	4	18	14	5	43	0.98
27	American University/DC	0	1	10	19	12	42	0.95
28	Boston University/MA	3	8	18	11	1	41	0.93
28	Illinois State University-Normal	0	0	2	11	28	41	0.93
28	University of Missouri-Columbia	5	7	12	6	11	41	0.93
31	University of Pittsburgh/PA	0	11	14	12	3	40	0.91
32	Syracuse University/NY	8	8	4	11	7	38	0.86
32	University of California-Berkeley	5	5	13	8	7	38	0.86
34	Auburn University/AL	3	13	6	5	8	35	0.80
35	Northwestern University/IL	4	21	6	2	0	33	0.75
35	Oregon State University	1	5	6	10	11	33	0.75
35	University of Houston/TX	2	17	7	5	2	33	0.75
38	Stanford University/CA	9	10	5	4	3	31	0.70
39	University of Tennessee-Knoxville	2	6	6	9	5	28	0.64
40	University of Massachusetts-Amherst	0	4	10	9	4	27	0.61
41	University of South Carolina	0	6	2	12	3	23	0.52

Rank	Institution	60's	70's	80's	90's	00's	Total	Avg. per year
42	University of Florida	4	6	5	5	2	22	0.50
43	University of South Florida	0	1	6	9	5	21	0.48
44	Cornell University/NY	3	4	2	11	0	20	0.45
44	University of Colorado	6	9	3	1	1	20	0.45
46	University of Oregon	3	9	5	1	1	19	0.43
47	Wayne State University/MI	6	7	2	3	0	18	0.41
48	Harvard University/MA	5	8	2	1	1	17	0.39
48	University of Kansas	8	2	0	2	5	17	0.39
50	Arizona State University	2	8	2	1	2	15	0.34
50	Ohio University	0	0	2	5	8	15	0.34
50	University of Connecticut	1	9	3	0	2	15	0.34
50	University of Mass-Lowell	0	0	0	11	4	15	0.34
54	University of New Hampshire	0	1	5	2	6	14	0.32
55	Southern Illinois University	0	4	2	6	1	13	0.30
55	Texas A&M University	0	5	2	4	2	13	0.30
55	University of Alabama	1	3	2	5	2	13	0.30
55	University of Denver/CO	3	5	5	0	0	13	0.30
59	University of Chicago/IL	2	2	0	7	1	12	0.27
60	University of Pennsylvania	1	10	0	0	0	11	0.25
60	Washington State University	2	1	0	7	1	11	0.25
62	Montana State University	1	0	1	4	4	10	0.23
62	University of Southern Mississippi	0	1	3	5	1	10	0.23
62	University of Delaware	0	1	1	8	0	10	0.23
65	Kansas State University	0	5	4	0	0	9	0.20
65	University of Arizona	0	2	0	3	4	9	0.20
65	University of Nebraska-Lincoln	2	5	1	1	0	9	0.20
65	West Virginia University	0	2	3	2	2	9	0.20
69	Claremont Graduate School/CA	0	0	0	5	3	8	0.18
69	University of Rochester/NY	0	3	3	1	1	8	0.18
69	University of Toledo/OH	0	4	1	3	0	8	0.18
69	Western Michigan University	0	0	0	3	5	8	0.18
73	University of North Carolina-Chapel Hill	2	2	0	2	1	7	0.16
73	University of California-Los Angeles	4	2	0	0	1	7	0.16
73	University of North Texas	4	3	0	0	0	7	0.16
73	University of Washington	0	2	2	2	1	7	0.16
77	State University of New York-Albany	0	3	2	1	0	6	0.14
77	University of Missouri-Kansas City	2	0	0	3	1	6	0.14
77	University of Southern California	3	1	1	1	0	6	0.14
80	George Mason University/VA	0	0	0	2	3	5	0.11
80	Kent State University/OH	0	1	0	4	0	5	0.11
80	San Diego State University/CA	0	0	0	2	3	5	0.11
80	University of North Carolina-Greensboro	0	0	0	5	0	5	0.11
80	University of California-Davis	0	0	0	2	3	5	0.11
80	University of Kentucky	3	0	0	2	0	5	0.11

Rank	Institution	60's	70's	80's	90's	00's	Total	Avg. per year
80	University of Mississippi	2	0	0	3	0	5	0.11
80	University of North Dakota	0	0	0	2	3	5	0.11
80	University of Utah	2	1	0	0	2	5	0.11
80	Utah State University	2	1	1	1	0	5	0.11
90	Albert Einstein College of Med/NY	3	1	0	0	0	4	0.09
90	Duke University/NC	3	0	1	0	0	4	0.09
90	Emory University/GA	0	0	1	1	2	4	0.09
90	Florida Atlantic University	0	1	2	1	0	4	0.09
90	Louisiana State U & A&M College	1	1	0	2	0	4	0.09
90	Nova Southeastern University/FL	0	0	1	1	2	4	0.09
90	University of Cincinnati/OH	0	0	1	2	1	4	0.09
90	Walden University/MN	0	0	0	2	2	4	0.09
98	Boston College/MA	1	1	0	1	0	3	0.07
98	Bowling Green State University/OH	0	0	2	0	1	3	0.07
98	Clemson University/SC	0	1	0	1	1	3	0.07
98	Florida Institute of Technology	0	0	0	1	2	3	0.07
98	Mississippi State University	1	0	1	0	1	3	0.07
98	Montclair State University/NJ	0	0	0	0	3	3	0.07
98	Northern Illinois University	0	0	0	2	1	3	0.07
98	Portland State University/OR	0	0	0	0	3	3	0.07
98	Texas Tech University	2	0	0	0	1	3	0.07
98	University of Missouri-Saint Louis	0	0	1	1	1	3	0.07
98	Univ of Arkansas-Fayetteville	1	1	0	0	1	3	0.07
98	University of Central Florida	0	0	0	0	3	3	0.07
98	University of Idaho	0	0	0	0	3	3	0.07
98	University of Illinois-Chicago	0	0	0	2	1	3	0.07
98	University of Montana	0	0	0	1	2	3	0.07
98	University of New Mexico	1	0	1	1	0	3	0.07
98	University of South Dakota	0	0	0	3	0	3	0.07
115	Baylor University/TX	0	0	0	1	1	2	0.05
115	Clark University/MA	0	0	1	1	0	2	0.05
115	George Washington University/DC	1	0	0	0	1	2	0.05
115	Grad School & University Center, CUNY	0	0	0	2	0	2	0.05
115	Indiana University of Pennsylvania	0	0	0	0	2	2	0.05
115	Lehigh University/PA	0	0	2	0	0	2	0.05
115	Marquette University/WI	0	0	0	1	1	2	0.05
115	Memphis, University of/TN	0	1	0	1	0	2	0.05
115	Morgan State University/MD	0	0	0	0	2	2	0.05
115	St. Louis University/MO	0	2	0	0	0	2	0.05
115	State Univ of New York-Binghamton	0	0	0	2	0	2	0.05
115	Tennessee State University	0	0	0	1	1	2	0.05
115	University of Arkansas-Little Rock	0	0	0	0	2	2	0.05
115	University of California-San Diego	0	0	0	0	2	2	0.05
115	University of Colorado-Denver	0	1	0	0	1	2	0.05

Rank	Institution	60's	70's	80's	90's	00's	Total	Avg. per year
115	University of Nevada-Las Vegas	0	0	0	0	2	2	0.05
115	University of Wyoming	0	1	1	0	0	2	0.05
115	Virginia Polytech Inst & State U	0	0	0	1	1	2	0.05
133	Argosy University-Sarasota Campus/FL	0	0	0	1	0	1	0.02
133	Ball State University/IN	0	0	0	1	0	1	0.02
133	Brandeis University/MA	0	0	0	1	0	1	0.02
133	Brigham Young University/UT	0	0	1	0	0	1	0.02
133	Colorado State University	0	0	0	0	1	1	0.02
133	Fairleigh Dickinson University/NJ	0	0	1	0	0	1	0.02
133	Fordham University/NY	1	0	0	0	0	1	0.02
133	Georgia Southern University	0	0	0	0	1	1	0.02
133	Hofstra University/NY	0	0	0	1	0	1	0.02
133	Iowa State University	0	1	0	0	0	1	0.02
133	Johns Hopkins University/MD	0	0	0	0	1	1	0.02
133	Loyola University of Chicago/IL	0	0	0	1	0	1	0.02
133	Massachusetts Inst of Technology	0	0	0	1	0	1	0.02
133	Miami University/OH	0	0	0	1	0	1	0.02
133	Northwestern State University of Louisiana	0	0	1	0	0	1	0.02
133	Princeton University/NJ	0	0	0	0	1	1	0.02
133	South Carolina State University	0	0	0	1	0	1	0.02
133	Southern University & A&M Col/LA	0	0	0	0	1	1	0.02
133	State U of New York-Stony Brook	0	0	0	0	1	1	0.02
133	The University of West Florida	0	0	0	0	1	1	0.02
133	University of California-Riverside	0	0	0	0	1	1	0.02
133	University of California-Santa Barbara	0	0	0	0	1	1	0.02
133	University of Puerto Rico-Rio Piedras	0	0	0	0	1	1	0.02
133	University of Akron/OH	0	0	1	0	0	1	0.02
133	University of La Verne/CA	0	0	0	0	1	1	0.02
133	University of Miami/FL	0	0	0	1	0	1	0.02
133	University of New Orleans/LA	0	0	0	1	0	1	0.02
133	University of Notre Dame/IN	0	0	0	1	0	1	0.02
133	University of Rhode Island	0	0	0	1	0	1	0.02
133	University of St. Thomas/MN	0	0	0	0	1	1	0.02
133	University of Texas-Arlington	0	0	0	0	1	1	0.02
133	University of Wisconsin-Milwaukee	0	0	1	0	0	1	0.02
133	US International University/CA	1	0	0	0	0	1	0.02
133	Washington University/MO	0	0	0	1	0	1	0.02
133	Wilmington College/DE	0	0	0	0	1	1	0.02
Total:		494	1095	648	844	518	3599	
Number of institutions with graduates:		70	86	85	118	115	167	
Average number of graduates per institution:		7.1	12.7	7.6	7.2	4.5	21.55	

An examination of Table 5 shows that 17 institutions did not award a doctorate in mathematics education from 1990-2005. These institutions are listed below with the last year of granting a doctorate in Mathematics Education noted.

Albert Einstein College of Med/NY (1976)	Brigham Young University (1984)
Duke University (1987)	Fairleigh Dickinson University (1982)
Fordham University (1962)	Iowa State University (1970)
Kansas State University (1989)	Lehigh University (1988)
Northwestern State University of Louisiana (1989)	St. Louis University (1979)
University of Akron (1985)	University of Denver (1988)
University of North Texas (1977)	University of Pennsylvania (1979)
University of Wisconsin-Milwaukee (1987)	University of Wyoming (1981)
US International University/CA (1969)	

Twenty-three institutions graduated doctorates only during the most recent decade (2000 – 2005). Thus, one might assume they are new programs or that graduates are better informed about providing the proper code for their major area of emphasis on the NORC survey. These 23 institutions are listed below along with the number of doctorates these institutions produced from 2000-2005.

Colorado State University (1)	Georgia Southern University (1)
Indiana University of Pennsylvania (2)	Johns Hopkins University (1)
Montclair State University (3)	Morgan State University (2)
Portland State University (3)	Princeton University (1)
Southern University & A&M College/LA (1)	State University of New York-Stony Brook (1)
University of West Florida (1)	University of Arkansas-Little Rock (2)
University of California-Riverside (1)	University of California-San Diego (2)
University of California-Santa Barbara (1)	University of Puerto Rico-Rio Piedras (1)
University of Central Florida (3)	University of Idaho (3)
University of La Verne/CA (1)	University of Nevada-Las Vegas (2)
University of St. Thomas/MN (1)	University of Texas-Arlington (1)
Wilmington College (1)	

Summary

These NORC data indicate an increasing number of institutions are producing graduates with a doctorate in mathematics education. Although the 5 to 10 institutions producing the largest number of graduates have remained fairly stable over several decades, there are some relatively new doctoral programs (such as Illinois State University) that are now among the largest producers of doctoral graduates in mathematics education. It is noteworthy that 30 institutions produce nearly three-fourths of all the doctorates in mathematics education. While these largest producing institutions have several graduates each year, the majority of institutions produce less than one graduate a year who identifies mathematics education as their area of emphasis.

There has been a gender shift in recipients of doctorates from the 1960s and 1970s where males greatly outnumbered females, to more recently where about 60% of doctorates in mathematics education are awarded to females. While the number of minority graduates has

increased over the past 45 years, the overwhelming majority of doctoral graduates in mathematics education are Caucasian with the ratio of Caucasian to minority graduates about 5 to 1 for the last decade.

References

- Glasgow, R. (2000). *An investigation of recent graduates of doctoral programs in mathematics education*, University of Missouri-Columbia, Unpublished doctoral dissertation.
- National Opinion Research Center (NORC). (2006). *Summary reports: Doctoral recipients from United States universities—1960-2005*. Chicago, IL: NORC.
- Reys, R. E., Glasgow, B., Ragan, G.A., Simms, K. W. (2001). Doctoral programs in mathematics education in the United States: A status report, In R. E. Reys & J. Kilpatrick (Eds.) *One Field, Many Paths: U. S. Doctoral Programs in Mathematics Education*, pp. 19-40, Washington, D.C.: American Mathematical Society/Mathematical Association of America.