

Chapter 7

Two-Year College Mathematics Program Faculty, Administration, and Special Topics

This chapter reports the number, teaching conditions, education, professional activities, age, gender, and ethnicity of the faculty in two-year college mathematics programs in fall 2000. Also included is information on mobility into, within, and out of two-year college mathematics program teaching positions. Further analysis of the items discussed in this chapter can be found in Chapters 1 and 2 of the current report where they are discussed from a comprehensive point of view in comparison to similar data for four-year colleges and universities. In particular, Chapter 2 discusses issues related to dual enrollment courses and pre-service teacher training.

The data are compared with those from the 1970, 1975, 1980, 1985, 1990, and 1995 CBMS surveys. Unlike surveys prior to 1995, the mathematics faculty surveyed in 1995 and in 2000 did not include those who teach in a computer science program that is separate from the mathematics program. Information on the sampling procedure used in the 2000 survey is in Appendix II. A copy of the two-year college questionnaire may be found in Appendix V.

Highlights

- Just under 7000 people taught as full-time permanent faculty in two-year college mathematics programs in the United States in fall 2000, an 8% drop from 1995. Another 961 individuals were teaching as temporary full-time faculty, an almost six-fold increase from the 164 temporary full-time faculty reported in 1995. See Table SF.6 in Chapter 1.
- For fall 2000, the number of part-time faculty was more than double the figure for full-time faculty and made up 69% of all mathematics faculty in two-year college programs. The proportional size of the part-time faculty, which had remained steady at 65% in 1990 and 1995, rose by 4 percentage points in fall 2000. See Table TYR.17.
- When the number of full-time temporary and part-time faculty teaching in fall 2000 in two-year college mathematics programs were combined, 70% of the faculty had status other than “full-time permanent.”
- About 46% of all sections were taught by part-time faculty members. In addition, 52% of full-time permanent two-year college mathematics faculty members taught extra hours for extra pay at their own college. These are class sections which otherwise would have required additional part-time faculty teaching. See Tables TYR.9 and TYR.18.
- In fall 2000, a masters degree was the terminal degree for 81% of full-time permanent two-year college mathematics faculty. An additional 15% held doctorates. In fall 1995, the first percentage was an almost identical 82% and the second was 17%. However, in a startling change, the proportion of full-time permanent faculty who were newly hired in mathematics programs for 2000–2001 and who had only bachelors degrees was 19%, a very large increase from the 1% hired for academic year 1995–1996. See Tables TYR. 21 and TYR. 36.
- About 49% of full-time permanent faculty members in mathematics programs at two-year colleges in fall 2000 were women. For the first time, the proportion of men and women among the full-time permanent faculty was essentially equal. However, the lower proportion of women among permanent full-time faculty under age 40 and among newly hired full-time permanent faculty suggested this equality in numbers would not be maintained. See Tables TYR.24, TYR.25, and SF.8 in Chapter 1.
- About 13% of full-time permanent faculty members in mathematics programs at two-year colleges in fall 2000 were ethnic minorities. Ethnic minorities made up a higher proportion (20%) of the under-age-40 faculty than they did of the faculty as a whole. The percentage of ethnic minorities over age 54 was 21% in fall 2000. See Tables TYR.29, TYR.34, and TYR.37.
- The median age of full-time permanent faculty in two-year college mathematics programs was 48. The average age rose slightly since 1995, from 47.2 to 47.6. The proportion of the full-time permanent faculty over age 54 rose to 27%. See Table SF.9 in Chapter 1 and Table TYR.33.
- Selection patterns for the 572 new full-time permanent faculty hired for the academic year 2000–2001 showed unexpected characteristics. Only 13% of new hires had a doctorate as compared to 19% in 1995–1996. Only 8% were hired directly from graduate school compared to 30% in 1995. The

percentage of new hires chosen from current part-time or temporary faculty nearly doubled to 34%. As noted above, the percentage of new hires with a terminal bachelors degree jumped dramatically from 1% for academic year 1995–1996 to 19% for academic year 2000–2001, a possible harbinger of dramatic changes that could occur in the composition and orientation of faculty over the decade 2000 to 2010. See Tables TYR.35 and TYR.36.

- The number of institutions and mathematics programs requiring some form of continuing education or professional development for full-time permanent faculty almost doubled from 20% in 1995 to 38% in 2000.
- For the first time in CBMS surveys, in fall 2000 essentially all full-time permanent faculty had a computer or terminal in their office, up to 99% from 76% in 1995. There was an 8 percentage point increase in the number of part-time faculty who needed to share a desk with two other people (three or more to a desk), now at 51%. See Tables TYR.40 and TYR.41.
- More mathematics program heads (62%) classified too much need for remediation as the most important problem faced by their mathematics program. Low student motivation and the need to use too many part-time faculty were second and third. See Table TYR.45.
- Only 22% of two-year colleges assigned a faculty member to coordinate pre-service K-8 teacher education in either academic year 1999–2000 or 2000–2001, and only about half of two-year colleges offered a special mathematics course for pre-service K-8 teachers. (This finding also was included in the Chapter 6 highlights.) See Table PSE.3 and the related discussion in Chapter 2 and the discussion under Special Topics in this chapter.
- As noted in Chapter 2, in fall 2000 about 61% of two-year college mathematics programs reported full control over the selection of instructors for so-called dual enrollment courses, courses often taught on a high school campus by a high school teacher and for which a student received both high school and college credit. In fall 2000, dual enrollment courses made up about 14% (1726 of 11,995) of all college algebra, precalculus, and calculus course sections at two-year colleges. See Tables DEN.16, DEN.17, and DEN.18 in Chapter 2.
- A traditional mathematics or mathematics/computer science department was found in fewer than half (43%) of the two-year colleges with mathematics programs, and 10% of these were multi-campus departmental arrangements. More common was a division structure, where mathe-

tics program administration was combined with science or other disciplines. See Table TYR.48.

- In 29% of two-year colleges, remedial/developmental mathematics courses were administered separately from the mathematics program. This was almost exactly the same percentage as in 1995. See survey question A-9 in Appendix V.

The Number and Teaching Assignments of Full-Time and Part-Time Mathematics Program Faculty

Trends in the Number of Full-Time Permanent Faculty and in the Use of Part-Time Faculty in Mathematics Programs at Two-Year Colleges, Including Those Paid by Third Parties

After steadily rising from 1980 to 1995, the number of full-time permanent faculty members in two-year college mathematics programs declined by 8% (618 faculty members) from fall 1995 to fall 2000. The fall 2000 total was 6,960, more than 4% lower than the 1990 level. At the same time, the number of part-time faculty continued to increase, as it had in each CBMS report since 1975, and reached 14,887 in fall 2000, an increase of 4% over 1995 levels. The figure 14,887 refers only to part-time faculty paid by two-year colleges. In fall 2000, the CBMS survey for the first time asked about part-time faculty who were paid by some third party. When the part-time faculty paid by a third party were included, the number of part-time faculty rose by another 776 and the percentage increase from 1995 levels was almost 10%.

Part-time faculty paid by a third party most frequently were employed by a local school district as high school teachers and were assigned to teach high school courses for which a two-year college granted simultaneous college credit. Such courses are called dual enrollment courses. In fall 2000, part-time faculty paid by a third party and usually teaching such dual enrollment courses accounted for about 5% of the total part-time faculty in two-year college mathematics programs. A complete analysis of dual enrollment data appears in Chapter 2.

If part-time faculty paid by a third party are combined with all other part-time faculty, then part-time faculty represented 69% of all two-year college mathematics program faculty (excluding full-time temporary faculty). That figure was above the 65% reported in CBMS1995 and CBMS1990, and was well above the 54% and 31% levels reported in 1980 and 1970, respectively. (All of these percentages also excluded full-time temporary faculty.) Hence, the proportional size of the part-time mathematics faculty, which held steady from 1990 to 1995, again rose from 1995 to 2000.

When the 961 full-time temporary faculty reported in fall 2000 were included in the base, part-time

faculty composed 66% (15,663 of 23,585) of the total faculty, not 69%. However, as was discussed in detail in Chapter 1 (Table SF.6), 961 was an unusually large number of full-time temporary faculty, six-fold higher than in 1995.

Perhaps the most revealing percentage about the faculty structure in two-year college mathematics programs in fall 2000 came from combining the count of full-time temporary and part-time faculty. When this was done, 70% (16,624 of 23,585) of faculty had status other than “full-time permanent.” In other

words, programs typically ran on 30% (by head count) full-time permanent teaching staff.

Part-time faculty members taught about 46% of all mathematics program sections, an increase of 8 percentage points since 1995. See Table TYR.9. Not surprisingly, 62% of mathematics program heads classified the “need to use part-time faculty for too many courses” as somewhat of a problem or a major problem for the program. See Table TYR.46. However, this dissatisfaction percentage was 17 percentage points lower than it was in 1995.

TABLE TYR.17 Number of full-time permanent faculty, and number of part-time faculty, including part-time faculty paid by a third party (e.g., dual-enrollment instructors) in Mathematics Programs of two-year colleges: Fall 1970, 1975, 1980, 1985, 1990, 1995, and 2000.

	1970	1975	1980	1985	1990	1995	2000
Full-time permanent faculty	4879	5944	5623	6277	7222	7578	6960
Part-time faculty ¹	2213	3411	6661	7433	13680	14266	14887
Part-time, paid by third party	na	na	na	na	na	na	776

¹ Figures in this row do not include part-time faculty paid by a third party.

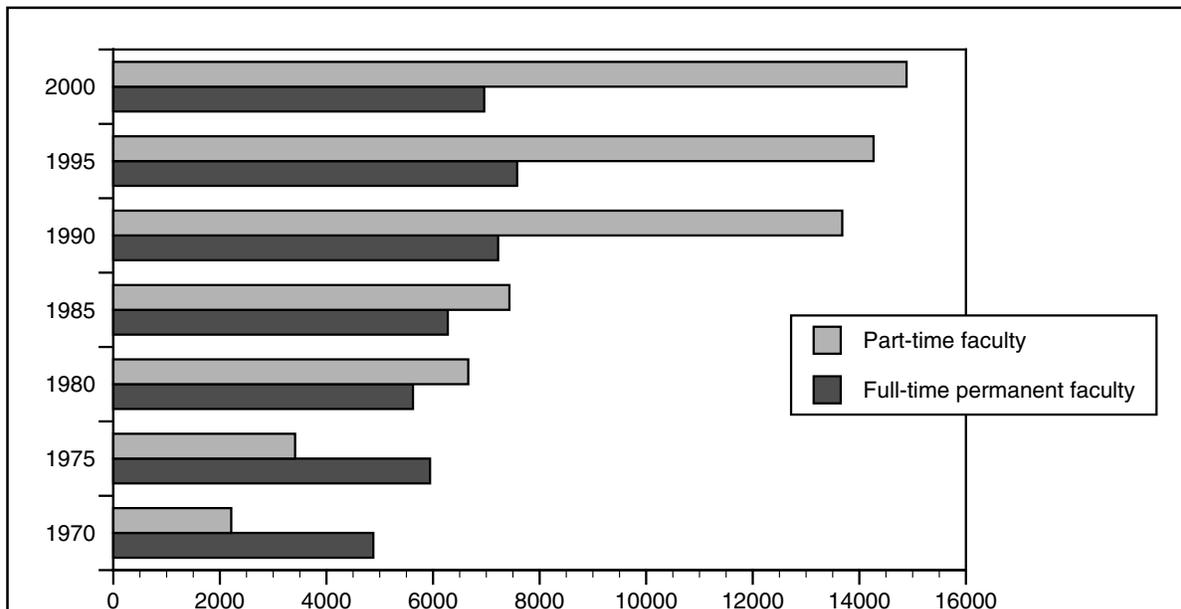


FIGURE TYR.17 Number of full-time permanent faculty and part-time faculty in Mathematics Programs in two-year colleges: Fall 1970, 1975, 1980, 1985, 1990, 1995, and 2000.

Teaching Assignment of Full-Time Permanent and Part-Time Faculty

The average required teaching assignment in weekly contact hours for a full-time permanent two-year college mathematics faculty member in fall 2000 was 14.8. In 1995 this figure was 15.8. See Table TYR.18. In 1990, the number was 14.7 hours and in 1985 it was 16.1 hours.

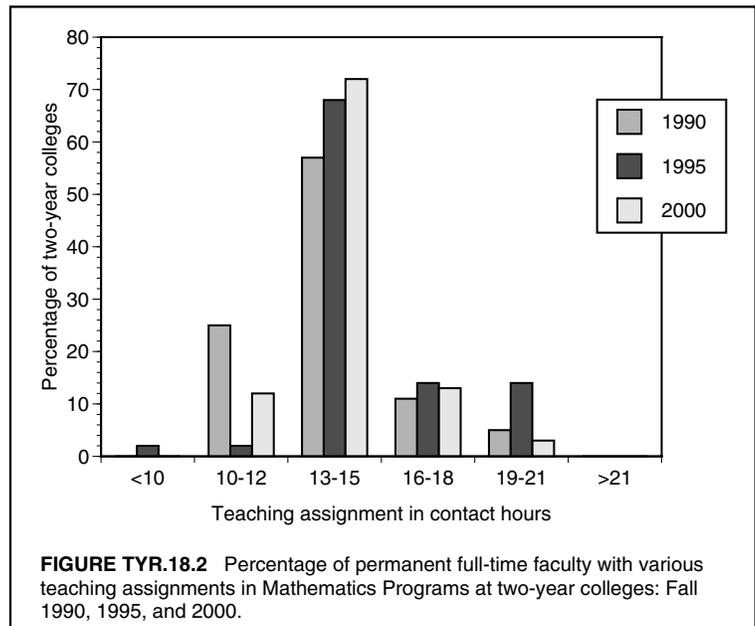
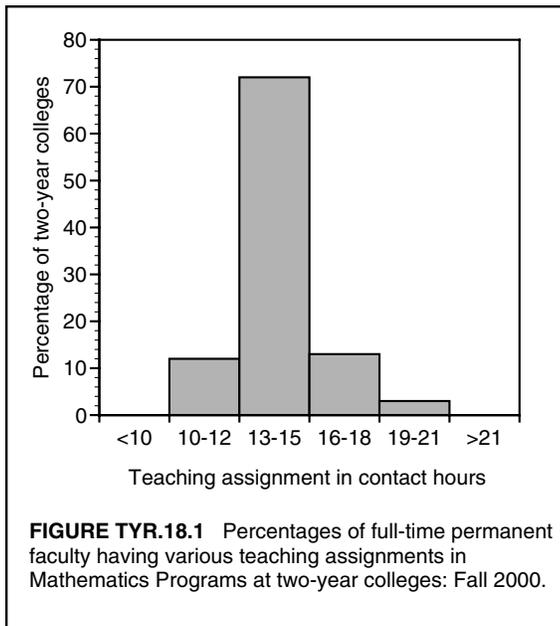
Previous CBMS surveys found regional differences, with average teaching assignments highest in the west

and lowest in New England and in some mid-Atlantic states. In 2000, the weekly hourly classroom teaching obligation was generally similar across the entire country. The only exceptions to this were a few states in the East (New York, New Jersey, and Pennsylvania) reporting weekly teaching assignments slightly below the average and a few states in both the mid-Atlantic (North and South Carolina) and the mid-west (Michigan, Illinois, Iowa, and Nebraska) reporting teaching assignments slightly above the average.

TABLE TYR.18 Teaching assignment for full-time permanent faculty in Mathematics Programs at two-year colleges: Fall 2000. (1995 data in parentheses)

Teaching assignment in contact hours	<10	10 to 12	13 to 15	16 to 18	19 to 21	>21
Percentage of two-year colleges	0 (2)	12 (2)	72 (68)	13 (14)	3 (14)	0 (1)
Average contact hours for full-time permanent faculty: 14.8 (15.8)						
Percentage of the full-time permanent Mathematics faculty who teach extra hours for extra pay at their own two-year college: 52% (48%)						
Average number of extra hours for extra pay: 3.6 (4.4)						
Percentage of full-time permanent Mathematics faculty who teach additional hours at another school: 6% (na)						

Note: 0 means less than half of 1%. See also Appendix II, p. 187, and Table A2.5.



About 54% of the 14,887 part-time faculty members in two-year college mathematics programs, that is, 54% of those paid directly by the college, taught six credit hours or more. In 37% of the colleges, office hours were required of part-time faculty, almost identical to the 39% reported in 1995. In 71% of the colleges, part-time faculty were paid on the same pay scale as full-time faculty members who taught extra hours for extra pay, an 11 percentage point jump since 1995. In 2% of colleges part-timers were paid more, and in 27% paid less, than full-time faculty who taught extra courses. The trend is clear: an ever-increasing number of part-time faculty and full-time faculty when teaching extra courses are paid at the same course rate.

Extra Teaching by Full-Time Faculty and Other Occupations of Part-Time Faculty

Table TYR.18 also shows that 52% of all full-time permanent two-year college mathematics faculty members taught extra hours for extra pay at their own

two-year college. An additional 6% taught at other schools. The average number of extra hours for extra pay taught at their own college was 3.6. In 1995, the percentage was 48% and the number of hours 4.4. In 1990, the percentage was 44% and the average number of hours was 4.7. So, over the decade from 1990 to 2000, a higher percentage of full-time permanent faculty taught extra hours for extra pay, but the average number of hours per semester declined.

About 41% of the 14,887 part-time two-year college faculty members reported in TYR.17 were not employed full-time elsewhere and were not graduate students. See Table TYR.19. In 1995, the percentage was 35% and in 1990 and 1985 these percentages, respectively, were 27% and 21%. The percentage who were employed full-time in a high school and who taught extra classes as a part-time faculty member at the two-year college, usually at night, continued to drop from 37% in 1985 to 30% in 1990 to 28% in 1995 and finally to 25% in 2000.

TABLE TYR.19 Percentage of part-time faculty in Mathematics Programs at two-year colleges having various other occupations: Fall 1995 and 2000.

Other occupations of part-time faculty	Percentage of part-time faculty	
	1995	2000
Employed full-time in:		
a high school	28	25
another department at the same college	6	7
another two-year college	2	2
a four-year college	3	2
industry or other	20	20
Graduate student	5	3
No full-time employment and not a graduate student	35	41
Number of part-time faculty	100% 14266	100% 14887

Education of Two-Year College Mathematics Program Faculty

Highest Degree of Full-Time Permanent Faculty, Including Newly Hired

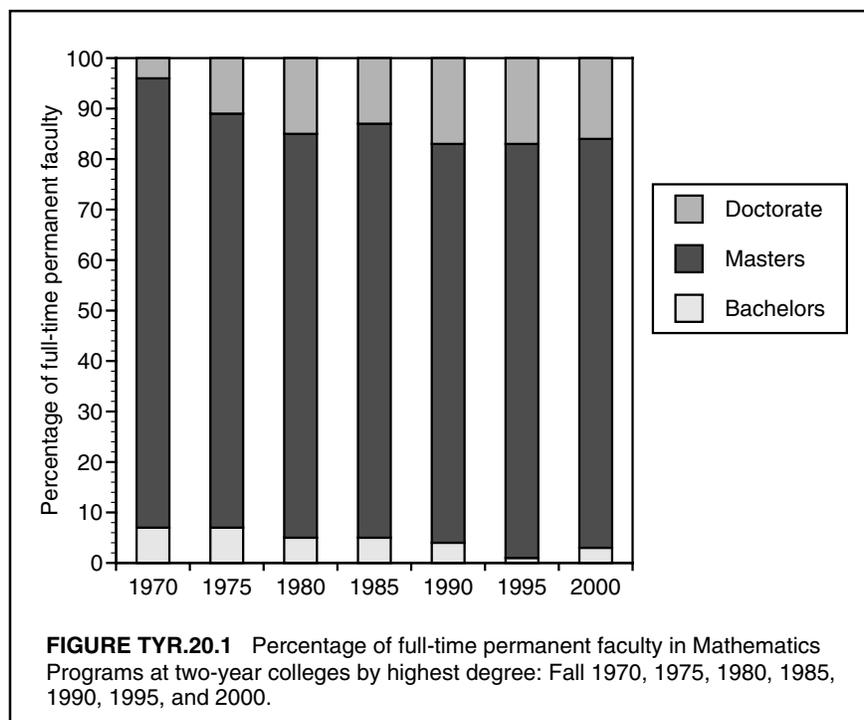
A masters degree was the terminal degree of 81% of the full-time permanent two-year college mathematics faculty, almost identical to the 1995 percentage, namely, 82%. As shown in Table TYR.20, the percentage of faculty with a doctorate dropped from 17% to 16%. The percentage whose terminal degree was a bachelors degree rose to 3%.

Some important changes were observed in the educational level of new faculty hires for 2000–2001. See Table TYR.36. About 19% of new hires for 1995–1996 had a doctorate, but only 13% did for 2000–2001. New hires with terminal masters degrees dropped 14 percentage points, but new hires with terminal bachelors degrees rose 18 percentage points.

The 2000–2001 new hires reversed the trend reported in the 1995 survey that two-year colleges were hiring more new full-time permanent faculty members with doctorates than they had previously. Prior to 1995, CBMS surveys found that two-year

TABLE TYR.20 Percentage of full-time permanent faculty in Mathematics Programs at two-year colleges by highest degree: Fall 1970, 1975, 1980, 1985, 1990, 1995, and 2000.

Highest degree	Percentage of full-time permanent faculty						
	1970	1975	1980	1985	1990	1995	2000
Doctorate	4	11	15	13	17	17	16
Masters	89	82	80	82	79	82	81
Bachelors	7	7	5	5	4	1	3
Number of full-time permanent faculty	100% 4879	100% 5944	100% 5623	100% 6277	100% 7222	100% 7578	100% 6960



colleges hired very few full-time permanent faculty with doctorates and that faculty earned their doctorates while on the job. The 1990 survey found, for example, that 2% of new hires had doctorates, rising to 19% in 1995. Hiring of doctorates at two-year colleges for 2000–2001, in comparison to 1995–1996, may have been affected negatively by the improved job market for doctoral graduates at four-year colleges and universities in that year. Or it may be that two-year college mathematics programs were returning to an earlier hiring pattern of choosing fewer doctoral faculty.

The 2000–2001 hiring of such a large percentage of candidates with terminal *bachelors* degrees may reflect the increasing percentage of developmental students

within mathematics programs. See Table TYR.4 and the relevant commentary in Chapter 6. Continuation of this hiring pattern, however, at a time when large numbers of first generation full-time permanent mathematics program faculty are poised to retire, could have a dramatic effect on the composition and orientation of two-year college mathematics programs over the next decade.

Table TYR.21 gives the academic major of the highest degree of full-time permanent two-year college mathematics faculty. These percentages are almost identical to the 1995 numbers. As in 1995, about 66% of those with masters degrees had mathematics as a major. About 47% of the doctorates were in mathematics. Mathematics education was second in both categories.

TABLE TYR.21 Percentage of full-time permanent faculty in Mathematics Programs at two-year colleges by field and highest degree: Fall 2000.

Field	Percentage having as highest degree			Total
	Doctorate	Masters	Bachelors	
Mathematics	7	54	1	62
Mathematics Education	5	18	1	24
Statistics	1	2	0	3
Computer Science	0	1	0	1
Other fields	2	6	0	9
Total	16	81	3	100% 6960

Note: 0 means less than half of 1%.

Highest Degree of Part-Time Faculty

Tables TYR.22 and TYR.23 summarize data on the highest degrees held by part-time faculty and their fields of specialization. Overall, in fall 2000 a large majority (70%) of part-time faculty held a masters degree as their highest degree and 24% held a bachelors degree as their highest degree. The remaining 6% were doctoral faculty. The 24% figure was a 6 percentage point rise over 1995 levels, but remained below the 27% figure found in 1990. The increase in part-time faculty holding bachelors degrees as their highest degree marked a reversal of a ten-year trend.

In fall 2000, 45% of all part-time faculty in two-year college mathematics programs held their highest degree (Ph.D., MA, or BA) in mathematics, and that

represented a substantial decline of 13 percentage points since 1995. Just over a quarter held their highest degree in mathematics education, slightly more than in 1995. A variety of other fields of specialization were sparsely represented among the highest earned degrees of part-time mathematics faculty. Closer examination of the data revealed some potentially disturbing trends. There was a 10 percentage point decline in the percentage of masters level mathematics program faculty holding degrees in mathematics, and a 5 percentage point increase in bachelors-level faculty who hold their degrees outside of the mathematical sciences. These trends deserve careful monitoring.

TABLE TYR.22 Percentage of part-time faculty in Mathematics Programs at two-year colleges by highest degree: Fall 1970, 1975, 1980, 1985, 1990, 1995, and 2000.

Highest degree	Percentage of part-time permanent faculty						
	1970	1975	1980	1985	1990	1995	2000
Doctorate	9	4	7	7	8	7	6
Masters	77	79	76	65	65	76	70
Bachelors	14	17	17	28	27	18	24
Number of part-time permanent faculty	100% 2213	100% 3411	100% 6661	100% 7433	100% 13680	100% 14266	100% 14887

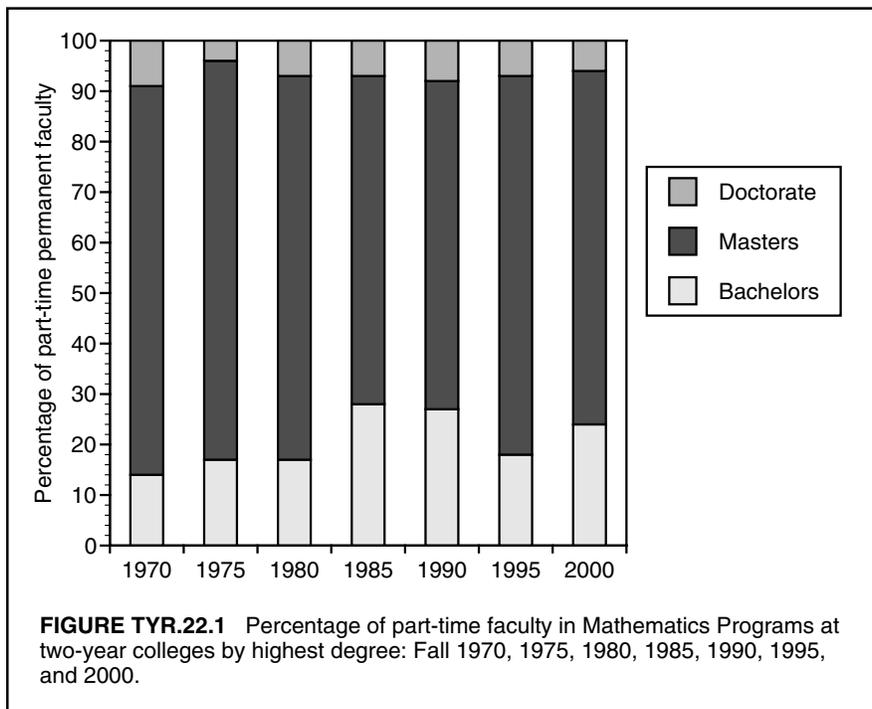


TABLE TYR.23 Percentage of part-time faculty in Mathematics Programs at two-year colleges by field and highest degree: Fall 2000. (1995 data in parentheses.)

Field	Percentage having as highest degree			Total
	Doctorate	Masters	Bachelors	
Mathematics	2	33	10	45
Mathematics Education	1	20	5	26
Statistics	1	2	1	4
Computer Science	0	1	0	1
Other fields	2	14	8	24
Total	6 (7)	70 (76)	24 (18)	100%

Note: 0 means less than half of 1%.

Gender, Ethnic Composition, and Age of Full-Time Permanent Two-Year College Mathematics Program Faculty

Gender of Full-Time Permanent Two-Year College Mathematics Program Faculty

A steady increase in the percentage of women among full-time permanent mathematics program faculty was reported in every CBMS study since 1975. In fall 2000, the percentage of women faculty reached 49%, which is essentially equal to the percentage of male faculty (51%).

However, other fall 2000 data suggested this equality of numbers might be difficult to maintain over the long term. In fall 2000, the proportion of women in the under 40 age group among full-time permanent faculty in mathematics programs at two-year colleges was 45%, less than their representation in the entire full-time permanent faculty. See the data in Table SF.8 in Chapter 1 where the reader can find a comprehensive review of mathematics faculty gender patterns at institutions of all levels.

Also acting counter to long-term numerical equality for women, nearly achieved in fall 2000, was the fact

that only 42% of new hires for 2000–2001 were women as reported in Table TYR.37. The 42% figure for new hires was well below the 49% overall proportion of women in the full-time permanent faculty and even below the new hire percentage of 44% for 1995–1996.

Finally, in evaluating the CBMS2000 data about gender of newly hired faculty, it is important to keep in mind the gender composition of the pool of newly-granted mathematics masters degrees. The percentage of women among the 3,643 mathematics masters degree recipients in the U.S. was 41% during academic year 1997–1998, the latest year for which firm data was available as the current report was being written. That percentage was essentially the same in 1992–1993, the figure reported in CBMS1995. In each CBMS report from 1970 to 1985, the percentage was 35% or less. This information is summarized in Table TYR.25, whose data are from the NCES surveys referenced earlier. The proportion of women among the recipients of masters degrees in mathematics is an important influence on long-term faculty gender composition at two-year colleges.

TABLE TYR.24 Number and percentage of full-time permanent faculty in Mathematics Programs at two-year colleges by gender: Fall 1975, 1980, 1985, 1990, 1995, and 2000.

	1975	1980	1985	1990	1995	2000
Men	4696 (79%)	4217 (75%)	4331 (69%)	4767 (66%)	4579 (60%)	3537 (51%)
Women	1248 (21%)	1406 (25%)	1946 (31%)	2455 (34%)	2999 (40%)	3423 (49%)
Total	5944 (100%)	5623 (100%)	6277 (100%)	7222 (100%)	7578 (100%)	6960 (100%)

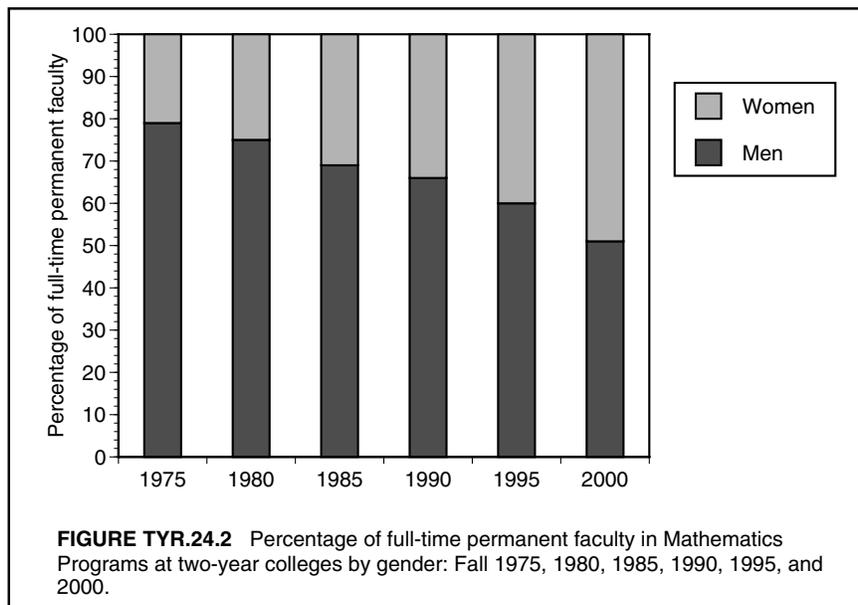
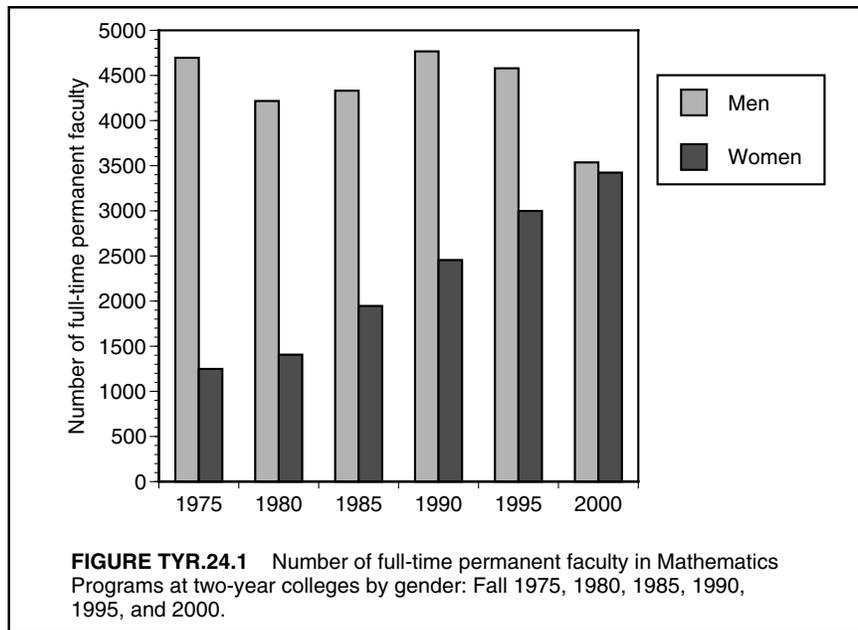


TABLE TYR.25 Percentage of full-time permanent faculty and part-time faculty in Mathematics Programs at two-year colleges by gender: Fall 2000. Also master's degrees in Mathematics granted in the U.S. by gender in 1997-98.

	Percentage of		
	Full-time permanent faculty	Part-time faculty	Master's degrees in mathematics granted in the U.S. in 1997-98 ¹
Men	51	57	59
Women	49	43	41
Total	100%	100%	100%
	6960	14887	3643

¹ Digest of Education Statistics, 2000, National Center for Education Statistics IPEDS Annual Completion Survey. (These figures include resident aliens.)

Ethnicity Among Full-Time Permanent and Part-Time Two-Year College Mathematics Program Faculty

Tables TYR.26, TYR.27, TYR.28, and TYR.29 present data on ethnic minority demographics for full-time permanent mathematics faculty in two-year colleges. The first two tables provide an historical perspective, while the latter two present more detailed information on the ethnic profile of the full-time permanent mathematics faculty, including information about both age and gender.

From 1995 to 2000, the overall number of full-time permanent mathematics faculty in two-year colleges

decreased by about 8%. Although the total number of ethnic minority faculty also declined, the percentage of ethnic minorities among the full-time permanent mathematics faculty remained at about 13%. That percentage is three points below the level reported in CBMS1990.

The relative sizes of most ethnic groups changed little between 1995 and 2000. Black (non-Hispanic) faculty composed the largest ethnic minority group (about 5% of the full-time permanent faculty) while Asian and Hispanic faculty accounted for 4% and 3%, respectively.

TABLE TYR.26 Percentage and number of ethnic minority full-time permanent faculty in Mathematics Programs at two-year colleges: Fall 1975, 1980, 1985, 1990, 1995, and 2000.

	1975	1980	1985	1990	1995	2000
Percentage of ethnic minorities among full-time permanent faculty	7	8	12	16	13	13
Number of full-time permanent ethnic minority faculty	416	450	753	1155	948	909
Number of full-time permanent faculty	5944	5623	6277	7222	7578	6960

TABLE TYR.27 Percentage of full-time permanent faculty in Mathematics Programs at two-year colleges by ethnicity: Fall 1980, 1985, 1990, 1995, and 2000.

Ethnic Group	Percentage of full-time permanent faculty				
	1980	1985	1990	1995	2000
Asian/Pacific Islander	3	3	4	4	4
Black (non-Hispanic)	3	4	4	5	5
American Indian/Eskimo/Aleut	1	1	1	0	1
Mexican American/Puerto Rican/ other Hispanic	1	4	7	3	3
White (non-Hispanic)	92	88	84	87	85
Status unknown	na	na	na	1	2
Number of full-time permanent faculty	100% 5623	100% 6277	100% 7222	100% 7578	100% 6960

Note: 0 means less than half of 1%.

CBMS2000 detected what might be a major change in the gender ratio within certain ethnic groups of mathematics program faculty. Among black (non-Hispanic) full-time permanent faculty, for example, the percentage of women dropped from 42% in fall 1995 to 28% in fall 2000. Among white (non-Hispanic) faculty, the percentage of women rose from 40% to 50%. But a word of caution is in order: compared to CBMS1995, the CBMS2000 survey reported a large increase in the percentage of women whose ethnicity was unknown.

The percentage of ethnic minority full-time permanent mathematics faculty under the age of 40 did not change from fall 1995 to fall 2000, remaining at 20%. The NCES surveys for the most recent five year periods

available at the time of the writing of the current report, namely, for 1992–1993 and for 1997–1998, showed an increase (13% to 19%) in the percentage of ethnic minorities among U.S. recipients of masters degrees in mathematics. See the NCES web page referenced above (<http://nces.ed.gov/pubs2001/2001034c.pdf>) and Table TYR.29. This is encouraging information about the increased availability of ethnic minority faculty for two-year college mathematics programs.

For information about ethnic minority faculty over age 54, see Table TYR.34. Data on ethnicity of newly hired faculty for academic year 2000–2001 appear in Table TYR.37.

TABLE TYR.28 Number and percentage of full-time permanent faculty in Mathematics Programs at two-year colleges by ethnic group and percentage of women within each ethnic group: Fall 2000.

Ethnic group	Number of full-time permanent faculty	Percentage of ethnic group in full-time permanent faculty	Percentage of women in ethnic group
Asian/Pacific Islander	273	4	36
Black (non-Hispanic)	361	5	28
American Indian/Eskimo/Aleut	85	1	30
Mexican American/Puerto Rican/ other Hispanic	190	3	40
White (non-Hispanic)	5903	85	50
Status not known	148	2	37
Total	6960	100	49

TABLE TYR.29 Percentage of full-time faculty and of full-time faculty under age 40 in Mathematics Programs at two-year colleges by ethnic group: Fall 2000. Also U.S. master's degrees in mathematics granted to U.S. residents by ethnic group in 1997–98.

Ethnic Group	Percentage among all full-time permanent faculty	Percentage among full-time permanent faculty under age 40	Master's degrees in mathematics granted in the U.S. in 1997–98 ¹
Ethnic minorities	13	20	19
White (non-Hispanic)	85	77	81
Unknown	2	3	0
Total	100% 6960	100% 1392	100% 2615

¹ 2000 Digest of Education Statistics, National Center for Education Statistics.

In fall 2000, about 13% of part-time faculty were members of ethnic minorities, almost identical to 1995. See Table TYR.30. African Americans made up the largest group, comprising 6% of the total part-time faculty. See Table TYR.31.

TABLE TYR.30 Percentage of ethnic minority part-time faculty in Mathematics Programs at two-year colleges: Fall 2000.

Percentage of ethnic minorities among part-time faculty	13
Number of part-time faculty	14887

TABLE TYR.31 Number and percentage of part-time faculty in Mathematics Programs at two-year colleges by ethnic group and percentage of women within ethnic groups: Fall 2000.

Ethnic group	Number of part-time faculty	Percentage of ethnic group among all part-time faculty	Percentage of women within ethnic group
Asian/Pacific Islander	528	4	38
Black (non-Hispanic)	920	6	37
American Indian/Eskimo/Aleut	8	0	40
Mexican American/Puerto Rican/ other Hispanic	440	3	35
White (non-Hispanic)	12263	82	45
Status not known	728	5	50
Total	14887	100	43

Note: 0 means less than half of 1%.

Age Distribution of Full-Time Permanent Two-Year College Mathematics Program Faculty

In fall 2000, the median age of full-time permanent faculty in two-year college mathematics programs was 48. The average age rose slightly to 47.6 years from its 1995 level of 47.2 years. For comparison, the average age in 1990 was about 45.4 years. See Table SF.9 and the discussion in Chapter 1 for a more comprehensive analysis of the age patterns of collegiate mathematics faculty at both four-year and two-year colleges.

As shown in Table TYR.32, the percentage of full-time permanent faculty who were under age 40 slid gradually from 47% in 1975 to 21% in 1995. It rose to 26% in 2000, a sign of a swing toward a younger faculty as first generation two-year college mathematics faculty begin to retire in larger numbers. At the other end of the age range, the percentage of full-time permanent faculty over age 54 had grown from

12% in 1975 to 18% in 1995 and reached 27% in 2000, a full quarter of the full-time permanent mathematics faculty.

Women were a majority in the 45–54 year old group and less heavily represented in the over 54 age group. Otherwise, in terms of age, as reflected in TYR.33, their distribution in the faculty matched that of males. Ethnic minorities tended to be younger than the faculty as a whole. For example, 21% of ethnic minority faculty in fall 2000 were over age 54 as compared to 27% of the full-time permanent faculty overall. See Tables TYR.33 and TYR.34.

In spite of the large proportional increase in full-time permanent faculty over age 54, the average age of the faculty did not rise much from 1995 to 2000 because of an increase in the size of the 35–45 age group and a decrease in the size of the 45–55 age group.

TABLE TYR.32 Percentage and number of full-time permanent faculty in Mathematics Programs at two-year colleges by age: Fall 1975, 1980, 1985, 1990, 1995, and 2000.

Age	Percentage of full-time permanent faculty						Number of full-time permanent faculty					
	1975	1980	1985	1990	1995	2000	1975	1980	1985	1990	1995	2000
<30	9	5	5	5	5	4	535	281	314	361	358	290
30-34	18	15	11	8	8	9	1070	843	690	578	580	615
35-39	20	24	18	10	8	13	1188	1350	1130	722	633	890
40-44	15	18	24	21	14	11	892	1012	1506	1517	1044	763
45-49	13	16	18	22	22	15	773	900	1130	1589	1672	1075
50-54	13	10	13	21	26	20	773	562	816	1517	1933	1418
55-59	8	7	7	8	13	16	475	394	439	578	966	1146
>59	4	5	4	5	5	11	238	281	252	360	391	763
Total	100%	100%	100%	100%	100%	100%	5944	5623	6277	7222	7578	6960

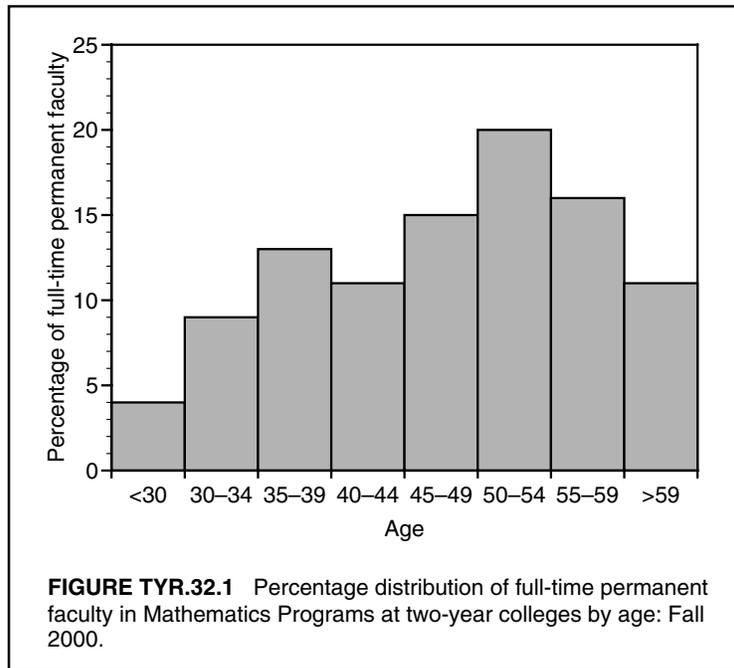


TABLE TYR.33 Percentage of full-time permanent faculty in Mathematics Programs at two-year colleges by age and by gender. Also percentage of women by age: Fall 2000.

Age	Percentage of full-time permanent faculty		Percentage of women in age group
	Women	Men	
<35	6	7	49
35-44	12	12	49
45-54	20	16	56
>54	10	17	36
Total	49%	51%	

TABLE TYR.34 Percentage of ethnic minority full-time permanent faculty in Mathematics Programs at two-year colleges by age: Fall 1980, 1985, 1990, 1995, and 2000.

Age	Percentage of ethnic minority full-time permanent faculty				
	1980	1985	1990	1995	2000
<35	28	27	24	18	20
35–44	38	46	43	26	31
45–54	30	20	29	35	28
>54	4	7	4	21	21
Number of ethnic minority full-time permanent faculty	100% 450	100% 753	100% 1155	100% 948	100% 909

Demographics of Full-Time Permanent Faculty Newly Hired for 2000–2001

Two-year college mathematics programs hired about 572 new full-time permanent faculty for 2000–2001. This was an eye-catching 63% increase over 1995–1996 when about 350 people were newly hired. See Table TYR.35. In 1990, the corresponding number of full-time permanent hires was about 600, the other end of an interesting bi-modal hiring count during the decade of the 1990s.

Important new hiring patterns emerged in 2000–2001 in comparison to 1995–1996. In 1995, 30% of new faculty were hired directly out of graduate school, about the same percentage as in 1990. In 2000, this fell to 8%. Similarly, the percentage of new hires previously teaching at a four-year institution dropped 8 percentage points to 10%. By contrast, hiring from among part-time faculty at the same institution almost doubled to 34%. The percentage of secondary school teachers among newly hired faculty rose from 4% to 22%, thereby returning to a pattern prevalent in the early years of community colleges. (A 1979 survey found that more than 60% of all mathematics faculty in two-year colleges had previously taught in secondary schools. [Robert McKelvey, Donald J. Albers, Shlomo Liebeskind, and Don O. Loftsgaarden, *An Inquiry into the Graduate Training Needs of Two-Year College Teachers of Mathematics*. Rocky Mountain Mathematics Consortium, 1979.]

Educational Credentials of Newly Hired Full-Time Permanent Faculty

In fall 2000, about 13% of the new hires had a doctorate, a drop of 6 percentage points from 1995. See Table TYR.36. Perhaps the improved employment opportunities at four-year colleges and universities for new mathematics Ph.D.'s in the late 1990's reduced the number of doctoral faculty seeking positions in two-year colleges. However, in light of the

data on increased hiring of new faculty with bachelors degrees, namely, 19% for 2000–2001 in contrast to 1% for 1995–1996, the drop in doctoral hiring may be another piece of evidence of a shift at two-year colleges away from hiring those with degrees beyond what accrediting agencies minimally require. (Most accrediting agencies require that two-year college faculty who teach courses which transfer for baccalaureate degree credit hold a masters degree with an 18-credit concentration in the academic field in which they are teaching. Faculty who teach remedial or developmental courses are required to hold a bachelors degree with a major in the subject in which they teach.)

If this pattern of educational credentials for new hires becomes a long-term hiring strategy, it could be short-sighted. In particular, as recorded in Table TYR.36, the percentage of masters degrees among new hires was 66% for 2000–2001, compared to 80% for 1995–1996. The 66% figure was far below the masters degree percentage (81%) of the mathematics faculty as a whole. The effect of repeated future hiring in the 2000–2001 proportions would be a rapid drop in the percentage of masters degrees among full-time permanent mathematics faculty within two-year college mathematics programs. This could lead to a two-tiered faculty within mathematics programs, to an overall change in program philosophy and cohesiveness, and to conflicts with four-year colleges and universities on course comparability and transferability.

Gender and Age of Newly Hired Full-Time Permanent Faculty

For 2000–2001, about 42% of the new hires were women. As noted earlier, this is less than the overall 49% of women in the entire full-time permanent faculty. Table TYR.37 shows that white non-Hispanic faculty comprised 86% of new hires for 2000–2001. Overall, 13% of new hires were ethnic minorities, a 4

percentage point drop in ethnic minority hiring when 2000–2001 is compared to 1995–1996.

Table TYR.38 gives the percentage of new hires whose ages fall in 5 year intervals beginning at age 30. As would be expected, almost 70% of new hires were under age 40 and 80% were under age 50. Especially interesting is the large percentage (58%) of hires between 30 and 39 years old. This suggests, as does other data, that fewer new full-time permanent mathematics faculty in two-year colleges are being hired

straight from graduate school. This age pattern is consistent with other CBMS2000 data which show that the largest number of new hires comes from current part-time faculty at the college.

Note that in earlier CBMS reports age percentages included full-time temporary hires but neither the 1995 nor the 2000 percentages included this group. Information about gender, ethnicity, and age of new hires was not collected in surveys prior to 1995.

TABLE TYR.35 Percentage of newly appointed permanent full-time faculty in Mathematics Programs at two-year colleges coming from various sources: Fall 1995 and 2000.

Source	Percentage of new faculty from	
	1995	2000
Graduate school	30	8
Part-time or full-time temporary employment at the same college	19	34
Teaching in a four-year college or university	18	10
Teaching in another two-year college	14	19
Teaching in a secondary school	4	22
Nonacademic employment	5	6
Unemployed	9	0
Unknown	0	1
Total number hired	100% 350	100% 572

TABLE TYR.36 Percentage of full-time permanent faculty newly hired for Mathematics Programs at two-year colleges by highest degree: 1995–1996 and 2000–2001.

Highest degree	Percentage of new hires	
	1995–1996	2000–2001
Doctorate	19	13
Masters	80	66
Bachelors	1	19
Unknown	0	2
Total	100%	100%

TABLE TYR.37 Percentage of full-time permanent faculty newly hired for Mathematics Programs at two-year colleges by ethnic group: 1995–1996 and 2000–2001. Also percentage of women within each ethnic group: 2000–2001.

Ethnic group	Percentage of new hires		Percentage of women among 2000–2001 new hires
	1995–1996	2000–2001	
Asian/Pacific Islander	13	7	28
Black (non-Hispanic)	1	1	0
Mexican American/Puerto Rican/other Hispanic	3	5	80
White (non-Hispanic)	81	86	47
Other	2	1	7
Percentage of women among all new hires	44%	42%	--

TABLE TYR.38 Percentage of full-time permanent faculty newly hired for Mathematics Programs at two-year colleges by age: 1995–1996 and 2000–2001.

Age	Percentage of new hires	
	1995–1996	2000–2001
<30	30	11
30–34	36	21
35–39	8	37
40–44	13	5
45–49	5	6
50–54	4	12
55–59	3	6
>59	1	3
Total	100%	100%

Outflow of Full-Time Permanent Faculty

During the 1999–2000 academic year, 401 people left their full-time permanent mathematics program faculty positions at two-year colleges. Using the fall 2000 full-time permanent estimate of 6,960 as a base, this outflow was about 5.7% of the faculty. During the academic year 1994–1995, the number was an almost identical 402 people or about 5.3% of the fall 1995 full-time permanent faculty. In 1989–1990, the number leaving was 317 (4.4%) and in 1984–1985 it was 449 (7.1%). See Tables TYR.39 and TYR.17.

In 1999–2000, about 41% of the outflow left due to death or retirement, compared to 68% in 1994–1995.

About 15% of those who left the two-year college mathematics faculty did so for “other reasons.” By comparing Tables TYR.32 and TYR.39 for CBMS1995 and CBMS2000, one can infer that in fall 2000, in contrast to 1995, faculty remained at their institutions in larger numbers beyond age 54.

Overall, the outflow data in Table TYR.39 is less informative than the comparable data in CBMS1995 because of the large increase in the “Unknown” category. In fall 2000, this was the reason given for 23% of the outflow while in fall 1995 it was used for only 6% of the outflow.

TABLE TYR.39 Outflow of full-time permanent faculty from Mathematics Programs at two-year colleges:1999–2000.

Status	Number
Died or retired	163
Teaching in a four-year college or university	17
Teaching in another two-year college	43
Teaching in a secondary school	0
Left for a nonacademic position	14
Returned to graduate school	10
Other	60
Unknown	94
Total	401

Services Available to Mathematics Program Faculty

For the first time, the 1995 CBMS survey collected information on office and computer facilities available to faculty members. The 2000 survey continued to collect some of this data. Table TYR.40 gives the

office facilities available to part-time faculty members in fall 2000. There was an 8 percentage point jump in the number of part-time faculty who shared a desk with two or more other people and simultaneously a 6 percentage point drop in the percentage of part-time faculty who had their own desk or shared a desk with only one other person.

TABLE TYR.40 Percentage of part-time faculty in Mathematics Programs at two-year colleges by desk availability: Fall 1995 and 2000.

Desk availability	Percentage of part-time faculty	
	1995	2000
Have their own desk	14	12
Share a desk with one other person	9	5
Share a desk with two or more other people	43	51
Have no desk	35	31

In fall 2000, essentially all full-time permanent faculty (99%) reported having a computer or terminal in their offices. In 1995, this number was 76%.

Similarly, 98% of these faculty had internet access in their offices and 100% had such access somewhere on campus. See Tables TYR.41 and TYR.42.

TABLE TYR.41 Percentage of full-time permanent faculty in Mathematics Programs of two-year colleges by access to computer facilities: Fall 1995 and 2000.

Computer facilities	Percentage of full-time faculty	
	1995	2000
Computer or terminal in office	76	99
No computer or terminal in office, but shared computers or terminals nearby	21	1
No convenient access or no access at all to computers or terminals	3	0

TABLE TYR.42 Percentage of full-time permanent faculty in Mathematics Programs at two-year colleges by access to Internet: Fall 2000.

Computer facilities	Percentage of full-time permanent faculty
Internet access in office	98
Internet access at school but not in office	2

Teaching Evaluation in Two-Year College Mathematics Programs

The fall 2000 survey determined that 98% of two-year colleges periodically evaluated the teaching of full-time permanent mathematics faculty members. See survey question I-5 in Appendix V. In 1995, the figure was 100%. Similarly, according to the 2000 survey, 88% of colleges evaluated part-time faculty. Data on evaluation of part-time faculty was not collected in the 1995 survey.

The most common method of evaluating teaching was the use of evaluation forms completed by students. CBMS2000 data indicated such student evaluations were used by 90% of two-year college mathematics programs to evaluate full-time permanent faculty, down from 97% in 1995. This tool was used

by 87% of schools to evaluate part-time faculty. Observation of classes by faculty or administrators, self-evaluation, and evaluation of written course materials were also common, each used by 46% to 64% of colleges. See Table TYR.43. Of interest in this table is the low percentage (50% less than for full-time faculty) of use of classroom visitations by department heads or other administrators in the evaluation of part-time faculty. A similar disparity was observed in the use of portfolios as an evaluation tool when full-time and part-time faculty are compared. Both classroom visitation and portfolios, while potentially very revealing of overall quality of teaching, are time intensive forms of evaluation which would be difficult to carry out for all part-time faculty when their numbers are large.

TABLE TYR.43 Percentage of Mathematics Programs at two-year colleges using various methods of evaluating teaching of full-time and part-time faculty: Fall 2000.

Method of evaluating teaching	Percentage of programs using evaluation method for	
	Full-time faculty	Part-time faculty
Observation of classes by other faculty	64	60
Observation of classes by division head (if different from chair) or other administrator	52	28
Evaluation forms completed by students	90	87
Evaluation of written course material such as lesson plans, syllabus, or exams	48	40
Self-evaluation such as teaching portfolios	46	24
Other methods	7	3

Professional Development Obligations and Activities of Full-Time Permanent Two-Year College Mathematics Program Faculty

In fall 2000, some form of continuing education or professional development was required of full-time permanent faculty members in 38% of two-year college mathematics programs, almost double the 1995 percentage of 20%. Table TYR.44 shows that about 36% of permanent full-time faculty fulfilled their professional development obligations by using activities provided by their home institutions. About 31% participated in activities provided by professional societies.

Direct comparison of CBMS2000 data to professional development data from CBMS1995 is not possible because of changes in the format of the two-year college questionnaire for 2000. The 1995 survey asked about participation in a wide variety of specific professional activities while the CBMS2000 question-

naire asked only about broad categories of professional development activities. Even so, some comparisons are possible. There were major changes between 1995 and 2000. For example, the 1995 survey found that a very high percentage (over 70%) of permanent full-time mathematics faculty participated in professional meetings, while CBMS2000 reported only 31% of the same faculty used professional meeting activities to fulfill their continuing education and professional development obligation. Perhaps this last figure shows that there was a major shift in the level of professional meeting participation between 1995 and 2000. Or perhaps the 31% suggests that, even though faculty continued to attend professional meetings in large numbers, colleges were not allowing them to count meeting attendance toward their professional development obligations. Only further study can explain the changes in the pattern of professional activity found in the 2000 survey.

TABLE TYR.44 Percentage of permanent full-time faculty in Mathematics Programs of two-year colleges who use various methods to fulfill their professional development obligation: Fall 2000.

Professional Development	Percentage of permanent faculty
Activities provided by employer	36
Activities provided by professional associations	31
Publishing books or research or expository papers	3
Continuing graduate education	8

Problems in Two-Year College Mathematics Programs

In every CBMS survey since 1985, 60% or more of mathematics program heads classified the need for too much student remediation as a major problem for their programs. The fall 2000 figure was 62%. See Tables TYR.45 and TYR.46. As in 1995, low student motivation ranked second among program major problems. Moving up to third place among major problems

was the need to use part-time faculty in too many classes, but 38% of schools reported this was only a minor problem. Ranked fourth in the major problem list was low faculty salaries. Still in the top five of the major problem list was low success rate in remedial courses. All other major problems listed affected a much lower percentage of mathematics programs than these five. Table TYR.45 gives historical comparative data on program heads' ranking of the severity of various departmental problems.

TABLE TYR.45 Percentage of program heads classifying various problems as "major" in Mathematics Programs at two-year colleges: Fall 1985, 1990, 1995, and 2000.

Problem	Percentage of program heads classifying problem as major			
	1985	1990	1995	2000
Too many students needing remediation	60	65	63	62
Low student motivation	na	38	51	47
Low success rate in developmental/remedial courses	na	na	34	22
Faculty salaries too low	na	na	31	36
Need to use part-time faculty for too many courses	na	na	30	39
Inadequate computer facilities for student services	na	na	23	3
Inadequate computer facilities for faculty use	27	7	22	2
Inadequate travel funds for faculty	41	26	21	15
Inadequate departmental support services (secretary, etc.)	41	26	15	5
Low success rate in transfer-level courses	na	na	15	8
Inadequate classroom space	21	18	14	17
Class sizes too large	27	10	11	10
Maintaining vitality of faculty	39	22	11	9
Staffing computer science courses	34	8	8	18
Coordinating mathematics courses with high schools	19	9	8	6
Too few students who intend to transfer actually do	na	na	7	2
Lack of curricular flexibility because of transfer rules	na	10	6	1
Staffing statistics courses	na	na	4	2
Dual-enrollment courses	na	na	na	8
Commercial outsourcing of instruction	na	na	na	1
Use of distance education	na	na	na	10

TABLE TYR.46 Percentage of program heads of Mathematics Programs at two-year colleges classifying various problems by severity: Fall 2000.

Problem	Percentage of program heads classifying problems as		
	minor or no problem	somewhat of a problem	major problem
Too many students needing remediation	7	30	62
Low student motivation	17	37	47
Low success rate in developmental/remedial courses	31	47	22
Faculty salaries too low	27	36	36
Need to use part-time faculty for too many courses	38	23	39
Inadequate computer facilities for student services	76	21	3
Inadequate computer facilities for faculty use	90	7	2
Inadequate travel funds for faculty	59	26	15
Inadequate departmental support services (secretary, etc.)	78	17	5
Low success rate in transfer-level courses	63	30	8
Inadequate classroom space	51	32	17
Class sizes too large	65	25	10
Maintaining vitality of faculty	72	18	9
Staffing computer science courses	72	9	18
Coordinating mathematics courses with high schools	72	22	6
Too few students who intend to transfer actually do	88	11	2
Lack of curricular flexibility because of transfer requirements	85	14	1
Staffing statistics courses	81	17	2
Dual enrollment credit (HS & college) courses	77	14	8
Commercial outsourcing of instruction	98	1	1
Use of distance education	82	8	10

Administration of Mathematics Programs in Two-Year Colleges

As was the case with four-year schools, two-year colleges made a major shift to the semester system between 1995 and 2000. In fall 2000, 93% of two-year colleges operated under the semester system, up from 73% in 1995. See Table TYR.47. For comparative data on four-year colleges, see Table SE.2 in Chapter 1.

In fall 2000, as in 1995, about 43% of two-year college mathematics programs were administered as departments, with 10% of these being multi-campus departmental systems. A division structure, where mathematics is combined with science or other disciplines, was found in just over half of two-year colleges.

See Table TYR.48. In future surveys it would be instructive to probe the positive or negative effects on mathematics instruction of the various structures used to administer mathematics programs at two-year colleges.

Historically, mathematics courses at two-year colleges have been taught in many different administrative units other than in the mathematics programs. This practice continued in fall 2000, as shown in Table TYR.16. In fall 2000, about 29% of all two-year colleges administered their remedial or developmental mathematics courses separately from the mathematics program. That percentage is essentially the same as the 30% figure found in 1995.

TABLE TYR.47 Percentage of Mathematics Programs at two-year colleges by type of academic calendar: Fall 1995 and 2000.

Academic calendar	Percentage	
	1995	2000
Semester	73	93
Trimester	0	0
Quarter	26	6
Other or unknown	1	1

Note: 0 means less than half of 1%.

TABLE TYR.48 Percentage of Mathematics Programs at two-year colleges by type of administrative structure: Fall 2000.

Administrative structure	On their own campus	As part of a multicampus organization
Mathematics department	33	10
Mathematics and computer science department	4	0
Mathematics and science department or division	34	2
Other department or division structure	14	1
None of the above or unknown	2	

Topics of Special Interest For Two-Year Mathematics Programs

In each CBMS survey cycle certain topics of special interest are chosen for data collection and comprehensive analysis across both two-year and four-year schools. In fall 2000, five such topics were chosen. They are discussed in Chapter 2 of the current report. Two of them, pre-service education of K–8 teachers and faculty who teach dual enrollment courses, are relevant to this chapter. Topics of special interest dealing with the placement testing of students in two-year college mathematics programs and with distance learning in mathematics are discussed in Chapter 6.

Pre-Service Mathematics Education of K–8 Teachers

Although they did not offer teacher certification credentials, two-year colleges in fall 2000 were involved in the pre-service education of teachers. Anecdotal evidence suggested this involvement grew as more students turned to two-year colleges, especially in summer sessions, to take required mathematics courses. Estimated enrollment of such students in fall 2000 was about 18,000. See course enrollment data in Table TYR.3 in Chapter 6.

About half of all two-year colleges offered a special course for pre-service K–8 teachers in either academic year 1999–2000 or 2000–2001. See Tables TYR.5 and TYR.6 in Chapter 6. Fewer than a quarter assigned a faculty member to coordinate pre-service K–8 teacher education. The extent to which pre-service elementary school teachers use two-year college mathematics courses to fulfill certification requirements deserves further study. If the anecdotal evidence is accurate, more cooperation and better coordination in this area between two-year colleges and certifying institutions become increasingly important. Pre-service teacher education is discussed in detail in Chapter 2. With regards to two-year colleges, see Table PSE.3.

Faculty who Teach Dual Credit Courses

Dual enrollment is a credit structure that allows high school students to receive simultaneous high school and college credit for courses which most often are taught at the high school by high school teachers.

Data in Chapter 2 (Tables DEN.16 through 18) and Chapter 6 show how large the dual credit system had become by fall 2000 when about 14% of all two-year college sections of College Algebra, Precalculus, and Calculus were dual enrollment courses.

In fall 2000, a faculty member teaching a dual enrollment course was viewed by most respondents as a part-time faculty member at the two-year college which awarded college credit for the course, even though the salary was paid completely by a third party, e.g., the local school district. CBMS2000 investigated the extent to which two-year college mathematics programs retained control of various aspects of dual enrollment courses.

In only 61% of cases did the two-year college mathematics program have full control over the selection of instructors for dual credit courses. In 79% of cases, the textbook used by a dual credit instructor was chosen by the two-year college mathematics program. However, only 57% of two-year college mathematics programs reported controlling the final examinations in their dual credit courses. Two-year college mathematics programs reported that in nine out of ten cases their dual enrollment instructors were required to meet the same degree requirements as other part-time faculty members. In only two-thirds of dual enrollment courses was teaching evaluated in the same way it was evaluated in courses taught by other part-time mathematics faculty.

In spite of the issues raised in the preceding paragraph, in Table TYR.46 among all survey respondents (who include respondents from schools which do not have dual enrollment arrangements) only 8% of mathematics program heads in two-year colleges saw dual enrollment courses as a major problem. Another 14% found dual enrollment arrangements somewhat of a problem. However, analysis of only those responses which came from schools reporting that they actually had a functioning dual enrollment program showed that more than 13% said dual enrollment was a major problem and an additional 14% said it was a moderate problem. Nonetheless, even in this group of actual users of dual enrollment, about 72% said dual enrollment was only a minor problem or no problem.