2001 Annual Survey of the Mathematical Sciences

(AMS-ASA-IMS-MAA)

First Report

Report on the 2001 New Doctoral Recipients
Faculty Salary Survey

Don O. Loftsgaarden
James W. Maxwell
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Report on the 2001 New Doctoral Recipients Faculty Salary Survey

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The First Report of the 2001 Annual Survey gives information about the employment status of 2000–01 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 two questionnaires distributed to departments in May 2001. A follow-up questionnaire was distributed to the individual new doctoral recipients in October 2001. 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 the Second Report of the 2001 Annual Survey in the August 2002 issue of the *Notices*. Another questionnaire concerned with data on fall 2001 course enrollments, majors, graduate students, and departmental faculty was distributed to departments in September 2001. Results from this questionnaire will appear in the Third Report of the 2001 Annual Survey in the September 2002 issue of the *Notices*.

The 2001 Annual Survey represents the forty-fifth in an annual series begun in 1957 by the American Mathematical Society. The 2001 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, Peter E. Haskell, G. Samuel Jordan, Ellen E. Kirkman, James M. Kister, James Lewis, Don O. Loftsgaarden (chair), James W. Maxwell (ex officio), and Yashiswini 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 2001 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, 2000, through June 30, 2001. It includes a preliminary analysis of the employment of 2000–01 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 2001 Survey of New Doctoral Recipients. See page 231 for a description of the groups. No adjustments were made in this report for nonresponding departments.

Table 1: Doctorates Granted Response Rates

Group I (Pu)	24 of 25 including 0 with 0 degrees
Group I (Pr)	22 of 23 including 0 with 0 degrees
Group II	51 of 56 including 4 with 0 degrees
Group III	70 of 74 including 20 with 0 degrees
Group IV	70 of 86 including 8 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

The following three changes need to be considered when comparing results in this report to those in prior years. More details on these changes can be found in the First Report for the 2000 Annual Survey.

1. Data used for the First Report is gathered from doctoral-granting departments beginning in May each year. These results are updated in the Second Report using data gathered from the

Highlights

There were 1,008 new doctoral recipients in 2000-01, down from 1,119 in 1999-2000. Approximately 40% of this decrease is due to a lower response rate from departments in 2000-01.

The number of new doctoral recipients from Groups I (Pu), I (Pr), and II combined has dropped from 744 in 1997-98 to 565 in 2000-01, a drop of 24.1% in three years.

Based on responses from departments alone, the fall 2001 unemployment rate for the 876 new doctoral recipients from 2000-01 whose employment status is known is 5.6%. This figure will be revised later using information collected from the new doctoral recipients themselves. The fall 2000 unemployment rate was 4.6%.

Of the new doctoral recipients who have jobs, 58 (7.1%) have positions in the institution from which they received their degrees, though not necessarily in the same department, and 14 have part-time jobs. The 58 represents 11.4% of the U.S. academic positions filled by new doctoral recipients.

Of the 717 new doctoral recipients employed in the U.S., 168 (23.4%) have jobs in business or industry. In fall 2000 this number was 206 (25.9%).

The number of new doctoral recipients taking U.S. academic positions was 510 in fall 2001 down from 551 in fall 2000.

Of the 1,008 new doctoral recipients in 2000-01, 494 (49.0%) are U.S. citizens.

Females account for 292 (29.0%) of the 1,008 new doctoral recipients in 2000-01 down slightly from 302 (27.0%) in 1999-2000. Of the 494 U.S. citizen new doctoral recipients, 151 (30.6%) are females, down from the record 187 (33.8%) in 1998-99, but still the second largest percentage ever recorded.

Among the U.S. citizen new doctoral recipients, there were 14 Black or African Americans and 11 Hispanic or Latinos. The largest minority group was Asians with 30. Whites accounted for 431 (87.2%) of U.S. citizen new doctoral recipients.

Among new doctoral recipients hired in U.S. doctoral granting departments, 46.4% are U.S. citizens. For other U.S. academic positions, 65.9% of the new doctoral recipients hired were U.S. citizens.

Group IV produced 237 new doctorates of which 98 (41.4%) are females, compared to all other doctoral groups combined where 194 of 771 (25.2%) are females.

For field of thesis, 289 of the 1,008 new doctoral recipients were in probability (34) or statistics (255). The next highest number was in algebra and number theory with 137.

new doctoral recipients in the following October. Prior to 1997 these latter data were gathered earlier and early returns were used in the First Reports.

2. Group Vb containing Operations Research/Management Science doctoral-granting departments has not been surveyed since 1998. Doctorates granted in Group Vb have been removed from any tables in this report that give data from past years, unless noted otherwise.

3. For the past five years Group IV, doctoral-granting statistics and biostatistics departments, has been under revision. It included 80 departments in 1995-96 and for 2000-01 it has 86 departments. Several drops and additions were involved in going from 80 to 86.

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 six years. The 1,008 new doctorates granted by these departments in 2000-01 is a decrease of 111 from 1999-2000. While every group except Group Va showed a decrease this year, the drops in Groups I (Pu), I (Pr), II, and IV were particularly large. Response rates were down slightly, mainly in Groups II and IV.

A department by department analysis showed that overall the drop in response rates only accounted for about 40% of the overall drop in new

Table/Figure 2: New Doctoral Degrees Awarded by Group, 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
2000-01	233	129	203	125	237	81	1008

*Does not include Vb. See "Recent Changes in Procedures" on page 217.

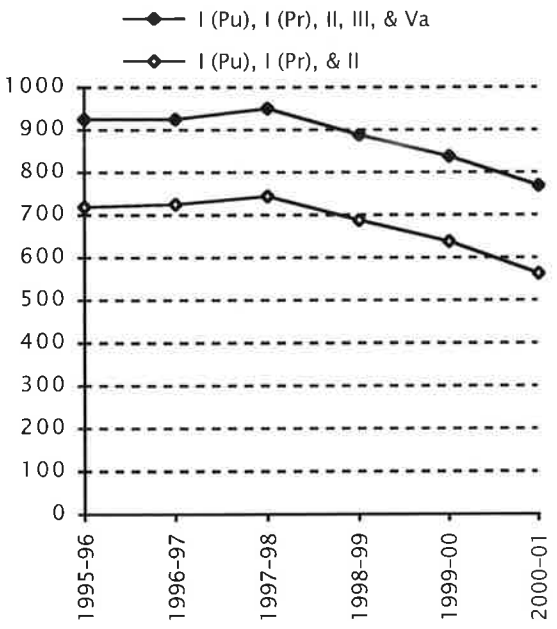

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Table 3A: Employment Status of 2000-01 U.S. New Doctoral Recipients in the Mathematical Sciences by Field of Thesis

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)	14	15	11	9	5	0	4	3	1	7	0	1	**70**
Group I (Private)	11	3	16	5	1	2	4	6	2	5	0	2	**57**
Group II	10	8	9	4	0	2	4	4	1	6	2	0	**50**
Group III	7	3	2	1	0	3	3	0	0	3	0	0	**22**
Group IV	0	0	0	0	4	34	0	0	0	1	0	2	**41**
Group Va	0	1	1	1	0	1	4	1	1	2	0	0	**12**
Master's	9	6	6	4	2	7	3	1	4	11	3	1	**57**
Bachelor's	19	14	16	17	3	6	7	6	2	6	5	3	**104**
Two-Year College	4	1	2	1	0	1	0	0	0	1	1	0	**11**
Other Academic Dept.	4	0	3	5	2	26	13	4	1	4	5	2	**69**
Research Institute/ Other Nonprofit	3	1	1	2	1	5	3	1	0	0	0	0	**17**
Government	2	1	1	2	1	19	4	7	0	2	0	0	**39**
Business and Industry	11	9	7	12	7	69	23	13	4	9	0	4	**168**
Non-U.S. Academic	12	9	13	4	2	18	6	0	5	9	2	0	**80**
Non-U.S. Nonacademic	3	1	0	0	1	7	1	1	0	1	0	0	**15**
Not Seeking Employment	2	1	1	3	0	3	4	0	0	1	0	0	**15**
Still Seeking Employment	9	2	5	4	3	10	8	0	1	6	1	0	**49**
Unknown (U.S.)	9	5	6	9	0	34	10	6	1	8	5	1	**94**
Unknown (non-U.S.)*	8	1	8	2	2	8	0	4	1	4	0	0	**38**
Column Total	**137**	**81**	**108**	**85**	**34**	**255**	**101**	**57**	**24**	**86**	**24**	**16**	**1008**
Column Subtotals Male	106	67	78	60	27	152	76	45	19	64	14	8	**716**
Column Subtotals Female	31	14	30	25	7	103	25	12	5	22	10	8	**292**

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

Table 3B: Employment Status of 2000-01 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)	41	11	10	4	1	3	**70**	53	17
Group I (Private)	26	25	1	0	2	3	**57**	47	10
Group II	17	6	16	7	3	1	**50**	35	15
Group III	11	1	3	4	2	1	**22**	17	5
Group IV	1	2	1	0	37	0	**41**	27	14
Group Va	6	1	0	0	0	5	**12**	10	2
Master's	4	3	23	18	6	3	**57**	42	15
Bachelor's	24	8	40	27	5	0	**104**	70	34
Two-Year College	4	1	2	4	0	0	**11**	6	5
Other Academic Dept.	10	6	12	9	23	9	**69**	43	26
Research Institute/ Other Nonprofit	2	6	1	1	5	2	**17**	12	5
Government	3	3	8	4	17	4	**39**	22	17
Business and Industry	24	15	25	21	59	24	**168**	129	39
Non-U.S. Academic	21	13	19	5	16	6	**80**	62	18
Non-U.S. Nonacademic	1	3	2	0	6	3	**15**	13	2
Not Seeking Employment	4	2	5	1	3	0	**15**	9	6
Still Seeking Employment	13	7	8	5	10	6	**49**	28	21
Unknown (U.S.)	17	3	23	12	34	5	**94**	66	28
Unknown (non-U.S.)*	4	13	4	3	8	6	**38**	25	13
Column Total	**233**	**129**	**203**	**125**	**237**	**81**	**1008**	**716**	**292**
Column Subtotals Male	172	107	147	92	139	59	**716**		
Column Subtotals Female	61	22	56	33	98	22	**292**		

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

Table 3C: Field of Thesis of 2000-01 New Doctoral Recipients 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)	57	27	43	28	8	7	15	10	4	26	0	8	**233**
Group I (Private)	33	7	30	14	5	2	13	5	3	17	0	0	**129**
Group II	38	30	22	17	9	7	26	16	8	23	7	0	**203**
Group III	8	15	12	10	3	18	12	12	4	14	17	0	**125**
Group IV	0	0	0	0	8	213	8	0	0	0	0	8	**237**
Group Va	1	2	1	16	1	8	27	14	5	6	0	0	**81**
Total	**137**	**81**	**108**	**85**	**34**	**255**	**101**	**57**	**24**	**86**	**24**	**16**	**1008**

doctorates granted in 2000-01. It accounted for almost none of the drops in Groups I (Pu), I (Pr), and III, but did account for 75%-80% of the drops in Groups II and IV. It is hoped that response rates can be increased before these results are updated in the 2001 Second Report which will be published in August 2002.

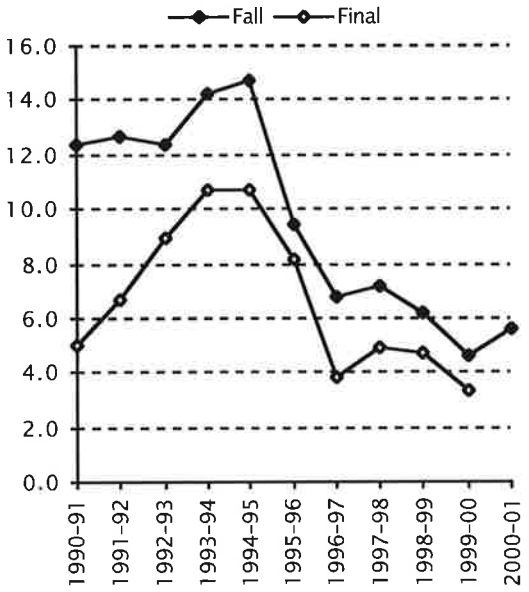
If one considers the new doctoral recipients in all Groups except IV for the six years in Table 2, the numbers are 926, 926, 950, 890, 835, and 771. There has been an 18.8% drop in new doctoral recipients in these departments from 1997-98 to 2000-01. If one considers only Groups I (Pu), I (Pr), and II, there has been a 24.1% drop in new doctoral recipients since 1997-98, from 744 to 565. Figure 2 illustrates these trends.

The 2000-01 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 1,008 new doctoral recipients are found on pages 241-258 of this issue of the *Notices*.

Table/Figure 4A: Percentage of New Doctoral Recipients Unemployed (as reported in the respective Annual Survey Reports 1991-2001)

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	3.3
2000-01	5.6	*

*To appear in the Second Report. Note: Prior to 1998-99, the percents include new doctoral recipients from Group Vb.



Employment Status of 2000-01 U.S. New Doctoral Recipients

Table 3A gives a cross-tabulation of the 1,008 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 that 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 the 2001 Second Report in August 2002.

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 5.6%. This figure will be updated later with information gathered from the individual new doctoral recipients. The analogous figure for fall 2000 is 4.6%. Table/Figure 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 8.6% for Group Va and a low of 4.5% for both Groups II and III.

There are 717 new doctoral recipients employed in the U.S. Of these, 510 (71.1%) hold academic positions, 39 (5.4%) are employed by government, and 168 (23.4%) hold positions in business and industry. In the First Report for 1999-2000, there were 796 new doctoral recip-

ients employed in the U.S., of which 551 (69.2%) held academic positions, 39 (4.9%) were in government, and 206 (25.9%) were in business and industry.

The number of new doctoral recipients taking jobs in business and industry which had been rising steadily in the mid-1990s has been oscillating for the past four years. Table 4B shows the number of new doctoral recipients who took positions in business and industry by the type of department granting their degree

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 2001

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
Fall 2001	24	15	25	21	59	24	168

for fall 1998 to fall 2001. Among the 717 new doctoral recipients known to have employment in the U.S. in fall 2001, Group I (Pu) has the smallest percentage taking jobs in business and industry at 13.9% and Group Va the highest at 43.6%.

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 2001. Among the 717 new doctoral recipients employed in the U.S. 71.1% have academic positions. This percentage is highest for Group I (Pu) at 84.4% and lowest for

Table 4C: Number of New Doctoral Recipients Taking U.S. Academic Positions by Type of Degree-Granting Department, Fall 1998 to Fall 2001

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**
Fall 2001	146	70	109	74	84	27	**510**

Groups IV at 52.5% and Va at 49.1%. 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. dropped off after being relatively high for the past two years.

In fall 2001, 58 new doctoral recipients hold positions in the institution that granted their degree, although not necessarily in the same department. This represents 7.1% of new doctoral recipients who are currently employed and 11.4% of the U.S. academic positions held by new doctoral recipients. In fall 2000 there were also 58 such individuals making up 6.5% of the new doctoral recipients who were employed at the time of the First Report. Fourteen new doctoral recipients have taken part-time positions in fall 2001.

Table 4D: U.S. Academic Positions Filled by New Doctoral Recipients by Type of Hiring Department, Fall 1998 to Fall 2001

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**
Fall 2001	199	41	12	161	97	**510**

Information about 2000–01 Female New Doctoral Recipients

Tables 3A and 3B give male and female breakdowns of the new doctoral recipients in 2000–01 by Field of Thesis, by Type of Degree-Granting Department, and by Type of Employer.

Overall, 292 (29.0%) of the 1,008 new doctoral recipients in 2000–01 are female. In 1999–2000, 302 (27.0%) of the new doctoral recipients were female. This percentage varies over the different groups, and these percentages are given in the first row of Table 4E. Following the same trend as in recent years, the percentage is lowest for Group I (Pr), at 17.1%, and highest for Group IV, statistics departments, at 41.4%. 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, 26.3% of the new doctoral recipients hired in Group M, master's departments, are female; 32.7% of the new doctoral recipients hired in Group B, bachelor's departments, are female; and 23.2% of new doctoral recipients hired in business and industry are female. The unemployment rate for female new doctoral recipients

Table 4E: Females as a Percentage of 2000–01 New Doctoral Recipients Produced by and Hired by Doctoral-Granting Groups

%	I (Pu)	I (Pr)	II	III	IV	Va	Total
Produced	26.2	17.1	27.6	26.4	41.4	27.2	**29.0**
Hired	24.3	17.5	30.0	22.7	34.1	16.7	**25.0**

is 8.4% compared to 4.5% for males and 5.6% overall.

The percentage of female new doctoral recipients within fields of thesis was very similar to previous years, ranging from 17.3% in real, complex, functional, and harmonic analysis to

Table 4F: Employment Status of 2000–01 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	393	76	227	21	**717**
U.S. Academic	287	53	155	15	**510**
Groups I, II, III, and Va	105	28	70	8	**211**
Group IV	12	6	22	1	**41**
Non-Ph.D. Department	161	18	56	6	**241**
Research Institute/Other Nonprofit	9	1	7	0	**17**
U.S. Nonacademic	106	23	72	6	**207**
Non-U.S. Employer	11	1	77	6	**95**
Non-U.S. Academic	10	0	66	4	**80**
Non-U.S. Nonacademic	1	1	11	2	**15**
Not Seeking Employment	8	1	4	2	**15**
Still Seeking Employment	28	4	17	0	**49**
SUBTOTAL	440	82	325	29	**876**
Unknown (U.S.)	53	11	27	3	**94**
Unknown (non-U.S.)*	1	0	33	4	**38**
TOTAL	**494**	**93**	**385**	**36**	**1008**

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

38.1% in probability or statistics and 41.7% in mathematics education.

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 2000–01 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 status is known for all 1,008 new doctoral recipients in 2000–01.

The unemployment rate for the 494 U.S. citizens is 6.4% compared to 4.2% in 1999–2000. The unemployment rate for non-U.S. citizens is 4.8%. This varies by type of visa. The unemployment rate for non-U.S. citizens with a permanent visa is 4.9%, while that for non-U.S. citizens with a temporary visa is 5.2%.

Among U.S. citizens whose employment status is known, 89.3% are employed in the U.S. Among non-U.S. citizens with a permanent visa whose employment status is known, 92.7% have jobs in the U.S., while this percentage for non-U.S. citizens with a temporary visa is 69.8%.

Table 4G: 2000–01 New Doctoral Recipients Having Employment in the U.S. by Type of Employer and Citizenship

Employer	U.S.	Non-U.S.	Total
U.S. Academic, Groups I–Va	117	135	**252**
U.S. Academic, Other	170	88	**258**
U.S. Nonacademic	106	101	**207**
Total	**393**	**324**	**717**

Table 5: Sex, Race/Ethnicity, and Citizenship of 2000–01 U.S. New Doctoral Recipients

RACIAL/ETHNIC GROUP	MALE					FEMALE					TOTAL
	U.S. CITIZENS	NON-U.S. CITIZENS			Total Male	U.S. CITIZENS	NON-U.S. CITIZENS			Total Female	
		Permanent Visa	Temporary Visa	Unknown Visa			Permanent Visa	Temporary Visa	Unknown Visa		
American Indian or Alaska Native	4	1	0	0	5	1	0	0	0	1	**6**
Asian	18	20	144	15	197	12	14	63	3	92	**289**
Black or African American	6	5	7	0	18	8	1	1	0	10	**28**
Hispanic or Latino	6	1	15	4	26	5	0	4	0	9	**35**
Native Hawaiian or Other Pacific Islander	1	0	1	0	2	1	0	0	0	1	**3**
White	308	29	117	9	463	123	22	30	1	176	**639**
Unknown	0	0	2	3	5	1	0	1	1	3	**8**
TOTAL	**343**	**56**	**286**	**31**	**716**	**151**	**37**	**99**	**5**	**292**	**1008**

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
2000-01	1008	494	49

*Prior to 1998-99, the counts include new doctoral recipients from Group Vb. In addition, prior to 1982-83, the counts include recipients from computer science departments.

Table 4G is a cross-tabulation of the 717 new doctoral recipients who have employment in the U.S. by citizenship and broad employment categories, using numbers from Table 4F. Of the 717 new doctoral recipients having jobs in the U.S., 54.8% are U.S. citizens. Of the 252 new doctoral recipients who took jobs in U.S. doctoral-granting departments, 46.4% are U.S. citizens. Of the 258 who took other academic positions, 65.9% are U.S. citizens. Of the 207 who took nonacademic positions, 51.2% are U.S. citizens.

Of the 393 U.S. citizens employed in the U.S., 29.8% have jobs in a doctoral-granting department, 43.3% are in other academic positions, and 27.0% are in nonacademic positions. For the 324 non-U.S. citizens employed in the U.S., the analogous percentages are 41.7%, 27.2%, and 31.2% 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
2000-01	494	343	151	31

*Prior to 1998-99, the counts include new doctoral recipients from Group Vb. In addition, prior to 1982-83, the counts include recipients from computer science departments.

Figure 6A: U.S. Citizen Doctoral Recipients

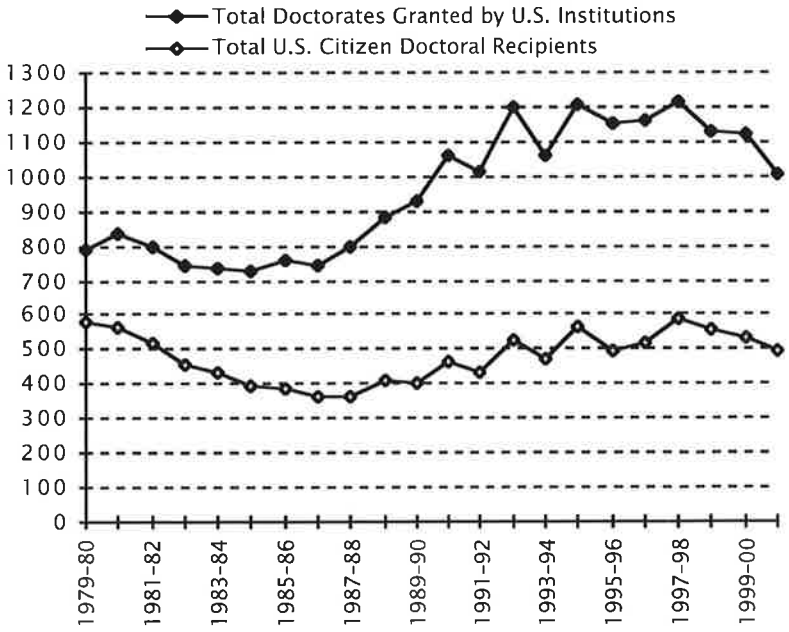


Figure 6B: U.S. Citizen Doctoral Recipients by Percent

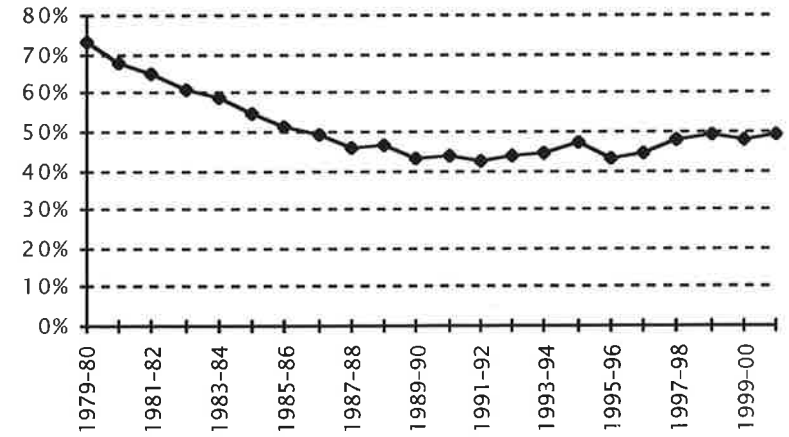


Figure 7: Female U.S. Citizen Doctoral Recipients by Percent

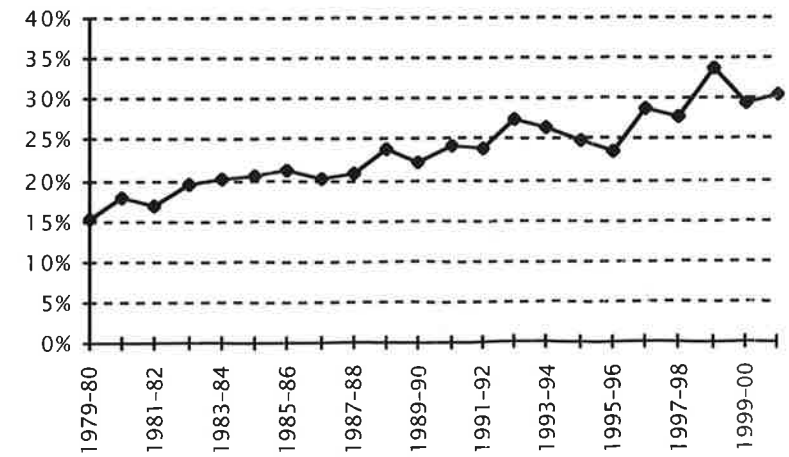


Table 8: Sex and Citizenship of 2000-01 New Doctoral Recipients by Granting Department

Group	I (Pu)		I (Pr)		II		III		IV		Va		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
U.S. Citizen	84	26	45	12	77	35	45	22	62	47	30	9	**343**	**151**
Non-U.S. Citizen	88	35	62	10	70	21	47	11	77	51	29	13	**373**	**141**
Total	**172**	**61**	**107**	**22**	**147**	**56**	**92**	**33**	**139**	**98**	**59**	**22**	**716**	**292**

Sex, Race/Ethnicity, and Citizenship Status of 2000-01 U.S. New Doctoral Recipients

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 494 (49.0%) U.S. citizens among the 1,008 new doctoral recipients in 2000-01. Table 6, Figure 6A, and Figure 6B give the number of new U.S. doctoral recipients 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 four years.

Among U.S. citizens, 30 are Asians (18 male and 12 female), 14 are Blacks or African Americans (6 male and 8 female), 11 are Hispanics or Latinos (6 male and 5 female), 431 are whites (308 male and 123 female), and 8 are other. Among non-U.S. citizens, there are 259 Asians, 24 Hispanics or Latinos, 208 whites, and 23 are other.

Females make up 30.6% of the 494 U.S. citizens receiving doctoral degrees in the mathematical sciences in 2000-01. This is up from last year but still down from 33.8% in 1998-99, the highest percentage of females among U.S. citizen new doctoral recipients ever reported by the Annual Survey. Among the 514 non-U.S. citizen new doctoral recipients, 141 (27.4%) are female.

Table 7 and Figure 7 give the historical record of U.S. citizen new doctoral recipients, broken down by male and female for past years, going back to 1975-76. The number of male U.S. citizen new doctoral recipients decreased by 36 from 1999-2000.

Table 8 gives a sex by citizenship breakdown of the new doctorates within each of the six types of doctoral granting departments. Among all 1,008 new doctoral recipients, 47.9% of the males and 51.8% of the females are U.S. citizens. The percentage of the new doctoral recipients who are U.S. citizens within the groups is lowest in Group I (Pr) at 44.2% and highest in Group II at 55.2%.

2000-01 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. For five years, substantial effort has gone into making Group IV an appropriate set of departments for the Annual Survey, and increasing the number of Group IV departments that respond to the Annual Survey. Progress that has been made with these efforts can be seen in Table 9, which contains six years of information for Group IV. Efforts are still ongoing to increase the response rate in this group.

For 2000-01, Group IV has 86 departments, 12 more than the next largest doctoral group. It contains 30% of all doctoral departments surveyed and the 70 departments responding to the Annual Survey produced 237 new doctoral recipients, 23.5% of all new doctoral recipients in 2000-01. The number of new doctorates granted is down 47 from the number reported last year. A large portion of this drop is due to five less departments responding for 2000-01 and the particular departments that did not respond.

In Table 9, most of the variation in numbers for Group IV during these six years is due to changes in Group IV mentioned in the first paragraph of this section and to the number of departments responding. The last two rows of Table 9 give a split of the 2000-01 results between the 55 statistics departments and the 31 biostatistics and biometrics departments when possible.

Because of its size, it is clear that the 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. Group IV results can mask important changes in the other doctoral groups. In the following paragraphs some of these differences are presented.

For the Group IV new doctoral recipients, 98 of 237 (41.4%) are female, while 194 of 771 (25.2%) are female in the other doctoral groups. Among the U.S. citizens, females accounted for 47 of the 109 (43.1%) Group IV new doctoral recipients while for the other groups, 104 of 385 (27.0%) were female. Overall 151 of 494 (30.6%) U.S. citizen new doctoral recipients were female.

Table 9: Six Years of Information about Group IV: Statistics and Biostatistics Departments

Year	Depts Surveyed	Depts Responding (percent)	New Doctoral Recipients in Group IV				New Doctoral Recipients in Probability or Statistics				New Doctoral Recipients Hired by Group IV	
			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
2000–01	86	70 (81.4)	237	98 (41.4)	59	5.1	289	*221	**68	5.3	27	14
Statistics	55	47 (85.5)	169	60 (35.5)	48	4.1					15	9
Biostatistics	31	23 (74.2)	68	38 (55.9)	11	8.3					12	5

* Of 221, there were 213 in statistics and 8 in probability. For complete details, see Table 3C.
** Of 68, there were 42 in statistics and 26 in probability. For complete details, see Table 3C.

Of 160 Group IV new doctoral recipients who have employment in the U.S., 59 (36.9%) took jobs in business or industry, while for the other doctoral groups 109 of 557 (19.6%) took jobs in business and industry.

Of 195 Group IV new doctoral recipients whose employment status is known, 10 (5.1%) are unemployed, while for the other doctoral groups 39 of 681 (5.7%) are unemployed. Fourteen of 41 (34.1%) new doctoral recipients hired by Group IV departments were female, down from last year's 47.8%. For the other doctoral groups, 49 of 211 (23.2%) new doctoral recipients hired were female, up from last year's 16.2%.

Group IV had 221 new doctoral recipients with field of thesis in probability (8) or statistics (213) and the other doctoral departments had 68 with field of thesis in probability (26) or statistics (42). The distribution of these 68 degrees among the various groups can be found in Table 3C. The number of new doctoral recipients with theses in probability or statistics (289) is larger than any other field, with algebra and number theory next with 137. The unemployment rate for new doctoral recipients in probability or statistics is 5.3% compared to 5.7% 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 (Statistics), IV (Biostatistics), 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. This is the first year that salary information has been reported separately for statistics departments and biostatistics and biometrics departments in Group IV.

Table 10 provides the departmental response rates for the 2001 Faculty Salary Survey. Departments were asked to report for each rank the number of tenured and tenure-track faculty whose 2001–02 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> or <n, n+10>, whichever is appropriate. The endpoints of these intervals are in thousands of dollars.

Since departments in Group I, II, and III were changed in 1995–96 (see definitions of the groups on page 231), comparisons are possible only to the last five year's data. In addition, prior to the 1998 survey, Groups Va and Vb were reported together as Group V.

Table 10: Faculty Salary Response Rates

Departments	Number	Percent
Group I (Public)	19 of 25	76.0
Group I (Private)	15 of 23	65.2
Group II	42 of 56	75.0
Group III	62 of 74	83.8
Group IV (Statistics)	43 of 55	78.2
Group IV (Biostatistics)	15 of 31	48.4
Group Va	12 of 18*	66.7
Group M	102 of 202	50.5
Group B	357 of 1028	34.7

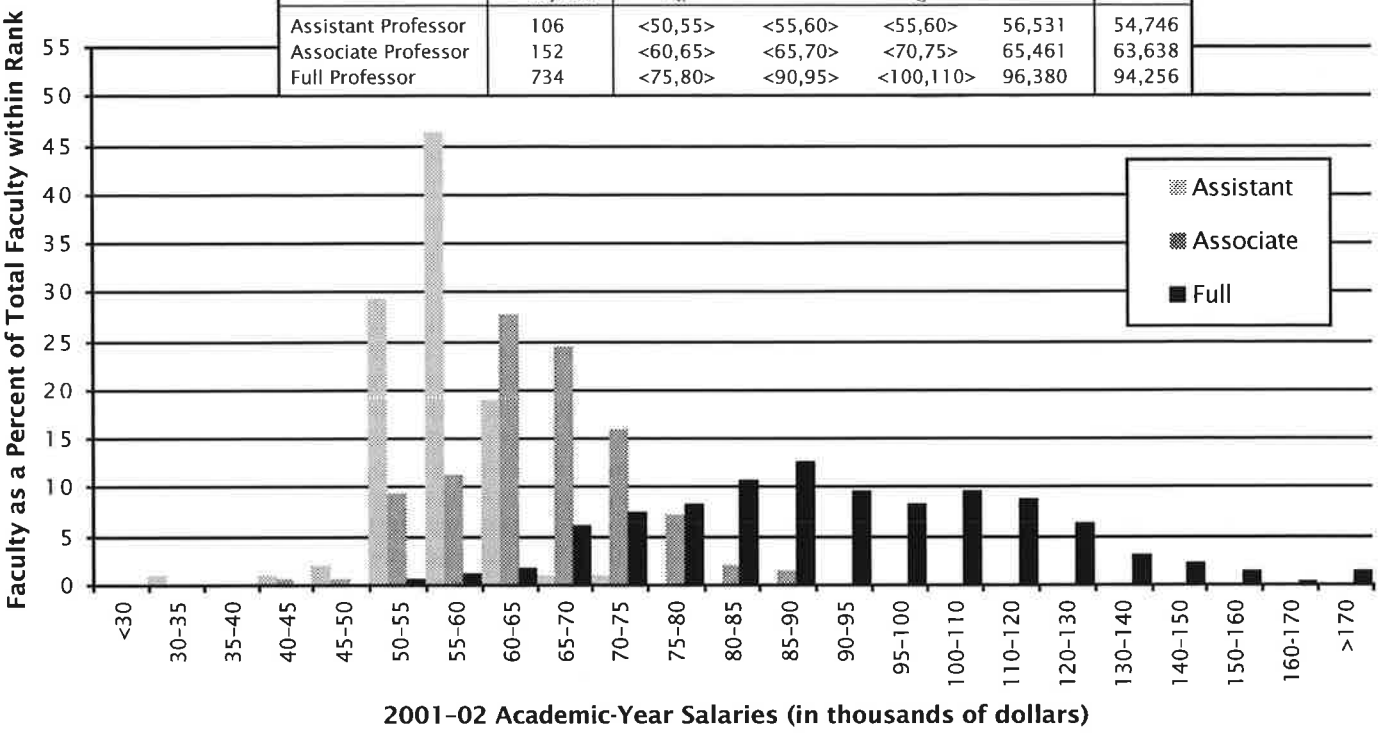
* The population for Group Va is slightly less than for the Doctorates Granted Survey because some departments grant degrees but do not formally "house" faculty and their salaries.

Group I (Public) Faculty Salaries

Doctoral degree-granting departments of mathematics (25)

19 responses (76.0%)

Rank	2001-02 No. Reported	Q_1	Median	Q_3	Mean	2000-01 Mean
Assistant Professor	106	<50,55>	<55,60>	<55,60>	56,531	54,746
Associate Professor	152	<60,65>	<65,70>	<70,75>	65,461	63,638
Full Professor	734	<75,80>	<90,95>	<100,110>	96,380	94,256

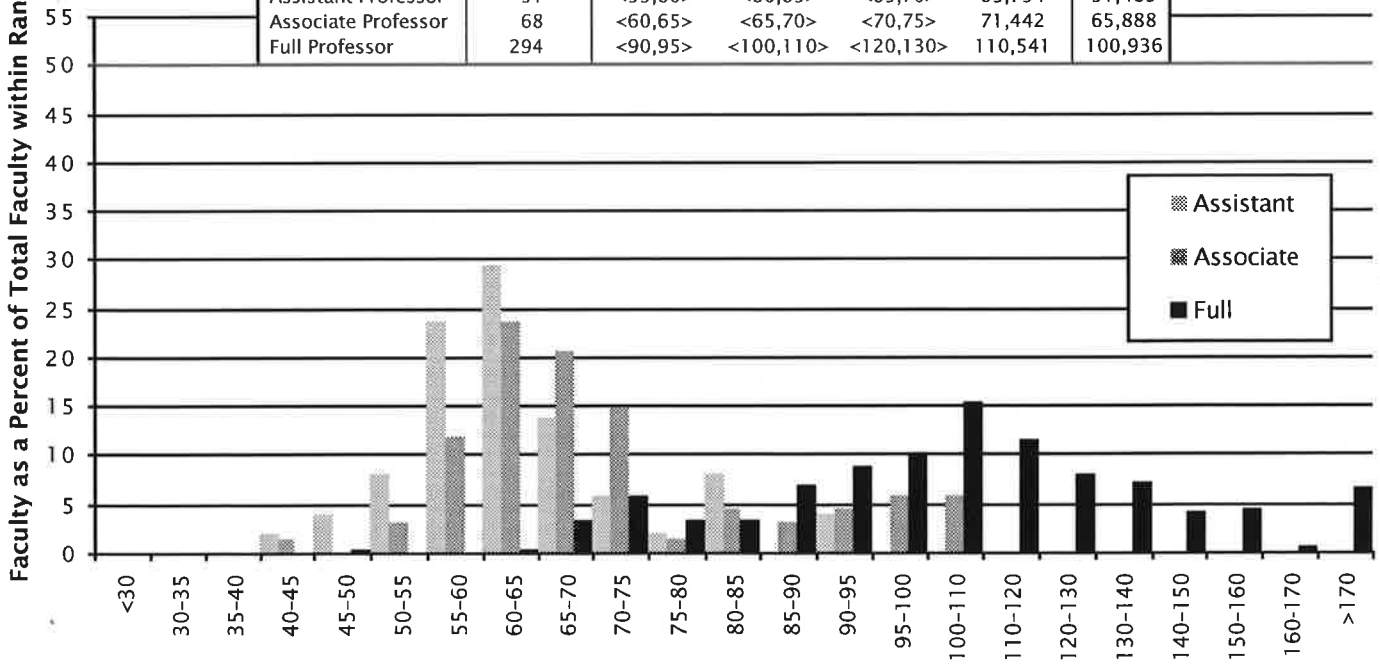


Group I (Private) Faculty Salaries

Doctoral degree-granting departments of mathematics (23)

15 responses (65.2%)

Rank	2001-02 No. Reported	Q_1	Median	Q_3	Mean	2000-01 Mean
Assistant Professor	51	<55,60>	<60,65>	<65,70>	63,794	51,489
Associate Professor	68	<60,65>	<65,70>	<70,75>	71,442	65,888
Full Professor	294	<90,95>	<100,110>	<120,130>	110,541	100,936

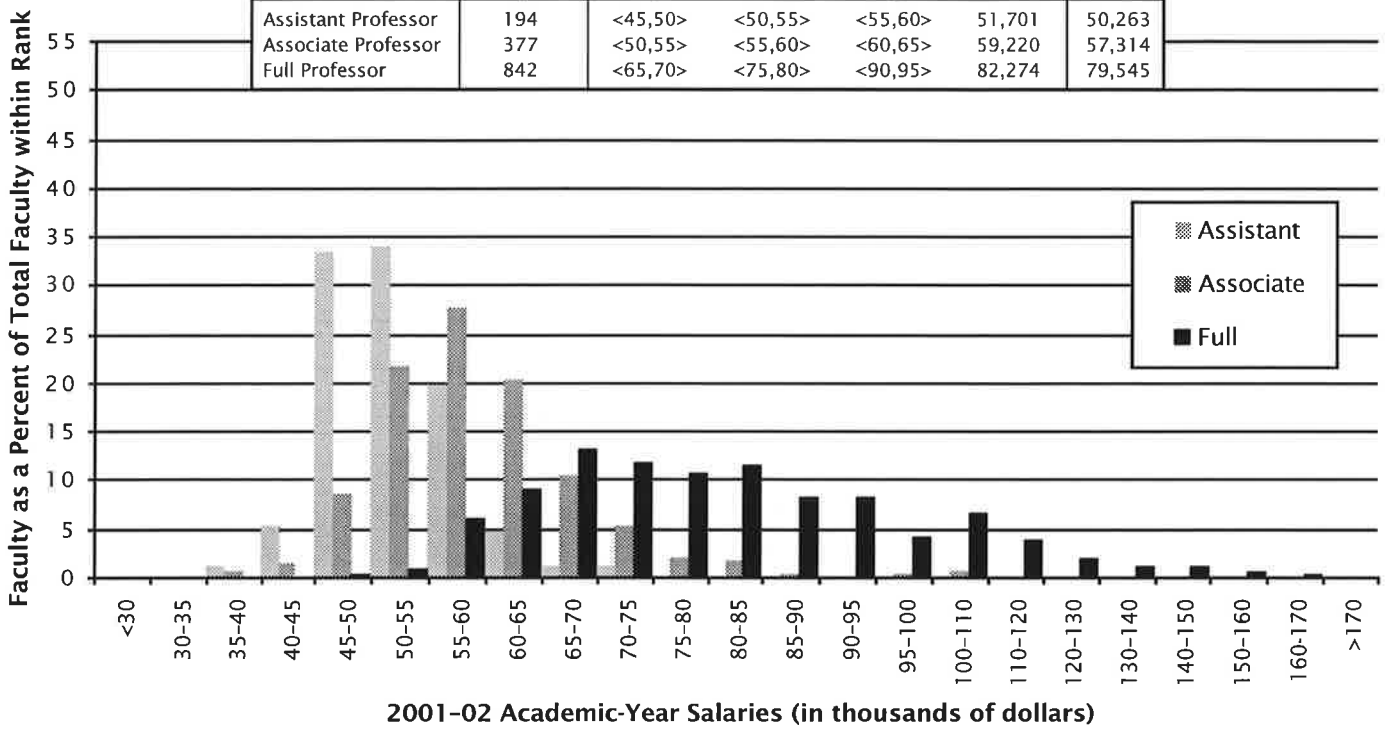


Group II Faculty Salaries

Doctoral degree-granting departments of mathematics (56)

42 responses (75.0%)

Rank	2001-02 No. Reported	Q_1	Median	Q_3	Mean	2000-01 Mean
Assistant Professor	194	<45,50>	<50,55>	<55,60>	51,701	50,263
Associate Professor	377	<50,55>	<55,60>	<60,65>	59,220	57,314
Full Professor	842	<65,70>	<75,80>	<90,95>	82,274	79,545

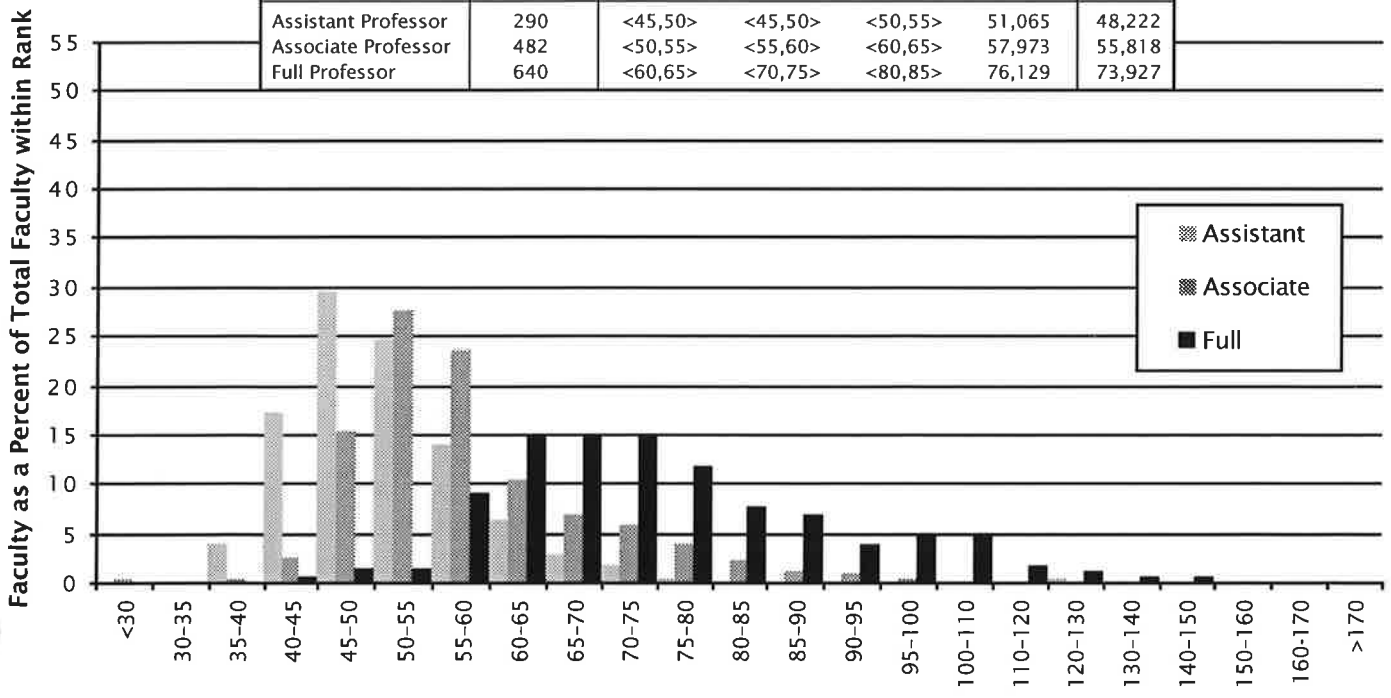


Group III Faculty Salaries

Doctoral degree-granting departments of mathematics (74)

62 responses (83.8%)

Rank	2001-02 No. Reported	Q_1	Median	Q_3	Mean	2000-01 Mean
Assistant Professor	290	<45,50>	<45,50>	<50,55>	51,065	48,222
Associate Professor	482	<50,55>	<55,60>	<60,65>	57,973	55,818
Full Professor	640	<60,65>	<70,75>	<80,85>	76,129	73,927

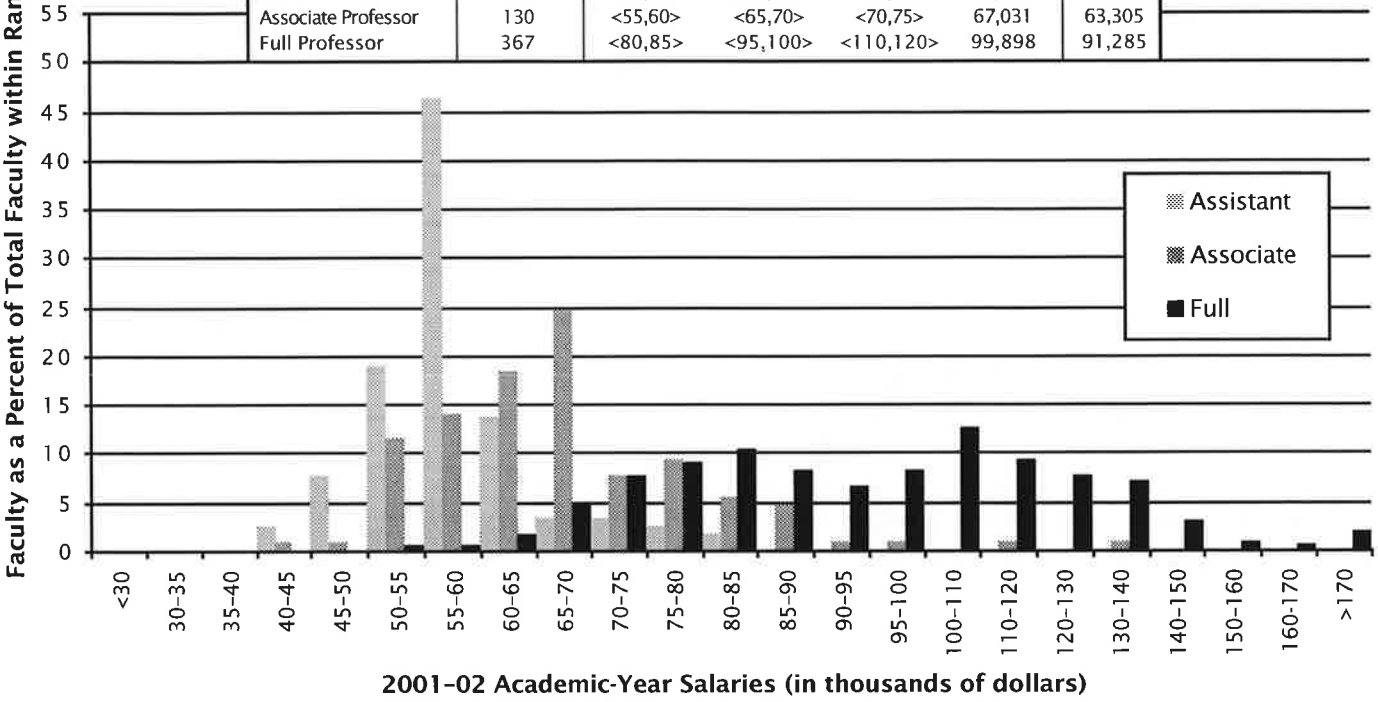


Group IV (Statistics) Faculty Salaries

Doctoral degree-granting departments of statistics (55)

43 responses (78.2%)

Rank	2001-02 No. Reported	Q_1	Median	Q_3	Mean	2000-01 Mean
Assistant Professor	117	<50,55>	<55,60>	<55,60>	57,615	54,719
Associate Professor	130	<55,60>	<65,70>	<70,75>	67,031	63,305
Full Professor	367	<80,85>	<95,100>	<110,120>	99,898	91,285

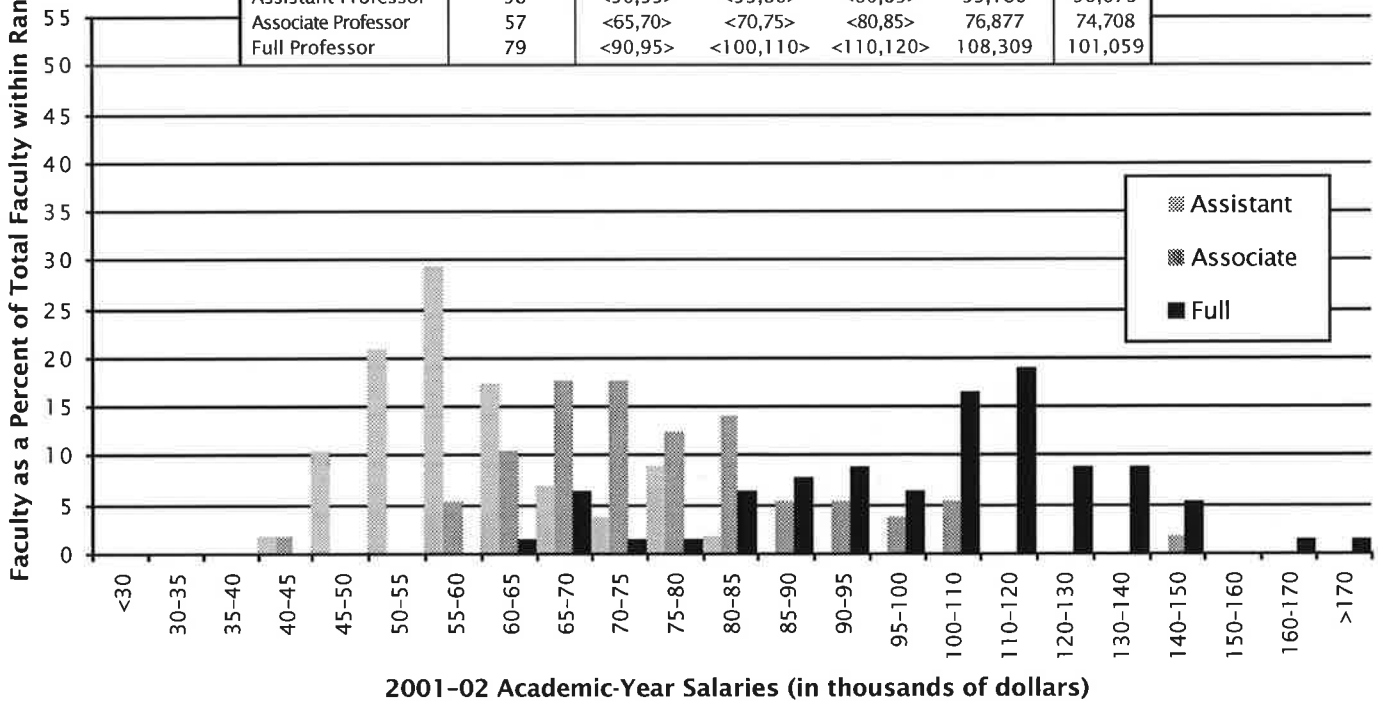


Group IV (Biostatistics) Faculty Salaries

Doctoral degree-granting departments of biostatistics and biometrics (31)

15 responses (48.4%)

Rank	2001-02 No. Reported	Q_1	Median	Q_3	Mean	2000-01 Mean
Assistant Professor	58	<50,55>	<55,60>	<60,65>	59,180	56,679
Associate Professor	57	<65,70>	<70,75>	<80,85>	76,877	74,708
Full Professor	79	<90,95>	<100,110>	<110,120>	108,309	101,059

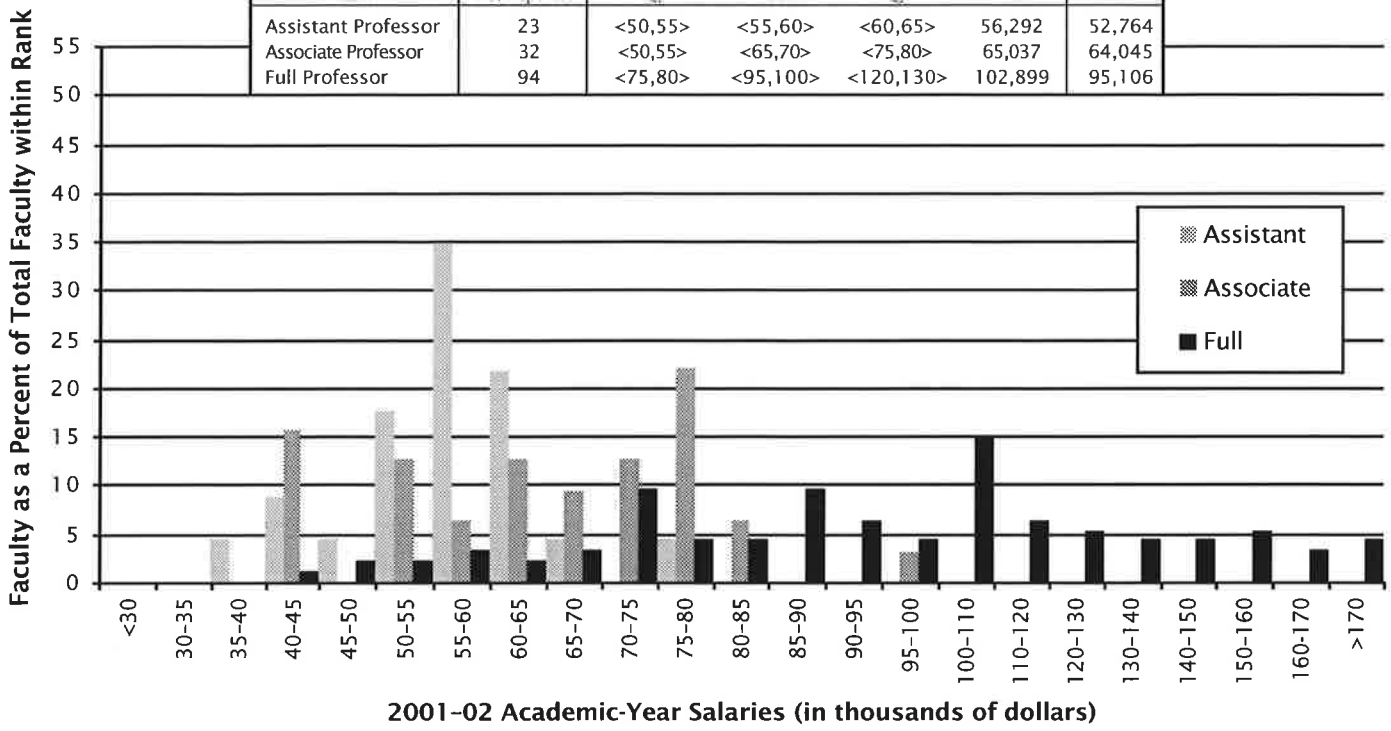


Group Va Faculty Salaries

Doctoral degree-granting departments of applied mathematics (18)

12 responses (66.7%)

Rank	2001-02 No. Reported	Q_1	Median	Q_3	Mean	2000-01 Mean
Assistant Professor	23	<50,55>	<55,60>	<60,65>	56,292	52,764
Associate Professor	32	<50,55>	<65,70>	<75,80>	65,037	64,045
Full Professor	94	<75,80>	<95,100>	<120,130>	102,899	95,106



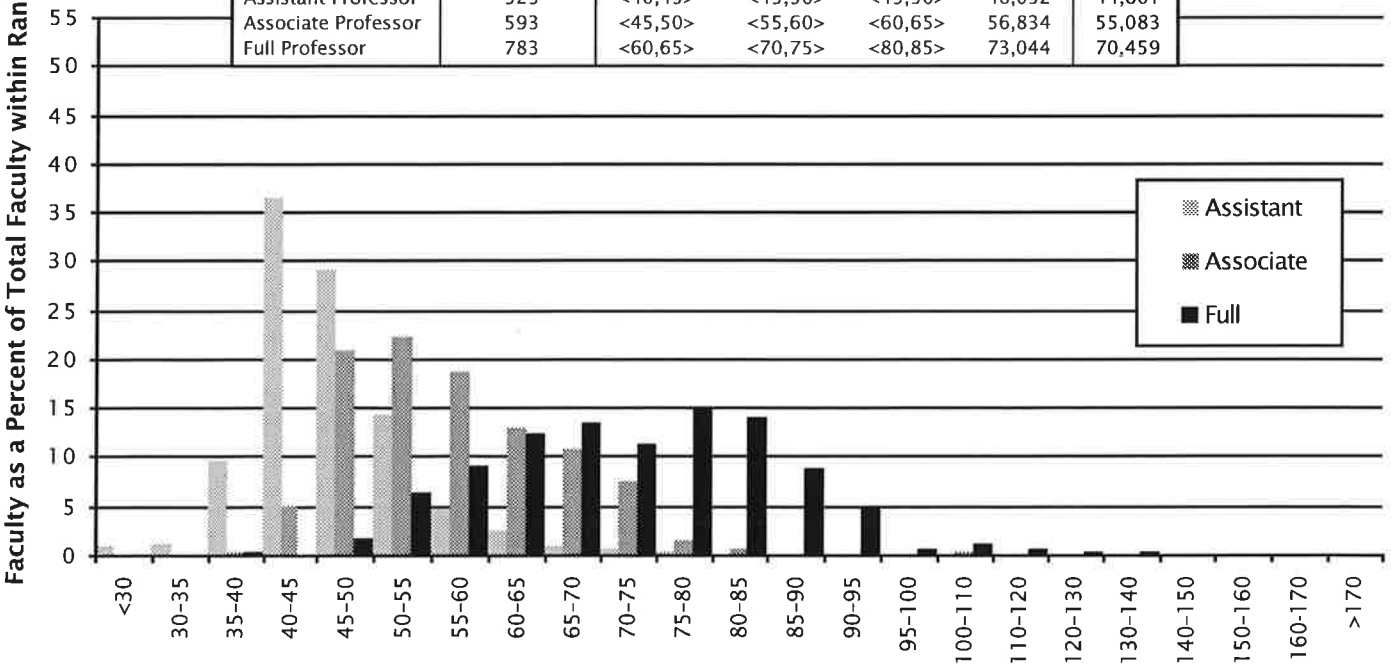
2001-02 Academic-Year Salaries (in thousands of dollars)

Group M Faculty Salaries

Master's degree-granting departments of mathematics (202)

102 responses (50.5%)

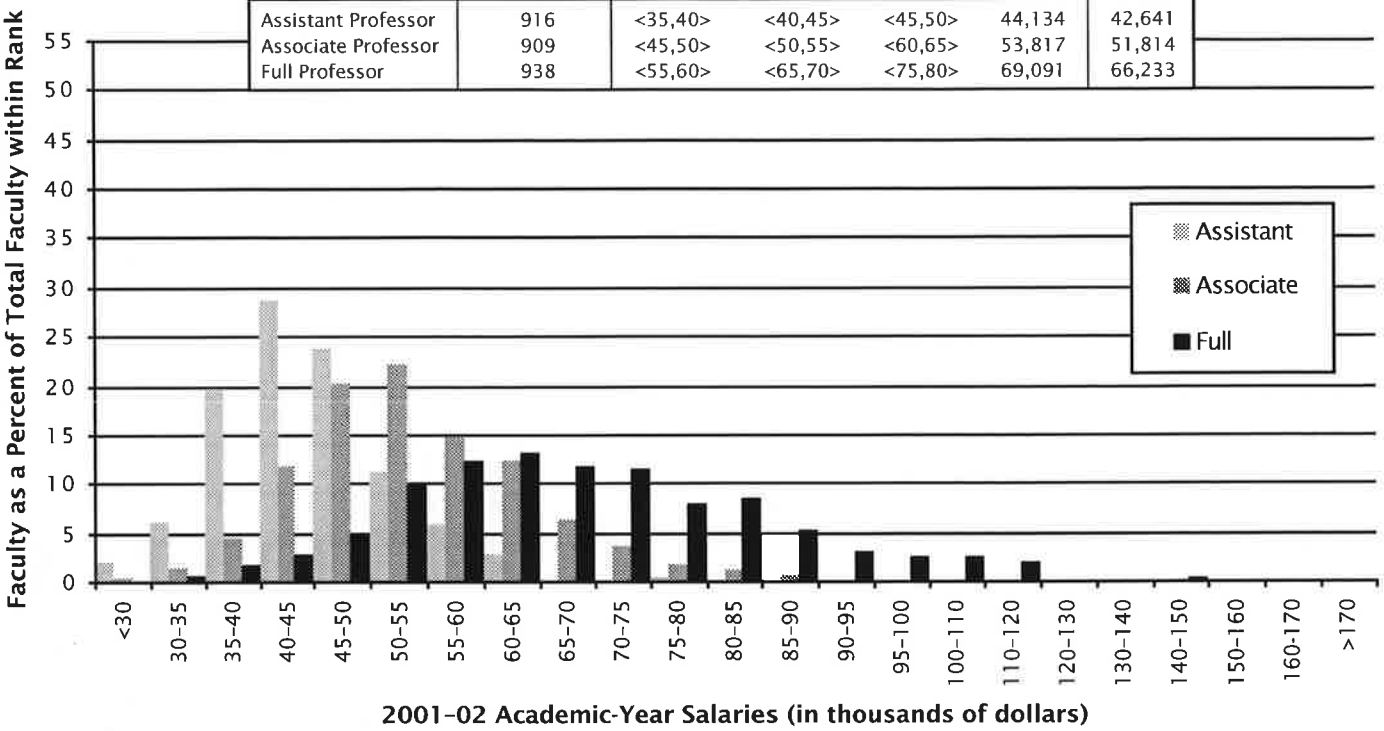
Rank	2001-02 No. Reported	Q_1	Median	Q_3	Mean	2000-01 Mean
Assistant Professor	523	<40,45>	<45,50>	<45,50>	46,052	44,801
Associate Professor	593	<45,50>	<55,60>	<60,65>	56,834	55,083
Full Professor	783	<60,65>	<70,75>	<80,85>	73,044	70,459



2001-02 Academic-Year Salaries (in thousands of dollars)

Group B Faculty Salaries
Bachelor's degree-granting departments of mathematics (1,028)
357 responses (34.7%)

Rank	2001-02 No. Reported	Q_1	Median	Q_3	Mean	2000-01 Mean
Assistant Professor	916	<35,40>	<40,45>	<45,50>	44,134	42,641
Associate Professor	909	<45,50>	<50,55>	<60,65>	53,817	51,814
Full Professor	938	<55,60>	<65,70>	<75,80>	69,091	66,233



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.

Previous Annual Survey Reports

The 2000 First, Second, and Third Annual Survey Reports were published in the *Notices* of the AMS in February, August, and September 2001 issues, respectively. These reports and earlier reports as well as a wealth of other information from these surveys are available on the AMS website at *www.ams.org/employment/surveyreports.html.*

Other Data Sources

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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.*