

Report of the Nineteenth Annual AMS Survey, 1975. Part One
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NINETEENTH ANNUAL AMS SURVEY

The following pages contain a first report on the 1975 AMS Survey. Included in this issue are data on faculty salaries, salaries of new recipients of doctorates in the mathematical sciences, a report on nonacademic salaries, an analysis, by sex, race, and citizenship, of the 1974-1975 Ph.D. class, and a list of the names and thesis titles of the members of that class.

The November issue of the *Notices* will contain a report, prepared by Richard D. Anderson

based on other data collected in the 1975 Survey, including information on employment of the new doctorates, and on enrollments, teaching loads, and class size, as well as an expanded study of faculty mobility.

This Survey is the nineteenth in an annual series begun in 1957 by the Society's Committee on the Economic Status of Teachers. The present Survey is under the direction of the Committee on Employment and Educational Policy.

Faculty Salaries

As has been the practice for several years, questionnaires were sent to departments in the mathematical sciences, asking for information on salaries. Departments submitted a minimum, median, and maximum salary figure for each of four academic ranks, both for staff members with and without doctorates. The two-year colleges were sent a form on which they reported salaries without regard to academic rank, because many of the junior colleges do not rank their teaching staffs. Annual salaries of full-time faculty members, for the academic year of 9-10 months, were requested.

For the reports on salaries, the departments are divided into groups according to the highest degree offered in the mathematical sciences. The Doctorate granting departments are in six groups as follows:

Group I and Group II include the leading departments of mathematics in the U.S.A. according to the findings of the American Council of Education in 1969* in which departments were ranked according to the quality of their graduate faculty. Group I is composed of the 27 departments ranked highest; Group II is made up of the other 38 leading departments listed in that report.

Group III contains all other U.S.A. departments of mathematics.

Group IV includes U.S.A. departments of statistics, biostatistics and biometrics.

Group V includes all other U.S.A. departments in the mathematical sciences.

Group VI consists of all departments in the mathematical sciences from Canadian universities.

Canadian doctorate granting departments are grouped separately but the two-year colleges and those granting bachelor and master degrees are included with U.S.A. departments.

The 1975 survey is based on usable returns from 912 departments in the mathematical sciences. All of the returns were used in compiling figures on the size of the faculty; this year, for the first time, number of faculty were reported for categories in which salary information was not usable (this resulted in the reporting of 105 additional faculty positions). In prior years the "number of usable returns" reflected only the number of returns from which some salary figures were used and so is not comparable to the number of usable returns in 1975.

Following past practice, the 1975 questionnaire requested information for both the years 1974-1975 and 1975-1976. The sample in this survey is thus the same for both years and is different from the sample used in the 18th Salary Survey in 1974.

In the following three pages the data in the parentheses give the range of the middle fifty percent of salaries reported. The figures outside the parentheses represent the minimum and maximum salary listed by any reporting institution. In some categories, relatively few departments reported, and inasmuch as there were no significant figures available, salaries are not listed.

NUMBER OF FACULTY REPORTING

The table at the top of page 307 gives the total number of faculty reported from usable questionnaires.

In doctoral granting institutions, 74% of the departments in Group I were covered in this survey and they reported 79% of the total 1974 faculty in that group. Similarly in Group II, 71% of the departments reported 67% of the total 1974 faculty and, in Group III, 63% of the departments reported 76% of the total 1974 faculty. These percentages are given only for Groups I, II and III because these are the only groups for which we have reliable figures available for the total number of faculty members, based on an independent count.

*The findings were published in "A Rating of Graduate Programs" by Kenneth D. Roose and Charles J. Andersen, American Council of Education, Washington, D. C., 1969, 115 pp. The information on mathematics was reprinted by the Society and can be found on pages 338-340 of the February 1971 issue of these *Notices*.

SALARIES
(in hundreds of dollars)

1974—1975		1975—1976		1974—1975		1975—1976	
FACULTY		FACULTY		FACULTY		FACULTY	
With	Without	With	Without	Minimum	Median	Minimum	Median
Total	Total	Total	Total	Minimum	Median	Minimum	Median

DOCTORATE GRANTING DEPARTMENTS. Group I

	1974—1975	1975—1976	1974—1975	1975—1976	1974—1975	1975—1976
	With	Without	With	Without	Minimum	Median
	Total	Total	Total	Total	Minimum	Median
WITHOUT DOCTORATE						
Instructor	2	1	1	0		
Asso. Prof.	1	1	1	1		
	3	2	2	1		
WITH DOCTORATE						
Instructor	64	0	51	0	110(110-123)	(110-124)
Asst. Prof.	194	3	194	3	(113-125)130	(116-130)
Asso. Prof.	192	5	197	181	(140-157)164	(131-151)
Professor	477	7	490	488	(179-205)223	(173-190)
	927	24	932	672	(241-294)	(260-310)

DOCTORATE GRANTING DEPARTMENTS. Group II

	1974—1975	1975—1976	1974—1975	1975—1976	1974—1975	1975—1976
	With	Without	With	Without	Minimum	Median
	Total	Total	Total	Total	Minimum	Median
WITHOUT DOCTORATE						
Instructor	5	10	26	5	64(90-130)	(90-130)
Asst. Prof.	3	1	7	3	---	---
Asso. Prof.	1	0	1	1	---	---
	34	11	34	9	---	---
WITH DOCTORATE						
Instructor	23	1	32	0	---	---
Asst. Prof.	237	19	218	11	90(115-128)	(125-144)
Asso. Prof.	339	12	333	305	(136-164)189	(135-150)
Professor	358	8	392	391	(178-204)261	(171-187)
	957	40	975	707	(301-350)450	(234-265)

DOCTORATE GRANTING DEPARTMENTS. Group III

	1974—1975	1975—1976	1974—1975	1975—1976	1974—1975	1975—1976
	With	Without	With	Without	Minimum	Median
	Total	Total	Total	Total	Minimum	Median
WITHOUT DOCTORATE						
Instructor	18	24	57	11	80(93-120)	(94-120)
Asst. Prof.	93	31	83	77	93(115-138)	(122-141)
Asso. Prof.	62	5	64	63	(138-147)171	(131-156)
Professor	16	1	15	14	133(142-165)	(149-173)
	239	61	219	165	---	---
WITH DOCTORATE						
Instructor	11	2	11	0	85(90-115)	(97-115)
Asst. Prof.	513	34	474	74	103(124-156)	(131-156)
Asso. Prof.	606	27	628	579	135(150-173)	(157-182)
Professor	472	11	517	506	---	---
	1602	74	1630	1159	---	---

Number of Usable Returns: 20 (out of 27)

Number of Usable Returns: 27 (out of 38)

Number of Usable Returns: 57 (out of 91)

SALARIES
(in hundreds of dollars)

SIZE OF FACULTY

1974—1975 1975—1976

	1974—1975		1975—1976	
	FACULTY	WOMEN	FACULTY	WOMEN
	Total	With Tenure	Total	With Tenure

MASTER DEGREE GRANTING DEPARTMENTS

	1974—1975		1975—1976		1974—1975			1975—1976							
	Total	With Tenure	Total	With Tenure	Minimum	Median	Maximum	Minimum	Median	Maximum					
WITHOUT DOCTORATE															
Instructor	23	86	12	173	163	23	73	11	72 (91-116)	(96-121)	(100-121)	176	72 (90-120)	(100-125)	(103-134)
Asst. Prof.	300	72	62	253	291	255	75	65	86 (112-129)	(117-138)	(134-146)	181	98 (119-141)	(126-149)	(131-160)
Asso. Prof.	187	24	24	180	188	184	21	19	109 (130-156)	(138-164)	(143-174)	202	119 (140-169)	(143-179)	(153-185)
Professor	46	2	2	46	38	38	3	1	132 (170-203)	(171-210)	(171-213)	260	166 (185-225)	(190-225)	(190-232)
	706	184	100	502	680	500	172	96							
WITH DOCTORATE															
Instructor	17	5	1	17	21	0	4	0	---	---	---	---	---	---	---
Asst. Prof.	624	59	13	624	587	145	63	16	87 (115-136)	(127-143)	(136-254)	230	85 (120-142)	(134-152)	(140-163)
Asso. Prof.	624	55	53	624	678	612	57	50	95 (143-160)	(150-176)	(160-194)	277	106 (150-169)	(161-186)	(172-203)
Professor	469	27	27	469	488	474	26	26	100 (176-210)	(185-224)	(197-253)	376	112 (183-220)	(197-232)	(209-260)
	1734	146	94	1151	1774	1231	150	92							

Number of Usable Returns: 145 (out of 333)

BACHELOR DEGREE GRANTING DEPARTMENTS

	1974—1975		1975—1976		1974—1975			1975—1976							
	Total	With Tenure	Total	With Tenure	Minimum	Median	Maximum	Minimum	Median	Maximum					
WITHOUT DOCTORATE															
Instructor	118	52	0	118	112	6	52	0	60 (90-112)	(93-114)	(95-116)	190	60 (100-115)	(100-120)	(100-123)
Asst. Prof.	325	67	36	325	279	184	57	34	85 (103-130)	(108-133)	(110-137)	190	83 (110-137)	(115-142)	(116-148)
Asso. Prof.	218	28	26	218	218	195	28	26	80 (120-149)	(121-152)	(123-158)	256	95 (135-163)	(129-166)	(132-170)
Professor	53	8	8	53	55	44	7	7	107 (139-194)	(139-199)	(142-199)	299	115 (150-207)	(150-207)	(153-207)
	714	155	70	441	664	429	144	67							

Number of Usable Returns: 329 (out of 1012)

WITH DOCTORATE

Instructor	9	4	1	9	7	0	1	0	---	---	---	---	---	---	---
Asst. Prof.	416	39	8	416	426	69	49	9	80 (110-129)	(115-132)	(116-139)	200	80 (117-135)	(120-140)	(120-145)
Asso. Prof.	323	29	23	323	363	282	28	22	90 (132-152)	(137-159)	(140-166)	240	95 (135-163)	(141-170)	(142-175)
Professor	298	33	28	298	308	289	30	26	99 (162-201)	(165-211)	(166-225)	334	110 (165-207)	(172-221)	(175-232)
	1046	105	60	581	1104	640	108	57							

Number of Usable Returns: 258 (out of 860)

TWO-YEAR COLLEGES

WITHOUT DOCTORATE										
1523 980 266 153 1462 1015 276 173 69 (98-130) (113-157) (124-187) 310 72 (100-140) (120-162) (132-200) 330										
WITH DOCTORATE										
165 89 20 11 168 96 33 10 87 (132-176) (130-196) (136-203) 335 103 (133-176) (139-200) (151-210) 340										

TOTAL FACULTY REPORTED FOR FOUR-YEAR COLLEGES AND UNIVERSITIES

	1974-1975				1975-1976			
	FACULTY		WOMEN		FACULTY		WOMEN	
	Total	With Tenure	Total	With Tenure	Total	With Tenure	Total	With Tenure
WITHOUT DOCTORATES								
Instructor	421	57	182	22	382	45	167	19
Assistant Professor	748	534	179	133	683	532	171	133
Associate Professor	488	461	61	59	492	463	58	54
Professor	136	124	12	12	128	115	12	10
	<u>1,793</u>	<u>1,176</u>	<u>434</u>	<u>226</u>	<u>1,685</u>	<u>1,155</u>	<u>408</u>	<u>216</u>
WITH DOCTORATES								
Instructor	123	2	18	2	136	0	19	0
Assistant Professor	2,378	345	184	30	2,279	340	200	34
Associate Professor	2,470	2,158	137	124	2,613	2,317	136	119
Professor	2,503	2,447	95	89	2,643	2,583	97	92
	<u>7,474</u>	<u>4,952</u>	<u>434</u>	<u>245</u>	<u>7,671</u>	<u>5,240</u>	<u>452</u>	<u>245</u>

Starting Salary Survey for New Recipients of the Doctorate

The latest figures in this Survey were compiled from questionnaires sent to individuals who received a doctorate in the mathematical sciences during the 1974-1975 academic year from universities in the United States and Canada. This year no attempt was made to obtain information from individuals who were reported to have left the U.S.A. or Canada.

Of 371 questionnaires which were returned between late June and early September, 311 (279 men and 34 women) were used in the tables below. Of the unused returns 26 did not have sufficient information for use in the compilation, 20 persons (17 men and 3 women) reported that they were not yet employed, 2 men were not seeking employment and 12 persons (11 men and 1 woman) had accepted part-time employment.

Of the doctorates included in this report 83% accepted academic positions, 11% positions in business or industry and 6% in government, including federal, state and provincial governments. Of those reporting academic positions, 50% held positions in doctorate granting departments, 21% in departments granting master's as the high-

est degree, 22% in bachelor granting departments, 2% in nondegree granting departments, 3% in junior colleges and 2% in high schools.

Of all those reporting, including those for whom no statistics were used in the salary compilations, 88% accepted jobs in the United States, 6% in Canada and 6% were not employed at the time of reporting.

KEY TO TABLE

Salaries are listed in hundreds of dollars. Dashes indicate that not enough returns were received to warrant including the figures. Years listed refer to the academic year ending in the listed year. M and F are Male and Female respectively. One year experience means that the persons had experience limited to one year or less in the same or a similar position to the one reported; some persons receiving a doctorate had been employed in their present position for several years. (X + Y) means there are X men and Y women in the 1975 sample. Quartile figures are given only in cases where the number of responses is large enough to make them meaningful.

NINE-MONTH SALARIES

Year	Min.	Q ₁	Median	Q ₃	Max.
TEACHING OR TEACHING AND RESEARCH* (178 + 23)					
1974	85	115	121	135	200
1975	90	120	128	135	173
1974M	85	115	124	137	200
1974F	90	108	115	120	145
1975M	90	120	130	137	173
1975F	95	120	126	135	160
One year experience (146 + 19)					
1975M	90	118	125	135	167
1975F	95	122	127	140	160

RESEARCH (2 + 0)

1972	60		111		155
1973	30		110		120
1974	50		80		130
1975	100		-		110
1973M	30		110		120
1973F	-		-		-
1974M	50		81		130
1974F	-		70		-
1975M	100		-		110
1975F	-		-		-
One year experience (2 + 0)					
1975M	100		-		110
1975F	-		-		-

TWELVE-MONTH SALARIES

Year	Min.	Median	Max.
TEACHING OR TEACHING AND RESEARCH* (40 + 3)			
1974	90	138	185
1975	87	145	204
1974M	90	146	185
1974F	106	126	145
1975M	87	145	204
1975F	145	-	185
One year experience (30 + 2)			
1975M	87	145	190
1975F	145	-	185

RESEARCH (9 + 0)

1972	50	125	180
1973	90	150	176
1974	72	95	265
1975	90	119	180
1972M	50	126	180
1972F	100	-	125
1973M	90	150	176
1973F	120	-	172
1974M	72	95	265
1974F	90	-	180
1975M	90	119	180
1975F	-	-	-
One year experience (9 + 0)			
1975M	90	119	180
1975F	-	-	-

Year	Min.	Median	Max.
GOVERNMENT* (17 + 3)			
1974	120	197	287
1975	78	182	247
1972M	70	155	315
1972F	110	156	160
1973M	95	169	250
1973F	120	140	173
1974M	120	199	287
1974F	-	177	-
1975M	150	185	247
1975F	78	100	145
One year experience (11 + 2)			
1975M	150	154	228
1975F	78	-	100

BUSINESS AND INDUSTRY* (31 + 5)

1974	140	190	251
1975	114	187	240
1972M	118	181	296
1972F	-	-	-
1973M	119	180	250
1973F	168	170	171
1974M	140	190	251
1974F	150	156	190
1975M	114	189	240
1975F	120	175	224
One year experience (21 + 3)			
1975M	114	185	210
1975F	120	150	175

*For information prior to 1974, see page 259 of the October 1974 issue of these Notices.

SALARIES IN NONACADEMIC ORGANIZATIONS

The Committee on Employment and Educational Policy has attempted to make a survey of nonacademic organizations which employ mathematical scientists with a Ph.D. Questionnaires were sent to a sample of 455 employers in nonacademic and nongovernment organizations. The results are very incomplete, not only because the response was very low (about 10 percent), but also because some of the biggest employers of Ph.D. mathematicians were unable to comply with the request for information. These figures may not give a reasonable overall picture of nonacademic pay scales because of the lack of completeness of the data and the lack of information on the number of organizations which are in the population being sampled. They do represent salaries paid by cer-

tain employers to certain individuals.

The questionnaires which were returned gave, for each individual, annual salary as of July 1, 1975 and the number of years of professional experience. In the figures reported below the Ph.D.'s have been grouped according to the number of years of experience and in each category minimum, median, and maximum salaries were reported.

The first table gives the summary of results; the succeeding tables give figures for three subsets. Salaries are listed in hundreds of dollars. Quartile figures are given only for the summary; minimum, median and maximum salaries are in all tables.

SUMMARY: ALL EMPLOYERS (39 employers, 141 employees)	Years of Experience	Number of Employees	ANNUAL SALARIES				
			Minimum	Q ₁	Median	Q ₃	Maximum
	0-4	43	115	170	198	220	270
	5-8	27	155	233	250	270	315
	9-12	20	190	255	285	322	500
	13+	51	220	279	320	365	510

ELECTRONICS & AEROSPACE (8 employers, 43 employees)	Years of Experience	Number of Employees	ANNUAL SALARIES		
			Minimum	Median	Maximum
	0-4	10	170	208	220
	5-8	6	200	242	285
	9-12	4	190	230	250
	13+	23	250	320	480

SMALL CONSULTING FIRMS (11 employers, 43 employees)	Years of Experience	Number of Employees	ANNUAL SALARIES		
			Minimum	Median	Maximum
	0-4	12	147	198	255
	5-8	9	187	260	315
	9-12	10	260	312	500
	13+	12	220	380	510

OTHER EMPLOYERS (20 employers, 55 employees)	Years of Experience	Number of Employees	ANNUAL SALARIES		
			Minimum	Median	Maximum
	0-4	21	115	175	270
	5-8	12	155	248	300
	9-12	6	243	267	330
	13+	16	228	290	460

SEX, RACE AND CITIZENSHIP OF NEW DOCTORATES, 1974 - 1975

The list on the following pages contains the names and thesis title of 1,022 recipients of doctoral degrees in the mathematical sciences from universities in the United States. The table below represents an analysis of this group, according to sex, race and citizenship. The racial categories used are those of the U. S. Department of

Labor. The information summarized here was obtained from department chairmen and in some cases from the recipients themselves.

Similar information was solicited for graduates of Canadian universities, but the returns were too sketchy to be significant.

RACIAL GROUP	MEN					WOMEN					TOTAL
	CITIZENSHIP				Total Men	CITIZENSHIP				Total Women	
	U. S.	Canada	Other	Unknown		U. S.	Canada	Other	Unknown		
Negro/Black	5		7		12	4				4	16
Spanish Surname	3		27		30	2		3		5	35
American Indian	1				1						1
Oriental	14		96	6	116	1		10	1	12	128
None of those above	576	18	89	1	684	67		5		72	756
Unknown	59		2	15	76	9		1		10	86
Total Number	658	18	221	22	919	83		19	1	103	1,022