

**Table 1: Faculty Attrition,<sup>1</sup> Fall 2002**

	GROUP									
	I Public	I Private	II	III	Va	I, II, III, & Va	M	B	I, II, III, Va, M, & B	IV
<b>Full-time faculty who retired or died</b>										
Total number (Standard error)	34	9	69	42	7	162	135 (16)	310 (90)	607 (92)	39
Percentage	1.9	1.0	2.9	2.0	2.3	2.2	3.1	3.8	3.0	2.8

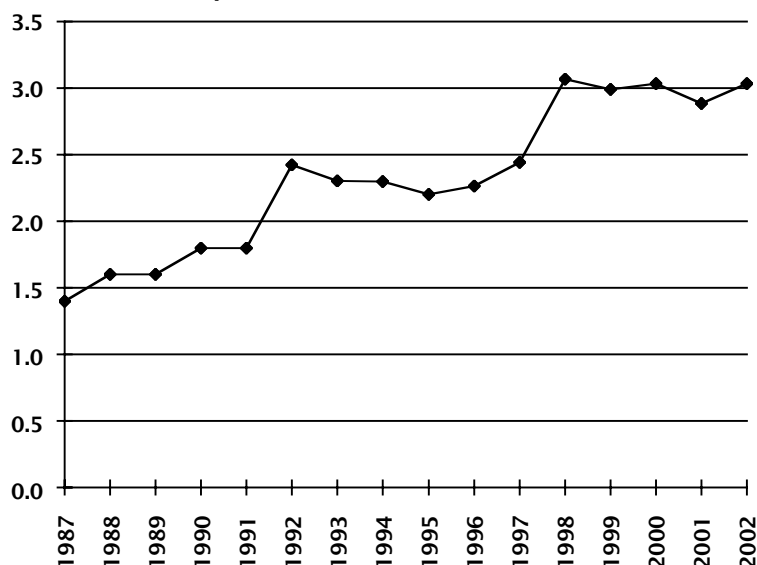
<sup>1</sup> Number and percentage of full-time faculty who were in the department in fall 2001 but were reported to have retired or died by fall 2002.

## Faculty Profile

The Departmental Profile, sent in fall 2002 to mathematical sciences departments at four-year colleges and universities as part of the Annual Survey, gathered information about faculties at these schools, which is reported in this section. The 2002 First Report presented data collected earlier about faculty salaries (pages 238–53 of the February 2003 issue of the *Notices of the AMS*.)

### Faculty Attrition

Table 1 displays losses of full-time mathematical sciences faculty due to retirements and deaths. The fall 2002 mathematics faculty attrition rate for Groups I, II, III, Va, M, and B combined was 3.0%. Figure 1 shows the trend in the attrition rate for these departments during the years 1987 to 2002. After a significant increase from 1997 to 1998, the overall rate has remained relatively stable over the last five years. However, the rates vary quite a bit from group to group and from year to year within each of the groups. For fall 2002, Group I Private

**Figure 1: Percent of Full-Time Doctoral Faculty Who Retired or Died in Groups I, II, III, Va, M, & B, Fall 1987 to Fall 2002****Table 2A: Recruitment of Doctoral Faculty, Fall 2002**

	GROUP									
	I Public	I Private	II	III	Va	I, II, III, & Va	M	B	I, II, III, Va, M, & B	IV
<b>Posted Doctoral Positions</b>										
<b>Total number</b> <sup>1</sup> (Standard error)	200	117	188	189	31	726	349 (42)	793 (60)	1867 (73)	169
Tenured/tenure-track	77	33	112	145	18	386	313	621	1320	141
Open to new doctoral recipients	146	87	156	174	25	587	311	771	1670	121
Tenured/tenure-track	33	10	86	129	15	272	278	573	1124	108
Open at assoc/full level	39	25	40	48	7	159	60	97	317	59
<b>Reported Hires for Above</b>										
<b>Total number</b>	174	101	161	151	23	611	290	598	1499	110
Male doctoral hires	143	78	114	112	16	464	170	349	983	65
Tenured/tenure-track	42	18	60	73	7	201	151	217	569	53
Female doctoral hires	30	22	43	30	4	129	73	133	335	45
Tenured/tenure-track	7	1	22	22	1	53	65	95	213	34
Male temporary hires	0	1	3	5	3	13	16	81	110	0
Female temporary hires	0	0	1	4	0	5	30	34	70	0
Total new doctoral hires	103	64	71	59	12	309	102	212	624	58
Male new doctoral hires	83	47	56	45	10	241	79	136	455	29
Tenured/tenure-track	1	2	21	34	4	63	76	96	235	25
Female new doctoral hires	21	17	15	14	2	69	24	76	168	29
Tenured/tenure-track	0	0	7	8	0	16	22	64	101	23
<b>Unfilled positions</b>	26	16	27	38	7	115	58	195	368	59

<sup>1</sup> Number of full-time doctoral positions under recruitment in 2001–2002 to be filled for 2002–2003.

had the lowest attrition rate at 1.0%, while Group B the highest at 3.8%.

### Faculty Recruitment

Table 2A contains detailed information on the number of full-time doctoral faculty positions in mathematical sciences departments under recruitment in 2001-2002 for employment beginning in the academic year 2002-2003. Among mathematics departments (Groups I, II, III, Va, M, and B), 1,867 positions were under recruitment in 2001-2002 for employment beginning in the academic year 2002-2003, down 19% compared to last year. Of those 1,867 positions, 1,670 (89%) were available to new doctoral recipients, and of those 1,670 positions, 1,124 (67%) were tenured/tenure-track positions. The 1,124 tenured/tenure-track positions open to new doctoral recipients was down 23%

**Table 2B: A Summary of Recruitment of Doctoral Faculty, Fall 2002**

	GROUP		
	I, II, III, & Va	M & B	IV
<b>Posted Doctoral Positions</b>			
<b>Total number</b>	<b>726</b>	<b>1142</b>	<b>169</b>
Tenured/tenure-track	386	934	141
Open to new doctoral recipients	587	1082	121
Tenured/tenure-track	272	851	108
<b>Reported Hires for Above</b>			
<b>Total new doctoral hires</b>	<b>309</b>	<b>314</b>	<b>58</b>
Tenured/tenure-track	79	258	48
Male	241	215	29
Tenured/tenure-track	63	172	25
Female	69	100	29
Tenured/tenure-track	16	86	23
<b>Total not new doctoral hires</b>	<b>284</b>	<b>411</b>	<b>52</b>
Tenured/tenure-track	175	270	39
Male	223	304	36
Tenured/tenure-track	138	196	28
Female	60	106	16
Tenured/tenure-track	37	74	11

**Table 2C: Percentage Tenured/Tenure-Track for Positions Posted and Filled, Fall 2002**

	GROUP		
	I, II, III, & Va	M & B	IV
<b>New Doctoral Positions</b>			
Positions posted	587	1082	121
% tenured/tenure-track	46	79	89
Positions filled	309	314	58
% tenured/tenure-track	25	82	83
<b>Not New Doctoral Positions</b>			
Positions posted <sup>1</sup>	-	-	-
% tenured/tenure-track	-	-	-
Positions filled	284	411	52
% tenured/tenure-track	62	66	75

<sup>1</sup> The current survey requests the number of positions posted and the number open to new doctoral recipients. As some positions are open to both new and not new doctoral recipients, there is no way to use the data collected to identify positions open to not new doctoral recipients only.

from the 1,459 such positions under recruitment in 2000-2001; the biggest drop was in Groups M and B, where the total number of tenured/tenure-track positions open to new doctoral recipients dropped from 1,192 last year to 851 this year (a 29% drop). The total number of tenured/tenure-track full-time doctoral positions under recruitment in Groups I, II, III, Va, M, and B combined is 1,320, down from last year's 1,618 (a drop of 18%). In Groups I, II, III, and Va combined, the total number of posted doctoral positions open at the associate/full level rose from 138 last year to 159 this year.

Table 2B condenses the information in Table 2A. It also reorganizes the doctoral hires into one section for new doctoral hires and another for other doctoral hires (so excludes posted doctoral positions that were temporarily filled with a person without a doctorate). Table 2C is derived from Table 2B with the percentage of the filled positions that were tenured/tenure-track included in the table.

From Table 2B we find that the total number of full-time doctoral positions filled in Groups I, II, III, Va, M, and B combined is down to 1,319 from 1,621 last year (a drop of 19%). Groups I, II, III, and Va combined filled 593 doctoral positions, of which 254 (43%) were tenured/tenure-track positions. Groups M and B combined filled 725 doctoral positions, of which 528 (73%) were tenured/tenure-track. Last year Groups I, II, III, and Va combined filled 666 doctoral positions, of which 281 (42%) were tenured/tenure-track positions, and Groups M and B combined filled 955 doctoral positions, of which 681 (71%) were tenured/tenure-track.

The number of tenured/tenure-track new doctoral hires was up in Groups I, II, III, and Va combined (79 from 59 last year), and about the same in Groups M and B combined (258 from 259 last year). But the number of tenured/tenure-track not new doctoral hires was down in both Groups I, II, III, and Va combined (175 from 222 last year) and in Groups M and B combined (270 from 422 last year, a 36% drop over last year).

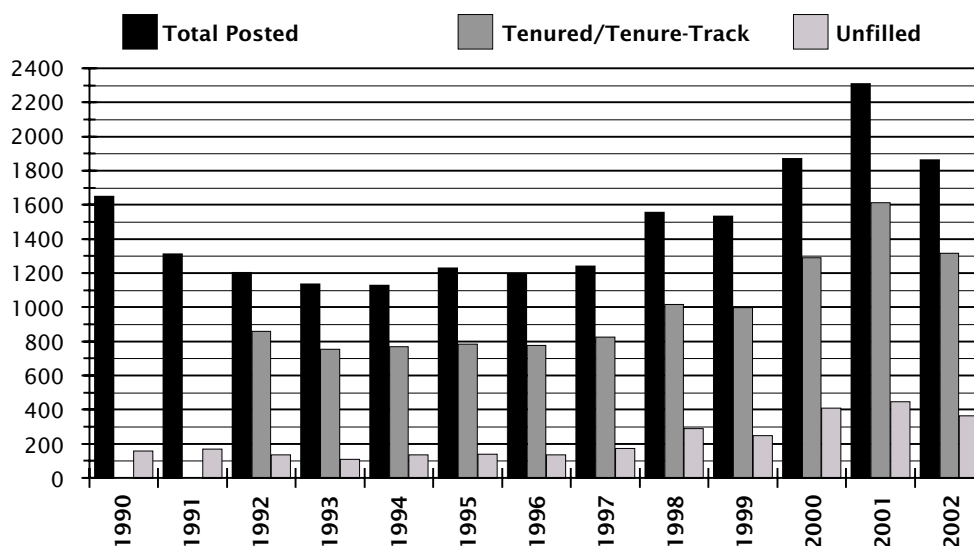
From Tables 2B and 2C we can compare the hiring patterns of Groups I, II, III, and Va with that of Groups M and B. In Groups I, II, III, and Va 52% of the positions hired went to new doctoral recipients (last year 47%), while in Groups M and B 43% of the positions hired went to new doctoral recipients (last year 40%). In Groups I, II, III, and Va only 26% of the hires of new doctoral recipients were in tenured/tenure-track positions (last year it was 19%), while in Groups M and B 82% of the hires were in tenured/tenure-track positions (last year it was 69%).

From Table 2B we find that of the new doctoral recipients hired in Groups I, II, III, and Va combined, 26% of the males and 23% of the females took tenured/tenure-track positions. For new doctoral recipients hired in Groups M and B combined, 80%

of the males and 86% of the females took tenured/tenure-track positions. Even though 46% of the positions available in doctoral departments (Groups I, II, III, and Va) for new doctoral recipients were tenure-track positions, only 26% of the new doctoral recipients hired were given tenured/tenure-track positions. At the same time, 284 of those hired were not new doctoral recipients and 62% had tenured/tenure-track positions.

Figure 2 shows the number of full-time doctoral positions available in all groups except Group IV, as well as the number of those that were tenured/tenure-track and the number unfilled for the years 1990 to 2002. There was a sharp decrease in available po-

**Figure 2: Number of Full-Time Doctoral Positions under Recruitment: Total, Tenured/Tenure-Track, and Unfilled in Groups I, II, III, Va, M, & B Combined, Fall 1990 to Fall 2002**



Note: The tenured/tenure-track status of positions under recruitment was not surveyed until 1992.

**Table 3A: Total Faculty Size, Fall 2002**

	GROUP									
	I Public	I Private	II	III	Va	I, II, III, & Va	M	B	I, II, III, Va, M, & B	IV
<b>Total full-time faculty</b> (Standard error)	1752	949	2422	2068	320	7511	4342 (121)	8154 (240)	20007 (269)	1397
Doctoral full-time faculty	1693	945	2179	1764	309	6890	3464	6076	16430	1355
Tenured	1163	536	1567	1292	182	4740	2361	3858	10959	812
Untenured, tenure-track	162	97	269	314	34	876	827	1711	3414	308
Non-tenure-track (Standard error)	368	312	343	158	93	1274	276 (62)	507 (71)	2057 (94)	235
Nondoctoral full-time faculty	59	4	243	304	11	621	878	2078	3577	42
<b>Total part-time faculty</b> (Standard error)	222	57	443	747	35	1504	2150 (175)	4117 (254)	7771 (309)	172

**Table 3B: Female Faculty Size, Fall 2002**

	GROUP									
	I Public	I Private	II	III	Va	I, II, III, & Va	M	B	I, II, III, Va, M, & B	IV
<b>Female full-time faculty</b> (Standard error)	219	100	422	451	46	1238	1277 (62)	2504 (115)	5019 (131)	354
Doctoral full-time faculty	181	99	279	274	39	872	811	1473	3156	332
Tenured	87	26	114	147	18	392	452	791	1635	125
Untenured, tenure-track	27	12	57	86	4	186	252	500	938	110
Non-tenure-track	67	61	108	41	17	294	107	182	583	97
Nondoctoral full-time faculty	38	1	143	177	6	365	467	1031	1863	23
<b>Female part-time faculty</b>	85	11	175	251	8	530	810	1855	3195	63

**Table 3C: Number and Percentage of Full-Time Faculty, Fall 2002**

	GROUP								TOTAL
	I Public	I Private	II	III	Va	M	B	IV	
<b>Full-Time Faculty</b>									
Number	1752	949	2422	2068	320	4342	8154	1397	21403
Percentage of total full-time faculty	8	4	11	10	1	20	38	7	100
<b>Female Full-Time Faculty</b>									
Number	219	100	422	451	46	1277	2504	354	5373
Percentage of female full-time faculty	4	2	8	8	1	24	47	7	100
<b>Female Full-Time Faculty</b> Percentage female full-time faculty by group	13	11	17	22	14	29	31	25	25

**Table 3D: Number, and Percentage of Those Female, of Non-tenure-track Doctoral Full-Time Faculty and Part-Time Faculty by Group, Fall 1996 to Fall 2002**

	1996	1997	1998	1999	2000	2001	2002
<b>Groups I, II, III, &amp; Va</b>							
Non-tenure-track doctoral full-time faculty	672	708	904	1014	993	1233	1274
Percentage female	25	22	21	22	20.6	21	23
Part-time faculty	1093	954	1141	1217	1399	1467	1504
Percentage female	37	37	38	38	37	38	35
<b>Group M</b>							
Non-tenure-track doctoral full-time faculty	138	216	140	146	262	183	276
Percentage female	24	30	27	56	29	24	39
Part-time faculty	1879	1612	1768	1906	2323	2393	2150
Percentage female	41	46	43	35	36	37	38
<b>Group B</b>							
Non-tenure-track doctoral full-time faculty	419	385	427	514	407	504	507
Percentage female	23	26	31	24	30	29	36
Part-time faculty	3055	3107	3585	3298	3580	4197	4117
Percentage female	44	46	42	41	40	43	45

sitions in the first few years of the 1990s, but the number of positions and the number of tenured/tenure-track positions had been increasing steadily until this year.

#### Faculty Size

Table 3A gives the number of faculty for different categories of faculty broken down by group. Table 3B gives the same information for females only. The estimated total number of full-time faculty in Groups I, II, III, Va, M, and B combined is 20,007, up 295 from last year, with a standard error of 269. We can be quite confident that the actual total number of faculty in these groups is in the interval  $20,007 \pm 538$ . The doctoral departments I, II, III, and Va were up 79 full-time faculty members, Group M was up 6 faculty members, and Group B was up 210. Since the standard errors for the total number of full-time faculty in Groups M and B are 121 and 240 respectively, there may not be an actual change, as these increases are well within the variability we expect with standard errors of 121 and 240.

Table 3C gives some percentages based on the information in Tables 3A and 3B.

The number of non-tenure-track doctoral full-time faculty and the number of part-time faculty have been increasing in recent years, though this year the estimated number of part-time faculty is down to 7,771 from 8,057 last year. Table 3D gives a seven-year history of these two types of faculty for Groups I, II, III, and Va combined; for Group M; and for Group B. Also shown for each number in this table is the percentage of females. Table 3D shows that over the last seven years, the percentage in non-tenure-track doctoral full-time faculty has increased by 90% in Groups I, II, III, and Va; 100% in Group M; and 21% in Group B, and the percentage of part-time faculty has increased in these groups 38%, 14%, and 35%, respectively. This increase in non-tenure-track full-time doctoral positions continues a disturbing trend highlighted in "Staffing shifts in mathematical sciences departments, 1990-2000" (David J. Lutzer and James W. Maxwell, *Notices of the AMS*, June/July 2003, pages 683-6).

Table 3E gives a summary of the various types of faculty found in departments of mathematical sciences by sex and group.

Tables 3F and 3G give more information about two types of faculty: full-time faculty without a doctorate and part-time faculty. The top half of Table 3F is a somewhat condensed version of the doctoral full-time faculty in Table 3A broken down by sex. The bottom half of Table 3F shows this same information for the 3,576 full-time faculty who do not have doctoral degrees. The majority of these faculty, 2,956 (83%), are found in Group M and B departments. Table 3G shows the part-time faculty broken down by sex and whether they have a doctoral degree.

#### Faculty Profile for Females

Table 3B gives a complete breakdown of all categories of female faculty by group and shows increasing estimated numbers of female faculty in most categories. The estimated total number of full-time faculty in all groups for 2002-2003 is 21,403, of which 5,373 (25%) are females, up from 5,135 (24%) last year. In the B group doctoral female faculty dropped to 1,473 from 1,527 last year, tenured female faculty dropped from 870 last year to 791 this year, and non-tenure-track doctoral female faculty rose from 147 last year to 182 this year. In the M group non-tenure-track female doctoral faculty rose from 43 last year to 107 this year.

Table 3C shows the number and percentage of all full-time and female full-time faculty that fall in each group for 2002-2003. The number of faculty in each group and the percentage who are female are given in the bottom section of Table 3C. The number of females as a percentage of full-time faculty varies considerably among the groups, from 11% for Group I Private to 31% for Group B. This is the same pattern as reported last year. Note: In Table 3C the percentages for each group in rows 2 and 4 are of the row totals. The percentages in row 6 are column percentages using the numbers in rows 1 and 3.

Table 3D contains information about non-tenure-track doctoral full-time faculty and part-time faculty for the years 1997 to 2002 for Groups I, II, III, and Va combined, M, and B. This table includes the total number for each category as well as the percentage female for each number.

**Table 3E: Summary of Full-Time and Part-Time Faculty by Sex, Fall 2002**

	GROUP					
	I, II, III, & Va		M & B		IV	
	Male	Female	Male	Female	Male	Female
<b>Full-time faculty</b>	<b>6273</b>	<b>1238</b>	<b>8714</b>	<b>3781</b>	<b>1043</b>	<b>354</b>
Percentage	84	16	70	30	75	25
Doctoral full-time faculty	6018	872	7256	2284	1023	332
Percentage	87	13	76	24	76	24
Tenured	4348	392	4977	1243	687	125
Percentage	92	8	80	20	85	15
Untenured, tenure-track	690	186	1786	752	199	110
Percentage	79	21	70	30	64	36
Non-tenure-track	980	294	493	289	137	97
Percentage	77	23	63	37	59	41
Nondoctoral full-time faculty	255	365	1459	1497	19	23
Percentage	41	59	49	51	46	54
<b>Part-time faculty</b>	<b>973</b>	<b>530</b>	<b>3602</b>	<b>2665</b>	<b>109</b>	<b>63</b>
Percentage	65	35	57	43	63	37

**Table 3F: Doctoral and Nondoctoral Full-Time Faculty Size, Fall 2002**

	GROUP					
	I, II, III, & Va		M & B		TOTAL	
	Male	Female	Male	Female	Male	Female
<b>Doctoral full-time faculty</b>	<b>6018</b>	<b>872</b>	<b>7256</b>	<b>2284</b>	<b>13274</b>	<b>3156</b>
Tenured	4348	392	4977	1243	9325	1635
Untenured, tenure-track	690	186	1786	752	2476	938
Non-tenure-track	980	294	493	289	1473	583
<b>Nondoctoral full-time faculty</b>	<b>255</b>	<b>365</b>	<b>1459</b>	<b>1497</b>	<b>1714</b>	<b>1862</b>
Tenured	19	10	483	337	502	347
Untenured, tenure-track	5	2	172	244	177	246
Non-tenure-track	231	353	803	916	1034	1269

Table 3E gives the male/female breakdown by count and percentage for Groups I, II, III, and Va combined for various categories of faculty in columns 2 and 3. The same breakdowns are given for Groups M and B combined in columns 4 and 5 and for Group IV in columns 6 and 7.

Table 3F shows that of the 3,576 nondoctoral full-time faculty in Groups I, II, III, Va, M, and B, 1,862 (52%) are females. In Table 3G we see that in these same groups there are 7,771 part-time faculty, of which 3,195 (41%) are females.

**Table 3G: Part-Time Faculty Size, Fall 2002**

	GROUP				
	I, II, III, & Va		M & B		TOTAL
	Male	Female	Male	Female	
Doctoral part-time faculty	400	130	834	331	<b>1695</b>
Nondoctoral part-time faculty	573	400	2768	2334	<b>6075</b>
<b>TOTAL</b>	<b>973</b>	<b>530</b>	<b>3602</b>	<b>2665</b>	<b>7771</b>