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1993 Annual AMS-IMS-MAA Survey

(Second Report)

Enrollments, Faculty Characteristics, and
Update on New Doctorates

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This is the second report of the 1993 Survey. A first report appeared in the November 1993 *Notices*, pages 1164–1179. It included a report on the 1992–1993 new doctorates, starting salaries, faculty salaries, and a list of names and thesis titles of the 1992–1993 doctorates. A supplementary list of 1992–1993 doctorates appears in the April 1994 issue of the *Notices*.

The 1993 Annual AMS-IMS-MAA Survey represents the thirty-seventh in an annual series begun in 1957 by the Society. The 1993 Survey was under the direction of the AMS-IMS-MAA Data Committee whose members are Paul W. Davis, Lorraine Denby, John D. Fulton (chair), James F. Hurley, Don O. Loftsgaarden, James W. Maxwell (*ex officio*), Donald B. Rubin, Donald C. Rung, Ann K. Stehney, and Ann E. Watkins. Comments or suggestions regarding the Annual Survey may be directed to members of the AMS-IMS-MAA Data Committee.

For these reports, departments are divided into groups according to the highest degree offered in the mathematical sciences:

Groups I and II include the leading departments of mathematics in the U.S. according to the 1982 Assessment of Research-Doctorate Programs conducted by the Conference Board of Associated Research Councils in which departments were rated according to the quality of their graduate faculty.¹

Group I is composed of 39 departments with scores in the 3.0–5.0 range.

Group II is composed of 43 departments with scores in the 2.0–2.9 range.

Group III contains the remaining U.S. departments reporting a doctoral program.

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 that report a doctoral program.

Group Va is applied mathematics/applied science; **Group Vb** is 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.

¹These 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, D.C., 1982. The information on mathematics, statistics and computer science was presented in digest form in the April 1983 issue of the *Notices*, pages 257–267, and an analysis of the above classifications was given in the June 1983 *Notices*, pages 392–393. For a listing of departments in Groups I and II see the April 1988 *Notices*, pages 532–533.

Highlights

- The final (spring) count of new doctorates shows a total of 1,214 doctorates in the mathematical sciences awarded by U.S. institutions in the period July 1, 1992, through June 30, 1993. This equals the 1970–1971 all-time high of 1,214 and is an increase of 14% over the 1991–1992 count.
- The final count shows 532 U.S. citizens among the 1,209 doctoral recipients whose citizenship status is known. This is the highest count of U.S. citizen new doctorates in the last twelve years and is 19% above last year's final count. The count of 679 non-U.S. citizens awarded doctorates in 1992–1993 exceeds the 1990–1991 record high by 11%.
- Recruitment of new faculty showed a decrease for the fourth year in a row. The decline of 4.5% in positions under recruitment by mathematics departments in 1992–1993 was half the decline recorded the previous year. The cumulative effect of the four-year decline translates into recruitment for 31% fewer positions in mathematics departments in 1992–1993 than in 1989–1990.
- Final counts indicate that the unemployment figure for 1992–1993 new doctorates represents a new record high rate of 8.9% at the time of the spring update of employment status. In addition, 5.5% of the new doctorates took part-time employment.
- While there were small increases in the total numbers of both full-time faculty and full-time doctoral faculty in mathematics departments from fall 1992 to fall 1993, there was a significant increase (8.3%) in the number of nontenure-track doctoral full-time faculty.
- After increasing for two years in a row, the number of junior/senior majors in mathematics departments decreased by 2%. Women junior/senior majors in mathematics departments decreased by 4%.
- The total number of full-time first-year graduate students in Ph.D.-granting mathematics departments declined 7.2% from fall 1992 to fall 1993.

I. Introduction

The Annual AMS-IMS-MAA Survey collects information each year about departments, faculties, and students in the mathematical sciences at four-year colleges and universities in the United States. This article reports results from two parts of the 1993 Annual AMS-IMS-MAA Survey. First, we update information about new doctorates reported earlier in the November 1993 issue of the *Notices* (see pages 1164–1179). Second, we present results about the characteristics of faculties and of instructional programs at the undergraduate and graduate levels.

In the interest of continuity in the analysis and presentation, and to make year-to-year comparisons possible, we report the same kinds of information that were included in last year's Second Report. Details are presented concerning employment patterns for new doctorates, department faculty characteristics, and distribution of enrollments in different types of departments.

We follow the procedure started in the 1991 Second Report of reporting projections of survey responses to the entire population of mathematical sciences departments. The projections of survey responses to the entire population are done within strata defined by the survey Groups. For example, on the part of the Departmental Profile Survey concerned with faculty, there were 30 usable responses from the 39 departments in Group I (see Table 3A). The 30 responding departments reported 34 full-time faculty to have retired or died, and this tally was multiplied by 39/30 to obtain the projected value of 44 for the Group as a whole.

We caution the reader that survey responses and the proportional projections are potentially biased due to (i) selection bias of the responding departments and (ii) inhomogeneity of departments within the survey Groups. The responses and projections for total faculty size are slightly affected by this bias. Nonetheless, the problems of a possible selection bias are mitigated by the generally high response rates to the Annual Survey. In Groups with lower response rates (e.g., Groups M and B), there is greater risk of biased projections.

II. Update on the 1992–1993 New Doctorates

Information about new doctorates awarded between July 1, 1992, and June 30, 1993, was collected from doctorate-granting departments in late spring 1993 and from a follow-up census of individual degree recipients. The First Report of the 1993 Annual Survey (November 1993 issue of the *Notices*, pages 1164–1179) presents the survey results obtained about new doctorates up to late September 1993. Here we update the earlier figures on the basis of more complete returns.

The spring count of new doctorates (Table 1) shows a total of 1,214 doctorates in mathematical sciences awarded by U.S. institutions. This is the highest number awarded in the past 20 years, and is equal to the 1970–1971 count (the 1970–1971 count has been adjusted to show only the total for the Groups we currently survey. The reported count of 1,414 included both Computer Science and Canadian departments). The final count

Table 1: New Doctorates, Fall and Spring Counts

	1988–89		1989–90		1990–91		1991–92		1992–93	
	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
U.S.	905	919	933	950	1074	1125	1050	1062	1202	1214

is 14% greater than that of the previous year and 47% greater than the count five years ago (828 in 1987–1988).

Citizenship status is known for most of the new doctorates (1,209 of 1,214). The spring count of new doctorates who are U.S. citizens is 532, the highest since 1980–1981. The proportion of 1992–1993 new doctorates who are U.S. citizens increased a percentage point over 1991–1992 to 44%, the first increase since 1988–1989. The spring count of new doctorates who are non-U.S. citizens increased by 14% to a record high of 679 from last year's spring count of 596. Page 1169 of the First Report displays further information on the geographic distribution of the citizenship of the 1992–1993 new doctorates.

Of the 532 U.S. citizen new doctorates, 146 are women and 386 are men. The 146 women new doctorates comprise 27% of the U.S. total for 1992–1993, an increase of 4 percentage points from the 1991–1992 figure and an all-time high both in number and in percent of the U.S. citizen total. The 386 U.S. citizen men who were awarded Ph.D. degrees in mathematical sciences during 1992–1993 represent both an 11% increase from the previous year and the most U.S. citizen male new doctorates since 1981–1982.

Tables 2A and 2B display updates of employment data for the fall count of 1992–1993 doctorates, broken down by field of thesis research and by the survey Group of their degree department. At the time of the spring report, the employment status of 1,076 of the 1,202 1992–1993 doctorates was known. Of the 1,076, 52% assumed academic employment in the U.S., and 68% took academic employment in the U.S. or other countries. Both of these percentages are down from 1991–1992 and 1990–1991.

Employment of 1992–1993 doctorates by U.S. Ph.D.-granting institutions increased 10% from the corresponding figure for 1991–1992. Other U.S. academic employment of the new doctorates remained constant. Foreign academic employment of new doctorates declined by 17%.

Among those 1992–1993 doctorates taking employment in the U.S., 23% took nonacademic employment (Government or Business and Industry). The fraction taking nonacademic employment varied significantly by field of thesis. Of those whose field of thesis was either Algebra/Number Theory, Real or Complex Analysis, Geometry/Topology, or Logic, 8% took nonacademic employment. For Probability or Statistics, the analogous figure is 38%, and for Applied Math, Discrete Math/Combinatorics, Numerical Analysis, or Linear/Nonlinear Optimization, the analogous figure is 27%.

Group I departments continued to award the most doctorates. Of the 1,214 1992–1993 mathematical sciences doctoral degrees awarded, 36% were awarded by Group I departments (439) more than double that of any other Group. Production of new doctorates increased significantly in all Groups except

Table 2A: Employment Status of 1992–1993 U.S. New Doctorates in the Mathematical Sciences, Updated March 1994

TYPE OF EMPLOYER	FIELD OF THESIS											TOTAL	
	Algebra/ Number Theory	Real or Complex Analysis	Geometry/ Topology	Logic	Probability	Statistics	Applied Math	Discr. Math/ Combinatorics	Numerical Analysis	Linear or Nonlinear Optim.	Other		
Group I	20	25	31	2	6	2	15	4	2			107	
Group II	4	8	12	1	3	3	15	1	2	2		51	
Group III	4	11	4		3	10	16	4	3	2	1	58	
Group IV						40						40	
Group V					1	1	6			2		10	
Masters	15	7	11	3	2	17	5	3	1	4	2	70	
Bachelors	38	25	18	2	4	10	16	8	6	1	1	129	
Two-year Colleges	6	5	3			3	2	4		1		24	
Other Academic Departments	3	3	1	3	2	27	11	2	5	9	9	75	
Research Institutes	3	4	5		1	4	8	2	2		1	30	
Government	1	1	1		1	17	5	1	1	3	3	34	
Business and Industry	7	4	6	3	7	60	19	8	11	14	8	147	
Foreign, Academic	23	21	26	5	9	35	18	4	9	5	8	163	
Foreign, Nonacademic		1	2		2	11	2	3			3	24	
Not seeking employment	2	2	2			6	5	1				18	
Still seeking employment	17	10	16	1	2	13	18	7	2	6	4	96	
Unknown (U.S.)	8	7	4	3	2	13	17	3	4	3	5	69	
Unknown (non-U.S.)*	7	6	3	2	2	15	10	4	1	2	5	57	
Column Total	158	140	145	25	47	287	188	59	49	54	50	1202	
Column Subtotals	Male	115	115	118	19	36	205	149	40	38	39	42	916
	Female	43	25	27	6	11	82	39	19	15	8	286	

*Non-U.S. citizens who returned to their country of citizenship and whose status is reported as "unknown" or "still seeking employment".

Table 2B: Employment Status of 1992–1993 U.S. New Doctorates by Type of Granting Department, Updated March 1994

TYPE OF EMPLOYER	TYPE OF DOCTORATE-GRANTING DEPARTMENT					ROW TOTAL	ROW SUBTOTALS	
	Group I Math	Group II Math	Group III Math	Group IV Statistics	Group V Applied Math/OR		Male	Female
Group I	90	7	4	1	5	107	79	28
Group II	19	22	4	2	4	51	38	13
Group III	21	9	21	7		58	43	15
Group IV	1	2		37		40	25	15
Group V	2				8	10	4	6
Masters	30	11	16	13		70	53	17
Bachelors	43	40	38	6	2	129	97	32
Two-year Colleges	3	6	14	1		24	19	5
Other Academic Departments	16	4	5	24	26	75	56	19
Research Institutes	17	1		4	8	30	20	10
Government	6	3	6	14	5	34	25	9
Business and Industry	26	16	20	49	36	147	113	34
Foreign, Academic	74	19	17	33	20	163	128	35
Foreign, Nonacademic	3		4	11	6	24	22	2
Not seeking employment	4	5	4	2	3	18	12	6
Still seeking employment	33	22	18	10	13	96	80	16
Unknown (U.S.)	29	12	9	9	10	69	56	13
Unknown (non-U.S.)*	22	8	7	10	10	57	46	11
Column Total	439	187	187	233	156	1202	916	286
Column Subtotals	Male	344	145	143	168	116	916	
	Female	95	42	44	65	40	286	

*Non-U.S. citizens who returned to their country of citizenship and whose status is reported as "unknown" or "still seeking employment".

Group II, which remained approximately constant with last year's figure.

The fall unemployment rate for new doctorates, based on information gathered by the time of the spring report, increased significantly from 6.7% for 1991–1992 to 8.9% for 1992–1993. The counts on which these rates are determined do not include those new doctorates whose fall employment status was unknown at the time of the spring report. For the past three years the fall unemployment rates for new doctorates at the time of the spring report have risen steadily from 5% in 1990–1991, to 6.7% last year, and then to the present rate of 8.9%. This year's rate is the highest ever reported in the spring report of the Annual Survey and is triple the highest rate ever reported in the spring report prior to the 5% rate for 1991–1992.

The record high unemployment rate of 8.9% among the 1992–1993 mathematical sciences doctorates at the time of the spring report is not the only employment concern. An additional 5.5% of the new doctorates took part-time employment. The data presented in Tables 2A and 2B do not reflect the fact that 54% of 334 1992–1993 doctorates responded individually that they assumed academic positions that are not tenure-track,

up three percentage points from last year. Fifty-four percent of those nontenure-track positions have contract durations of two years or less, down from 60% in 1991–1992. Of the 226 positions in U.S. Ph.D.-granting departments filled by 1992–1993 doctorates 83 (31%) were held by new doctorates who received their degree from the same institution. Fifty-nine (5.5%) of the positions reported as filled in Table 2A are part-time, and at least 21 of the 59 incumbents still are seeking full-time employment.

Individual respondents also provided information about applying for jobs. From 351 respondents who reported applying for academic positions, an average number of 62 applications for academic employment and an average number of 5.7 applications for nonacademic employment were reported. From 157 respondents who reported applying for nonacademic positions, an average number of 50 applications for academic employment and an average number of 13.6 applications for nonacademic employment were reported.

The names of the 1992–1993 new doctorates and their thesis titles were published in the November 1993 *Notices*, with a supplemental list published in the April 1994 *Notices*.

Table 3A. Faculty Attrition*

	I	II	III	I+II+III	GROUP IV	V	M	B	I+II+III+ M+B
Number of full-time faculty who retired or died (Group total)	44	33	64	141	26	8	171	150	463
% of full-time faculty in Group	2.2%	1.9%	2.4%	2.2%	2.1%	2.0%	3.1%	1.9%	2.3%
Number of usable responses**	30 (77%)	34 (79%)	55 (61%)	119 (69%)	41 (54%)	14 (45%)	93 (36%)	367 (37%)	579 (40%)

* Number and percentage of full-time faculty who were in the department in fall 1992 but were reported to have retired or died by fall 1993.

** The number of usable returns varies for different sections of the Departmental Profile Survey. The response rates reported here apply to faculty size and recruitment data only. All counts are projected from the survey response to the respective Group as a whole.

Table 3B. Recruitment of Doctoral Faculty

	I	II	III	I+II+III	GROUP IV	V	M	B	I+II+III+ M+B
Number of open doctoral positions (Group total)*	176	73	165	414	76	36	263	454	1131
Number that were tenured/tenure-track	48	51	133	231	44	32	213	304	748
Number that were open to new doctorates	150	62	144	355	44	30	240	391	987
Doctoral hires, male	140	43	119	303	43	23	180	254	737
Doctoral hires, female	23	22	33	78	19	7	53	77	207
Nondoctoral hires, male	0	0	0	0	0	3	0	44	44
Nondoctoral hires, female	0	0	0	0	0	0	6	25	30
Number of unfilled positions	12	9	13	34	15	4	25	55	113

* Number of full-time doctoral positions under recruitment in 1992–1993 to be filled for 1993–1994. Subtotals of rounded table values may exhibit rounding errors.

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Table 3C. Faculty Size, Fall 1993, and Percentage Change in Size, Fall 1992 to Fall 1993

	I	II	III	I+II+III	GROUP IV	V	M	B	I+II+III+ M+B
Total number of full-time faculty (Group total)	1998	1768	2690	6456	1242	406	5549	8103	20108
% change in full-time faculty	1.1%	1.5%	1.0%	1.2%	1.1%	-0.6%	0.0%	0.1%	0.5%
Number of doctoral full-time faculty	1957	1628	2463	6047	1196	406	4352	5677	16076
% change in doctoral full-time faculty	0.7%	0.6%	1.8%	1.1%	0.9%	-0.6%	1.7%	0.9%	1.2%
Number of tenured doctoral full-time faculty	1440	1308	1807	4555	758	319	3255	3846	11656
% change in tenured doctoral full-time faculty	-1.0%	1.7%	3.1%	1.4%	2.5%	2.4%	0.6%	3.1%	1.7%
Number of untenured, tenure-track doctoral full-time faculty	156	231	537	924	300	62	956	1516	3369
% change in untenured, tenure-track doctoral full-time faculty	-7.7%	-8.0%	0.3%	-3.3%	-3.6%	-16.8%	4.8%	-5.8%	-2.3%
Number of nontenure-track doctoral full-time faculty	360	89	119	568	137	26	141	315	1024
% change in nontenure-track doctoral full-time faculty	13.1%	11.1%	-9.9%	7.0%	2.8%	10.9%	8.5%	10.6%	8.3%
Number of part-time faculty	83	187	532	802	154	31	1818	3510	6130
% change in part-time faculty	-15.8%	-4.5%	-8.5%	-8.4%	23.9%	1.6%	4.4%	5.2%	3.0%

Table 3D. Women Faculty Size, Fall 1993, and Percentage Change in Size, Fall 1992 to Fall 1993

	I	II	III	I+II+III	GROUP IV	V	M	B	I+II+III+ M+B
Total number of full-time women faculty (Group total)	166	231	344	741	200	30	1163	1989	3894
% change in full-time women faculty	15.3%	12.3%	2.4%	8.1%	9.1%	7.3%	4.7%	1.0%	3.4%
Number of doctoral full-time women faculty	148	143	221	512	174	30	597	1037	2146
% change in doctoral full-time women faculty	15.2%	13.0%	5.5%	10.2%	8.0%	7.3%	10.2%	0.3%	5.2%
Number of tenured doctoral full-time women faculty	70	77	118	265	50	15	354	580	1199
% change in tenured doctoral full-time women faculty	5.9%	13.0%	18.0%	13.1%	28.6%	0.0%	5.8%	9.8%	9.3%
Number of untenured, tenure-track doctoral full-time women faculty	10	39	90	140	80	9	210	391	741
% change in untenured, tenure-track doctoral full-time women faculty	-11.1%	3.3%	-3.5%	-2.3%	-8.5%	30.8%	15.2%	-12.3%	-3.9%
Number of nontenure-track doctoral f-t women faculty	68	27	13	107	44	6	33	66	206
% change in nontenure-track doctoral f-t women faculty	33.3%	31.3%	-20.0%	22.9%	26.3%	0.0%	33.3%	9.1%	19.6%
Number of part-time women faculty	25	51	216	291	54	2	785	1403	2480
% change in part-time women faculty	-29.6%	-25.9%	-0.8%	-9.3%	70.6%	0.0%	6.8%	3.8%	3.0%

III. Faculty Characteristics

The Departmental Profile Survey, sent in fall 1993 to mathematical sciences departments at four-year colleges and universities as part of the Annual Survey, provided information about faculty and instructional programs. In order that more reliable year-to-year comparisons could be made, data for fall 1992 and fall 1993 was gathered, except for data on retirement, deaths, and faculty recruitment. The percent change figures reported in Tables 3C and 3D, Tables 4A and 4D, and Tables 5A, 5B, and 5C are based on these two years of data. On pages 1172–1179 of the November 1993 issue of the *Notices*, the First Report presented information collected earlier about faculty salaries.

Table 3A displays losses of full-time mathematical sciences faculty due to retirements or deaths. While there was little overall change between the reported attrition rate for fall 1992 of 2.4% and the fall 1993 reported rate of 2.3% for Groups I+II+III+M+B, both percentages are significantly ahead of the 1.8% faculty attrition rate reported for fall 1991. Likely, these increased attrition rates reported for fall 1992 and 1993 reflect the many early retirement programs which have been established in the past two years in academic institutions. Numbers of retirements tend to fluctuate substantially from year to year. For example, faculty attrition in Group M increased by 47% from the reported figure for fall 1991 to the reported figure for fall 1992, yet remained constant from the fall 1992 figure to the fall 1993 figure.

Table 3B displays Departmental Profile Survey information on the number of full-time faculty positions in mathematical sciences departments under recruitment in 1992–1993. The number of positions in mathematics departments under recruitment has decreased significantly for four straight years (by 31% since 1989–1990 and by 5.2% from last year). The number of positions under recruitment declined from 1990–1991 to 1991–1992 for every Group except Group II. A comparison of Table 3B in this spring's report with Table 3B of last spring's report indicates that every Group except Groups II and B had increases in the number of positions under recruitment, yet the declines in Groups II and B (29% and 15%, respectively) account for the overall decrease in number of positions under recruitment.

Table 3B indicates that 87% of the positions under recruitment in 1992–1993 by mathematics departments were available to new doctorates. However, only 66% of those available to new doctorates were tenured/tenure-track positions. The total number of tenured/tenure-track positions under recruitment by mathematics departments declined by 13% from last year's count.

Tables 3C and 3D describe the makeup of faculties by sex, tenure status, and doctoral/nondoctoral degree in the different Groups. Table 3C indicates that the total number of full-time faculty in mathematics departments increased slightly (by 0.5%) from fall 1992 to fall 1993. Among all Groups, except Group III, significant increases were recorded in the numbers of nontenure-track, doctoral, full-time faculty. In mathematics departments this number increased by 8.3% (I+II+III+M+B entry). Table 3D indicates that women accounted for major

portions of the increases in nontenure-track, doctoral, full-time faculty, except in Groups III, V, and B.

IV. Enrollment Profile and Undergraduate Majors

The Departmental Profile Survey obtains information about enrollments and distribution of instructional effort in the mathematical sciences departments.

For mathematics departments (Groups I+II+III+M+B), Table 4A indicates that undergraduate course enrollments declined by 2.5% from fall 1992 to fall 1993. The graduate course enrollments declined by 1.4% over the same period. A comparison of Table 4B, which displays fall 1993 undergraduate enrollments distribution, with Table 4B from last year's Second Report, p. 608 of the July/August 1993 *Notices*, shows a similar pattern of enrollment distribution. A comparison of Table 4C based on the fall 1993 report and Table 4C based on the fall 1992 report in the July/August 1993 *Notices* shows some considerable decline both in undergraduate and total course enrollments per full-time faculty member for all of the Groups except: Group IV for undergraduate course enrollments, and Group V for total course enrollments. Graduate course enrollments per full-time faculty member remained essentially constant except for Groups IV and Group V where the ratio decreased significantly.

Table 4D reports a decline in both total number of junior/senior majors in mathematics departments (Groups I+II+III+M+B), and in number of women junior/senior majors from fall 1992 to fall 1993. The decline in the number of women junior/senior majors was over double the decline of the total junior/senior major population. Only Groups I and III reported increases in women majors.

V. Graduate Student Profile

Tables 5A through 5C summarize population statistics for graduate students gathered by the 1993 Departmental Profile Survey. Table 5A indicates that the total number of full-time graduate students in mathematics departments (Groups I+II+III+M) declined by 1% from fall 1992 to fall 1993 and declined in every Group except Group M. Table 5B data shows that the total number of women full-time graduate students in mathematics departments also declined (but by 2.8%) during the same interval and declined in all Groups except Group V. Table 5C indicates an increase of 2% in the total number of U.S. citizen full-time mathematics graduate students from fall 1992 to fall 1993, but only in Groups M and III were increases reported. Groups IV and V reported small decreases.

These three tables also show significant declines in first-year graduate students from fall 1992 to fall 1993 for all doctorate-granting departments. Running counter to these declines is the significant increase in first-year graduate students reported in all three tables for Group M (the relatively small response rate from Group M departments in-

Table 4A. Undergraduate and Graduate Enrollments (thousands), Fall 1993, and Percentage Change in Enrollments, Fall 1992 to Fall 1993

	GROUP								total
	I	II	III	I+II+III	IV	V	M	B	
Number of undergraduate course enrollments (thousands)	166	174	296	637	66	18	589	720	2029
% change in undergraduate course enrollments	-1.4%	-0.1%	-6.4%	-3.5%	2.0%	-6.2%	-4.0%	-0.6%	-2.5%
Number of graduate course enrollments (thousands)	10	8	12	30	19	9	16	2	76
% change in graduate course enrollments	0.3%	-3.2%	1.7%	-0.1%	2.1%	-1.2%	-3.3%	-4.4%	-0.5%
Number of usable responses*	30 (77%)	34 (79%)	54 (60%)	118 (69%)	38 (50%)	13 (42%)	91 (35%)	376 (38%)	636 (41%)

* The number of usable returns varies for different sections of the Departmental Profile Survey. The response rates reported here apply to Tables 4A through 4C on enrollments only. All counts are projected from the survey response to the respective Group as a whole.

Table 4B. Distribution of Undergraduate Enrollments (thousands), Fall 1993

COURSES	GROUP							
	I	II	III	I+II+III	IV	V	M	B
Remedial mathematics* (thousands, %**)	18 11%	13 8%	34 12%	66 12%			102 17%	126 18%
Precalculus	22 13%	36 21%	75 25%	133 25%	1 1%	1 1%	104 18%	103 14%
1st-year Calculus (mainstream)	53 32%	37 21%	57 19%	147 19%		2 12%	75 13%	95 13%
1st-year Calculus (non-mainstream)	18 11%	22 12%	24 8%	63 8%	1 1%	1 4%	39 7%	34 5%
Statistics	1 1%	8 4%	19 6%	28 6%	60 91%	4 21%	53 9%	70 10%
Computer Science	2 1%		5 2%	7 2%	2 4%	1 1%	27 5%	75 10%
Other department courses for majors	28 17%	30 17%	40 13%	97 13%	1 1%	7 39%	75 13%	79 11%
Other undergraduate courses	23 14%	29 17%	42 14%	95 14%	2 3%	4 21%	114 19%	138 19%

* Arithmetic, high school algebra, geometry.

** Percents are "column percents" describing relative enrollments within the respective Survey Groups of the different types of undergraduate courses.

Table 4C. Undergraduate and Graduate Enrollments per Full-time Faculty Member, Fall 1993

	GROUP						
	I	II	III	IV	V	M	B
Undergraduate course enrollments per full-time faculty member	83	99	110	53	44	106	89
Graduate course enrollments per full-time faculty member	5	5	5	15	22	3	0
Total course enrollments per full-time faculty member	88	103	115	68	66	109	89

Table 4D. Undergraduate Junior/Senior Majors (hundreds) and Undergraduate Women Junior/Senior Majors (hundreds), Fall 1993, and Percentage Change in Majors, Fall 1992 to Fall 1993

	GROUP							
	I	II	III	IV	V	M	B	I+II+III+M+B
Number of junior/senior majors (hundreds)	59	36	78	13	16	236	281	689
% change in junior/senior majors	0.4%	-7.6%	2.7%	-5.8%	-6.1%	-3.7%	-1.1%	-1.8%
Number of women junior/senior majors (hundreds)	22	14	36	4	5	105	122	299
% change in women junior/senior majors	1.2%	-10.0%	4.5%	-13.6%	-7.8%	-7.9%	-2.6%	-3.9%
Number of usable responses*	29 (74%)	34 (79%)	53 (59%)	37 (49%)	14 (45%)	84 (33%)	331 (33%)	531 (38%)

* The number of usable returns varies for different sections of the Departmental Profile Survey. The response rates reported here apply to undergraduate major data only. All counts are projected from the survey response to the respective Group as a whole.

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creases the risk of bias in the projections for these three tables). The declines for the doctorate-granting departments are large enough to suggest a decline in the number of new doctorates three to five years hence. The extent of the decline will depend on next year's figure for first-year graduate students as well as possible changes in the next three to five years in the rate of attrition from doctoral programs.

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Table 5A. Full-time Graduate Students, Fall 1993, and Percentage Change in Graduate Students, Fall 1992 to Fall 1993

	I	II	III	I+II+III	GROUP IV	V	M	I+II+III+M
Total number of full-time graduate students	3615	2499	3749	9863	3278	1742	3917	13780
% change in full-time graduate students	-3.1%	-6.1%	-0.7%	-3.0%	-0.3%	-1.2%	4.5%	-1.0%
Number of first-year graduate students	800	667	1136	2602	887	330	1737	4339
% change in first-year graduate students	-10.3%	-3.7%	-7.0%	-7.2%	-19.8%	-15.2%	14.7%	0.5%
Number of usable responses*	30 (77%)	34 (79%)	55 (61%)	119 (69%)	39 (51%)	16 (52%)	83 (32%)	202 (47%)

* The number of usable returns varies for different sections of the Departmental Profile Survey. The response rates reported here apply to Tables 5A through 5C on graduate student enrollments. All counts are projected from the survey response to the respective Group as a whole.

Table 5B. Women Full-time Graduate Students, Fall 1993, and Percentage Change in Women Graduate Students, Fall 1992 to Fall 1993

	I	II	III	I+II+III	GROUP IV	V	M	I+II+III+M
Total number of full-time women graduate students	839	715	1263	2816	1271	417	1514	4330
% change in full-time women graduate students	-3.6%	-8.0%	-0.4%	-3.4%	-0.6%	0.3%	-1.8%	-2.8%
Number of first-year women graduate students	243	225	419	887	331	107	669	1556
% change in first-year women graduate students	-2.6%	1.1%	-3.0%	-1.9%	-28.6%	-1.8%	9.6%	2.8%

Table 5C. U.S. Citizen Full-time Graduate Students, Fall 1993, and Percentage Change in U.S. Citizen Graduate Students, Fall 1992 to Fall 1993

	I	II	III	I+II+III	GROUP IV	V	M	I+II+III+M
Total number of full-time U.S. citizen graduate students	1777	1414	2306	5497	1682	868	2681	8178
% change in full-time U.S. citizen graduate students	-3.2%	-5.7%	0.6%	-2.3%	-0.9%	-1.4%	12.3%	2.0%
Number of first-year U.S. citizen graduate students	400	436	761	1598	485	187	1192	2790
% change in first-year U.S. citizen graduate students	-14.7%	0.3%	-5.3%	-6.5%	-26.8%	-17.5%	21.5%	3.7%

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