Chapter 2
Enrollments

Data Highlights

Since 1990, enrollment in calculus-level courses declined by 32% in BA departments of mathematics and 22% in PhD departments of mathematics; MA departments of mathematics showed a slight increase. The percentage of enrollment in calculus-level courses taught by tenured and tenure-eligible faculty is 62% for PhD departments of mathematics, 76% for MA departments of mathematics, and 81% for BA departments of mathematics. Average section sizes for courses beyond remedial level declined somewhat over 1990 levels. Within mathematical sciences departments, the percentage of sections of mathematics courses taught by tenured and tenure-eligible faculty is 58%, but for statistics courses this percentage rises to 77%, and for computer science courses it is 72%. The actual number of sections taught by part-time mathematics faculty is given and, when divided by the average number of sections taught per tenured/tenure-eligible faculty, gives a full-time-equivalent (fte) estimate for part-time mathematics faculty of 3667. This analysis is presented in the commentary for Tables E.13 through E.18.

Explanation of the Tables

There are 18 tables in this chapter which present enrollment by level of course and type of department classified by the highest mathematics degree offered by the department. Those mathematics departments offering only a bachelor's degree or no mathematics degree are labeled BA departments, those offering master's degrees as the highest degree are designated MA departments, and those offering a doctor's degree in mathematics are called PhD departments. A statistics department is labeled a PhD or a MA department according to the classification of the companion mathematics department. However, only two of the responding PhD statistics departments reported not having a PhD degree in statistics.

While historical data is presented primarily in the summary chapter, Table E.2. does contain corresponding enrollment taken from the 1990 CBMS survey.

The specific courses that comprise the various levels of mathematics courses—remedial, precalculus, calculus, and advanced math, as well as the various levels of statistics and computer science courses—are found in Appendix I, which contains detailed enrollment by course and historical data from previous CBMS surveys.

Enrollment information on mainstream and non-mainstream Calculus I and II, as well as elementary statistics and probability and statistics, by instructional format and type of department, is presented in chapter 4, *First-Year Calculus Courses: Calculus and Statistics.*

Table E.1

This is an elaboration of Table SE.4 in chapter 1, *Summary.*

The percentage of women among computer science baccalaureate degrees continues to be about half of the corresponding percentage for mathematics baccalaureate degrees. Because of this and because four-year college mathematics departments award the majority (65%) of the computer science degrees awarded by mathematics departments, these departments have the lowest percentage of women graduates among mathematics departments.

Graduates in mathematics education within mathematics departments are about equally divided between males and females. In the previous 1990 CBMS survey, which reported the bachelor's degrees awarded by mathematics departments from July 1, 1989, to June 30, 1990, the percentage of women receiving mathematics education degrees (in mathematics departments) was 64%, as compared with the 1995 percentage of 49%. The number of such degrees increased dramatically, from 3116 in the 1989-1990 period to 4829 in 1994-1995.

TABLE E.1 Bachelor's Degrees in Mathematics, Mathematics Education, Statistics, and Computer Science in Departments of Mathematics and in Departments of Statistics awarded between July 1, 1994 and June 30, 1995 by gender of degree recipient and type of school.

Bachelor's Degrees in Math and Stat Depts	Math Depts				Stat Depts			Total Math & Stat Depts
	Univ (PhD)	Univ (MA)	Coll (BA)	Total Math Depts	Univ (PhD)	Univ (MA)	Total Stat Depts	
Mathematics majors (including Act Sci, Oper Res, and joint degrees)								
Men	2867	2235	2956	8058				8058
Women	1933	1833	2470	6236				6236
	(40%)	(45%)	(46%)	(44%)				(44%)
Total Math Degrees	4800	4068	5426	14294				14294
Mathematics Education majors								
Men	403	701	1346	2450				2450
Women	527	831	1021	2379				2379
	(57%)	(54%)	(43%)	(49%)				(49%)
Total Math Ed Degrees	930	1532	2367	4829				4829
Statistics majors								
Men	162	50	27	239	264	82	346	585
Women	162	47	22	231	157	58	215	446
	(50%)	(48%)	(45%)	(49%)	(37%)	(41%)	(38%)	(43%)
Total Stat Degrees	324	97	49	470	421	140	561	1031
Computer Science majors								
Men	155	522	1532	2209				2209
Women	45	245	242	532				532
	(22%)	(32%)	(14%)	(22%)				(22%)
Total CS Degrees	200	767	1774	2741				2741
Total Degrees - Men	3587	3508	5861	12956	264	82	346	13302
Total Degrees - Women	2667	2956	3755	9378	157	58	215	9593
	(43%)	(46%)	(39%)	(42%)	(37%)	(41%)	(38%)	(42%)
Total All Degrees	6254	6464	9616	22334	421	140	561	22895

The number of baccalaureate graduates who were mathematics majors remained virtually unchanged over this five-year period: 14,827 in 1989-1990 and 14,294 in 1994-1995.

Baccalaureate degrees in statistics increased substantially, from 670 in 1989-1990 to 1031 in 1994-1995, with most of the increase in statistics departments, where the number of degrees awarded went from 337 to 561.

Computer science baccalaureate degrees awarded to mathematical sciences majors continued to decline from the peak year of 1984-1985, when 8646 such degrees were awarded. In 1989-1990 there were 5075 such degrees awarded, and in 1994-1995 there were 2741 such degrees awarded.
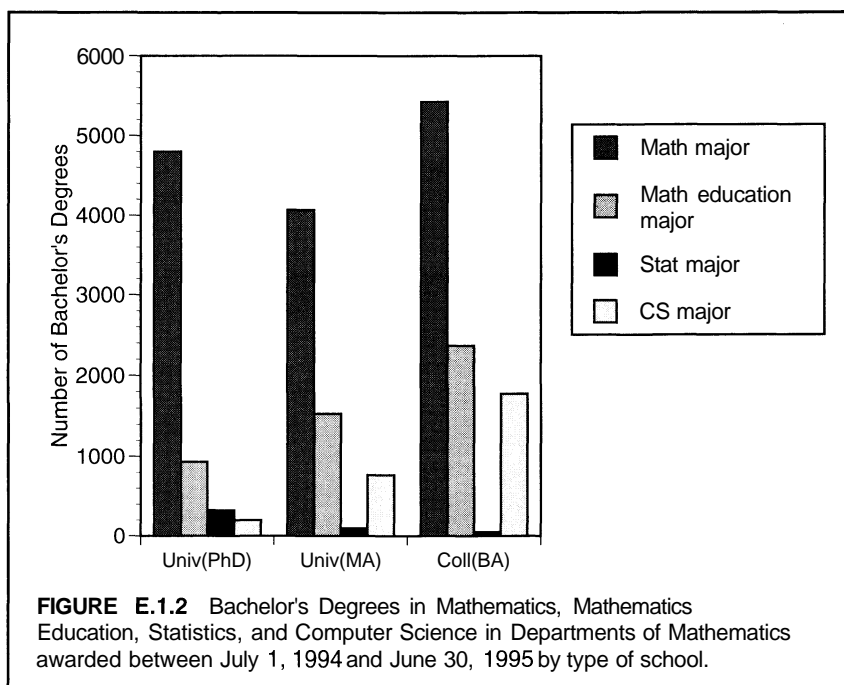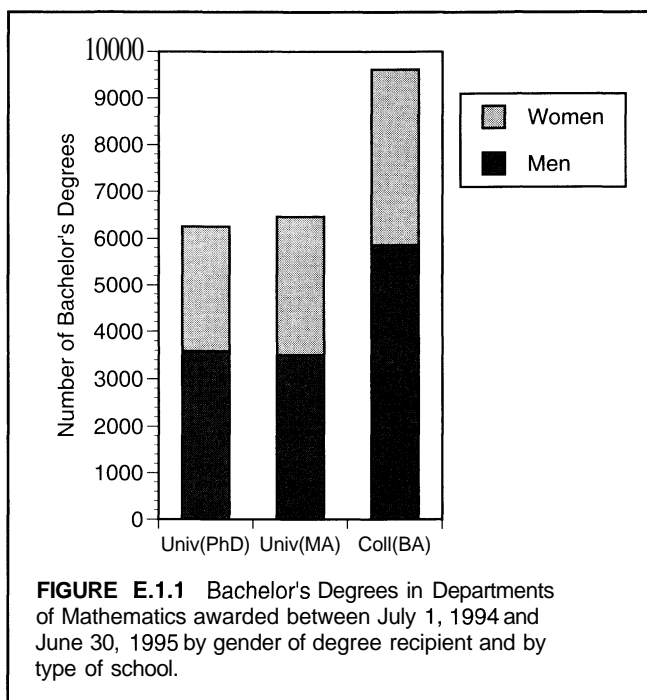

FIGURE E.1.1 Bachelor's Degrees in Departments of Mathematics awarded between July 1, 1994 and June 30, 1995 by gender of degree recipient and by type of school.

FIGURE E.1.2 Bachelor's Degrees in Mathematics, Mathematics Education, Statistics, and Computer Science in Departments of Mathematics awarded between July 1, 1994 and June 30, 1995 by type of school.

Table E.2

This is an elaboration of the 1995 enrollment data contained in Tables SE.1 and SE.3 in chapter 1, *Summary.*

Especially in four-year colleges, the spectrum of courses offered by the mathematics department is broad, encompassing a substantial enrollment in statistics and computer science courses as well as in mathematics. The enrollment in statistics courses grew substantially since 1990 to the point where the statistics enrollment in four-year college mathematics departments and the statistics enrollment in all separate statistics departments, mostly PhD departments, are now about equal in number. In turn, this number is equal to the enrollment in computer science courses taught in four-year college mathematics departments.

As in the 1990 CBMS survey, the preponderance of statistics course enrollment—almost 70%—is still within the mathematics departments, with the remaining 30% in separate statistics departments. In Fall 1990 separate statistics departments taught 25% of all statistics enrollments.

TABLE E.2 Enrollment (thousands) in undergraduate Mathematics, Statistics and Computer Science courses in Departments of Mathematics and in Departments of Statistics by level of course and type of school: Fall 1995. Also full-time faculty: Fall 1995. (Numbers in parentheses are 1990 enrollments.)

	Fall 1995 (1990) enrollments (thousands)						
	Math Depts				**Stat Depts**		
	Univ (PhD)	**Univ (MA)**	**Coll (BA)**	**Total Math Depts**	**Univ (PhD)**	**Univ (MA)**	**Total Stat Depts**
Number of full-time faculty 1995	6221	4765	7262	18248	876	112	988
Math courses							
Remedial	60	84	78	222			0
	(68)	(93)	(100)	(261)			(0)
Precalculus	222	193	198	613	1		1
	(205)	(202)	(185)	(592)	(0)		(0)
Calculus	264	124	150	538	1		1
	(337)	(122)	(188)	(647)	(1)		(1)
Adv math	41	25	30	96	0		0
	(58)	(29)	(32)	(119)	(1)		(1)
Total Math courses	587	426	456	1469	2		2
	(668)	(446)	(505)	(1619)	(2)		(2)
Stat courses							
Elem stat	23	35	57	115	46	3	49
	(14)	(27)	(46)	(87)	(25)	(5)	(30)
Upper level stat	10	7	11	28	16		16
	(18)	(12)	(8)	(38)	(14)		(14)
Total Stat courses	33	42	68	143	62	3	65
	(32)	(39)	(54)	(125)	(39)	(5)	(44)
CS courses							
Lower CS	4	18	52	74		1	1
	(9)	(42)	(83)	(134)		(0)	(0)
Middle CS	0	3	10	13			0
	(1)	(4)	(7)	(12)			(0)
Upper CS	2	4	6	12			0
	(6)	(12)	(16)	(34)			(0)
Total CS courses	6	25	68	99		1	1
	(16)	(58)	(106)	(180)		(0)	(0)
Total all courses	626	493	592	1711	64	4	68
	(716)	(543)	(665)	(1924)	(41)	(5)	(46)

Within mathematics departments, enrollment in computer science courses declined from an estimated 273,000 in Fall 1985 to 180,000 in Fall 1990 to the present Fall 1995 figure of 99,000, which is 36% of the 1985 number.

At the PhD institutions, enrollment in calculus-level courses fell by 73,000 over 1990 levels, a 22% decline. A detailed comparison with the 1990 enrollment shows that mainstream Calculus I enrollment declined by 17%, while enrollment in mainstream Calculus II declined by 11%. Non-mainstream calculus enrollment declined by 29%. Total enrollment in the traditional second-year courses, mainstream Calculus III and IV, Linear Algebra and Differential Equations, declined by 26%, nearly uniformly across each course.

At BA colleges, enrollment in calculus-level courses declined by 38,000 over 1990 levels, or 20%. However, total enrollment in all calculus-level courses, except for non-mainstream Calculus I, were only slightly lower than the 1990 totals, but non-mainstream Calculus I enrollment declined by 30,000.

While the CBMS surveys contain no enrollment in graduate-level courses, the enrollment count in advanced and upper-level undergraduate courses does not distinguish between undergraduate or graduate enrollees. Consequently, some of the decline in enrollment in these courses at PhD departments of mathematics may be attributed to the already observed decline in graduate enrollment at these schools. For a recent report on this decline, see James W. Maxwell and Don O. Loftsgaarden, *Recent Trends in Graduate Admissions in Mathematics Departments* (Notices Amer. Math. Soc., vol. 44, no. 2, pp. 213-216).

Individual course enrollments for four-year colleges and universities are contained in Appendix I, along with historical enrollment data. Individual course enrollments, with historical data, for two-year colleges are found in Table TYR.3 in chapter 6.
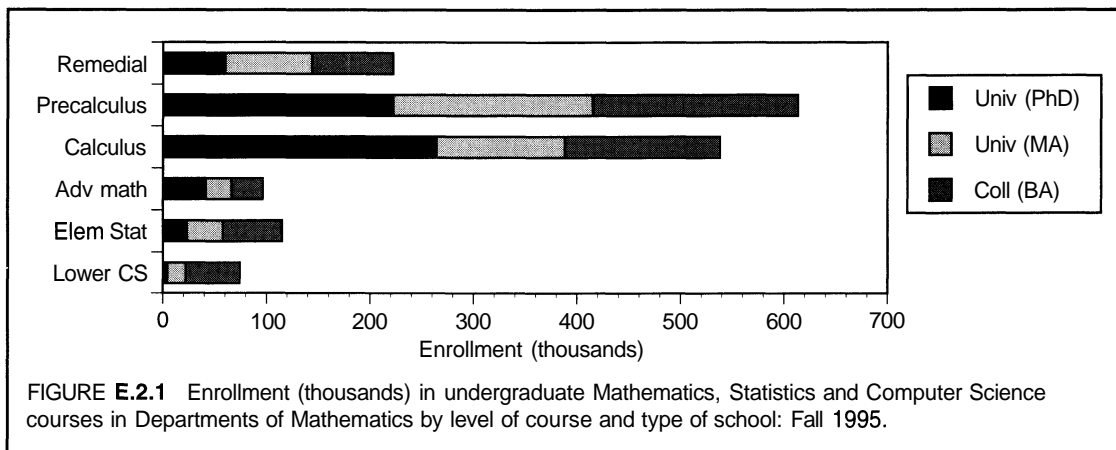

FIGURE **E.2.1** Enrollment (thousands) in undergraduate Mathematics, Statistics and Computer Science courses in Departments of Mathematics by level of course and type of school: Fall 1995.
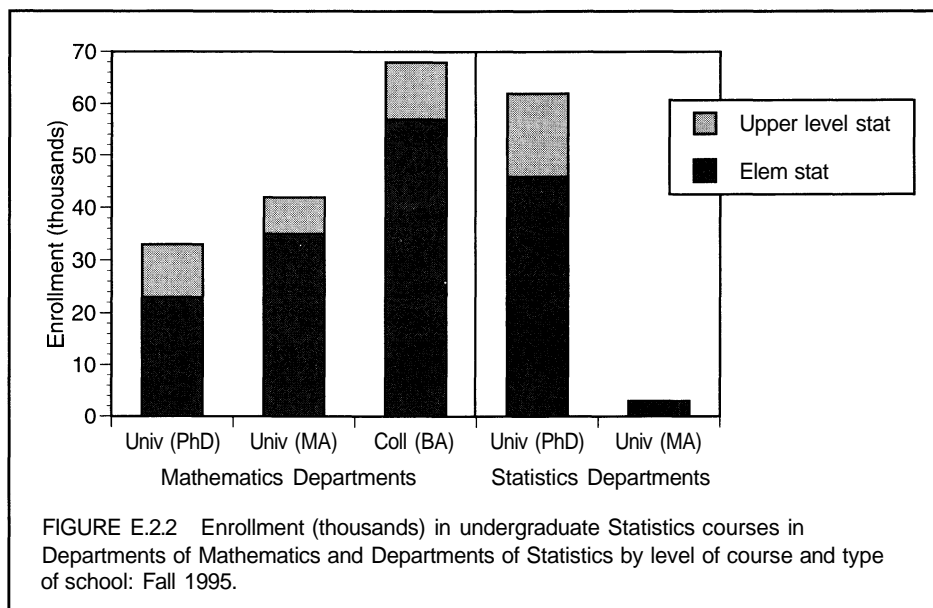

FIGURE E.2.2 Enrollment (thousands) in undergraduate Statistics courses in Departments of Mathematics and Departments of Statistics by level of course and type of school: Fall 1995.
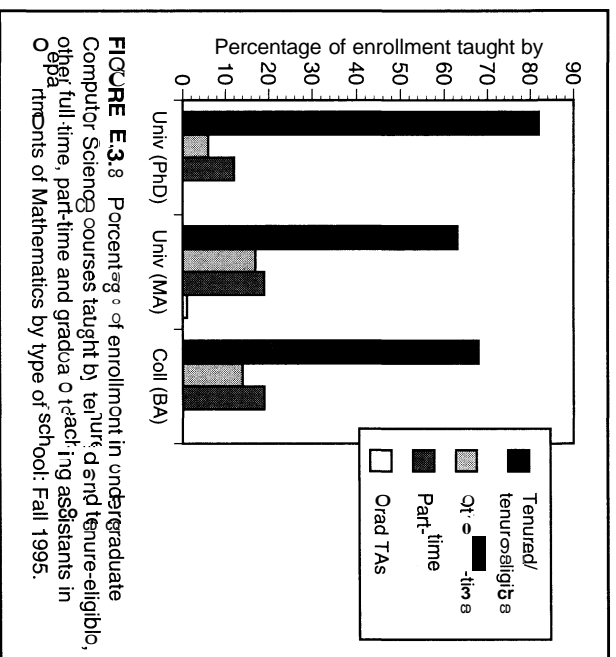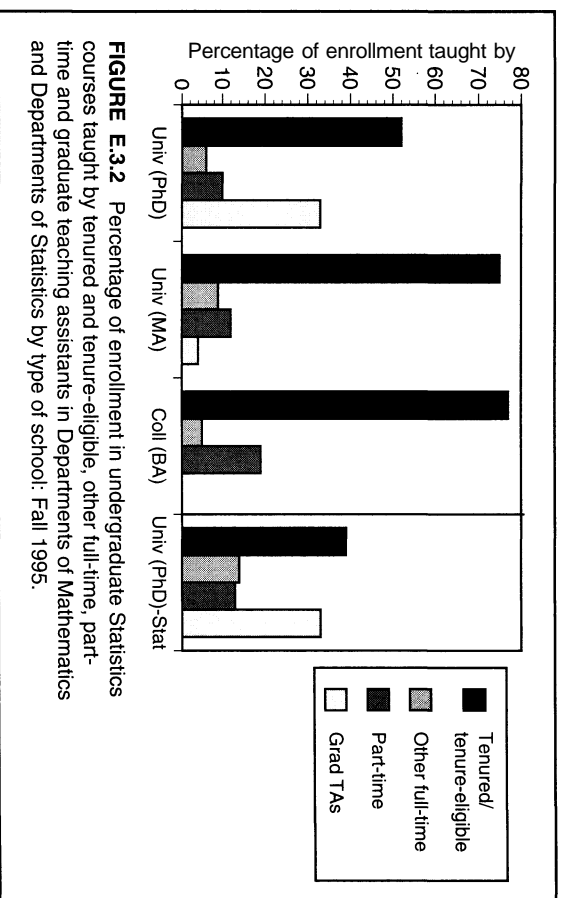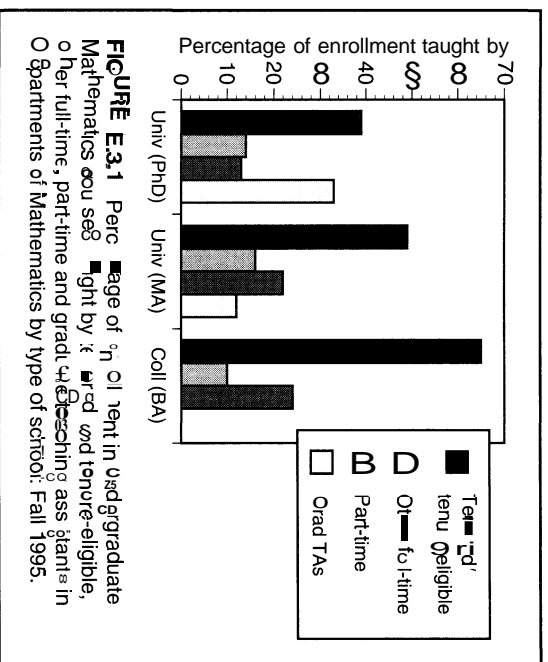
Table E.3

This is an elaboration of Table SFY.17 in chapter 1, *Summary*.

This is the first CBMS survey to collect data on the type of instructors who taught each undergraduate course listed in the survey form, except for advanced and upper-level courses. Instructors were grouped according to the following categories: tenured/tenure-eligible faculty, other full-time faculty, part-time faculty, and graduate teaching assistants. Part-time faculty included those who were full-time in the institution but part-time within the department, as well as those who were part-time faculty at the institution. For summary purposes it was assumed that all upper- and advanced-level courses were taught by tenured/tenure-eligible faculty. (Again, percentages in each row within a box total 100%, except for rounding errors.) A more detailed breakdown by level of course and type of institution is found in the next six tables.

TABLE E.3 Percentage of enrollment in undergraduate Mathematics, Statistics and Computer Science courses taught by tenured and tenure-eligible, other full-time, part-time and graduate teaching assistants in Departments of Mathematics and in Departments of Statistics by type of school: Fall 1995.

	Percent of enrollment in math courses taught by				Math enroll. (1000s)	Percent of enrollment in stat courses taught by				Stat enroll. (1000s)	Percent of enrollment in CS courses taught by				CS enroll. (1000s)
	Tenured/ tenure- eligible	Other full- time	Part- time	Grad TAs		Tenured/ tenure- eligible	Other full- time	Part- time	Grad TAs		Tenured/ tenure- eligible	Other full- time	Part- time	Grad TAs	
Math Depts															
Univ (PhD)	39	14	13	33	100% 587	52	6	10	33	100% 33	82	6	12	0	**100%** 6
Univ (MA)	49	16	22	12	100% 426	75	9	12	4	100% 42	63	17	19	1	100% 25
Coll (BA)	65	10	24	0	100% 456	77	5	19	0	100% 68	68	14	19	0	100% 68
Stat Depts															
Univ (PhD)	Number of math courses taught is too small for reliable estimates.				100% 2	55	8	6	30	100% 62	Number of CS courses taught is too small for reliable estimates.				100% 0
Univ (MA)					100% 0	63	21	15	0	100% 3					100% 1

Percentage of enrollment taught by

FIGURE E.3.1 Percentage of enrollment in undergraduate Mathematics courses taught by tenured and tenure-eligible, other full-time, part-time and graduate teaching assistants in Departments of Mathematics by type of school: Fall 1995.

- Tenured/tenure-eligible
- Other full-time
- Part-time
- Grad TAs

Percentage of enrollment taught by

FIGURE E.3.2 Percentage of enrollment in undergraduate Statistics courses taught by tenured and tenure-eligible, other full-time, part-time and graduate teaching assistants in Departments of Mathematics and Departments of Statistics by type of school: Fall 1995.

- Tenured/tenure-eligible
- Other full-time
- Part-time
- Grad TAs

Percentage of enrollment taught by

FIGURE E.3.3 Percentage of enrollment in undergraduate Computer Science courses taught by tenured and tenure-eligible, other full-time, part-time and graduate teaching assistants in Departments of Mathematics by type of school: Fall 1995.

- Tenured/tenure-eligible
- Other full-time
- Part-time
- Grad TAs

Tables E.4-E.9

These tables are an elaboration of Tables SFY.17, SFY.18 and SFY.19 in chapter 1, *Summary.*

This series of tables gives the percentage of enrollment taught by type of institution and type of instructor, with each table devoted to a specific level of courses in mathematics, statistics, and computer science. Perhaps the most contrasting data occur in the precalculus courses where tenured and tenure-eligible faculty at PhD universities teach 18% of the enrollment and the corresponding number for master's-granting universities is 42%, while at four-year colleges 63% of the enrollment is taught by tenured and tenure-eligible faculty. A similar disparity occurs in the elementary-level statistics courses.

The percentage of calculus-level enrollment taught by such faculty does not differ nearly as much as the precalculus percentages. In the calculus-level courses, tenured and tenure-eligible faculty teach 62% of enrollment in PhD universities, 76% of the enrollment in master's-granting universities, and 81% of the enrollment in four-year colleges. In chapter 4, *First-Year Courses: Calculus and Statistics,* similar data are presented for the first two mainstream and non-mainstream calculus courses, as well as the elementary-level statistics courses.

Each row in the main box in these tables totals 100%, except for rounding errors.

Further elaborations of Table E.6 by type of institution, type of calculus course, and method of instruction appear in Tables FY.1 and FY.3 in chapter 4, *First-Year Courses: Mathematics and Statistics.*

Further elaborations of Table E.7 by type of institution, type of statistics course, and method of instruction appear in Tables FY.5 and FY.6 in chapter 4, *First-Year Courses: Calculus and Statistics.*

TABLE E.4 Percentage of enrollment in Remedial level courses taught in Departments of Mathematics by type of instructor and type of school: Fall 1995.

	Percentage of enrollment taught by				
	Tenured/ tenure- eligible	Other full-time	Part-time	Graduate teaching assistants	Total enrollment (thousands)
Math Depts Univ(PhD)	1	12	33	54	100% 60
Univ(MA)	12	16	41	30	100% 84
College(BA)	26	12	61	1	100% 78
Total	14	14	46	26	100% 222

TABLE E.5   Percentage of enrollment in Precalculus level courses taught in Departments of Mathematics by type of instructor and type of school: Fall 1995.

	Percentage of enrollment taught by				
	Tenured/ tenure- eligible	Other full-time	Part-time	Graduate teaching assistants	Total enrollment (thousands)
Math Depts					
Univ(PhD)	18	17	16	49	100% 222
Univ(MA)	42	22	24	12	100% 193
College(BA)	63	14	23	0	**100%** 198
Total	40	18	21	22	**100%** 613

TABLE E.6   Percentage of enrollment in Calculus level courses taught in Departments of Mathematics by type of instructor and type of school: Fall 1995.

	Percentage of enrollment taught by				
	Tenured/ tenure- eligible	Other full-time	Part-time	Graduate teaching assistants	Total enrollment (thousands)
Math Depts					
Univ(PhD)	62	13	7	19	100% 264
Univ(MA)	76	11	11	2	**100%** 124
College(BA)	81	7	12	0	**100%** 150
Total	71	11	9	10	100% 538

TABLE E.7 Percentage of enrollment in Elementary Level Statistics courses taught in Departments of Mathematics and in Departments of Statistics by type of instructor and type of school: Fall 1995.

	Percentage of enrollment taught by				
	Tenured/ tenure- eligible	Other full-time	Part-time	Graduate teaching assistants	Total enrollment (thousands)
Math Depts					
Univ(PhD)	31	8	15	47	100% 23
Univ(MA)	70	11	14	5	**100%** 35
College(BA)	72	4	23	0	100% 57
Total Math Depts	63	7	19	11	100% 115
Stat Depts					
Univ(PhD)	40	11	9	41	100% 46
Univ(MA)	63	21	15	0	100% 3
Total Stat Depts	41	12	9	38	100% 49

TABLE E.8 Percentage of enrollment in Lower Level Computer Science courses taught in Departments of Mathematics by type of instructor and type of school: Fall 1995.

	Percentage of enrollment taught by				
	Tenured/ tenure- eligible	Other full-time	Part-time	Graduate teaching assistants	Total enrollment (thousands)
Math Depts					
Univ(PhD)	73	9	18	0	100% 4
Univ(MA)	54	20	24	2	100% 18
College(BA)	61	15	25	0	100% 52
Total	60	16	24	0	**100%** 74

TABLE E.9 Percentage of enrollment in Middle Level Computer Science courses taught in Departments of Mathematics by type of instructor and type of school: Fall 1995.

	Percentage of enrollment taught by				
	Tenured/ tenure- eligible	Other full-time	Part-time	Graduate teaching assistants	Total enrollment (thousands)
Math Depts Univ(PhD)					0
Univ(MA)	68	20	13	0	100% 3
College(BA)	82	17	1	0	100% 10
Total	79	18	4	0	100% 13

Tables E.10, E.11, and E.12

These three tables have no precursors in the *Summary* chapter.

Also: These data have not been collected in prior CBMS surveys. Table E.10 gives the number of sections offered, and Table E.11 gives the corresponding section sizes. Percentages of sections taught by various types of instructors and by type of institution are presented in Table E.12. Tables E.13 through E.18 elaborate on the data presented in Table E.12.

As seen in Table E.10, advanced and upper-level sections in mathematics, statistics, and computer science courses are 18% of the total sections offered for PhD mathematics departments, 15% for MA mathematics departments, 19% for four-year colleges, and 42% in PhD statistics departments.

Both MA and BA mathematics departments devote considerable effort to teaching statistics and computer science courses. Sections of statistics and computer science courses for these two types of institutions account for 21% of all their sections.

In Table E.10, there are several entries for number of sections, mostly in MA departments of statistics, for which the corresponding enrollment has been reported as 0 in previous enrollment tables. This arises when the enrollment is less than 500, which is then rounded to 0. For the sake of completeness, Table E.10 includes the number of sections for these low-enrollment courses.

With enrollment levels below those in 1990, average section sizes have declined somewhat, especially in upper-level and advanced courses.

For the purposes of this survey, it is assumed that all upper- and advanced-level mathematics, statistics, and computer science courses were taught by tenured and tenure-eligible faculty. No data were collected on the type of faculty who taught advanced or upper-level courses.

TABLE E.10   Number of sections of undergraduate Mathematics, Statistics and Computer Science courses in Departments of Mathematics and in Departments of Statistics by level of course and type of school: Fall 1995.

| | Number of sections: Fall 1995 | | | | | | |
| | Math Depts | | | | Stat Depts | | |
	Univ (PhD)	Univ (MA)	Coll (BA)	Total Math Depts	Univ (PhD)	Univ (MA)	Total Stat Depts
Math courses							
Remedial	1663	2670	2913	7246			0
Precalculus	5258	5673	7036	17967	26		26
Calculus	6061	4280	6932	17273	23		23
Adv math	2531	1886	3640	8057	11	4	15
Total Math courses	15513	14509	20521	50543	60	4	64
Stat courses							
Elem stat	551	1028	1951	3530	748	72	810
Upper level stat	446	482	768	1696	576	48	624
Total Stat courses	997	1511	2719	5227	1324	120	1444
CS courses							
Lower CS	137	796	2431	3364	7	30	37
Middle CS	48	245	651	944		4	4
Upper CS	89	230	652	971		10	10
Total CS courses	274	1271	3734	5279	7	44	51
Total all courses	16784	17291	26974	61049	**1391**	168	1559

In Ph.D mathematics departments, tenured/tenure-eligible faculty taught a total of 7811 sections of undergraduate mathematical sciences courses. The second report of the AMS-IMS-MAA Data Committee (Notices Amer. Math. Soc., vol. 43, no. 8, pp. 848-858), gives the enrollment in graduate-level courses for Fall 1995 as 28,000. A previous report of this data committee in 1991 gave the average graduate section enrollment at both PhD (and MA) departments of mathematics as 10, giving an estimate of 2800 sections of graduate-level courses. (The CBMS survey does not survey graduate enrollment.) Thus, graduate-level courses account for a little over a quarter of the faculty teaching assignments in Ph.D mathematics departments. The total number of sections taught in PhD mathematics departments, 10,611, when divided by the number of tenured/tenure-eligible faculty not on leave of 4989, gives an average teaching assignment of 2.13 sections per faculty.

(Information on the number of tenured/tenure-eligible faculty by type of department is given in Table E.2 and, in more detail, in Tables F.1-F.3 in chapter 3.

The number of tenured/tenure-eligible faculty on leave by type of department is given in the commentary accompanying Tables F.1-F.3 in chapter 3.)

According to the aforementioned AMS-IMS-MAA Data Committee report, MA departments of mathematics had a Fall 1995 graduate enrollment of 18,000, and the number of graduate sections totaled 1800. The CBMS survey shows that there were 9973 undergraduate sections taught by tenured/tenure-eligible faculty, which gives a total of 11,773 sections. The number of tenured/tenure-eligible faculty not on leave for Fall 1995 is 3822, and dividing these two numbers gives an average of 3.08 sections per tenured/tenure-eligible faculty.

A similar computation for BA departments of mathematics, using only undergraduate course enrollment, gives an average number of sections taught by tenured/tenure-eligible faculty as 3.14.

The CBMS survey count of tenured/tenure-eligible faculty does not distinguish among faculty with administrative or other duties who might have reduced teaching duties.

TABLE E.11   Average section size for undergraduate Mathematics, Statistics and Computer Science courses in Departments of Mathematics and in Departments of Statistics by level of course and type of school: Fall 1995. Also all departments' average section sizes for 1985,1990, 1995.

| | Average size of sections Fall 1995 | | | | | | | |
| | Math Depts | | | Stat Depts | | All Depts 1985 | All Depts 1990 | AM Depts 1995 |
	Univ (PhD)	Univ (MA)	Coll (BA)	Univ (PhD)	Univ (MA)			
Math courses								
Remedial	36	32	27			32	31	31
Precalculus	42	34	28			35	35	34
Calculus	44	29	22			34	35	31
Adv math	16	14	8			19	16	12
Stat courses								
Elem stat	42	34	29	50	42	37	37	38
Upper level stat	22	15	14	27	23	30	24	19
CS courses								
Lower CS	29	23	21			na	24	22
Middle CS	(1)	12	15			na	15	14
Upper CS	22	17	9			na	14	12

(1) Enrollment in these classes was less than 500.

TABLE E.12 Percentage of sections of undergraduate Mathematics, Statistics and Computer Science courses taught by tenured and tenure-eligible, other full-time, part-time and graduate teaching assistants in Departments of Mathematics and Departments of Statistics by type of school: Fall 1995.

	Percentage of sections of math courses taught by					Percentage of sections of stat courses taught by					Percentage of sections of CS courses taught by				
	Tenured/ tenure-eligible	Other full-time	Part-time	Grad TAs	No. of math sections	Tenured/ tenure-eligible	Other full-time	Part-time	Grad TAs	No. of stat sections	Tenured/ tenure-eligible	Other full-time	Part-time	Grad TAs	No. of CS sections
Math Depts															
Univ (PhD)	45	11	12	31	100% 15513	61	3	8	28	100% 997	81	7	12	0	100% 274
Univ (MA)	54	15	20	10	100% 14509	79	8	10	3	100% 1511	67	15	17	1	100% 1271
Coll (BA)	70	9	21	0	100% 20521	82	3	16	0	100% 2719	73	10	17	0	100% 3734
Total	58	11	18	12	100% 50543	77	4	13	6	100% 5227	72	11	17	0	100% 5279
Stat Depts															
Univ (PhD)	Too few cases in the sample to make reliable estimates.				100% 60	64	10	5	21	100% 1324	Too few cases in the sample to make reliable estimates.				100% 7
Univ (MA)					100% 4	79	13	8	0	100% 120					100% 44
Total						65	10	5	19	100% 1444					

Tables E.13–E.18

These tables further elaborate on the number of sections taught by various types of instructors, by type of institution, and by level of course.

Table E.13 shows quite clearly that in Fall 1995 regular faculty in BA mathematics departments were much more involved in teaching remedial mathematics than regular faculty in PhD mathematics departments. In the former, 25% of remedial sections were taught by tenured and tenure-eligible faculty, while the comparable figure for PhD mathematics departments is 1%. In Table E.14 a similar difference is seen in the precalculus courses with 63% of precalculus sections taught by tenured and tenure-eligible faculty at four-year colleges versus 17% for PhD mathematics departments. In these departments, graduate assistants taught the majority of precalculus sections, 51%. Overall, 43% of precalculus sections were taught by tenured or tenure-eligible faculty.

For calculus-level courses in mathematics departments, 72% of the sections (and 71% of the enrollment) are taught by tenured and tenure-eligible faculty.

An exception to this pattern is seen in the lower-level computer science courses, where tenured and tenure-eligible mathematics faculty teach 61% of the sections offered in mathematics departments.

These tables can be used to estimate the teaching contributions of the part-time mathematics faculty in terms of full-time equivalent (fte) faculty, using the average teaching assignment for tenured/tenure-eligible faculty just computed in the previous commentary.

For the initial computation, remedial-level mathematics courses will not be included in this part-time faculty fte computation.

Beginning this analysis with the PhD mathematics departments and first applying it to calculus-level courses, Table E.15 shows that there were 451 sections of calculus-level courses taught by part-time faculty. Dividing this by 2.13 sections per tenured/tenure-eligible faculty member ratio obtained above, gives a figure of 212 fte faculty. Applying this formula to the the precalculus-level courses, the lower-level statistics courses and, finally, the lower- and middle-level computer science courses makes the part-time mathematics faculty contributions in these courses equal to 444 fte faculty. Adding the two numbers, we obtain a part-time mathematics faculty teaching fte number of 656 for PhD mathematics departments.

The same analysis applied to master's mathematics departments, using the ratio of 3.08 sections per tenured/tenure-eligible faculty obtained above, gives a part-time mathematics faculty fte total of 153 for calculus-level courses and 563 fte for the other four levels of courses, for a total part-time fte total of 716 mathematics faculty.

At the four-year mathematics departments, the ratio of sections per tenured/tenure-eligible faculty member is 3.14, which gives a faculty fte of 260 for calculus-level courses and 855 for the other non-remedial courses. This is a total fte of 1115.

The total part-time fte mathematics faculty for all four-year colleges and universities and for all departmental courses beyond the remedial level is 2487. For just the calculus-level courses, the fte number is 625.

Applying the same analysis to the remedial-level mathematics courses gives an additional part-time fte faculty of 263 for PhD mathematics departments, 359 for MA mathematics departments, and 576 for BA mathematics departments. Thus, the total part-time mathematics faculty has an equivalent fte count of 3685, which is 23% of the tenured and tenure-eligible mathematics faculty.

Using the data found in Tables E.13 to E.18, part-time mathematics faculty taught 16% of the non-remedial enrollment of 1,353,000, and 19% if remedial enrollment is included. While the 1990 CBMS report does not have this level of detail, it did report that 16% of the sections offered in Fall 1990 by four-year and university departments of mathematics were taught by part-time mathematics faculty, while the corresponding number for Fall 1995 is 17%, indicating that the percentage use of part-time faculty has remained about the same.

However, the actual number of part-time faculty declined from 6786 part-time mathematics faculty in Fall 1990 to 5289 part-time mathematics faculty in Fall 1995, a decrease of 22%. While this is twice the percentage decline in enrollment within mathematics departments over this five-year period, the figures in the preceding paragraphs suggest that the percent of part-time teaching is little changed from 1990 to 1995. The number of part-time faculty is difficult to interpret because of the diverse teaching assignments for part-time faculty. Dividing the fte part-time faculty count of 3616 by the actual part-time faculty head count of 5289 (given in Table SF.13 in chapter 1, *Summary)* gives a ratio of about .7, suggesting that .7, not 1/2, is the proper multiplier in converting the number of part-time faculty to their fte equivalent, absent the type of data available in this report.

For summary purposes it was assumed that all upper- and advanced-level courses were taught by tenured/tenure eligible faculty. (The percentages in these tables account for 100% of the teaching, but the numbers may not total 100% because of rounding.)

The use of part-time faculty is quite a bit less in PhD statistics departments. There were 122 part-time faculty reported for Fall 1995.

TABLE E.13 Number of sections of Remedial level courses in Departments of Mathematics by type of instructor and type of school: Fall 1995.

	Number of sections				
	Tenured/ tenure- eligible	Other full-time	Part-time	Graduate teaching assistants	Total sections
Math Depts					
Univ(PhD)	20	191	561	891	1663
Univ(MA)	327	439	1107	797	2670
College(BA)	728	344	1808	33	2913
Total	1075	974	3476	1721	7246

TABLE E.14 Number of sections of Precalculus level courses in Departments of Mathematics by type of instructor and type of school: Fall 1995.

	Number of sections				
	Tenured/ tenure- eligible	Other full-time	Part-time	Graduate teaching assistants	Total sections
Math Depts					
Univ(PhD)	886	878	834	2660	5258
Univ(MA)	2415	1250	1367	641	5673
College(BA)	4458	956	1613	9	7036
Total	7759	3084	3814	3310	17967

TABLE E.15 Number of sections of Calculus level courses in Departments of Mathematics by type of instructor and type of school: Fall 1995.

	Number of sections				
	Tenured/ tenure- eligible	Other full-time	Part-time	Graduate teaching assistants	Total sections
Math Depts					
Univ(PhD)	3576	702	451	1332	6061
Univ(MA)	3301	450	472	57	4280
College(BA)	5594	520	818	0	6932
Total	12471	1672	1741	1389	17273

TABLE E.16 Number of sections of Elementary Level Statistics courses in Departments of Mathematics and in Departments of Statistics by type of instructor and type of school: Fall 1995.

	Number of sections				
	Tenured/ tenure- eligible	Other full-time	Part-time	Graduate teaching assistants	Total sections
Math Depts					
Univ(PhD)	167	27	76	281	551
Univ(MA)	713	114	151	50	1028
College(BA)	1451	77	423	0	1951
Total Math Depts	2331	218	650	331	3530
Stat Depts					
Univ(PhD)	274	130	70	274	748
Univ(MA)	47	15	10	0	72
Total Stat Depts	321	145	80	274	820

TABLE E.17 Number of sections of Lower Level Computer Science courses in Departments of Mathematics by type of instructor and type of school: Fall 1995.

	Number of sections				
	Tenured/ tenure- eligible	Other full-time	Part-time	Graduate teaching assistants	Total sections
Math Depts					
Univ(PhD)	94	15	28	0	137
Univ(MA)	453	144	183	16	796
College(BA)	1503	290	638	0	2431
Total	2050	449	849	16	3364

TABLE E.18 Number of sections of Middle Level Computer Science courses in Departments of Mathematics by type of instructor and type of school: Fall 1995.

	Number of sections				
	Tenured/ tenure- eligible	Other full-time	Part-time	Graduate teaching assistants	Total sections
Math Depts					
Univ(PhD)	39	3	6	0	48
Univ(MA)	166	48	31	0	245
College(BA)	567	75	9	0	651
Total	772	126	46	0	944