

Chapter 7

Faculty and Administration in Two-Year College Mathematics Programs

This chapter reports the number, teaching conditions, education, professional activities, and age, gender, and ethnicity of the faculty in two-year college mathematics programs in Fall 1995. Information on mobility into, within, and out of two-year college mathematics program teaching positions is also included.

The data are compared with those from the 1966, 1970, 1975, 1980, 1985, and 1990 CBMS surveys.

Unlike previous surveys, the mathematics faculty surveyed in 1995 does not include those who teach in a computer science program that is separate from the mathematics program.

For more information on the sampling procedure used in this survey, see Appendix II. A copy of the two-year college questionnaire may be found in Appendix V.

Highlights

- About 7600 people taught full-time in two-year college mathematics programs in the United States in Fall 1996. The number of part-time faculty members was almost double that.
- Part-time faculty members taught 38% of all sections. In addition, 48% of full-time permanent two-year college mathematics faculty members taught extra hours for extra pay at their own two-year college.
- A master's degree was the terminal degree of 82% of the full-time permanent two-year college mathematics faculty.
- Forty percent of full-time permanent faculty members in mathematics programs at two-year colleges were women and 13% were ethnic minorities.
- Sixty-one percent of full-time faculty members had a private fully enclosed office and 76% had a computer in their office. Only 14% of part-time faculty members had their own desk.
- The need for remediation was classified as a major problem by 63% of mathematics program heads, a larger percentage than for any other problem. Low student motivation and low success rate in developmental/remedial courses were second and third.
- A traditional mathematics or mathematics/computer science department was found in fewer than half of the two-year colleges with mathematics programs. More common was a division structure, where mathematics is combined with science or other disciplines.
- In 30% of two-year colleges, remedial/developmental mathematics courses were administered separately from the mathematics department/program.

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

Trends in the number of full-time permanent and part-time mathematics program faculty members

Table TYR.17 shows that the number of full-time permanent faculty members in two-year college mathematics programs was 7578 in 1995 and the number of part-time faculty members was 14,266. The faculty increased by 356 full-timers and 586 part-timers from 1990 to 1995.

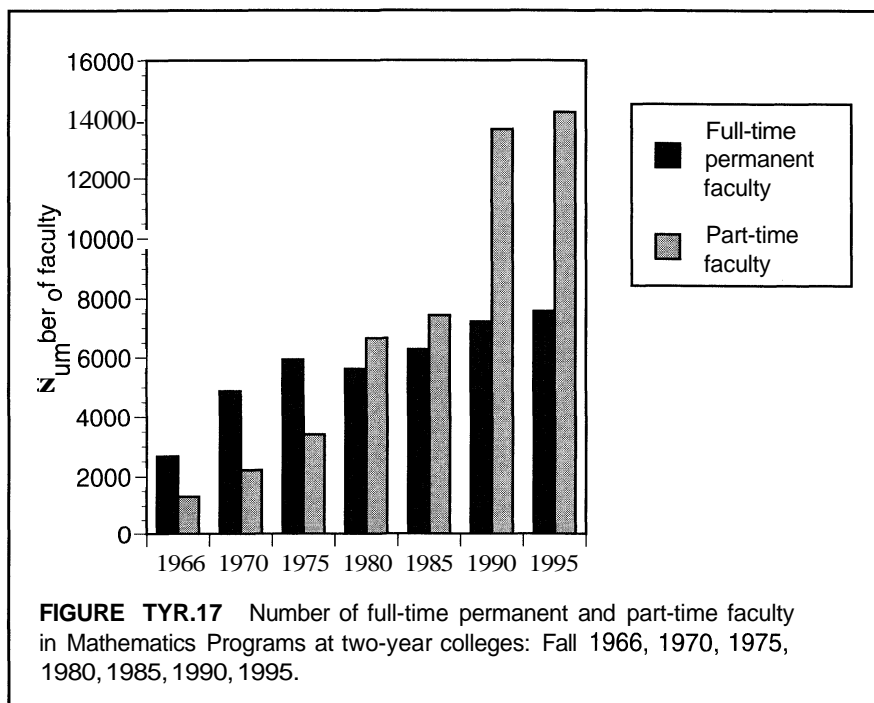
Part-time faculty members made up 65% of the two-year college mathematics program faculty. This is the same percentage as in 1990. However, the percentage was 54% in 1980 and 31% in 1970.

Part-time faculty members taught 38% of all sections (see Table TYR.9). Not surprisingly, 79% of mathematics programs heads classified "need to use part-time faculty for too many courses" as somewhat of a problem or a major problem (see Table TYR.46).

In Fall 1995, there were 164 full-time temporary faculty members such as sabbatical replacements.

TABLE TYR.17 Number of full-time permanent and part-time faculty in Mathematics Programs at two-year colleges: Fall 1966, 1970, 1975, 1980, 1985, 1990, 1995.

	1966	1970	1975	1980	1985	1990	1995
Full-time permanent faculty	2677	4879	5944	5623	6277	7222	7578
Part-time faculty	1318	2213	3411	6661	7433	13680	14266



Teaching assignment of full-time permanent and part-time faculty

The average required teaching assignment for a full-time permanent two-year college mathematics faculty member in 1995 was 15.8 hours a week (Table TYR.18). In 1990, it was 14.7 hours and in 1985, 16.1 hours. (Previous CBMS surveys have found regional differences, with average teaching assignment highest in the west and lowest in the New England/mid-Atlantic states.)

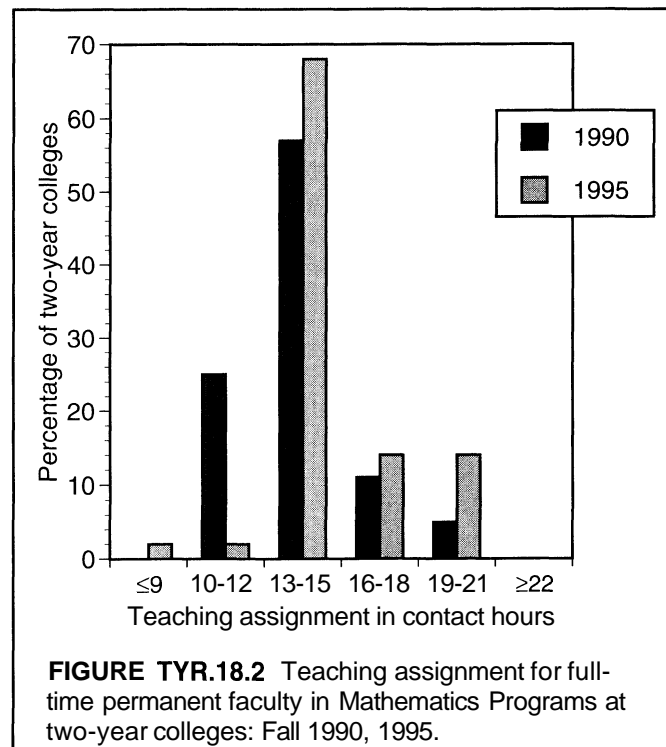
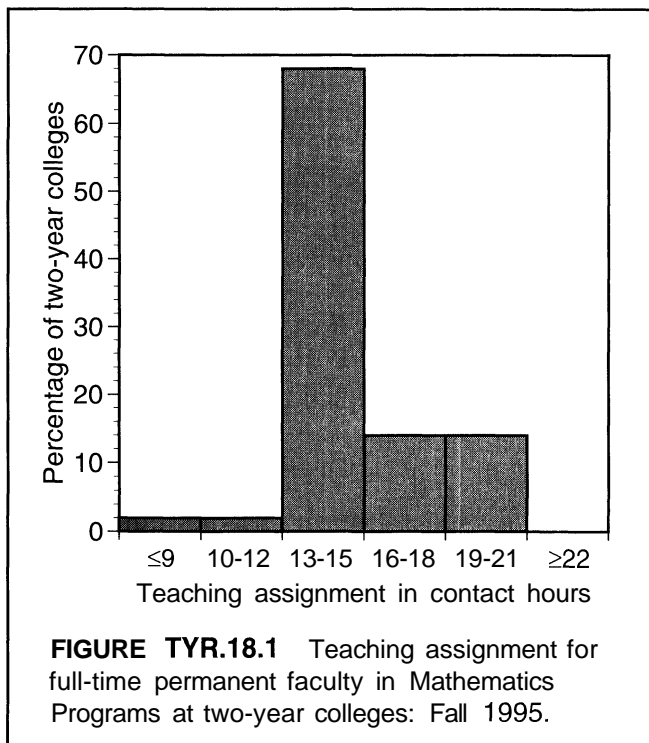
About 6990 (49%) of the 14,266 part-time faculty members taught six units or more at that college. In 39% of the colleges, office hours were required of part-time faculty. Of these, 11% gave extra pay for the office hours. In 60% of the colleges, part-time faculty were paid on the same pay scale as full-time faculty members who teach extra hours for extra pay, in 5% of the colleges part-timers were paid more, and in 35% of the colleges they were paid less.

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

Teaching assignment in contact hours	≤9	10-12	13-15	16-18	19-21	≥22
Percentage of two-year colleges	2	2	68	14	14	0)

- Average contact hours for full-time permanent faculty: 15.8
- Percentage of the full-time permanent faculty who teach extra hours for extra pay at their two-year college: 48%
- Average number of extra hours for extra pay: 4.4

(1) less than half of 1%



Extra teaching by full-time faculty and other occupations of part-time faculty

Table TYR.18 also shows that 48% of all full-time permanent two-year college mathematics faculty members taught extra hours for extra pay at their own two-year college. (In addition, 7% taught at other schools.) A slight majority of them taught three units or fewer. The average number of extra hours for extra pay for faculty members who taught at their own college was 4.4. In 1990, the percentage was 44% and the average number of hours was 4.7.

Thirty-five percent of part-time two-year college faculty members were not employed full time elsewhere and were not graduate students (Table TYR.19). In 1990, the percentage was 27% and in 1985 it was 21%. The percentage who were employed full time in a high school continued to drop from 37% in 1985 to 30% in 1990 to 28% in 1995. Mathematics program heads estimated that 3052 (21%) of the 14,266 part-time faculty members were seeking full-time permanent employment in a two-year college.

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

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

Education of Two-Year College Mathematics Program Faculty

Highest degree of full-time permanent faculty

A master's degree was the terminal degree of 82% of the full-time permanent two-year college mathematics faculty. As shown in Table TYR.20, the percentage of faculty with a doctorate remained at 17%. The percentage whose terminal degree is a bachelor's degree continued to approach zero.

Nineteen percent of new hires for 1995-1996 had a doctorate (see Table TYR.36). Thus, the percentage of new hires with doctorates was about the same as the per-

centage of full-time permanent faculty with doctorates. However, there is some indication that two-year colleges are hiring more new full-time faculty members with doctorates than they did previously. Previous CBMS surveys have found that two-year colleges hire very few people with doctorates and that people earn their doctorates while on the job. The 1990 survey found, for example, that 2% of new hires had doctorates.

Table TYR.21 gives the field of highest degree of full-time permanent two-year college mathematics faculty. Sixty-six percent of the master's degrees were in mathematics. Thirty-five percent of the doctorates were in mathematics.

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.

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

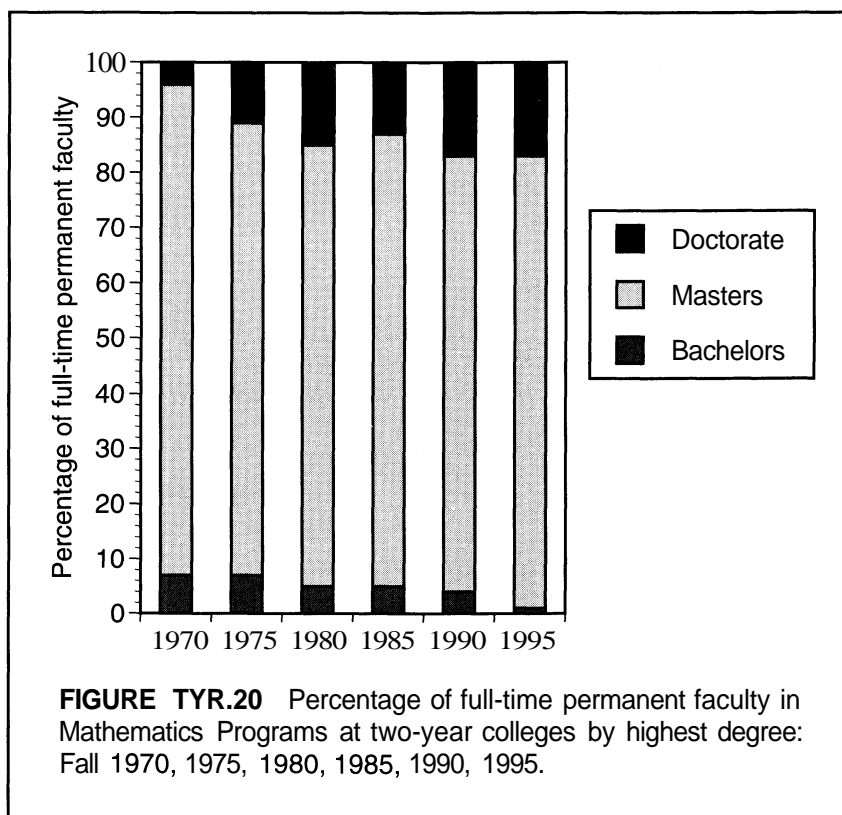


TABLE TYR.21 Percentage of 7578 full-time permanent faculty in Mathematics Programs at two-year colleges by field and highest degree: Fall 1995.

Field	Percentage having as highest degree			Total
	Doctorate	Masters	Bachelors	
Mathematics	6	54	1	61
Mathematics Education	7	17	0	24
Statistics	(1)	2	0	2
Computer Science	(1)	3	0	3
Other fields	3	6	(1)	9
Total	17	82	1	100%

(1) less than half of 1%.

Highest degree of full-time temporary and part-time faculty

As shown in Table TYR.22, the percentage of full-time temporary and part-time two-year college faculty with a doctorate remained steady at 7%. The percentage with a bachelor's degree as their terminal degree was 18%.

Table TYR.23 gives the field of highest degree of full-time temporary and part-time two-year college mathematics faculty. Fifty-seven percent of the master's degrees were in mathematics. Forty-three percent of the doctorates were in mathematics.

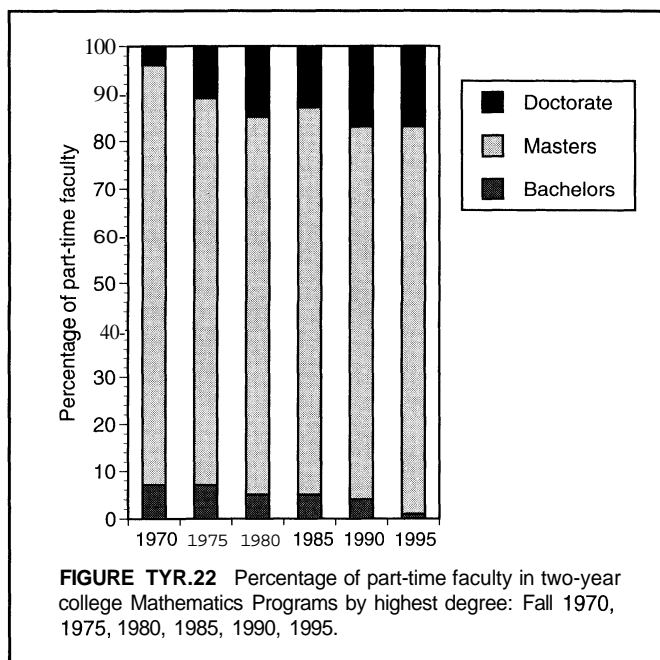
TABLE TYR.22 Percentage of part-time faculty in Mathematics Programs at two-year colleges by highest degree: Fall 1970, 1975, 1980, 1985, 1990, 1995.

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

TABLE TYR.23 Percentage of 14430 full-time temporary and part-time faculty in Mathematics Programs at two-year colleges by field and highest degree: Fall 1995.

Field	Percentage having as highest degree			Total
	Doctorate	Masters	Bachelors	
Mathematics	3	43	12	58
Mathematics Education	1	19	3	23
Statistics	(1)	1	0)	1
Computer Science	(1)	2	0)	2
Other fields	3	11	3	17
Total	7	76	18	100%

(1) 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

Forty percent of full-time permanent faculty members in mathematics programs at two-year colleges were women (Table TYR.24). Twenty years ago the percentage was 21%. While the total faculty size grew

by 1634 during the years 1975 to 1995, the number of women increased by 1751 and the number of men decreased by 117. For 1995-1996, 44% of the new hires were women (see Table TYR.37).

The percentage of the 2924 master's degrees in mathematics granted in the United States to U.S. residents who are women rose to 42% in 1992-1993 (see Table TYR.25). In each year from 1970 to 1985, the percentage was 35% or less (National Center for Education Statistics).

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.

	1975	1980	1985	1990	1995
Men	4696 (79%)	4217 (75%)	4831 (68%)	4767 (66%)	4578 (60%)
Women	1848 (21%)	1406 (25%)	1846 (31%)	2454 (84%)	3066 (40%)
Total	6544 (100%)	5623 (100%)	6677 (100%)	7222 (100%)	7644 (100%)

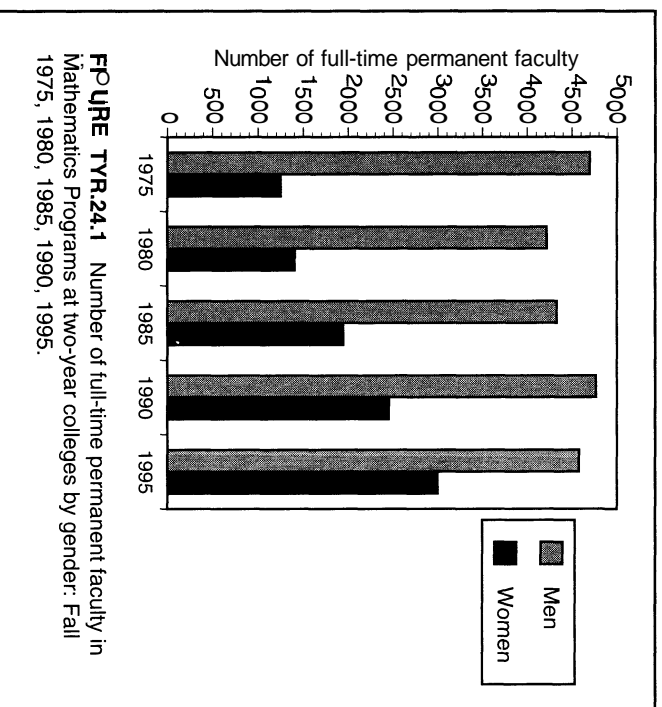


FIGURE TYR.24.1 Number of full-time permanent faculty in Mathematics Programs at two-year colleges by gender: Fall 1975, 1980, 1985, 1990, 1995.

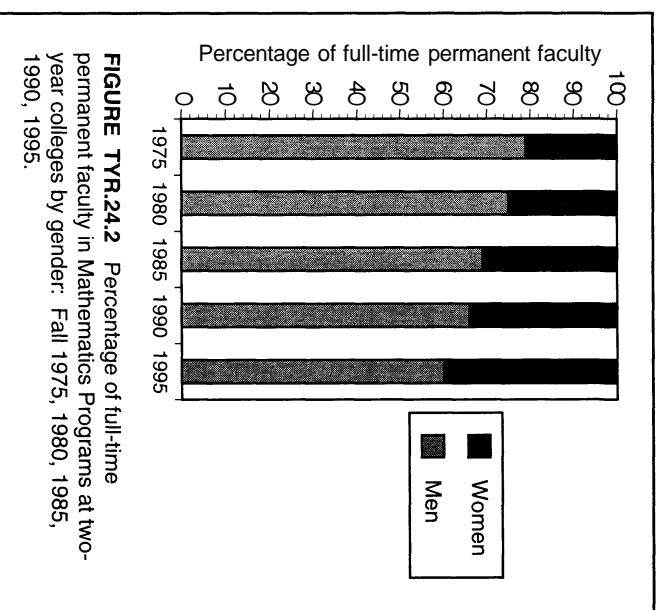


FIGURE TYR.24.2 Percentage of full-time permanent faculty in Mathematics Programs at two-year colleges by gender: Fall 1975, 1980, 1985, 1990, 1995.

TABLE TYR.25 Percentage of full-time permanent faculty and full-time temporary and part-time faculty in Mathematics Programs at two-year colleges by gender: Fall 1995. Also U.S. master's degrees in mathematics granted to U.S. residents by gender: 1992-93.

	Percentage of		
	full-time permanent faculty	full-time temporary and part-time faculty	Master's degrees in mathematics granted in the U.S. in 1992-93 to U.S. residents*
Men	60	59	58
Women	40	41	42
	100%	100%	100%
Total	7578	14430	2924

* 1995 Digest of Education Statistics. National Center for Education Statistics.

Ethnicity and gender of full-time permanent two-year college mathematics program faculty

Thirteen percent of full-time permanent faculty were members of ethnic minorities (Table TYR.26). African-Americans made up the largest group, comprising 5% of the total full-time permanent faculty (Table TYR.27). The percentage of women among ethnic group minorities didn't vary much from the 40% overall percentage except that 34% of Asian/Pacific Islanders are women (Table TYR.28). Every ethnic group except non-Hispanic white was proportionally

larger among the full-time permanent faculty who were under age 40 than among the entire full-time permanent faculty. Similarly, every ethnic group except non-Hispanic white was proportionally larger among the full-time permanent faculty who were under age 40 than among those to whom master's degrees in mathematics were granted in 1992-1993 (Table TYR.29).

For 1995-1996, 17% of the new hires were ethnic minorities (see Table TYR.37).

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.

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

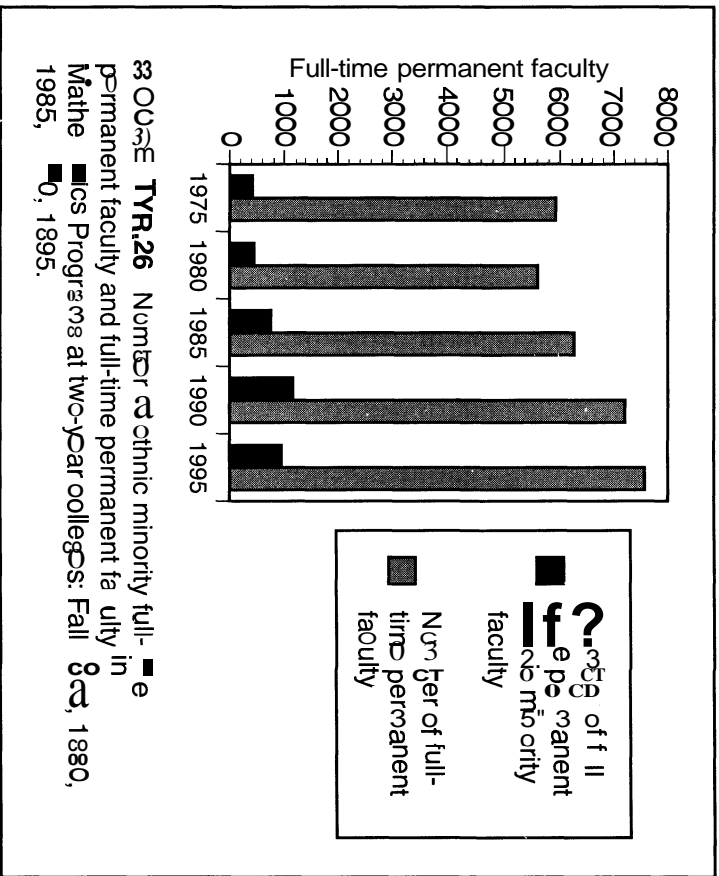


FIGURE 26. Number of ethnic minority full-time permanent faculty and full-time permanent faculty in Mathematics Programs at two-year colleges: Fall 1980, 1985, 1985, 1990, 1995.

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

Ethnic group	Percentage of full-time permanent faculty			
	1980	1985	1990	1995
Asian, Pacific Islander	8	8	4	4
Bon (Hispanic)	8	4	4	5
American Indian, Eskimo, Aleut	1	1	1	(1)
Mexican American, Puerto Rican or other Hispanic	1	1	7	8
White (non-Hispanic)	82	88	84	87
Unknown	ns	ns	na	1
Number of full-time permanent faculty	100% 5623	100% 6277	100% 7578	100% 7578

(1) less than half of 1%

TABLE TYR.28 Number and percentage of full-time permanent faculty in Mathematics Programs at two-year colleges by ethnic group and number and percentage women by ethnic group: Fall 1995.

Ethnic group	Number of full-time permanent faculty	Percentage of full-time permanent faculty	Number of full-time permanent women	Percentage women by ethnic group
Asian, Pacific Islander	326	4%	110	34%
Black (non-Hispanic)	362	5%	152	42%
American Indian, Eskimo, Aleut	19	(1)	6	32%
Mexican American, Puerto Rican or other Hispanic	230	3%	97	42%
White (non-Hispanic)	6566	87%	2619	40%
Status not known	74	1%	16	12%
Total	7578	100%	2999	40%

(1) less than half of 1%

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 1995. Also U.S. master's degrees in mathematics granted to U.S. residents by ethnic group in 1992-1993.

Ethnic Group	Percentage of		
	full-time permanent faculty	full-time permanent faculty under age 40	Master's degrees in mathematics granted in the U.S. in 1992-93 to U.S. residents*
Asian, Pacific Islander	4	8	7
Black (non-Hispanic)	5	6	4
American Indian, Eskimo, Aleut	(1)	0)	(1)
Mexican American, Puerto Rican or other Hispanic	3	6	2
White (non-Hispanic)	87	80	87
Status not known	1	0)	0
Total	100% 7578	100% 1570	100% 2924

(1) less than half of 1%

* 1995 Digest of Education Statistics. National Center for Education Statistics.

Ethnicity and gender of full-time temporary and part-time two-year college mathematics program faculty

Fourteen percent of full-time temporary and part-time faculty were members of ethnic minorities (Table

TYR.30). African-Americans made up the largest group, comprising 5% of the total full-time temporary and part-time faculty (Table TYR.31).

TABLE TYR.30 Percentage of ethnic minority full-time temporary and part-time faculty in Mathematics Programs at two-year colleges: Fall 1995.

Percentage of ethnic minorities among full-time temporary and part-time faculty	14%
Number of full-time temporary and part-time faculty	14430

TABLE TYR.31 Number and percentage of full-time temporary and part-time faculty in Mathematics Programs at two-year colleges by ethnic group and number and percentage women by ethnic group: Fall 1995.

Ethnic group	Number of full-time temporary and part-time faculty	Percentage of full-time temporary and part-time faculty	Number of full-time temporary and part-time women	Percentage women by ethnic group
Asian, Pacific Islander	619	4%	248	40%
Black (non-Hispanic)	763	5%	298	39%
American Indian, Eskimo, Aleut	14	0)	8	57%
Mexican American, Puerto Rican or other Hispanic	458	3%	163	36%
White (non-Hispanic)	11792	82%	4949	42%
Status not known	785	5%	257	37%
Total	14430	100%	5923	41%

(1) less than half of 1%

Age distribution of full-time permanent two-year college mathematics program faculty

The average age of full-time two-year college mathematics program faculty continued to climb and in Fall 1995 was 47.2 years. In 1990, it was 45.4 years. As shown in Table TYR.32, the percentage under age 40

slid gradually from 47% in 1975 to 21% in 1995.

Women were more heavily represented in the younger age groups (Table TYR.33) and were a majority in the 35-44 year old group. Ethnic minorities also tended to be younger than the faculty as a whole (Table TYR.34).

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.

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

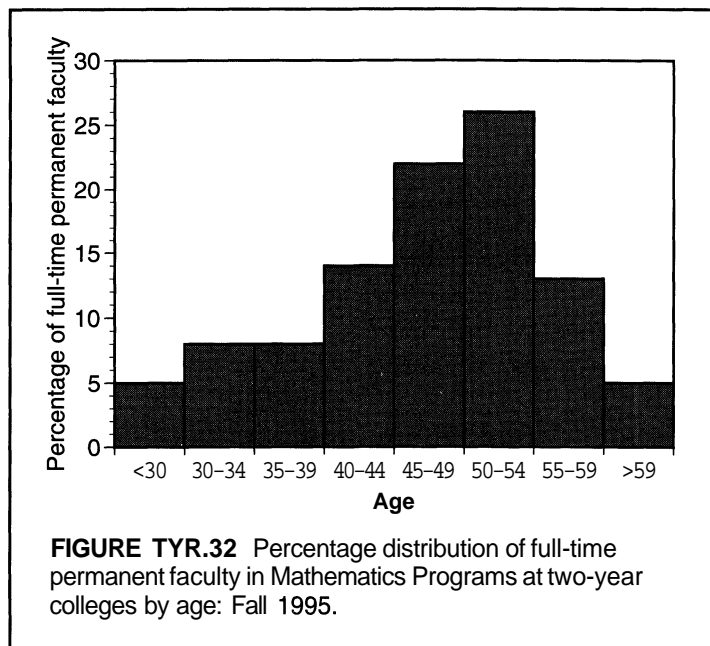


TABLE TYR.33 Percentage of full-time permanent faculty in Mathematics Programs at two-year colleges by age and by gender; also percentage women by age: Fall 1995.

Age	Percentage of full-time permanent faculty		Percentage women by age
	Women	Men	
< 35	6	7	46
35-44	12	11	53
45-54	18	29	38
> 54	4	14	23
Overall	40%	60%	40%

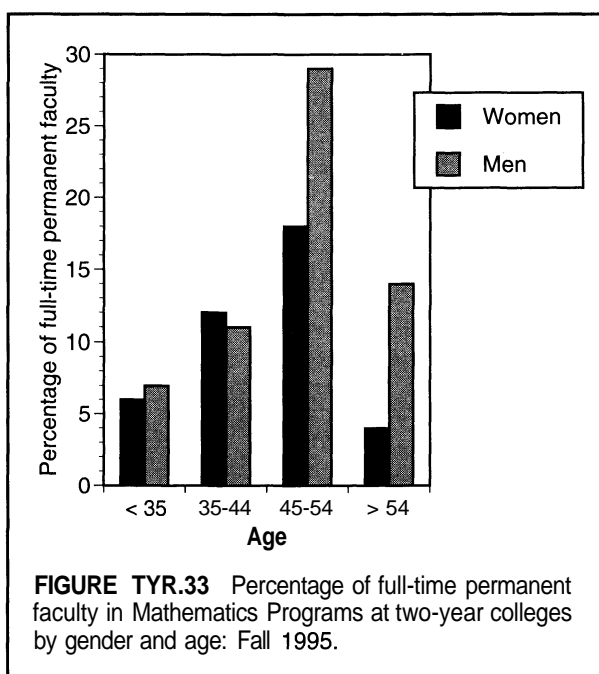


TABLE TYR.34 Percentage of ethnic minority full-time permanent faculty in Mathematics Programs at two-year colleges by age: Fall 1980, 1985, 1990, 1995.

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

Demographics of Full-Time Permanent Faculty Newly Hired for 1995-1996

An estimated 350 people were newly hired as full-time permanent faculty members in mathematics programs at two-year colleges for the academic year 1995-1996 (Table TYR.35). In 1990, the corresponding number of full-time permanent hires was almost 600. In 1995, 30% were hired directly out of graduate school—about the same percentage as in 1990. However in 1995, 62% of the new full-time permanent

hires had previously taught in that program either full time or part time. This percentage is up from 47% in 1990.

New faculty rarely come from secondary schools. This was not the case 20 years ago. 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*

TABLE TYR.35 Number and percentage of full-time permanent faculty newly hired for Mathematics Programs at two-year colleges for 1995-1996 by source.

Source	Number of hires	Percentage of hires
Graduate school	106	30
Part-time or full-time temporary employment at your college	68	19
Teaching in a four-year college or university	63	18
Teaching in another two-year college	48	14
Unemployed	33	9
Nonacademic employment	19	5
Teaching in a secondary school	12	4
Total	350	100%

TABLE TYR.36 Number and percentage of full-time permanent faculty newly hired for Mathematics Programs at two-year colleges for 1995-96 by highest degree.

Highest degree	Number of hires	Percentage of hires
Doctorate	67	19
Masters	280	80
Bachelors	2	1
Total	350	100%

College Teachers of Mathematics, Rocky Mountain Mathematics Consortium, 1979.)

Nineteen percent of the new hires had a doctorate, up from 2% in 1990 (Table TYR.36). As mentioned previously, this increase may reflect the relatively high unemployment rate for new PhDs in mathematics during 1990-1995. For 1995-1996, 44% of the new hires were women.

Table TYR.37 shows that non-Hispanic whites made

up 82% of new hires for 1995-1996. Thirteen percent were Asian/Pacific Islander. African-Americans were 1% and Hispanics 3%. Table TYR.38 gives the ages of new hires. The average age was about 35.

Note that the 1990 percentages include full-time temporary hires, but the 1995 percentages do not include this group. Information about gender, ethnicity, and age of new hires was not collected in previous surveys.

TABLE TYR.37 Number and percentage of full-time permanent faculty newly hired for Mathematics Programs at two-year colleges for 1995-96 by ethnic group.

Ethnic group	Number of hires	Percentage of hires
Asian, Pacific Islander	43	13
Black(non-Hispanic)	6	1
Mexican American, Puerto Rican or other Hispanic	6	3
White (non-Hispanic)	288	81
Other	7	2
Total	350	100%

Percentage of hires who were women: 44%

TABLE TYR.38 Number and percentage of full-time permanent faculty newly hired for Mathematics Programs at two-year colleges for 1995-96 by age.

Source	Number of hires	Percentage of hires
Under 30	104	30
30-34	127	36
35-39	29	8
40-44	47	13
45-49	17	5
50-54	14	4
55-59	9	3
60 and over	3	1
Total	350	100%

Outflow of Full-Time Permanent Faculty

During the academic year 1994-1995, 402 people left their full-time permanent two-year college mathematics teaching positions. For 1989-1990, the number who left was 317 and for 1984-1985 it was 449. In 1994-1995, about 68% left due to death or retire-

ment (Table TYR.39). The "other" category includes reasons for leaving that varied from disability to immigration problems to termination for poor performance. From Tables TYR.32 and TYR.38, we can infer that people begin to leave in fairly large numbers after age 50.

TABLE TYR.39 Outflow of full-time permanent faculty from Mathematics Programs at two-year colleges for 1994-1995.

Status	Number
Died or retired	274
Teaching in a four-year college or university	5
Teaching in another two-year college	27
Teaching in a secondary school	0
Left for a nonacademic position	34
Returned to graduate school	9
Other	30
Unknown	23
Total	402

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. Table TYR.40 gives the office

facilities available to full-time permanent faculty members. Sixty-one percent had a private fully enclosed office. Table TYR.41 gives the availability of desks to part-time faculty members. Only 14% had their own desk.

TABLE TYR.40 Percentage of full-time permanent faculty in Mathematics Programs at two-year colleges by type of office: Fall 1995.

Office	Percentage of full-time permanent faculty
Private, fully enclosed office	61
Two-person, fully enclosed office	27
Other office facilities, including cubicles	12
No desk or office	(1)
	100%

(1) less than half of 1%

TABLE TYR.41 Percentage of part-time faculty in Mathematics Programs at two-year colleges by desk availability: Fall 1995.

Desk availability	Percentage of part-time faculty
Have their own desk	14
Share a desk with one other person	9
Share a desk with two or more other people.	43
Have no desk	35
	100%

Seventy-six percent of the full-time permanent faculty had a computer or terminal in their office (Table TYR.42), and 55% used e-mail.

The teaching of permanent full-time mathematics faculty members is periodically evaluated in 100% of two-year colleges. The most common method of eval-

uating teaching is evaluation forms completed by students, which were used by 97% of two-year college mathematics programs. Observation of classes by faculty or administrators, self-evaluation, and evaluation of written course materials were also common (Table TYR.43).

TABLE TYR.42 Percentage of full-time permanent faculty in Mathematics Programs at two-year colleges by computer facilities available: Fall 1995.

Computer facilities	Percentage of full-time permanent faculty
Computer or terminal in office	76
No computer or terminal in office, but shared computers or terminals nearby	21
No convenient access or no access at all to computers or terminals	3
	100%

Note: 55% of full-time permanent faculty use email.

TABLE TYR.43 Percentage of the 1023 Mathematics Programs at two-year colleges using various methods of evaluating teaching: Fall 1995.

Method of evaluating teaching	Percentage of Mathematics Programs at two-year colleges using the method
Evaluation forms completed by students	97
Observation of classes by other faculty members or department chair	55
Self-evaluation such as teaching portfolios	44
Observation of classes by division head (if different from chair) or other administrator	43
Evaluation of written course material such as lesson plans, syllabus, or exams	39
Other methods	10

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

Some form of continuing education is required of full-time permanent faculty members in 20% of two-year college mathematics programs. Typically, this continuing education consists of in-house activities. A few two-year colleges require six college credits within a five- to seven-year period.

Full-time permanent two-year college mathematics teachers were generally active in professional activities (Table TYR.44). Seventy-three percent attended at

least one professional meeting during the 1994-1995 academic year. Another 64% regularly read articles in professional journals. One out of five gave a talk at a professional meeting.

Activities that have increased in the last twenty years include attending at least one professional meeting and giving a talk at a professional meeting. (The American Mathematical Association of Two-Year Colleges (AMATYC) was founded in 1975 and in 1996 had about 2200 members—not all of them two-year college teachers.) Activities that have declined in the last twenty years include taking an upper division or graduate mathematics class and publishing a textbook.

TABLE TYR.44 Percentage of full-time permanent faculty in Mathematics Programs at two-year colleges who participated in various professional activities during academic year 1994-1995. Historical data for 1975, 1980, 1985, 1990, 1995.

Activity	Percentage of full-time permanent faculty				
	1975	1980	1985	1990	1995
Attended at least one professional meeting	47	59	70	67	73
Took an upper division or graduate mathematics class	21	22	31	15	12
Attended a mini-course or short course	na	na	31	27	34
Gave a talk at a professional meeting	9	15	16	15	20
Regularly read articles in professional journals	47	57	72	57	64
Had an expository article published	5	6	6	5	4
Had a research article published	na	na	3	4	2
Had a textbook published	15	10	4	6	3
Received a new grant from outside their college	na	na	na	na	5
Received a new grant from their college	na	na	na	na	6

Problems in Two-Year College Mathematics Programs

As was the case in 1985 and 1990, the need for remediation was classified as a major problem by more program heads than was any other problem (Table TYR.45). Low student motivation and low success rate in developmental/remedial courses were second and

third. Table TYR.46 gives the percentage of program heads who rated each category as a major problem, somewhat of a problem, or minor/no problem in 1995. Problems not in the table that were mentioned by several mathematics program heads include inadequate pay for part-time faculty members, lack of office space for part-time faculty members, and a nonsupportive administration.

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

Problem	Percentage of program heads classifying problem as major		
	1985	1990	1995
Too many students needing remediation	60	65	63
Low student motivation	na	38	51
Low success rate in developmental/remedial courses	na	na	34
Faculty salaries too low	na	na	31
Need to use part-time faculty for too many courses	na	na	30
Inadequate computer facilities for student services	na	na	23
Inadequate computer facilities for faculty use	27	7	22
Inadequate travel funds for faculty	41	26	21
Inadequate departmental support services (secretary, etc.)	41	26	15
Low success rate in transfer-level courses	na	na	15
Inadequate classroom space	21	18	14
Inadequate office space	19	16	14
Class sizes too large	27	10	11
Maintaining vitality of faculty	39	22	11
Staffing computer science courses	34	8	8
Coordinating mathematics courses with high schools	19	9	8
Too few students who intend to transfer actually do	na	na	7
Lack of curricular flexibility because of transfer requirements	na	10	6
Staffing statistics courses	na	na	4

TABLE TYR.46 Percentage of program heads of Mathematics Programs at two-year colleges classifying various problems by severity: Fall 1995.

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	63
Low student motivation	9	40	51
Low success rate in developmental/remedial courses	23	44	34
Faculty salaries too low	27	42	31
Need to use part-time faculty for too many courses	21	49	30
Inadequate computer facilities for student services	38	39	23
Inadequate computer facilities for faculty use	51	27	22
Inadequate travel funds for faculty	40	40	21
Inadequate departmental support services (secretary, etc.)	57	29	15
Low success rate in transfer-level courses	43	43	15
Inadequate classroom space	54	32	14
Inadequate office space	62	25	14
Class sizes too large	56	33	11
Maintaining vitality of faculty	55	35	11
Staffing computer science courses	73	19	8
Coordinating mathematics courses with high schools	67	25	8
Too few students who intend to transfer actually do	67	26	7
Lack of curricular flexibility because of transfer requirements	70	25	6
Staffing statistics courses	71	26	4

Administration of Mathematics Programs in Two-Year Colleges

Seventy-three percent of two-year colleges operate under the semester system with almost all of the rest on the quarter system (Table TYR.47). Forty-three percent of mathematics programs were administered as "departments." A division structure, where mathematics is combined with science or other disciplines, was found in over half of two-year colleges with mathematics programs (Table TYR.48). As a result, the person who filled out the survey form, who was supposed

to be "the person who is directly in charge of the mathematics program or department" varied from a regular mathematics faculty member to a mathematics department chair to a person from the humanities in charge of an arts and sciences division. On average, the person who filled out the form had been in charge of the mathematics program for six years. Forty-two percent had been in charge for three years or less.

In 30% of two-year colleges, remedial/developmental mathematics courses were administered separately from the mathematics department/program.

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

Academic calendar	Percentage of Mathematics Programs at two-year colleges
Semester	73
Trimester	0
Quarter	26
Other	1
	100%

TABLE TYR.48 Percentage of Mathematics Programs at two-year colleges by type of administrative structure: Fall 1995.

Administrative structure	Percentage of Mathematics Programs at two-year colleges
Mathematics department	31
Mathematics and computer science department	12
Mathematics and science department or division	34
No department or division structure	1
Other (mostly department or division with mathematics and other disciplines)	22
	100%