

21st ANNUAL
1977
AMS SURVEY

FIRST REPORT

The following pages contain a first report on the 1977 AMS Survey. Included in this issue are data on faculty salaries in four-year colleges and universities, a report on the 1977 survey of new doctorates, and a list of the names and thesis titles of the members of the 1976-1977 Ph.D. class.

As in 1976, the distribution of some of the questionnaires for the Annual AMS Survey was postponed several months in order to make it possible to obtain more current data on two-year colleges, fall enrollments, class size, teaching loads and faculty mobility than were obtained in previous years. These data will be included in a

second report on the 1977 AMS Survey which is planned for the February or April 1978 issue of these *Notices*.

This Survey is the twenty-first 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, whose members are Lida K. Barrett, David Blackwell, Wendell H. Fleming (chairman), Hugo Rossi, Martha K. Smith, and Robert J. Thompson. The data were compiled by the AMS staff under the direction of Lincoln K. Durst.

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. Annual salaries of full-time faculty members for the academic year of 9-10 months were sought. The 1977 questionnaire requested information for both the years 1976-1977 and 1977-1978. The sample in this survey is thus the same for both years and is different from the sample used in the Twentieth Salary Survey in 1976. The information reported this year on the number of faculty members is based on usable returns from 828 departments in the mathematical sciences, 110 of which did not contain usable salary information. On pages 338-340 the salary data in 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.

For these reports, 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.

Although Canadian doctorate granting departments are grouped separately, those granting bachelor and master degrees are included with U.S.A. departments.

*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*.

NUMBER OF FACULTY REPORTED

Table 1 below provides a summary of the number of faculty members reported on the faculty salary survey questionnaires. Readers should be aware of certain limitations on these figures as indicators of the size and composition of the North American mathematical sciences faculty: (1) The samples of responding departments in each category, being self-selected, cannot be assumed to be random samples. (2) Departments in each category differ greatly in size, so that extrapolation

based on the sample size is not simple. Two years ago figures were provided to indicate how great some of these deviations actually are (these *Notices*), October 1975, page 303, column 2, last paragraph). (3) In previous years, the questionnaire carried instructions to omit faculty members on leave. This year the instructions were changed: faculty members on leave were to be included at their regular full-time salary, and departments were asked to provide the total number of those on leave in each year.

TABLE 1: TOTAL FACULTY REPORTED FOR FOUR-YEAR COLLEGES AND UNIVERSITIES

	1976-1977				1977-1978			
	FACULTY		WOMEN		FACULTY		WOMEN	
	Total	With Tenure	Total	With Tenure	Total	With Tenure	Total	With Tenure
WITHOUT DOCTORATE								
Instructor	485	77	187	30	480	68	188	29
Assistant Professor	718	573	169	136	687	546	156	120
Associate Professor	532	516	68	64	524	511	69	64
Professor	<u>131</u>	<u>125</u>	<u>9</u>	<u>9</u>	<u>136</u>	<u>131</u>	<u>9</u>	<u>9</u>
	<u>1,866</u>	<u>1,291</u>	<u>433</u>	<u>239</u>	<u>1,827</u>	<u>1,256</u>	<u>422</u>	<u>222</u>
On leave	(33)	(23)	(7)	(2)	(28)	(22)	(7)	(1)
WITH DOCTORATE								
Instructor	197	9	25	1	189	8	26	1
Assistant Professor	2,363	435	234	53	2,266	387	248	44
Associate Professor	2,955	2,666	161	145	3,045	2,763	171	152
Professor	<u>3,129</u>	<u>3,072</u>	<u>125</u>	<u>122</u>	<u>3,290</u>	<u>3,241</u>	<u>137</u>	<u>134</u>
	<u>8,644</u>	<u>6,182</u>	<u>545</u>	<u>321</u>	<u>8,790</u>	<u>6,399</u>	<u>582</u>	<u>331</u>
On leave	(376)	(293)	(18)	(10)	(353)	(268)	(14)	(6)

Note. Table 1 (Total Faculty Reported) shows a modest increase in the total number of full-time faculty members among responding departments between 1976-1977 and 1977-1978. On the other hand, the data indicate that the long-term up-

ward trend in tenure percentages may be nearing an end. Using the faculty counts shown on the left-half of the following pages, Table 2 summarizes percentages of doctorate faculty members who are tenured.

TABLE 2: PERCENT OF DOCTORATE FACULTY WITH TENURE

	Fall 1976	Fall 1977
Groups I, II, III	75.3%	75.6%
Groups IV, V	67.3%	67.8%
Group VI	77.1%	80.1%
Masters and Bachelors	67.8%	70.1%

A striking feature of Table 2 is that, for U.S. doctorate granting departments (Groups I-V), the percentage tenured scarcely changed between 1976-1977 and 1977-1978. This is contrary to an upward trend of some 2% to 3% per year in tenure percentages observed for several years (see these *Notices*), November 1974, p.

335; February 1977, p. 102). Thus it had been the case that the number of individuals granted tenure exceeded the number of positions made available by those who died or retired. Table 2 indicates that this is probably no longer possible, at least among doctorate granting departments. WHF

SALARIES
(in hundreds of dollars)

SIZE OF FACULTY

1976-1977 1977-1978

(in hundreds of dollars)

1976-1977		1977-1978	
Minimum	Median	Maximum	Maximum

1976-1977		1977-1978	
Faculty	Women	Faculty	Women
Total	With Tenure	Total	With Tenure

DOCTORATE GRANTING DEPARTMENTS. Group I (19 out of 27 reporting)

	1976-1977	1977-1978
	Faculty	Women
	Total	With Tenure
WITHOUT DOCTORATE		
Instructor	3	0
Asst. Prof.	1	0
	4	2
WITH DOCTORATE		
Instructor	47	0
Asst. Prof.	156	6
Asso. Prof.	187	9
Professor	467	9
	857	36
On leave	(79)	(58)

DOCTORATE GRANTING DEPARTMENTS. Group II (32 out of 38 reporting)

	1976-1977	1977-1978
	Faculty	Women
	Total	With Tenure
WITHOUT DOCTORATE		
Instructor	17	5
Asst. Prof.	5	3
Asso. Prof.	3	0
Professor	0	0
	27	10
On leave	(1)	(1)
WITH DOCTORATE		
Instructor	50	4
Asst. Prof.	254	11
Asso. Prof.	374	16
Professor	451	9
	1129	40
On leave	(60)	(50)

DOCTORATE GRANTING DEPARTMENTS. Group III (74 out of 91 reporting)

	1976-1977	1977-1978
	Faculty	Women
	Total	With Tenure
WITHOUT DOCTORATE		
Instructor	64	15
Asst. Prof.	70	65
Asso. Prof.	49	48
Professor	10	10
	193	138
On leave	(1)	(1)
WITH DOCTORATE		
Instructor	23	0
Asst. Prof.	413	91
Asso. Prof.	664	618
Professor	613	604
	1713	1313
On leave	(56)	(44)

	1976-1977	1977-1978
	Minimum	Median
WITHOUT DOCTORATE		
Instructor	125(130-140)	(140-156)
Asst. Prof.	150(158-180)	(179-201)
	182(200-225)	(264-309)
WITH DOCTORATE		
Instructor	130(135-150)	(153-170)200
Asst. Prof.	150(166-192)	(198-240)274
Asso. Prof.	188(208-244)	(383-418)450
On leave	(162-175)197	(149-165)
	(210-249)300	(190-210)
	(395-441)480	(269-313)
DOCTORATE GRANTING DEPARTMENTS. Group I	100(104-147)	(104-153)
	(107-168)208	(113-173)
DOCTORATE GRANTING DEPARTMENTS. Group II	110(113-135)	(120-125)
	(148-179)197	(137-158)
	(205-234)272	(185-202)
	(335-388)473	(250-288)
On leave	(124-142)148	(121-141)
	(155-187)209	(144-163)
	(214-249)272	(193-211)
	(355-399)473	(263-293)
DOCTORATE GRANTING DEPARTMENTS. Group III	90(103-123)	(103-128)
	(133-165)186	(127-159)
	(177-207)255	(177-202)
	(218-235)329	(218-235)
On leave	(109-145)171	(102-136)
	(145-171)198	(139-166)
	(189-219)234	(184-211)
	(234-300)339	(234-300)
DOCTORATE GRANTING DEPARTMENTS. Group I	115(125-148)	(140-162)
	(155-173)198	(155-173)198
	(195-221)267	(177-197)
	(277-341)438	(236-274)
On leave	(163-183)213	(149-167)
	(206-234)279	(186-207)
	(280-358)460	(242-289)

SIZE OF FACULTY

1976-1977 1977-1978

	FACULTY		WOMEN		FACULTY		WOMEN	
	Total	With Tenure	Total	With Tenure	Total	With Tenure	Total	With Tenure
DOCTORATE GRANTING DEPARTMENTS. Group IV	(43 out of 67 reporting)							
WITHOUT DOCTORATE	9	0	2	0	8	0	1	0
Instructor	8	3	3	1	9	3	2	1
Asst. Prof.	3	2	1	1	3	2	1	1
Asso. Prof.	3	3	0	0	4	4	0	0
Professor	23	8	6	2	24	9	4	2
On leave					(1)	(1)	(0)	(0)
WITH DOCTORATE	4	1	2	1	2	1	2	1
Instructor	133	6	17	2	139	5	19	0
Asst. Prof.	123	101	7	5	134	111	9	5
Asso. Prof.	208	205	9	9	213	208	9	9
Professor	468	313	35	17	488	325	39	15
On leave	(22)	(16)	(2)	(0)	(22)	(12)	(0)	(0)

DOCTORATE GRANTING DEPARTMENTS. Group V

	FACULTY		WOMEN		FACULTY		WOMEN	
	Total	With Tenure	Total	With Tenure	Total	With Tenure	Total	With Tenure
DOCTORATE GRANTING DEPARTMENTS. Group V	(44 out of 117 reporting)							
WITHOUT DOCTORATE	16	0	4	0	10	0	4	0
Instructor	3	1	0	0	2	0	0	0
Asst. Prof.	7	7	0	0	7	7	0	0
Asso. Prof.	5	3	0	0	5	3	0	0
Professor	31	11	4	0	24	10	4	0
On leave	(1)	(0)	(0)	(0)				
WITH DOCTORATE	3	0	0	0	2	0	0	0
Instructor	165	8	11	1	153	4	13	1
Asst. Prof.	144	118	4	4	144	117	6	5
Asso. Prof.	268	266	5	5	277	275	8	8
Professor	580	392	20	10	576	396	27	14
On leave	(30)	(21)	(0)	(0)	(24)	(20)	(0)	(0)

DOCTORATE GRANTING DEPARTMENTS. Group VI

	FACULTY		WOMEN		FACULTY		WOMEN	
	Total	With Tenure	Total	With Tenure	Total	With Tenure	Total	With Tenure
DOCTORATE GRANTING DEPARTMENTS. Group VI	(20 out of 34 reporting)							
WITHOUT DOCTORATE	8	0	2	0	5	0	0	0
Instructor	17	14	8	8	17	13	8	8
Asst. Prof.	26	23	2	2	26	23	2	2
Asso. Prof.	9	8	0	0	10	9	0	0
Professor	60	45	12	10	58	45	10	10
On leave	(3)	(3)	(0)	(0)	(3)	(3)	(0)	(0)
WITH DOCTORATE	2	0	0	0	2	0	1	0
Instructor	141	41	6	0	127	38	6	0
Asst. Prof.	238	216	5	4	246	228	6	4
Asso. Prof.	164	163	0	0	179	178	0	0
Professor	545	420	11	4	554	444	13	4
On leave	(21)	(18)	(0)	(0)	(23)	(17)	(0)	(0)

SALARIES

(in hundreds of dollars)

	1976-1977			1977-1978		
	Minimum	Median	Maximum	Minimum	Median	Maximum
DOCTORATE GRANTING DEPARTMENTS. Group IV	(43 out of 67 reporting)					
WITHOUT DOCTORATE	---	---	---	---	---	---
Instructor	122(135-156)	(144-162)	(153-179)220	135(142-164)	(150-170)	(161-183)272
Asst. Prof.	133(169-210)	(186-214)	(195-230)258	139(172-222)	(194-229)	(205-240)274
Asso. Prof.	172(230-261)	(255-307)	(320-375)450	184(235-267)	(273-317)	(333-400)450
On leave						
WITH DOCTORATE	---	---	---	---	---	---
Instructor	100(140-160)	(149-165)	(163-180)212	109(150-169)	(158-176)	(170-190)208
Asst. Prof.	122(175-200)	(185-215)	(195-232)260	122(181-210)	(193-220)	(205-246)271
Asso. Prof.	155(218-255)	(259-290)	(303-360)440	155(228-262)	(270-310)	(315-380)478
On leave						
DOCTORATE GRANTING DEPARTMENTS. Group V	(44 out of 117 reporting)					
WITHOUT DOCTORATE	---	---	---	---	---	---
Instructor	---	---	---	---	---	---
Asst. Prof.	---	---	---	---	---	---
Asso. Prof.	---	---	---	---	---	---
Professor	---	---	---	---	---	---
On leave						
WITH DOCTORATE	---	---	---	---	---	---
Instructor	100(140-160)	(149-165)	(163-180)212	109(150-169)	(158-176)	(170-190)208
Asst. Prof.	122(175-200)	(185-215)	(195-232)260	122(181-210)	(193-220)	(205-246)271
Asso. Prof.	155(218-255)	(259-290)	(303-360)440	155(228-262)	(270-310)	(315-380)478
On leave						
DOCTORATE GRANTING DEPARTMENTS. Group VI	(20 out of 34 reporting)					
WITHOUT DOCTORATE	---	---	---	---	---	---
Instructor	---	---	---	---	---	---
Asst. Prof.	---	---	---	---	---	---
Asso. Prof.	---	---	---	---	---	---
Professor	---	---	---	---	---	---
On leave						
WITH DOCTORATE	---	---	---	---	---	---
Instructor	130(138-165)	(155-192)	(172-204)235	131(142-178)	(162-202)	(186-230)255
Asst. Prof.	160(181-208)	(204-240)	(234-287)314	173(179-226)	(215-264)	(255-312)355
Asso. Prof.	213(232-265)	(272-336)	(327-400)466	217(237-291)	(291-353)	(360-420)501
On leave						

SALARIES
(in hundreds of dollars)

SIZE OF FACULTY

	1976-1977		1977-1978		1976-1977		1977-1978		
	Total	With Tenure	Total	With Tenure	Minimum	Median	Minimum	Median	Maximum
MASTER DEGREE GRANTING DEPARTMENTS	(180 out of 369 reporting)								
WITHOUT DOCTORATE	184	31	85	13	178	26	84	13	
Instructor	311	278	81	74	297	266	69	63	
Asst. Prof.	199	197	23	23	200	200	26	26	
Asso. Prof.	51	51	4	4	53	53	4	4	
Professor	745	557	193	114	728	545	183	106	
On leave	(13)	(12)	(3)	(2)	(12)	(9)	(3)	(1)	
WITH DOCTORATE	20	0	7	0	15	0	4	0	
Instructor	614	175	64	21	562	158	74	22	
Asst. Prof.	758	686	50	47	807	732	51	50	
Asso. Prof.	584	568	39	39	632	624	43	43	
Professor	1976	1429	160	107	2016	1514	172	115	
On leave	(75)	(66)	(3)	(3)	(45)	(39)	(1)	(1)	
BACHELOR DEGREE GRANTING DEPARTMENTS	(416 out of 1047 reporting)								
WITHOUT DOCTORATE	183	26	59	5	194	23	61	4	
Instructor	302	208	54	31	290	197	56	27	
Asst. Prof.	245	236	36	33	239	231	35	31	
Asso. Prof.	53	50	5	5	54	52	5	5	
Professor	783	520	154	74	777	503	157	67	
On leave	(16)	(8)	(4)	(0)	(10)	(7)	(6)	(3)	
WITH DOCTORATE	48	4	8	0	37	5	4	0	
Instructor	487	97	67	16	481	88	68	8	
Asst. Prof.	467	392	38	33	509	431	45	37	
Asso. Prof.	374	349	38	35	387	366	39	36	
Professor	1376	842	151	84	1414	890	156	81	
On leave	(33)	(20)	(5)	(1)	(35)	(30)	(0)	(0)	

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 1976-1977 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.

A total of 875 questionnaires was distributed to recipients of degrees using addresses provided by the departments which granted the degrees. Of these, 33 were returned by the postal service as undeliverable and could not be forwarded. Of the 490 which were returned between late June and early September, 440 (386 men and 54 women) were used in the tables below. Of the unused returns, 19 did not have sufficient information for use in this compilation, 16 persons (14 men and 2 women) reported that they were not yet employed, 3 persons (2 men and 1 woman) were not seeking employment and 12 persons (6 men and 6 women) had accepted part-time employment.

Of the doctorates included in this report, 75% accepted academic positions, 16% positions in business or industry and 9% in government, including federal, state and provincial governments. Of those reporting academic positions, 180 held

positions in doctorate granting departments, 51 in departments granting masters as the highest degree, 49 in bachelor granting departments, 14 in two-year colleges, 12 in departments granting no degrees and 2 in high school.

Of all those reporting, including those whose questionnaires were not usable in the salary compilations, 92% accepted positions in the United States, 5% in Canada, and 3% were seeking employment at the time of reporting.

KEY TO TABLE

Salaries are listed in hundreds of dollars. 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 position or a position similar 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 1977 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 (231 + 32)					
1974	85	115	121	135	200
1975	90	120	128	135	173
1976	85	124	133	145	245
1977	72	130	140	150	328
1974M	85	115	124	137	200
1974F	90	108	115	120	145
1975M	90	120	130	137	173
1975F	95	120	126	135	160
1976M	93	125	134	145	245
1976F	85	120	125	145	168
1977M	72	130	140	150	328
1977F	72	120	135	148	170
One year experience (198 + 24)					
1977M	72	130	138	150	180
1977F	72	120	135	140	170

RESEARCH (2 + 1)

1974	50	80	130
1975	100	-	110
1976	70	80	180
1977	80	86	160
1974M	50	81	130
1974F	-	70	-
1975M	100	-	110
1975F	-	-	-
1976M	70	80	180
1976F	-	-	-
1977M	80	-	160
1977F	-	86	-
One year experience (2 + 1)			
1977M	80	-	160
1977F	-	86	-

TWELVE-MONTH SALARIES

Year	Min.	Median	Max.	Year	Min.	Median	Max.
TEACHING OR TEACHING AND RESEARCH (39 + 4)				GOVERNMENT (35 + 7)			
1974	90	138	185	1974	120	197	287
1975	87	145	204	1975	78	182	247
1976	100	155	270	1976	115	194	270
1977	111	170	260	1977	105	187	330
1974M	90	146	185	1974M	120	199	287
1974F	106	126	145	1974F	-	177	-
1975M	87	145	204	1975M	150	185	247
1975F	145	-	185	1975F	78	100	145
1976M	100	150	270	1976M	118	194	270
1976F	100	174	240	1976F	115	194	200
1977M	111	170	260	1977M	105	192	330
1977F	125	-	182	1977F	115	182	204
One year experience (28 + 4)				One year experience (21 + 6)			
1977M	111	155	220	1977M	105	171	216
1977F	125	-	182	1977F	115	172	204

RESEARCH (16 + 3)

1974	72	95	265
1975	90	119	180
1976	90	130	210
1977	100	156	250
1974M	72	95	265
1974F	90	-	180
1975M	90	119	180
1975F	-	-	-
1976M	90	121	210
1976F	-	195	-
1977M	100	139	210
1977F	190	222	250
One year experience (14 + 2)			
1977M	100	135	250
1977F	190	-	222

BUSINESS AND INDUSTRY (63 + 7)

1974	140	190	251
1975	114	187	240
1976	120	205	400
1977	100	210	380
1974M	140	190	251
1974F	150	156	190
1975M	114	189	240
1975F	120	175	224
1976M	120	206	400
1976F	185	-	200
1977M	100	216	380
1977F	130	195	220
One year experience (48 + 7)			
1977M	100	210	330
1977F	130	195	220

Report on the 1977 Survey of New Doctorates

by Wendell H. Fleming

This report concerns employment patterns for 1976-1977 mathematical science doctorates, trends in the number of doctoral degrees granted, and sex, minority group status, and citizenship of new doctorates. The employment pattern for new doctorates is similar to that observed last year. The proportion employed in university or four-year college mathematical science departments is slightly lower. Again this year there was a drop in the number of doctorates granted, but the percentage of women doctorates continued to increase.

Employment Status of New Doctorates, Table 1 shows the employment status by type of employer

and field of degree of the 972 new doctorates listed on pages 344-361 of this issue of these *Notices*. In row 1 ("University"), the recipients are counted who accepted appointments in U.S. doctorate granting mathematical science departments (Groups I-V as defined on page 336). Similarly, in row 2 ("College"), the figures represent those accepting appointments in U.S. mathematical science departments granting bachelors and masters degrees only. The information was obtained from the departments granting the degrees and from questionnaires subsequently completed by over 56% of the recipients themselves.

TABLE 1

1977-1978 EMPLOYMENT STATUS OF NEW DOCTORATES IN THE MATHEMATICAL SCIENCES

Type of Employer	PURE MATHEMATICS											Total
	Algebra and Number Theory	Analysis and Functional Analysis	Geometry and Topology	Logic	Probability	Statistics	Computer Science	Operations Research	Applied Mathematics	Mathematics Education	Other	
University	40	54	41	6	15	41	37	1	25	2	11	273
College	32	31	25	4	5	18	11	2	17	4	9	158
Two-year college and high school	9	3	5	1			1		1	3	2	25
Other academic departments or research institutes	4	6	6	1	1	18	15	4	13		12	80
Government	5	6	1		1	24	6	3	8		4	58
Business and industry	3	11	5	1	2	17	50	5	23		8	125
Canada	14	12	2	4	5	9	8	2	7		6	69
Foreign	11	14	16	2	2	16	8	2	8	1	4	84
Not seeking employment	2	2	2			2						8
Not yet employed	12	14	14	2	1	10		2	9		5	69
Unknown	3	4	1		1	7	2	1	2	1	1	23
Total	135	157	118	21	33	162	138	22	113	11	62	972

Among those 1976-1977 new doctorates employed in the U.S., 60% took positions in university or college mathematical science departments. This is a decline from 63% reported in last year's survey of 1975-1976 new doctorates, and from 67% reported two years ago. About 25% of 1976-1977 new doctorates employed in the U.S. took positions in government, business, and industry, while the remaining 15% are in two-year colleges, high schools, other academic departments, or research institutes.

Table 1 shows as "not yet employed" about 10% of the 1976-1977 new doctorates (this excludes those whose employment status is unknown, and those now in Canada or other foreign countries). The data in Table 1 were in many instances obtained in early summer 1977, and do not reflect

subsequent hiring during the summer; an update of Table 1 is planned for a later issue of these *Notices*. A similar update last year revealed a substantial drop between summer and winter 1976 in the number of 1975-1976 new doctorates seeking employment. See these *Notices*, October 1976, p. 318, and February 1977, p. 99.

Trends in Number of Doctorates. Table 1 shows 464 pure mathematics doctorates out of a 972 total, about 48% pure mathematics. This is approximately the same percentage reported in last year's survey, but it is lower than two years ago. Table 2 shows the number of doctorates granted by those mathematical science departments in the U.S. and Canada which reported in both of the last two years.

TABLE 2

MATHEMATICAL SCIENCE DOCTORATES		
	1975-1976	1976-1977
Group I	262	223
Group II	141	147
Group III	205	204
Total I, II, III	608	574
Group IV	120	132
Group V	153	155
Group VI	57	50
Total	938	911

Table 2 indicates a modest decline in the number of new doctorates between 1975-1976 and 1976-1977, less dramatic than that observed between 1974-1975 and 1975-1976 (these *Notices*, October 1976, p. 319). The most noticeable drop in Table 2 occurred among the top-rated Group I mathematics departments. However, it should be pointed out that during recent years Group II departments had already experienced a drastic decline in the number of doctorates awarded. The 223 Group I doctorates for 1976-1977 shown in Table 2 represent 23 departments, while the 351 Group II and III doctorates represent 116 departments reporting both years. Thus the average number of doctorates produced during 1976-1977 per Group II and III department is low (only about 3 per department).

Since departments are not included in Table 2 which failed to report either 1975-1976 or 1976-1977 new doctorates, the totals do not represent all doctoral degrees granted. For Groups I-III the missing departments contributed perhaps an additional 55 to 70 doctorates. For the applications-oriented departments in Groups IV and V, there is an inherent difficulty in attempting to determine just which degrees belong in the mathematical sciences. Moreover, the Group V row in Table 2 does not include several major computer science departments and programs. Thus, the data for Group V are less reliable, either as an indicator of the number of doctorates or of trends, than are the data for the other categories of departments. A reasonable estimate of the total number of mathematical science doctorates (U.S. and Canada) would be in the 1100-1200 range for 1976-1977, down slightly from 1975-1976.

Sex, Race, and Citizenship of New Doctorates (July 1, 1976-June 30, 1977). The tables below represent an analysis according to sex, minority group and citizenship of the group of 972 recipients of doctorates in the mathematical sciences from universities in the U.S. and Canada for the academic year 1976-1977. The information summarized in the tables was obtained from department heads and in some cases from recipients themselves.

TABLE 3
SEX, RACE, AND CITIZENSHIP OF NEW DOCTORATES
July 1, 1977-June 30, 1977

U. S. DEGREES	MEN					WOMEN					TOTAL
	CITIZENSHIP					CITIZENSHIP					
	U. S.	Canada	Other	Not Known	Total Men	U. S.	Canada	Other	Not Known	Total Women	
RACIAL/ETHNIC GROUP											
American Indian, Eskimo	2				2	2				2	4
Black, Afro-American	9		3		12			1		1	13
Mexican American, Puerto Rican	3		4		7	1		1		2	9
Oriental, Pacific Islander	12		60	1	73	4	1	10		15	88
None of those above	530	13	93	6	642	71		16		87	729
Not Known	46	6	3	5	60	9		1	1	11	71
Total Number	602	19	163	12	796	87	1	29	1	118	914
CANADIAN DEGREES	MEN					WOMEN					TOTAL
	CITIZENSHIP					CITIZENSHIP					
RACIAL/ETHNIC GROUP	U. S.	Canada	Other	Not Known	Total Men	U. S.	Canada	Other	Not Known	Total Women	
American Indian, Eskimo		1			1						1
Black, Afro-American											
Mexican American, Puerto Rican			2		2						2
Oriental, Pacific Islander		6	2		8						8
None of those above	2	13	6		21		4			4	25
Not Known	1	14	3		18		3	1		4	22
Total Number	3	34	13		50		7	1		8	58

Table 3 shows that 13% of the new U.S. 1976-1977 doctorates are women. This compares with 9% in 1973-1974, 10% in 1974-1975, and 11% in 1975-1976. About three-quarters of the new 1976-1977 doctorates are U.S. citizens. Table 3 shows thirty-three new doctorates who are both U.S. citizens and members of a minority group listed there. As in previous years this number represents only a small percentage of the total.

Analysis of the employment forms indicate that among the new 1976-1977 doctorates from

U.S. universities employed by Group I, II, and III departments, 10% are women. (The percentage remains nearly the same if Group IV and V departments are included.) Among new doctorates employed by bachelors and masters degree granting departments 16% are women, while among those employed by government, business, and industry 11% are women. Among the 69 individuals shown in Table 1 as seeking employment, 10 are women.