2000 Annual Survey of the Mathematical Sciences

(AMS-ASA-IMS-MAA)

First Report

Report on the 2000 New Doctoral Recipients
Faculty Salary Survey

Don O. Loftsgaarden
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Report on the 2000 New Doctoral Recipients Faculty Salary Survey

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The First Report of the 2000 Annual Survey gives information about the employment status of 1999–2000 new doctoral recipients from U.S. departments in the mathematical sciences and salary data on faculty members in U.S. departments of mathematical sciences in four-year colleges and universities. This report is based on information collected from a questionnaire distributed to departments in May 2000. A second questionnaire concerned with data on fall 2000 enrollments, majors, and departmental faculty size was distributed to departments in October 2000. Results from the second questionnaire will appear in a later report of the 2000 Annual Survey in a summer 2001 issue of the *Notices*. A questionnaire was also distributed to the individual new doctoral recipients in October 2000. This questionnaire will be used to update and revise results in this report, which are based on information from the departments that produced the new doctorates. Those results will be published in a later report of the 2000 Annual Survey in a summer 2001 issue of the *Notices*.

The 2000 Annual Survey represents the forty-fourth in an annual series begun in 1957 by the American Mathematical Society. The 2000 Survey is under the direction of the Annual Survey Data Committee, a joint committee of the American Mathematical Society, the American Statistical Association, the Institute of Mathematical Statistics, and the Mathematical Association of America. The current members of this committee are Lorraine Denby, J. Douglas Faires, Mary W. Gray, Alfred W. Hales, Peter E. Haskell, Ellen E. Kirkman, James M. Kister, James Lewis, Don O. Loftsgaarden (chair), James W. Maxwell (ex officio), and Yashaswini Mittal. The committee is assisted by AMS survey analyst Kinda Remick Priestley and survey coordinator Colleen Rose. Comments or suggestions regarding this Survey Report may be directed to the Committee.

Report on the 2000 New Doctoral Recipients

This report presents a statistical profile of recipients of doctoral degrees awarded by departments in the mathematical sciences at universities in the United States during the period July 1, 1999, through June 30, 2000. It includes a preliminary analysis of the employment of 1999–2000 doctoral recipients and a demographic profile summarizing characteristics of citizenship status, sex, and racial/ethnic group. All information came from the departments that gave the degrees. Table 1 provides the departmental response rates for the 2000 Survey of New Doctoral Recipients. See page 208 for a description of the groups.

Table 1: Doctorates Granted Response Rates

Group I (Pu)	25 of 25 including 0 with 0 degrees
Group I (Pr)	22 of 23 including 0 with 0 degrees
Group II	56 of 56 including 2 with 0 degrees
Group III	68 of 74 including 17 with 0 degrees
Group IV	75 of 89 including 7 with 0 degrees
Group Va	18 of 20 including 1 with 0 degrees
Group Vb	No longer surveyed

Recent Changes in Procedures for the Annual Survey

Data used for the First Report of the Annual Survey is gathered from doctoral-granting departments starting in May each year. Updated information from the individual new doctoral recipients is gathered in the fall each year, and this information is used to update the results from the First Report in a later report, which will appear in an issue of the *Notices* the following summer. For the 1996 Annual Survey and earlier surveys, data from the individual new doctoral recipients was gathered earlier, and early responses were used in the First Report. This means that results in First Reports after 1996 are not strictly comparable with those in earlier reports.

Prior to 1999, Group V was comprised of Groups Va and Vb, with Group Va containing Ap-

Highlights

Based on responses from departments alone, the fall 2000 unemployment rate for the 943 new doctoral recipients from 1999–00 whose employment status is known is 4.6%. This figure will be revised using information collected from the new doctoral recipients themselves and it will likely be between 3% and 4%. The fall 1999 unemployment rate was 6.2%.

Of the new doctoral recipients who have jobs, 58 (6.5%) have positions in the institution from which they received their degrees, though not necessarily in the same department, and 15 (1.7%) have part-time jobs.

Of the 796 new doctoral recipients employed in the U.S., 206 (25.9%) have jobs in business or industry. In 1998 this number was 219 and in 1999 it was 160. The number of new doctoral recipients taking U.S. Academic positions was 551 in Fall 2000, down slightly from 564 in Fall 1999.

Females account for 302 (27.0%) of the 1,119 new doctoral recipients in 1999–00, down slightly from the record high of 318 (28.1%) in 1998–99. Of 537 U.S. citizen new doctoral recipients, 158 (29.4%) are females, down from the record 187 (33.8%) in 1998–99, but still the second highest percentage ever recorded.

Of the 1,119 new doctoral recipients in 1999–00, 537 (48.0%) are U.S. citizens, down slightly from 48.9% in 1998-99.

Among U.S. citizen new doctoral recipients, there were 15 Black or African Americans and 10 Hispanic or Latinos. The largest minority group was Asians with 29. The 54 new doctorates in these groups is up from 42 in 1998–99. Whites accounted for 479 (89.2%) of U.S. citizen new doctoral recipients.

Among new doctoral recipients hired in U.S. doctoral-granting departments, 48.1% are U.S. citizens. For other U.S. academic positions, 69.6% of the new doctoral recipients hired were U.S. citizens.

For the first time, a section on new doctoral recipients in Group IV, statistics departments, is included in this report. Group IV produced 284 new doctorates of which 110 (38.7%) are females, compared to all other doctoral departments combined where 192 of 835 (23.0%) are females.

For field of thesis, 351 of the 1119 new doctoral recipients were in probability (41) or statistics (310). The next highest number was in algebra and number theory with 169.

plied Mathematics/Applied Science doctoral departments and Vb containing Operations Research/Management Science doctoral departments. Response rates for Vb departments were always very poor, and many of the departments were inherently quite different from the other departments included in the Annual Surveys. Beginning with the 1999 Survey, the Annual Survey Data Committee decided to no longer survey Group Vb. Hence Group V now contains only Group Va, Applied Mathematics/Applied Science departments. The average number of doctoral degrees reported by responding Group Vb departments in 1995, 1996, 1997, and 1998 was 55. This change means the number of doctoral degrees in the First Reports since 1999 are not strictly comparable to those of earlier First Reports.

Also in 1999, 9 new statistics departments were added to Group IV, doctoral-granting statistics departments, to make this group more complete. The list of departments in Group IV has been under revision over the last three to four years and now contains a set of 89 departments appropriate for the Annual Survey. In addition, the number of Group IV departments responding to the Annual Survey has risen from 54 (67.5%) in 1995–96 to 75 (84.3%) in 1999–2000. A later section of this report is devoted to new doctoral recipients in Group IV.

Note:
Several tables in this report contain results for five years, 1995–96, 1996–97, 1997–98, 1998–99, and 1999–2000. New doctoral recipients granted by Group Vb departments have been removed from most tables for the years 1995–96, 1996–97, and 1997–98. This is done because Group Vb departments are no longer a part of the Annual Survey beginning with 1998–99. Thus some numbers in this report will be slightly smaller than the corresponding numbers in the 1995–96, 1996–97, and 1997–98 First Reports. All results in this report are based on the actual numbers reported by the responding departments. No adjustments were made to account for nonresponding departments.

Doctoral Degrees Granted

Table 2 shows the number of new doctoral degrees granted by the different doctoral groups surveyed in the Annual Survey for the past five years. Since Group Vb was dropped from the Annual Survey in 1998–99, doctorates reported by Vb departments in earlier years are not shown in Table 2. The 1,119 new doctorates granted by these departments in 1999–2000 is a de-

Table 2: New Doctoral Degrees Awarded by Groups I–Va, Fall Count

Group	I (Pu)	I (Pr)	II	III	IV	Va	Total*
1995–96	325	174	222	124	172	81	1098
1996–97	297	187	238	132	197	72	1123
1997–98	306	174	264	129	213	77	1163
1998–99	292	152	241	136	243	69	1133
1999–00	256	157	223	132	284	67	1119

*Does not include Vb. See "Recent Changes in Procedures" on page 195.

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Table 3A: Employment Status of 1999–2000 U.S. New Doctoral Recipients in the Mathematical Sciences by Field of Thesis

TYPE OF EMPLOYER		FIELD OF THESIS												TOTAL
		Algebra Number Theory	Real, Comp., Funct., & Harmonic Analysis	Geometry/ Topology	Discr. Math./ Combin./ Logic/ Comp. Sci.	Probability	Statistics	Applied Math.	Numerical Analysis/ Approxi-mations	Linear Nonlinear Optim./ Control	Differential, Integral, & Difference Equations	Math. Education	Other/ Unknown	
Group I (Public)		16	15	12	10	3	1	7	4	1	6	0	0	**75**
Group I (Private)		15	3	19	4	5	0	3	4	0	5	0	0	**58**
Group II		8	13	7	5	1	2	1	1	2	7	0	0	**47**
Group III		7	4	2	1	0	9	1	0	1	2	2	0	**29**
Group IV		0	0	0	0	2	43	0	1	0	0	0	0	**46**
Group Va		0	0	0	1	2	0	4	1	4	1	0	0	**13**
Master's		13	8	8	4	1	3	4	3	1	4	4	0	**53**
Bachelor's		25	16	9	10	1	9	7	5	2	14	6	1	**105**
Two-Year College		2	1	3	1	0	1	2	3	0	1	0	1	**15**
Other Academic Dept.		1	2	1	3	2	47	11	2	1	6	2	1	**79**
Research Institute/ Other Nonprofit		10	2	0	1	1	13	0	3	0	1	0	0	**31**
Government		0	0	0	3	1	20	7	3	1	4	0	0	**39**
Business and Industry		20	8	9	11	10	93	29	9	4	13	0	0	**206**
Non-U.S. Academic		15	8	12	10	5	19	7	1	1	7	0	0	**85**
Non-U.S. Nonacademic		0	1	2	1	0	1	1	2	0	0	0	0	**8**
Not Seeking Employment		3	0	0	2	0	2	3	1	0	0	0	0	**11**
Still Seeking Employment		11	2	8	2	0	6	3	6	1	4	0	0	**43**
Unknown (U.S.)		10	9	10	13	4	29	10	4	4	9	0	0	**102**
Unknown (non-U.S.)*		13	5	9	1	3	12	6	6	7	9	3	0	**74**
Column Total		**169**	**97**	**111**	**83**	**41**	**310**	**106**	**59**	**30**	**93**	**17**	**3**	**1119**
Column Subtotals	Male	133	80	91	63	33	189	81	45	23	68	9	2	**817**
	Female	36	17	20	20	8	121	25	14	7	25	8	1	**302**

*Includes those whose status is reported as "unknown" or "still seeking employment".

Table 3B: Employment Status of 1999–2000 U.S. New Doctoral Recipients in the Mathematical Sciences by Type of Degree-Granting Department

TYPE OF EMPLOYER		TYPE OF DOCTORAL DEGREE-GRANTING DEPARTMENT						ROW TOTAL	ROW SUBTOTAL	
		Group I (Public) Math	Group I (Private) Math	Group II Math	Group III Math	Group IV Statistics	Group Va Applied Math		Male	Female
Group I (Public)		38	21	11	4	1	0	**75**	63	12
Group I (Private)		24	27	3	0	2	2	**58**	50	8
Group II		19	8	15	3	1	1	**47**	40	7
Group III		8	0	7	6	7	1	**29**	22	7
Group IV		0	0	0	0	46	0	**46**	24	22
Group Va		0	2	0	1	0	10	**13**	11	2
Master's		8	2	25	14	2	2	**53**	34	19
Bachelor's		20	9	36	31	7	2	**105**	64	41
Two-Year College		5	0	2	7	1	0	**15**	12	3
Other Academic Dept.		4	5	7	8	48	7	**79**	52	27
Research Institute/ Other Nonprofit		7	4	6	1	11	2	**31**	17	14
Government		4	7	4	2	20	2	**39**	26	13
Business and Industry		31	23	34	25	79	14	**206**	166	40
Non-U.S. Academic		31	17	13	3	18	3	**85**	69	16
Non-U.S. Nonacademic		1	1	3	1	1	1	**8**	5	3
Not Seeking Employment		1	0	5	2	1	2	**11**	4	7
Still Seeking Employment		15	9	7	3	6	3	**43**	35	8
Unknown (U.S.)		22	8	28	14	21	9	**102**	66	36
Unknown (non-U.S.)*		18	14	17	7	12	6	**74**	57	17
Column Total		**256**	**157**	**223**	**132**	**284**	**67**	**1119**	**817**	**302**
Column Subtotals	Male	197	139	157	100	174	50	**817**		
	Female	59	18	66	32	110	17	**302**		

*Includes those whose status is reported as "unknown" or "still seeking employment".

Table 3C: 1999–2000 New Doctoral Recipients: Field of Thesis by Type of Degree-Granting Department

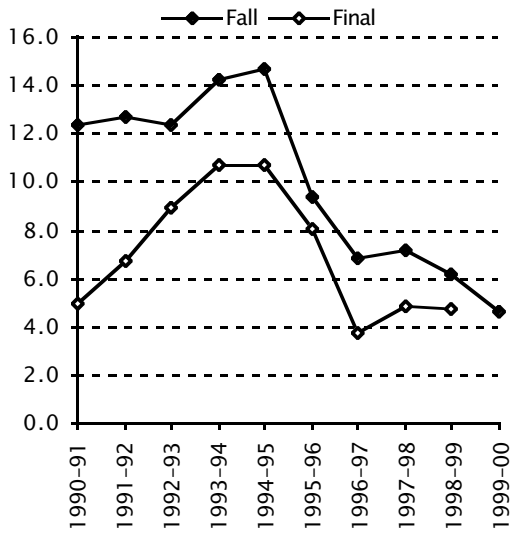
TYPE OF DOCTORAL DEGREE-GRANTING DEPARTMENT	FIELD OF THESIS												TOTAL
	Algebra Number Theory	Real, Comp., Funct., & Harmonic Analysis	Geometry/ Topology	Discr. Math./ Combin./ Logic/ Comp. Sci.	Probability	Statistics	Applied Math.	Numerical Analysis/ Approxi-mations	Linear Nonlinear Optim./ Control	Differential, Integral, & Difference Equations	Math. Education	Other/ Unknown	
Group I (Public)	73	33	44	23	9	4	19	15	7	27	0	2	**256**
Group I (Private)	38	18	35	16	8	3	15	9	1	12	1	0	**157**
Group II	45	35	21	21	6	4	35	15	6	31	4	0	**223**
Group III	12	10	10	15	3	25	12	13	1	18	12	1	**132**
Group IV	0	0	0	0	9	269	4	1	1	0	0	0	**284**
Group Va	0	1	1	8	6	5	21	6	14	5	0	0	**67**
Total	**169**	**97**	**111**	**83**	**41**	**310**	**106**	**59**	**30**	**93**	**17**	**3**	**1119**

crease of 14 from 1998–99. Groups I (Pu), II, III, and Va showed decreases, while Group I (Pr) increased by 5 and Group IV increased by 41 from 1998–99. Much of the increase in number of new doctoral degrees in Group IV is almost certainly due to the increase in response rate for Group IV. The 1999–2000 numbers in Table 2 will be broken down in various ways, such as by sex, in later sections of this report. The names of the 1,119 new doctoral recipients are found on pages 219–38 of this issue of the *Notices*.

A quick glance at the Total column in Table 2, seems to indicate that nothing interesting has happened with number of new doctoral recipients over the five years included there. However, a closer look yields some interesting information. Group IV doctoral degrees have increased by 112 (65.1%) since 1995–96. Much of this increase is due to adding departments to this group and an increase in the number of responding departments from 54 in 1995–96 to 75 in 1999–2000. Over these five years, Group I (Pu) is down 69 (21.2%), Group I (Pr) is down 17 (9.8%), Groups II and III are up slightly, 1 and 8 respectively, and Group Va is down 14 (17.3%). If Group IV is excluded, the other five groups have gone from 926 new doctoral recipients in 1995–96 to 835 in 1999–2000, a drop of 9.8%

Table/Graph 4A: Percentage of New Doctoral Recipients Unemployed (as reported in the respective Annual Survey Reports 1991–2000)

Report	Fall	Final
1990–91	12.4	5.0
1991–92	12.7	6.7
1992–93	12.4	8.9
1993–94	14.2	10.7
1994–95	14.7	10.7
1995–96	9.4	8.1
1996–97	6.8	3.8
1997–98	7.2	4.9
1998–99	6.2	4.7
1999–00	4.6	*



*To appear in the Second Report.
Caution: See "Recent Changes in Procedures" on page 195. The fall unemployment rate for 1997–98 excluding Group Vb was 7.6%.

Employment Status of U.S. New Doctoral Recipients, 1999–2000

Table 3A gives a cross-tabulation of the 1,119 new doctoral recipients in the mathematical sciences: Type of Employer by Field of Thesis. Table 3B gives a cross-tabulation of the same data: Type of Employer by Type of Degree-Granting Department (Group). Table 3C gives a cross-tabulation of these same data: Type of Degree-Granting Department (Group) by Field of Thesis. This table gives a picture of the type of doctoral students being trained in the various groups. These tables contain a wealth of information about the employment of these new doctoral recipients, some of which will be discussed in this report. Keep in mind the results in this report come from the departments giving the degrees and not from the degree recipients themselves. These tables will be revised using information from the doctoral recipients themselves and they will appear in a later report.

The last column (Total) in Table 3A can be used to find the overall unemployment rate. In this and other unemployment calculations in this report, the individuals whose employment status is not known (Unknown (U.S.) and Unknown (non-U.S.)) are first removed, and the unemployment fraction is the number still seeking employment divided by the total number of individuals left after the "Unknowns" are removed. The overall unemployment rate for these data is 4.6%. This figure will be updated with information gathered from the individual new doctoral recipients. The analogous figure for fall 1999 is 6.2%. Table/Graph 4A shows how this employment rate compares with other years over the past decade. The unemployment rate varies from group to group, with a high of 6.9% for Group I (Pu) and a low of 2.4% for Group IV.

There are 796 new doctoral recipients employed in the U.S. Of these, 551 (69.2%) hold academic positions, 39 (4.9%) are employed by government, and 206 (25.9%) hold positions in business and industry. In the First Report for fall 1999, there were 759 new doctoral recipients employed in the U.S., of which 564 (74.3%) held academic positions, 35 (4.6%) were in government, and 160 (21.1%) were in business and industry.

Table 4B: Number of New Doctoral Recipients Taking Positions in Business and Industry in the U.S. by Type of Degree-Granting Department, Fall 1998 to Fall 2000

Group	I (Pu)	I (Pr)	II	III	IV	Va	Total
Fall 1998	29	27	41	27	70	25	219
Fall 1999	28	19	23	19	57	14	160
Fall 2000	31	23	34	25	79	14	206

The number of new doctoral mathematicians taking jobs in business and industry which had been rising for several years dropped from 219 in fall 1998 to 160 in fall 1999. In fall 2000, the figure jumped back up to 206, close to its previous high. Table 4B shows the number of new doctoral recipients who took positions in business and industry by the type of department granting their degree for fall 1998 to fall 2000. Group I (Pu) has the smallest percentage (18.5%) taking jobs in business and industry and Group IV the highest at 35.1%. These percentages are based on the 796 new doctoral recipients known to have employment in the U.S.

Table 4C: Number of New Doctoral Recipients Taking U.S. Academic Positions by Type of Degree-Granting Department, Fall 1998 to Fall 2000

Group	I (Pu)	I (Pr)	II	III	IV	Va	Total
Fall 1998	117	97	122	49	84	32	**501**
Fall 1999	157	87	130	70	82	38	**564**
Fall 2000	133	78	112	75	126	27	**551**

Table 4C shows the number of new doctoral recipients who took academic positions in the U.S. by type of department granting their degree for fall 1998 to fall 2000, while Table 4D shows how many positions were filled with new doctoral recipients for each type of academic employer. The number taking academic positions in the U.S. remains high for the second consecutive year.

In 2000, 58 new doctoral recipients hold positions in the institution that granted their degree, although not necessarily in the same department. This represents 6.5% of new doctoral recipients who are currently employed and 10.5% of the U.S. academic positions held by new doctoral recipients. In 1999 there were 72 such individuals making up 8.2% of the new doctoral recipients who were employed at the time of the First Report. Fifteen new doctoral recipients have taken part-time positions in fall 2000.

Table 4D: U.S. Academic Positions Filled by New Doctoral Recipients by Type of Hiring Department, Fall 1998 to Fall 2000

Group	I–III	IV	Va	M&B	Other	Total
Fall 1998	177	35	7	177	105	**501**
Fall 1999	221	49	17	175	102	**564**
Fall 2000	209	46	13	158	125	**551**

Information about Females among the New Doctoral Recipients, 1999–2000

Tables 3A and 3B give male and female breakdowns of the new doctoral recipients in 1999–2000 by Field of Thesis, by Type of Degree-Granting Department, and by Type of Employer.

Overall, 302 (27.0%) of the 1,119 new doctoral recipients in 1999–2000 are females. In 1998–99, 318 (28.1%) of the new doctoral recipients were females. This percentage varies over the different groups, and these percentages are given in the first row of Table 4E. The percentage is lowest for Group I (Pr), at 11.5%, and highest for Group IV, statistics departments, at 38.7%. The second row of Table 4E gives the percentage of the new doctoral recipients hired who are female for each of the Groups I, II, III, IV and Va. In addition, 35.8% of the new doctoral recipients hired in Group M, master's departments, are female; 39.0% of the new doctoral recipients hired in Group B, bachelor's departments, are female; and 19.4% of new doctoral recipients hired in business and industry are female. The unemployment rate for all female new doctoral recipients is 3.2% compared to 5.0% for males and 4.6% overall.

Table 4E: Females as a Percentage of New Doctoral Recipients Produced by and Hired by Doctoral-Granting Groups, 1999–2000

%	I (Pu)	I (Pr)	II	III	IV	Va	Total
Produced	23.0	11.5	29.6	24.2	38.7	25.4	**27.0**
Hired	16.0	13.8	14.9	24.1	47.8	15.4	**21.6**

By field of thesis the percentage of female new doctoral recipients ranged from 17.5% in real, complex, functional, and harmonic analysis to 36.8% in probability or statistics and 47.1% in mathematics education.

Table 4F: Employment Status of 1999–2000 U.S. New Doctoral Recipients by Citizenship Status

TYPE OF EMPLOYER	CITIZENSHIP				TOTAL DOCTORAL RECIPIENTS
	U.S. CITIZENS	NON-U.S. CITIZENS			
		Permanent Visa	Temporary Visa	Unknown Visa	
U.S. Employer	439	68	241	48	**796**
U.S. Academic	326	40	150	35	**551**
Groups I, II, III, and Va	104	24	80	14	**222**
Group IV	25	3	15	3	**46**
Non-Ph.D. Department	181	11	44	16	**252**
Research Institute/Other Nonprofit	16	2	11	2	**31**
U.S. Nonacademic	113	28	91	13	**245**
Non-U.S. Employer	8	4	70	11	**93**
Non-U.S. Academic	8	3	64	10	**85**
Non-U.S. Nonacademic	0	1	6	1	**8**
Not Seeking Employment	7	2	2	0	**11**
Still Seeking Employment	20	5	15	3	**43**
SUBTOTAL	474	79	328	62	**943**
Unknown (U.S.)	63	19	17	3	**102**
Unknown (non-U.S.)*	0	3	56	15	**74**
TOTAL	**537**	**101**	**401**	**80**	**1119**

*Includes those whose status is reported as "unknown" or "still seeking employment".

Later sections in this First Report give more information about the female new doctoral recipients who are U.S. citizens and the female new doctoral recipients in Group IV.

Employment Information about New Doctoral Recipients by Citizenship and Type of Employer

Table 4F shows the pattern of employment within broad job categories broken down by citizenship status of the new doctoral recipients. The citizenship is known for all 1,119 new doctoral recipients in 1999–2000.

The unemployment rate for the 537 U.S. citizens is 4.2% compared to 6.0% in 1998–99. The unemployment rate for non-U.S. citizens is 4.9%. This varies by type of visa. The unemployment rate for non-U.S. citizens with a permanent visa is 6.3%, while that for non-U.S. citizens with a temporary visa is 4.6%.

Among U.S. citizens whose employment status is known, 92.6% are employed in the U.S. Among non-U.S. citizens with a permanent visa whose employment status is known, 86.1% have jobs in the U.S., while this percentage for non-

Table 4G: New Doctoral Recipients Having Employment in the U.S. by Type of Employer and Citizenship, 1999–2000

Employer	U.S.	Non-U.S.	Total
U.S. Academic, Groups I–Va	129	139	**268**
U.S. Academic, Other	197	86	**283**
U.S. Nonacademic	113	132	**245**
Total	**439**	**357**	**796**

Table 5: Sex, Race/Ethnicity, and Citizenship of U.S. New Doctoral Recipients, 1999–2000

RACIAL/ETHNIC GROUP	MALE					FEMALE					
	U.S. CITIZEN	NON-U.S. CITIZEN			Total Male	U.S. CITIZEN	NON-U.S. CITIZEN			Total Female	TOTAL
		Permanent Visa	Temporary Visa	Unknown Visa			Permanent Visa	Temporary Visa	Unknown Visa		
American Indian or Alaska Native	1	0	0	0	1	1	0	0	0	1	**2**
Asian	21	30	157	29	237	8	21	48	14	91	**328**
Black or African American	10	0	2	2	14	5	0	0	1	6	**20**
Hispanic or Latino	4	2	21	5	32	6	2	6	1	15	**47**
Native Hawaiian or Other Pacific Islander	0	0	0	0	0	0	0	1	0	1	**1**
White	343	36	132	18	529	136	8	33	7	184	**713**
Unknown	0	1	1	2	4	2	1	0	1	4	**8**
TOTAL	**379**	**69**	**313**	**56**	**817**	**158**	**32**	**88**	**24**	**302**	**1119**

Table 6: U.S. Citizen Doctoral Recipients

Year	Total Doctorates by U.S. Institutions	Total U.S. Citizen Doctoral Recipients	%
1975–76	965	722	75
1980–81	839	567	68
1985–86	755	386	51
1990–91	1061	461	43
1995–96	1150	493	43
1996–97	1158	516	45
1997–98*	1216	586	48
1998–99	1133	554	49
1999–00	1119	537	48

*Prior to this year, the counts include new doctoral recipients from Group Vb. The figure for 1997–98 excluding Vb is 1,163 new doctoral recipients, of which 565 are U.S. citizens. In addition, prior to 1982–83, the counts include recipients from computer science departments.

U.S. citizens with a temporary visa is 73.5%.

Table 4G is a cross-tabulation of the 796 new doctoral recipients who have employment in the U.S. by citizenship and broad employment categories. It is a condensed version of Table 4F.

Of the 796 new doctoral recipients having jobs in the U.S., 55.2% are U.S. citizens. Of the 268 new doctoral recipients who took jobs in U.S. doctoral-granting departments, 48.1% are U.S. citizens. Of the 283 who took other academic positions, 69.6% are U.S. citizens. Of the 245 who took nonacademic positions, 46.1% are U.S. citizens.

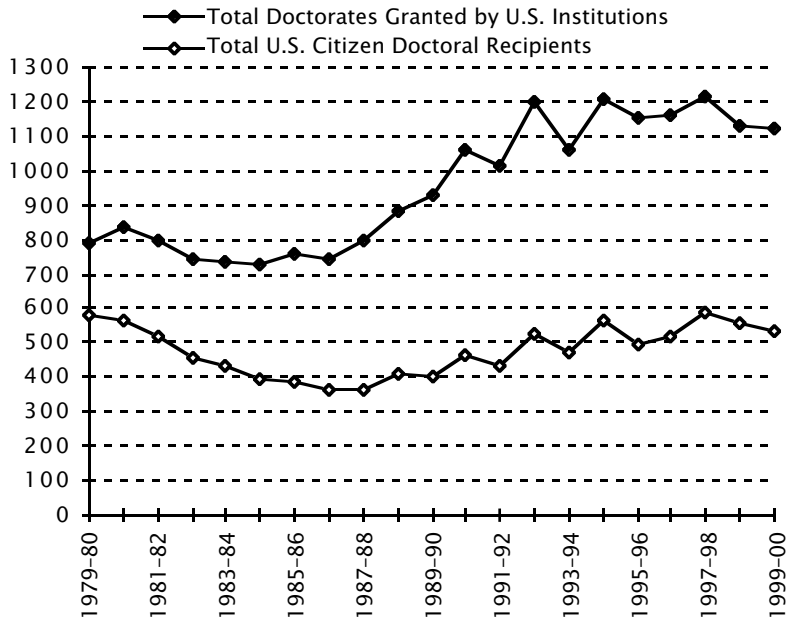
Of the 439 U.S. citizens employed in the U.S., 29.4% have jobs in a doctoral-granting department, 44.9% are in other academic positions, and 25.7% are in nonacademic positions. For the 357 non-U.S. citizens employed in the U.S., the analogous percentages are 38.9%, 24.1%, and 37.0% respectively.

Table 7: U.S. Citizen Doctoral Recipients by Sex

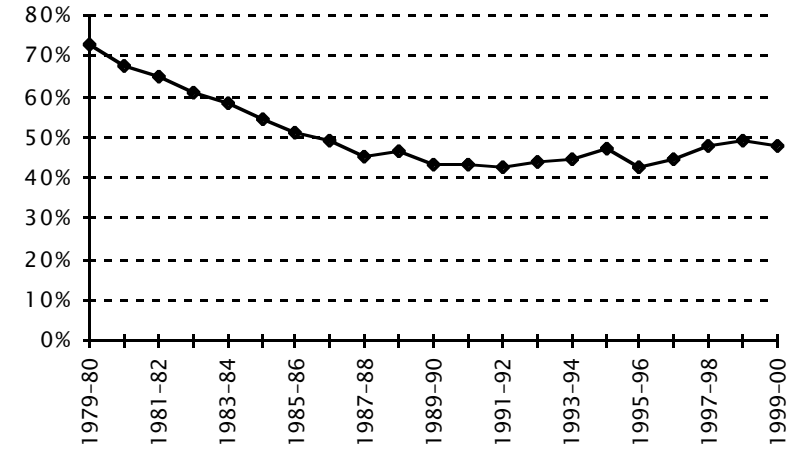
Year	Total U.S. Citizen Doctoral Recipients	Male	Female	% Female
1975–76	722	636	86	12
1980–81	567	465	102	18
1985–86	386	304	82	21
1990–91	461	349	112	24
1995–96	493	377	116	24
1996–97	516	368	148	29
1997–98*	586	423	163	28
1998–99	554	367	187	34
1999–00	537	379	158	29

*Prior to this year, the counts include new doctoral recipients from Group Vb. The figures for 1997–98 excluding Vb are 565 U.S. citizen new doctoral recipients, of which 409 are male and 156 are female. In addition, prior to 1982–83, the counts include recipients from computer science departments.

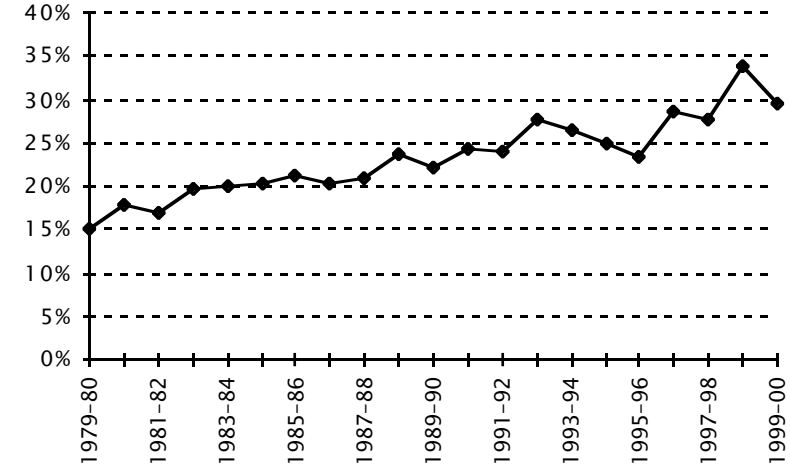
Graph 6A: U.S. Citizen Doctoral Recipients



Graph 6B: U.S. Citizen Doctoral Recipients by Percent



Graph 7: Female U.S. Citizen Doctoral Recipients by Percent



Sex, Race/Ethnicity, and Citizenship Status of U.S. New Doctoral Recipients, 1999–2000

Table 5 presents a breakdown according to sex, racial/ethnic group, and citizenship status of new doctoral recipients. The information reported in this table was obtained in summary form from the departments granting the degrees.

There were 537 (48.0%) U.S. citizens among the 1,119 new doctoral recipients in 1999–2000. Table 6 gives the number of new U.S. doctorates and the number of U.S. citizens back to 1975–76. The percentage of U.S. citizens has remained essentially the same over the last three years.

Among U.S. citizens, 29 are Asians (21 male and 8 female), 15 are Blacks or African Americans (10 male and 5 female), 10 are Hispanics or Latinos (4 male and 6 female), 479 are whites (343 male and 136 female), and 4 are other. Among non-U.S. citizens, there are 299 Asians, 37 Hispanics or Latinos, 234 whites, and 12 others.

Females make up 29.4% of the 537 U.S. citizens receiving doctoral degrees in the mathematical sciences in 1999–2000. This is down considerably from 33.8% in 1998–99, the highest percentage of females among U.S. citizen new doctoral recipients ever reported by the Annual Survey. For comparison, among the 582 non-U.S. citizen new doctoral recipients, 144 (24.7%) are females.

The number of male U.S. citizen new doctoral recipients increased by 12 from 1998–99. Table 7 gives the historical record of U.S. citizen new doctoral recipients, broken down by male and female for past years, going back to 1975–76.

New Doctoral Recipients in Group IV

Group IV contains U.S. departments (or programs) of statistics, biostatistics, and biometrics reporting a doctoral program. In the Annual Survey Reports, Group IV is referred to as the Statistics Group. In the past three to four years, substantial effort has gone into making Group IV an appropriate set of departments for the Annual Survey, making Group IV as complete as possible, and increasing the number of Group IV departments that respond to the Annual Survey. These efforts have been quite successful as can be seen in Table 8, which contains five years of data for Group IV. Efforts are still ongoing to increase the response rate to the near 100% that the other doctoral groups have.

Group IV now has 89 departments, 15 more than the next largest doctoral group. It contains 31% of all doctoral departments surveyed and the 75 departments responding to the Annual Survey produced 284 new doctorates, 25.4% of all new doctorates.

Table 8 gives five years of data for several variables in Group IV from 1995 to 2000. It is likely that most of the variation in numbers for Group IV during these five years is due to changes in Group IV mentioned in the first paragraph of this section.

Because of its size, it is clear that data from Group IV have a large effect on the overall results when all doctoral groups are combined. Furthermore, Group IV results are often quite different than those for Groups I (Pu), I (Pr), II, III, and Va, and Group IV results can mask important changes in the other doctoral groups. In the following paragraphs some of these differences are presented.

Of new doctoral recipients, 110 of 284 (38.7%) in Group IV are females and 192 of 835 (23.0%) are females in the other doctoral groups. Among the U.S. citizens, females accounted for 55 of the 143 (38.5%) Group IV new doctoral recipients while for the other groups combined, 103 of 394 (26.1%) were females.

Of 225 Group IV new doctoral recipients who have employment in the U.S., 79 (35.1%) took jobs in business or industry, while for the other doctoral groups 127 of 571 (22.2%) took jobs in business and industry.

Of 251 Group IV new doctoral recipients whose employment status is known, 6 (2.4%) are unemployed, while for the other doctoral groups 37 of 692 (5.3%) are unemployed. Twenty-two of 46 (47.8%) new doctoral recipients hired by Group IV departments were females. For the other doctoral groups, 36 of 222 (16.2%) new doctoral recipients hired were females.

Group IV had 278 new doctoral recipients with a field of thesis in probability (9) or statistics (269) and the other doctoral departments had

Table 8: Five Years of Information about Group IV: Statistics and Biostatistics Departments

Year	Departments Surveyed	Departments Responding (percent)	New Doctorates in Group IV				New Doctorates in Probability or Statistics				New Doctorates Hired	
			Total	Females (percent)	Jobs in bus & ind	Percentage Unemployed	Total	Group IV	Other groups	Percentage Unemployed	Male	Female
1995–96	80	54 (67.5)	172	46 (26.7)	55	3.9	266	171	95	4.8	24	6
1996–97	81	60 (74.1)	197	74 (37.6)	70	4.2	292	187	105	5.1	24	9
1997–98	82	59 (72.0)	213	73 (34.3)	70	3.2	294	199	95	3.7	25	10
1998–99	91	72 (79.1)	243	87 (35.8)	57	4.9	320	240	80	5.8	29	20
1999–00	89	75 (84.3)	284	110 (38.7)	79	2.4	351	*278	**73	2.0	24	22

* Of 278, there were 269 in statistics and 9 in probability. For complete details, see Table 3C.

** Of 73, there were 41 in statistics and 32 in probability. For complete details, see Table 3C.

73 in probability (32) or statistics (41). The distribution of these 73 degrees among the various groups can be found in Table 3C. The number of new doctoral recipients with theses in probability or statistics (351) is larger than any other field, with algebra and number theory next with 169. The unemployment rate for the 351 new doctoral recipients in probability or statistics is 2.0% compared to 5.8% for new doctoral recipients in all other fields combined.

Faculty Salary Survey

The charts on the following pages display faculty salary data for Groups I (Pu), I (Pr), II, III, IV, Va, M, and B: faculty salary distribution by rank, mean salaries by rank, information on quartiles by rank, and the number of returns for the group. Results reported here are summaries based on the departments who responded to this portion of the Annual Survey.

Table 9 provides the departmental response rates for the 2000 Faculty Salary Survey. Departments were asked to report for each rank the number of tenured and tenure-track faculty whose 2000–2001 academic-year salaries fell within given salary intervals. Reporting salary data in this fashion eliminates some of the concerns about confidentiality but does not permit determination of actual quartiles. What can be determined is the salary interval in which the quartiles occur; the salary intervals containing the quartiles are denoted by <n, n+5>.

Table 9: Faculty Salary Response Rates

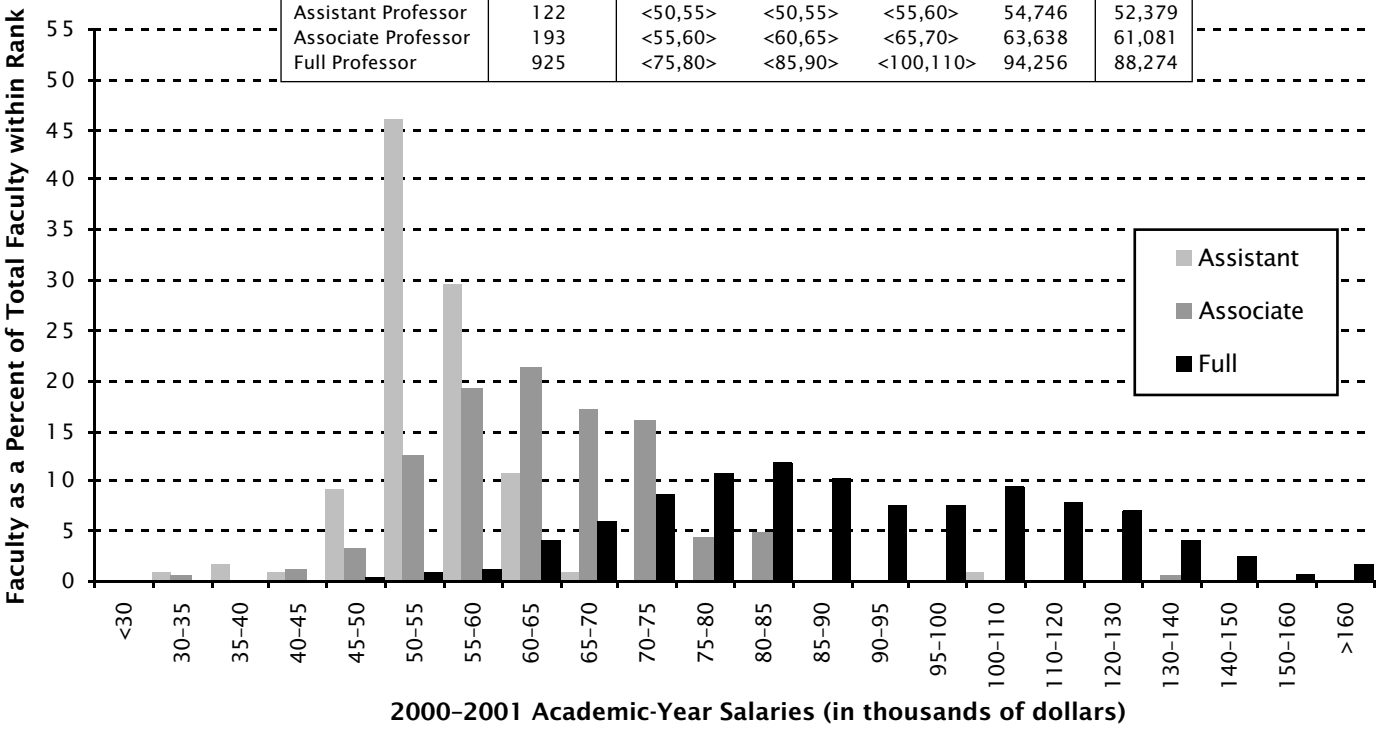
Departments	Number	Percent
Group I (Public)	25 of 25	100.0
Group I (Private)	16 of 23	69.6
Group II	46 of 56	82.1
Group III	58 of 74	78.4
Group IV	58 of 89	65.2
Group Va	10 of 17*	58.8
Group M	125 of 230	54.3
Group B	368 of 1018	36.1

* The population for Group V is slightly less than for the Doctorates Granted Survey because some departments grant degrees but do not formally "house" faculty and their salaries.

Since departments in Group I, II, and III were changed in 1995–96 (see definitions of the groups on page 208), comparisons are possible only to the last four year's data. In addition, prior to the 1998 survey, Groups Va and Vb were reported together as Group V.

Group I (Public) Faculty Salaries
Doctoral degree-granting departments of mathematics (25)
25 responses (100.0%)

Rank	2000–2001 No. Reported	Q_1	Median	Q_3	Mean	1999–00 Mean
Assistant Professor	122	<50,55>	<50,55>	<55,60>	54,746	52,379
Associate Professor	193	<55,60>	<60,65>	<65,70>	63,638	61,081
Full Professor	925	<75,80>	<85,90>	<100,110>	94,256	88,274

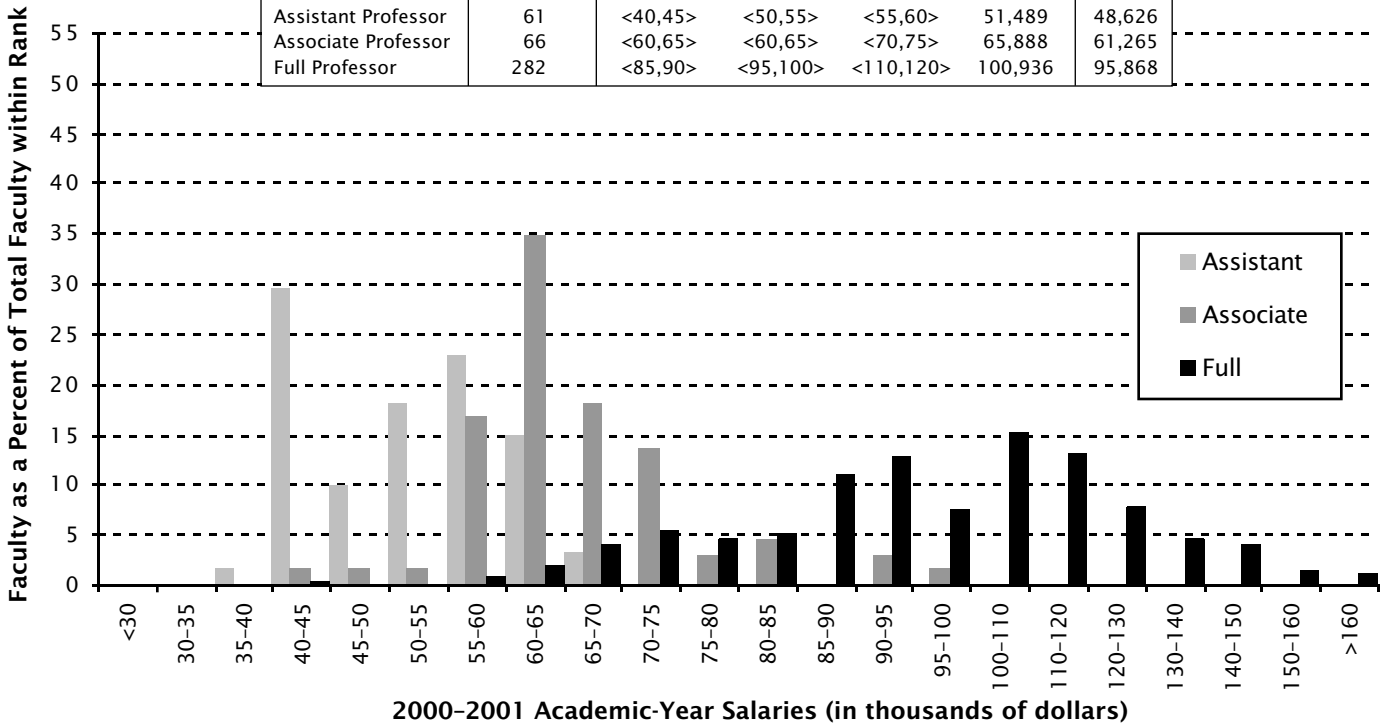


Group I (Private) Faculty Salaries

Doctoral degree-granting departments of mathematics (23)

16 responses (69.6%)

Rank	2000–2001 No. Reported	Q_1	Median	Q_3	Mean	1999–00 Mean
Assistant Professor	61	<40,45>	<50,55>	<55,60>	51,489	48,626
Associate Professor	66	<60,65>	<60,65>	<70,75>	65,888	61,265
Full Professor	282	<85,90>	<95,100>	<110,120>	100,936	95,868

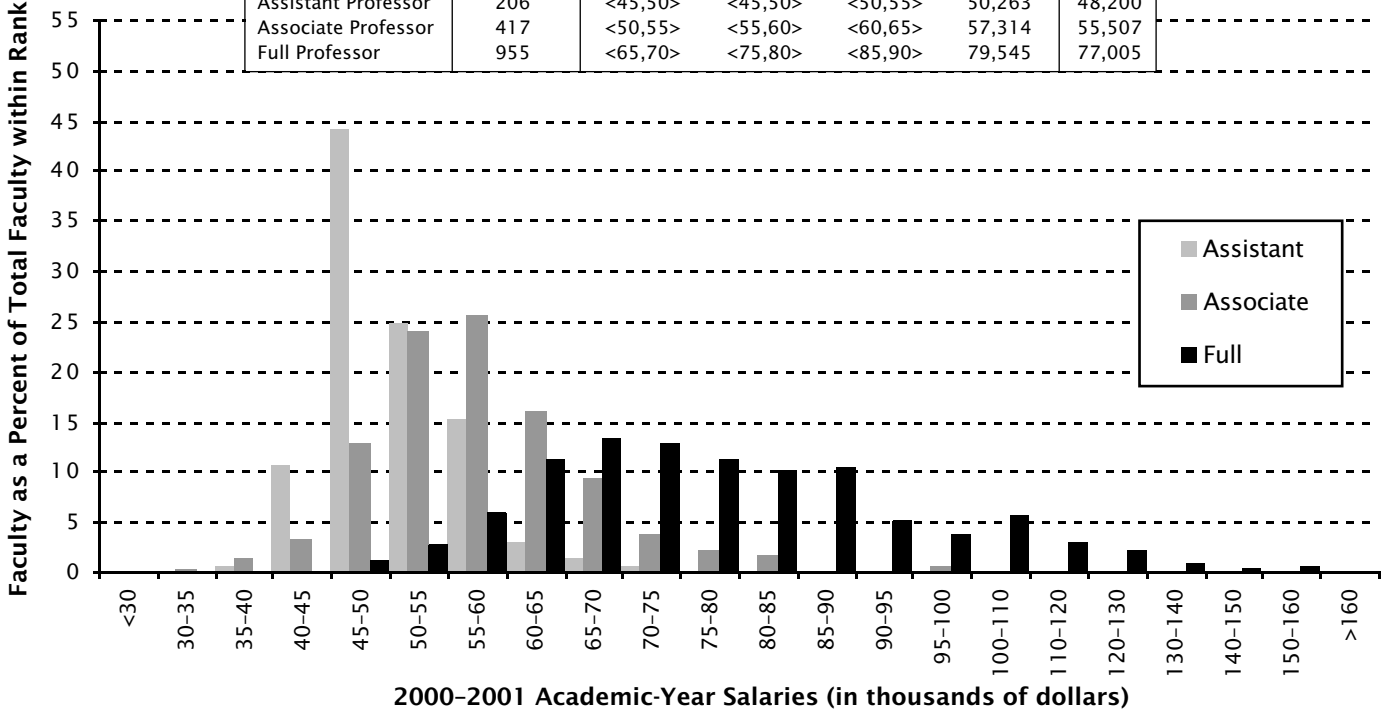


Group II Faculty Salaries

Doctoral degree-granting departments of mathematics (56)

46 responses (82.1%)

Rank	2000–2001 No. Reported	Q_1	Median	Q_3	Mean	1999–00 Mean
Assistant Professor	206	<45,50>	<45,50>	<50,55>	50,263	48,200
Associate Professor	417	<50,55>	<55,60>	<60,65>	57,314	55,507
Full Professor	955	<65,70>	<75,80>	<85,90>	79,545	77,005

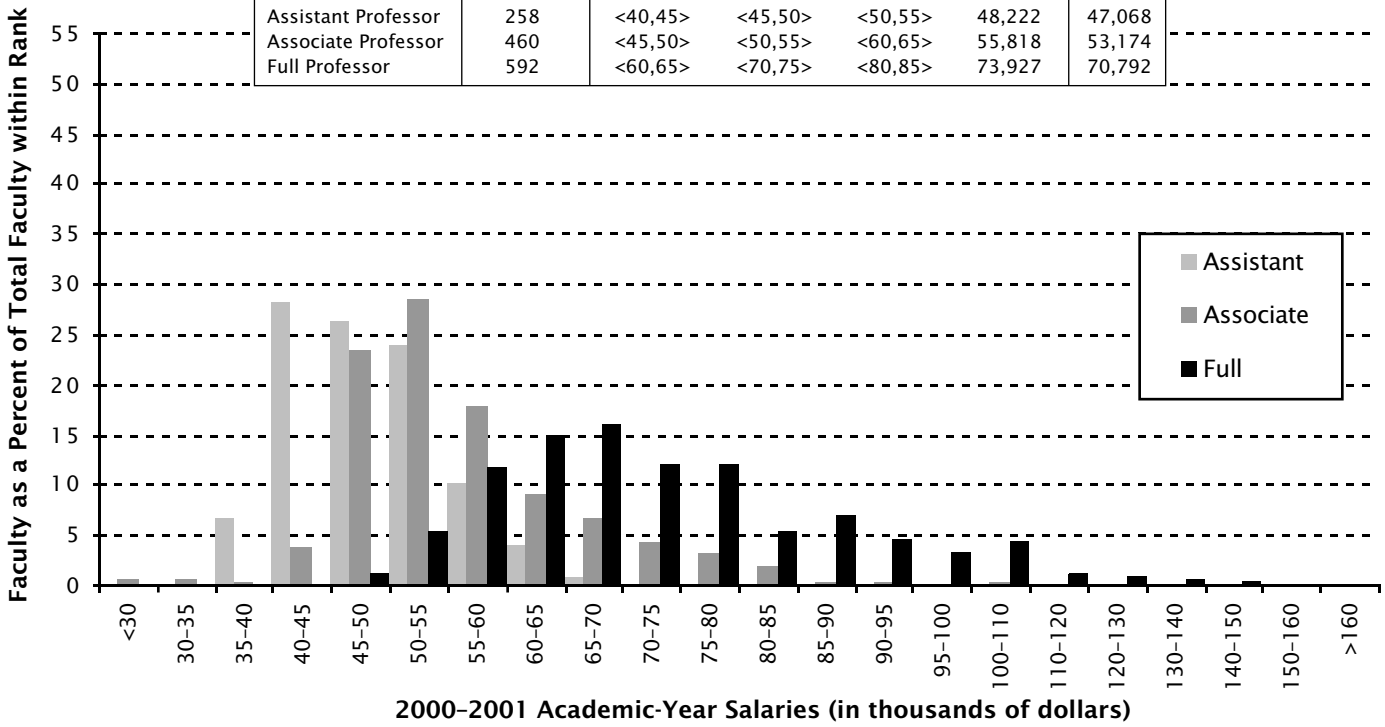


Group III Faculty Salaries

Doctoral degree-granting departments of mathematics (74)

58 responses (78.4%)

Rank	2000–2001 No. Reported	Q_1	Median	Q_3	Mean	1999–00 Mean
Assistant Professor	258	<40,45>	<45,50>	<50,55>	48,222	47,068
Associate Professor	460	<45,50>	<50,55>	<60,65>	55,818	53,174
Full Professor	592	<60,65>	<70,75>	<80,85>	73,927	70,792

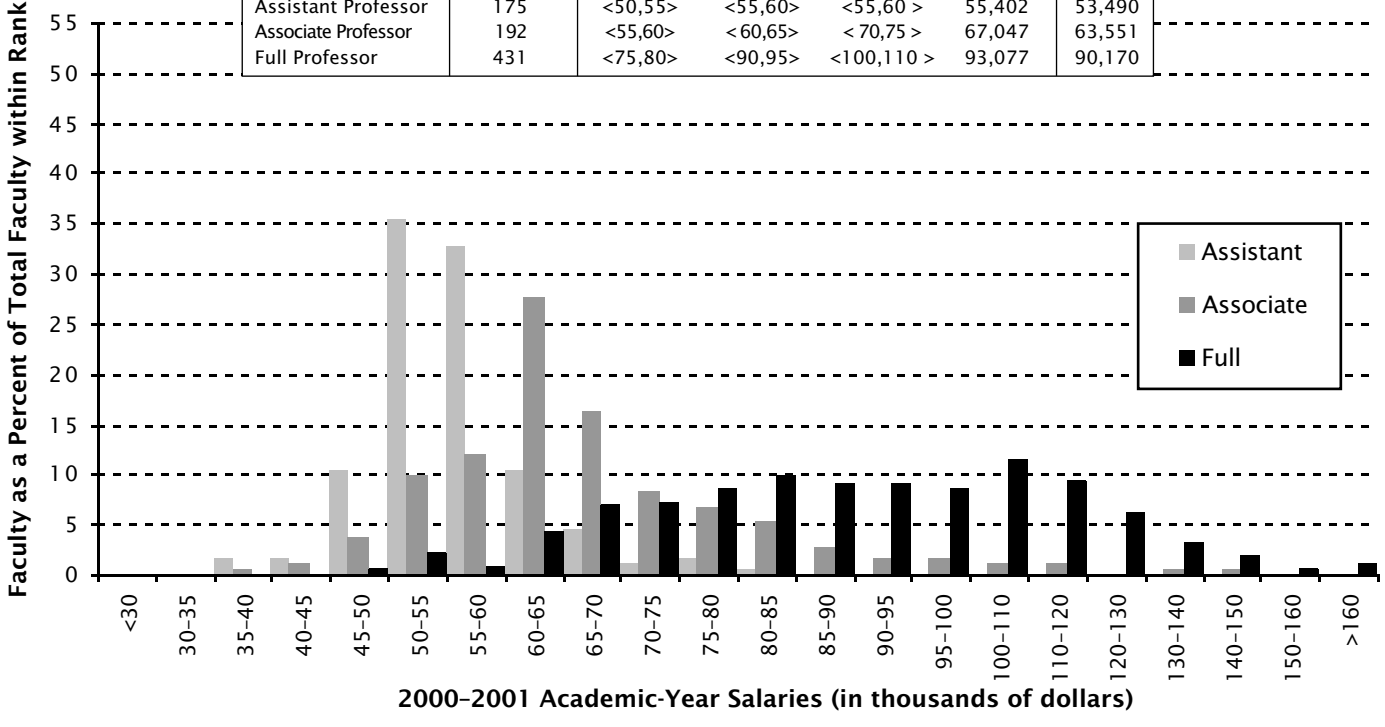


Group IV Faculty Salaries

Doctoral degree-granting departments of statistics, biostatistics, biometrics (89)

58 responses (65.2%)

Rank	2000–2001 No. Reported	Q_1	Median	Q_3	Mean	1999–00 Mean
Assistant Professor	175	<50,55>	<55,60>	<55,60 >	55,402	53,490
Associate Professor	192	<55,60>	< 60,65>	< 70,75 >	67,047	63,551
Full Professor	431	<75,80>	<90,95>	<100,110 >	93,077	90,170

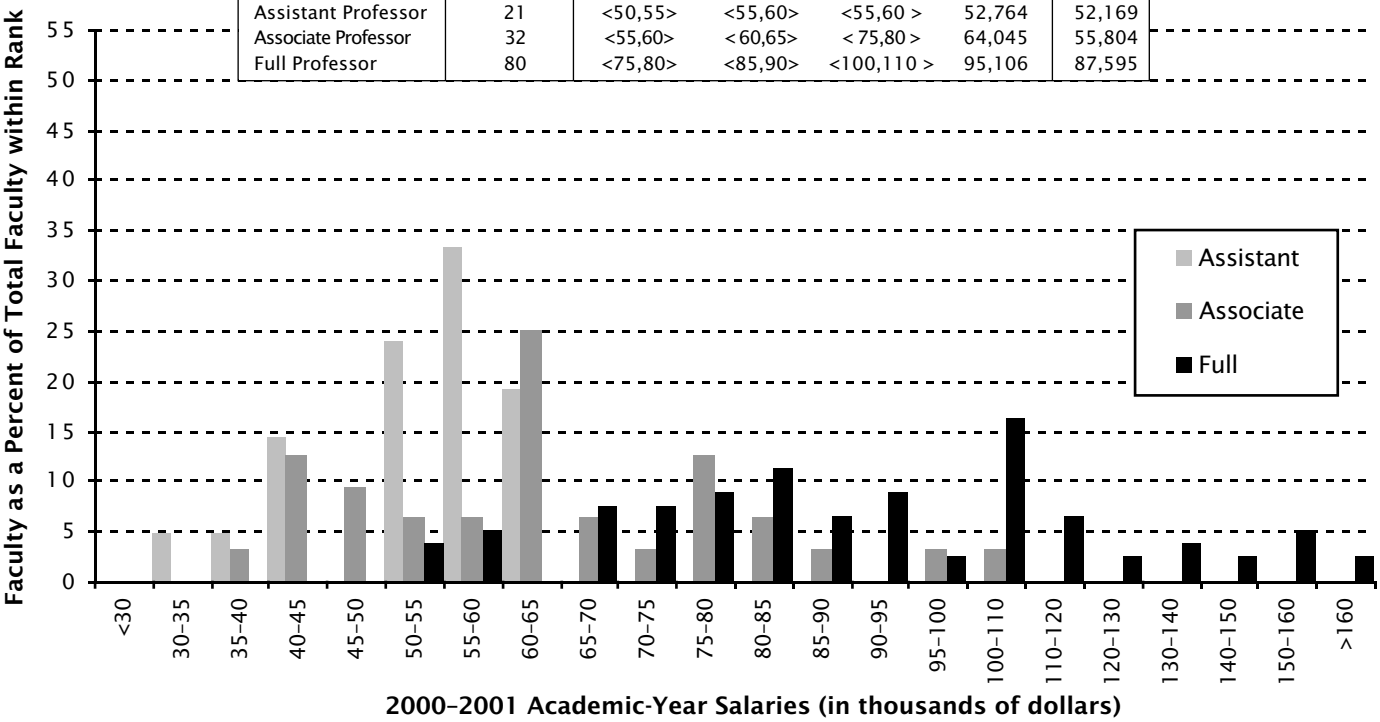


Group Va Faculty Salaries

Doctoral degree-granting departments of applied mathematics (17)

10 responses (58.8%)

Rank	2000–2001 No. Reported	Q_1	Median	Q_3	Mean	1999–00 Mean
Assistant Professor	21	<50,55>	<55,60>	<55,60 >	52,764	52,169
Associate Professor	32	<55,60>	< 60,65>	< 75,80 >	64,045	55,804
Full Professor	80	<75,80>	<85,90>	<100,110 >	95,106	87,595

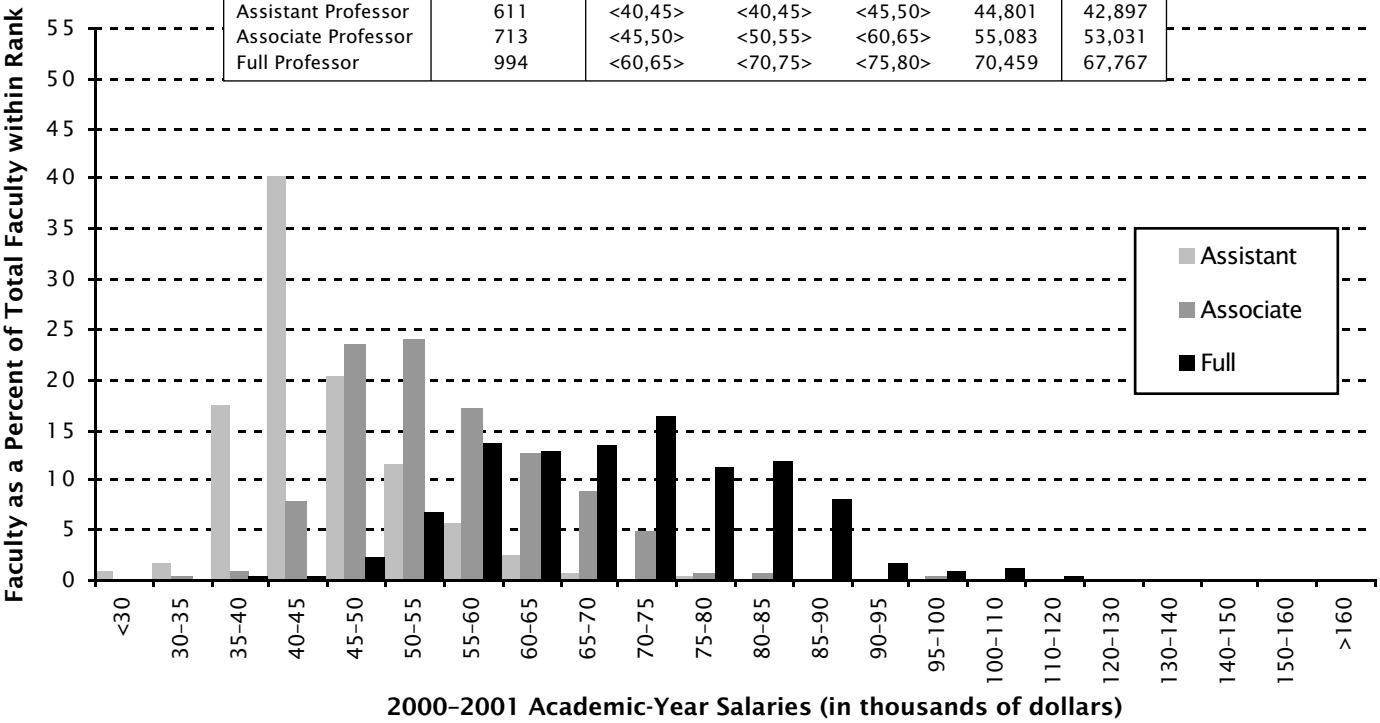


Group M Faculty Salaries

Master's degree-granting departments of mathematics (230)

125 responses (54.3%)

Rank	2000–2001 No. Reported	Q_1	Median	Q_3	Mean	1999–00 Mean
Assistant Professor	611	<40,45>	<40,45>	<45,50>	44,801	42,897
Associate Professor	713	<45,50>	<50,55>	<60,65>	55,083	53,031
Full Professor	994	<60,65>	<70,75>	<75,80>	70,459	67,767

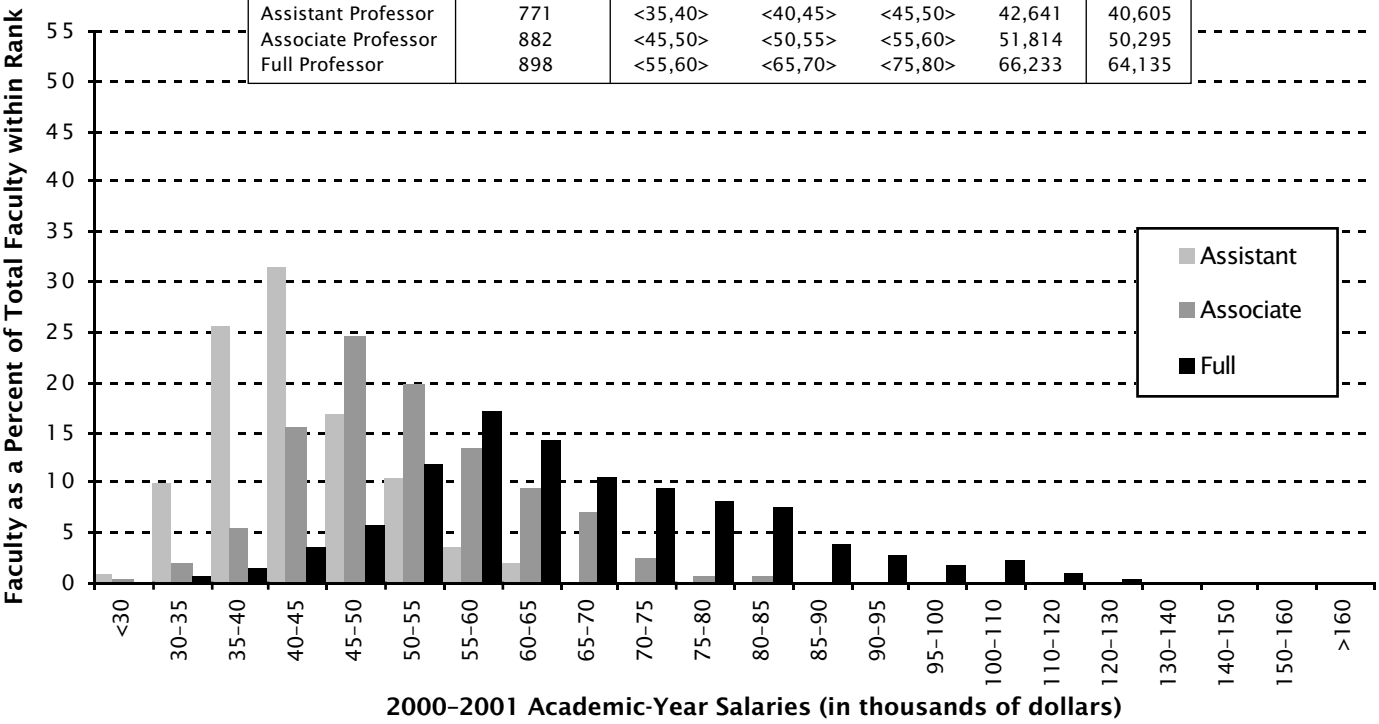


Group B Faculty Salaries

Bachelor's degree-granting departments of mathematics (1,018)

368 responses (36.1%)

Rank	2000–2001 No. Reported	Q_1	Median	Q_3	Mean	1999–00 Mean
Assistant Professor	771	<35,40>	<40,45>	<45,50>	42,641	40,605
Associate Professor	882	<45,50>	<50,55>	<55,60>	51,814	50,295
Full Professor	898	<55,60>	<65,70>	<75,80>	66,233	64,135



Acknowledgments

The Annual Survey attempts to provide an accurate appraisal and analysis of various aspects of the academic mathematical sciences scene for the use and benefit of the community and for filling the information needs of the professional organizations. Every year, college and university departments in the United States are invited to respond. The Annual Survey relies heavily on the conscientious efforts of the dedicated staff members of these departments for the quality of its information. On behalf of the Annual Survey Data Committee and the Annual Survey staff, we thank the many secretarial and administrative staff members in the mathematical sciences departments for their cooperation and assistance in responding to the survey questionnaires.

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Definitions of the Groups

As has been the case for a number of years, much of the data in these reports is presented for departments divided into groups according to several characteristics, the principal one being the highest degree offered in the mathematical sciences. Doctoral-granting departments of mathematics are further subdivided according to their ranking of "scholarly quality of program faculty" as reported in the 1995 publication *Research-Doctorate Programs in the United States: Continuity and Change.*[1] These rankings update those reported in a previous study published in 1982.[2] Consequently, the departments which now comprise Groups I, II, and III differ significantly from those used prior to the 1996 survey.

The subdivision of the Group I institutions into Group I Public and Group I Private was new for the 1996 survey. With the increase in number of the Group I departments from 39 to 48, the Annual Survey Data Committee judged that a further subdivision of public and private would provide more meaningful reporting of the data for these departments.

Brief descriptions of the groupings are as follows:

Group I is composed of 48 departments with scores in the 3.00–5.00 range. Group I Public and Group I Private are Group I departments at public institutions and private institutions respectively.

Group II is composed of 56 departments with scores in the 2.00–2.99 range.

Group III contains the remaining U.S. departments reporting a doctoral program, including a number of departments not included in the 1995 ranking of program faculty.

Group IV contains U.S. departments (or programs) of statistics, biostatistics, and biometrics reporting a doctoral program.

Group V contains U.S. departments (or programs) in applied mathematics/applied science, operations research, and management science which report a doctoral program.

Group Va is applied mathematics/applied science; Group Vb, which is no longer surveyed as of 1998–99, was operations research and management science.

Group M contains U.S. departments granting a master's degree as the highest graduate degree.

Group B contains U.S. departments granting a baccalaureate degree only.

Listings of the actual departments which comprise these groups are available on the AMS Web site at www.ams.org/employment/.

[1]Research-Doctorate Programs in the United States: Continuity and Change, *edited by Marvin L. Goldberger, Brendan A. Maher, and Pamela Ebert Flattau, National Academy Press, Washington, DC, 1995.*

[2]*These findings were published in* An Assessment of Research-Doctorate Programs in the United States: Mathematical and Physical Sciences, *edited by Lyle V. Jones, Gardner Lindzey, and Porter E. Coggeshall, National Academy Press, Washington, DC, 1982. The information on mathematics, statistics, and computer science was presented in digest form in the April 1983 issue of the* Notices, *pages 257–67, and an analysis of the classifications was given in the June 1983* Notices, *pages 392–3.*

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