

Chapter 4

Faculty Demographics in Mathematical Sciences Departments of Four-Year Colleges and Universities

Introduction

In this chapter we consider data on the number, gender, age, and race/ethnicity of mathematical sciences faculty in doctoral-level, masters-level, and bachelors-level four-year mathematics departments, and also in doctoral-level and masters-level statistics departments having an undergraduate program in statistics. The same topics were presented in Chapter 1 tables for the profession as a whole. In this chapter we will consider differences across departments grouped according to the highest degree offered (“level of department”), by “type of appointment” (tenured, tenure-eligible, other full-time, postdoc), by highest degree obtained by the faculty (“doctoral” and “non-doctoral” faculty) and by gender. So that the discussion here can be relatively self-contained, we repeat some demographic data from Chapter 1.

- Table S.13 and Figure S.13.3 in Chapter 1 showed a pattern of increases in the estimated number of full-time faculty in all levels of mathematics departments combined, observed in the CBMS surveys of 2000, 2005, 2010, and 2015, and a pattern of decreases in the estimated number of part-time faculty that occurred until the current survey of 2015, when the number of part-time mathematics faculty increased significantly. Table S.13 and Figure S.13.5 showed a pattern of growth in the estimated numbers of full-time faculty in doctoral-level statistics departments, and relative stability in the estimated numbers of part-time faculty, over that same time frame for the doctoral-level statistics departments (the masters-level statistics departments were not included in the 2005 survey).
- Table S.13 and Figure S.13.3 of Chapter 1 showed that, in fall 2015, the estimated total number of full-time mathematics faculty was slightly larger than the fall 2010 estimate, but the 2010 estimate was within 1 SE of the 2015 estimate. However, the estimated number of part-time mathematics faculty increased by about 27% (more than 5 SEs from the 2010 estimate), ending the pattern of small declines in estimated numbers of part-time faculty in mathematics departments observed since 2000 (See Chapter 1, Figures S.13.2 and S.13.3). Tables F.1 and F.2 in this chapter break down these numbers further, showing that most of this growth

in part-time faculty occurred in the doctoral-level and bachelors-level mathematics departments.

- Larger growth was observed in the estimated numbers of full-time statistics faculty. Table S.13 and Figure S.13.5 of Chapter 1 indicated that in fall 2015, the estimated total number of full-time faculty in doctoral-level statistics departments increased 23% (almost 5 SEs), and the estimated number of part-time faculty in doctoral-level statistics departments increased 22% over fall 2010 (1.2 SE). The total number of full-time statistics faculty in doctoral-level statistics departments in 2000 was estimated at 808 faculty; the 2015 estimate is 1,237 (Chapter 1, Table S.13). Tables F.1 and F.3 in this chapter include the data for masters-level statistics departments, as well as for doctoral-level statistics departments, and are broken down further.
- Breaking down the number of full-time mathematics faculty by the type of appointment, by Table S.15 in Chapter 1, the components of the small growth in the estimated number of full-time mathematics faculty from fall 2010 to fall 2015 were a 6% decline in the estimated number of tenured faculty (a decline of 4.8 SEs), a 9% decline in the estimated number of tenure-eligible faculty (4.1 SEs), and a 22% (6.1 SEs) increase in the estimated number of “other full time faculty” (full-time, non-tenure-eligible faculty, including postdocs). These estimates are broken down further in Tables F.1 and F.2 in this chapter.
- Table F.1 (and Tables F.1.1 and F.2, which are derived from this table) in this chapter provide more detail on the estimated numbers of mathematics faculty, broken down by level of department, highest degree of the faculty, and by gender. The estimated numbers of tenured, and of tenure-eligible, faculty remained stable or declined from fall 2010 to fall 2015, the largest declines being a 20% (5 SEs) decline in masters-level tenure-eligible mathematics faculty, and a 12% (4.3 SEs) (respectively, 9% (2.5 SEs)) decline in tenured (respectively, tenure-eligible) mathematics faculty in the bachelors-level departments. The estimated number of tenured mathematics faculty at doctoral-level mathematics departments has

declined from the CBMS2000 estimate of 5,022 in each of the following CBMS surveys.

- Breaking down the estimated number of full-time statistics faculty in masters and doctoral-level statistics departments combined by type of appointment, Table S.15 in Chapter 1 showed that, from fall 2010 to fall 2015, the estimated number of tenured statistics faculty increased by 6% (1.3 SEs), the number of tenure-eligible statistics faculty decreased by less than 1%, and hence these were not significant changes. However, the number of other full-time statistics faculty (including postdocs) increased by 129 faculty (a 47% (5.9 SEs) increase). Tables F.1 and F.3 in this chapter break these estimates down further.
- In doctoral-level statistics departments the estimated number of tenured faculty in fall 2015 was 649, nearly the same as it was in fall 2000. The estimated number of tenure-eligible faculty has increased from 138 faculty in fall 2000, to 220 in fall 2015 (Table F.3 in this chapter, and in CBMS2000, p. 98).
- Table S.15 in Chapter 1 showed that the estimated number of other full-time faculty in all levels of mathematics departments combined, from fall 2010 to fall 2015, increased by 1,332 faculty to 7,261 faculty (a 22% increase (6.1 SEs) from fall 2010); this estimate includes an increase of 292 postdoc faculty (a 28% (4.8 SEs) increase from 2010). The estimated number of other full-time mathematics faculty has more than doubled in the past 15 years. The estimated number of mathematics postdocs increased 61% from 2005 (when this data was first collected) to 2015 (for the 2000 and 2005 data see CBMS2005 Table S.15, p. 35).
- Tables F.1 and F.2 of this chapter provide more detail on other full-time and postdoc appointments, broken down by level of mathematics department, highest degree of the faculty, and by gender. Increases in the estimated numbers of both other full-time and postdoc appointments were observed across all three levels of mathematics departments. Over the past fifteen years, the estimated number of other full-time faculty has more than doubled at the doctoral and bachelors-level mathematics departments, and increased 69% in the masters-level mathematics departments. Especially dramatic was the increased number of postdocs at bachelors-level mathematics departments, which grew from an estimated 6 postdocs in fall 2010 to an estimated 137 postdocs in fall 2015.
- In masters- and doctoral-level statistics departments combined, Table S.15 of Chapter 1 showed that the estimated number of other full-time faculty (including postdocs) increased from fall 2010 to fall 2015 by 129 faculty (5.9 SEs) to 401 other full-time faculty (a 47% increase from 2010), and, over that time period, the estimated number of postdocs increased by 30 postdocs (a 35% (2 SEs) increase from fall 2010).
- From Table F.3 we see that, in fall 2015, the number of other full-time faculty in doctoral-level statistics departments was estimated at 369 faculty. In fall 2000 there were 99 estimated other full-time faculty in doctoral-level statistics departments; hence, this category of faculty has more than tripled in the past 15 years. The estimated number of postdocs in doctoral-level statistics departments increased from 51 in 2005 to 113 in 2015, so this estimate has more than doubled from 2005 to 2015. The estimated numbers of other full-time faculty and of postdocs were smaller in fall 2015 than in fall 2010 in masters-level statistics departments. (See CBMS2005 Table F.3, p. 105 for data in 2000 and 2005.)
- The estimated numbers of faculty with a doctorate generally increased from fall 2010 to fall 2015. For example, it follows from Table F.1 that, from fall 2010 to fall 2015, in doctoral-level mathematics departments, the estimated number of part-time faculty with a doctorate increased by 59% (9 SEs), and the estimated number of other full-time faculty with a doctorate, who are not postdocs, increased 61% (7 SEs).
- Table S.15 in Chapter 1 showed that, in fall 2015, women comprised 31% of all full-time mathematics faculty, 22% of all tenured mathematics faculty, 36% of all tenure-eligible mathematics faculty, and 22% of all mathematics postdocs, all estimates, except estimated percentage of postdocs, are a few percentage points above the estimated percentages in 2010. In statistics departments, in fall 2015, women were 27% of all full-time faculty, 20% of tenured faculty, 35% of tenure-eligible faculty, and 19% of all postdocs; all of these estimated percentages, except the percentage of tenure-eligible faculty and the percentage of women postdocs, are up over 2010. Tables F.1, F.2, and F.3 and Figure F.3.1 in this chapter provide more detail on the estimated numbers of women faculty. Among the significant changes from 2010 was an increase in the estimated number of tenured women faculty in doctoral-level mathematics departments, which was up 21% (7.5 SEs) in fall 2015 over fall 2010.
- Table S.16 in Chapter 1 gave estimated age distribution of tenured and tenure-eligible mathematics faculty. The percent of tenured and tenure-eligible faculty age 65 and older increased from 8% in 2005 to 12% in 2010, and is estimated at 13% in 2015, suggesting a decline in the rate of retirement among the most senior faculty. Tables S.17 in Chapter 1 showed a similar trend in statistics faculty, where

the estimated percent of tenured and tenure-eligible faculty aged 65 and older increased from 8% in 2005 to 10% in 2010, and is estimated at 14% in 2015. Table F.4 in this chapter gives data on the age distribution of faculty, broken down by level of department, and the average ages of faculty in fall 2005, 2010, and 2015.

- Tables S.18 and S.19 of Chapter 1 showed that the estimated distribution of faculty by race/ethnicity in mathematics and statistics departments in fall 2015 had changed only slightly from fall 2010. The estimated percentages of White male faculty continued to decrease slightly, as they had over the recent CBMS surveys, and the estimated percentages of Asian faculty were generally slightly higher in fall 2015 than in previous surveys. The estimated percentages of Black and Hispanic faculty remain small. More information on race-ethnicity and gender is contained in Tables F.5 (full-time faculty) and F.6 (part-time faculty) in this chapter; Table F.5 estimated that, in fall 2015, 22% (respectively 11%) of tenured and tenure-eligible statistics faculty were Asian male (respectively, female); in fall 2000 these percentages were estimated at 15% (4%) [CBMS2000 Table SF.12, p. 26].

Data sources and notes on the tables

Each fall the AMS conducts the Annual Survey of the Mathematical Sciences (that we will call just the Annual Survey when the context is clear), a collection of national surveys of mathematical sciences departments at four-year institutions. This work is sponsored by the AMS, ASA, IMS, MAA, and SIAM with oversight provided via the Joint Data Committee (JDC) whose members are appointed by the sponsoring societies. Reports on these surveys are published in the Notices of the American Mathematical Society each year, and online at <http://www.ams.org/profession/data/annual-survey/annual-survey>. Beginning with the CBMS survey in 2005, the demographic data for the CBMS survey is collected as part of the Annual Survey; sampled departments were asked additional demographic questions that normally do not appear on the Annual Survey.

In comparing data from the CBMS surveys to data published in the Annual Surveys, one must keep in mind several differences between the survey reports. The Annual Surveys do not include postdoctoral appointments as a part of “other full-time faculty” (OFT), while CBMS surveys do – i.e. CBMS surveys list “other full-time faculty” (which includes postdoctoral appointments), and also lists the portion of other full-time faculty that are postdoctoral appointments. The CBMS surveys of “statistics” include only statistics departments that offer an undergraduate program in statistics, while the Annual Surveys go to all depart-

ments of statistics and biostatistics that award a Ph.D. The 2005 Annual Survey did not include masters-level statistics departments, and the 2010 and 2015 surveys did include these departments; hence comparisons to 2005 are for doctoral-level statistics programs, and comparisons to 2010 data include masters-level programs (it should be noted that there are a smaller number of masters-level statistics programs and estimates for these departments tend to have large standard errors). The Annual Surveys use stratified random samples of bachelors-level mathematics programs but a census of doctoral and masters-levels programs.

Table entries are rounded to the nearest integer, and the sum of rounded numbers is not always equal to the rounded sum. In the text that follows, the standard error (SE) in many of the estimates is provided along with the estimate (e.g. “estimate 4,596 (SE 58)”; the standard errors for all CBMS2015 tables can be found in Appendix VIII. The change in an estimate from the estimate in a previous survey is often expressed both as percentage change and as the number of SEs that change represents (e.g. “increased 22% (1.2 SEs)”).

Numbers of full-time mathematics and statistics faculty

Table S.13 and Figure S.13.3 in Chapter 1 showed a pattern of increases in the estimated number of full-time faculty in all levels of mathematics departments combined, observed in the CBMS surveys of 2000, 2005, 2010, and 2015, and a pattern of decreases in the estimated number of part-time mathematics faculty that occurred until the current survey in 2015, when the estimated number of part-time faculty increased. Table S.13 showed that, in fall 2015, the estimated total number of full-time mathematics faculty plus part-time mathematics faculty for all levels of four-year mathematics departments combined increased by almost 7% from 2010 to 2015. From Table S.13 and Figures S.13.1 and S.13.3 we see that the estimated total number of full-time mathematics faculty in four-year colleges and universities across all types of departments increased slightly from 22,293 in fall 2010 to 22,532 in fall 2015; the SE on the 2015 estimate was 312, so the 2010 estimate is within 1 SE of the 2015 estimate, and hence not significantly different. The fall 2005 estimate was 21,885 faculty, and the fall 2000 estimate was 19,799 faculty.

Table S.13 and Figure S.13.5 in Chapter 1 showed a pattern of growth in the estimated numbers of full-time faculty in doctoral-level statistics departments, observed over the CBMS surveys of 2000, 2005, 2010, and 2015, and the relative stability in the estimated numbers of part-time faculty in doctoral-level statistics departments, over that same time frame; we note the masters-level statistics departments were

not included in the 2005 survey and hence are not included in Table S.13. Table S.13 and Figure S.14.3 of Chapter 1 indicated that, in fall 2015, the estimated total number of full-time statistics faculty plus part-time statistics faculty in doctoral-level statistics departments increased about 23% from the fall 2010 estimate (compared to the 5% growth observed from 2005 to 2010). The number of full-time faculty in doctoral-level statistics departments increased from 1,004 in fall 2010, to 1,237 in fall 2015, a 23% (4.9 SEs) increase, and is up 53% since fall 2000. The fall 2005 estimate was 946 faculty, and the fall 2000 estimate was 808 faculty.

Numbers of tenured and tenure-eligible mathematics faculty

Despite the possibly slight increase in the estimated number of full-time mathematics faculty, Table S.14 in Chapter 1 shows that the estimated number of tenured plus tenure-eligible mathematics faculty decreased over the past 10 years: from 17,256 in 2005, to 16,364 in 2010, to 15,270 in 2015, a loss of almost 2,000 tenured or tenure-eligible positions over 10 years, eliminating the gains that had been made since fall 2000, when the estimated number of tenured plus tenure-eligible faculty was 16,245 (data from 2000 and 2005 can be found in CBMS2005 Table S.15, p. 35).

Table S.15 in Chapter 1 showed that across all types of four-year mathematics departments combined, from fall 2010 to fall 2015, the estimated number of tenured faculty decreased by 768 faculty, and the estimated number of tenure-eligible faculty decreased by 326 faculty, producing a 6% (4.3 SEs) decrease in the total number of tenured faculty and a 9% (4.1 SEs) decrease in the number of tenure-eligible faculty.

Table F.1 in this chapter gives the estimated numbers of full-time and part-time mathematics and statistics faculty, broken down by the level of department (the highest degree the department offered), the type of appointment (tenured, tenure-eligible, other full-time, postdoc, part-time), the highest degree of the faculty (doctoral or non-doctoral), and faculty gender, comparing fall 2010 and fall 2015. Table F.1.1, derived from F.1, gives totals for full-time faculty across all of the levels of mathematics (combined) and statistics departments (combined) broken down by the highest degree and gender. Table F.2, derived from F.1, gives the estimated numbers of full-time mathematics faculty, broken down by the level of department, the type of appointment, and faculty gender, and Table F.3, derived from F.1, gives these same data for statistics departments.

From Table F.2 we see that for mathematics departments, except for the doctoral-level departments, where the estimated number of tenure-eligible faculty

was almost identical in fall 2010 and fall 2015, and also for the doctoral and masters-level mathematics departments, where the number of tenured faculty in 2015 was lower than (but within 1 SE of) the 2010 estimate, in each of the other levels of mathematics departments, the estimated numbers of tenured, and of tenure-eligible, faculty declined significantly from 2010 to 2015: a 20% (5 SEs) decline in masters-level tenure-eligible mathematics faculty, and a 12% (4 SEs) (respectively, 9% (2.5 SEs)) decline in tenured (respectively, tenure-eligible) mathematics faculty in the bachelors-level departments. Over the past 15 years, the estimated number of tenured faculty at doctoral-level mathematics departments shows a pattern of decline; it was estimated at 5,022 in fall 2000, at 4,719 in fall 2005, at 4,621 in fall 2010, and at 4,596 (with SE 58) in fall 2015. For bachelors-level departments, the estimated number of tenured faculty has a more varied pattern; the fall 2000 estimate was 4,817, the fall 2005 estimate was quite a bit larger at 5,612, the fall 2010 estimate was about the same at 5,693, and the fall 2015 was smaller at 5,018 (with SE 155); the 2000 estimate was 1.3 SEs below the 2015 estimate. (Data for 2000 and 2005 can be found in CBMS2005 Table F.2, p. 104.)

Numbers of tenured and tenure-eligible statistics faculty

Table S.14 of Chapter 1 showed that the estimated number of tenured faculty plus tenure-eligible faculty in doctoral-level and masters-level statistics departments combined grew by 4% (0.96 SEs) to 1,031, from fall 2010 to fall 2015. Table S.15 in Chapter 1 showed that, from fall 2010 to fall 2015, the estimated number of tenured statistics faculty increased by 6% (1.4 SEs), and the number of tenure-eligible statistics faculty decreased by 3% (0.5 SE), not significant changes. However, Table F.3 in this chapter shows both the estimated numbers of tenured, and of tenure-eligible, faculty grew from 2010 to 2015 in doctoral-level statistics departments, but declined in masters-level statistics departments.

To compare the data from fall 2015 to several previous CBMS surveys we consider the changes in the estimated numbers of tenured and tenure-eligible positions in doctoral-level statistics departments, since masters-level statistics departments were not surveyed in 2005. From Table F.3 we see that the estimated numbers of tenured and tenure-eligible faculty in doctoral-level statistics departments have increased over the past 15 years. In fall 2000, the estimated number of tenured faculty in doctoral-level statistics departments was 572, and, in fall 2015, the estimate was 649, an increase of 13% (2.3 SEs); in fall 2000, the estimated number of tenure-eligible faculty in doctoral-level statistics departments was 137, and, in fall 2015, it was 220, an increase of

TABLE F.1 Number of faculty, and of female faculty (F), in various types of mathematics departments and PhD and MA statistics departments, by highest degree and type of department, in fall 2015. (Fall 2010 figures are in parentheses, and postdocs are included in other full-time (OFT) faculty totals.)

Mathematics Depts	Univ (PhD)				Univ (MA)				Coll (BA)						
	Tenured	Tenure-eligible	OFT	Post-docs	Part-time	Tenured	Tenure-eligible	OFT	Post-docs	Part-time	Tenured	Tenure-eligible	OFT	Post-docs	Part-time
Mathematics Depts															
Doctoral Faculty	4591 (4,604)	998 (986)	2336 (1,739)	1150 (1,001)	588 (370)	2309 (2,369)	608 (758)	398 (237)	31 (16)	441 (354)	4780 (5,218)	1582 (1,712)	747 (627)	137 (6)	911 (609)
Doctoral (F)	635 (518)	260 (269)	652 (496)	234 (226)	151 (107)	587 (579)	244 (273)	307 (89)	3 (6)	148 (102)	1346 (1,408)	614 (546)	420 (158)	51 (0)	289 (220)
Non-doctoral Faculty	5 (16)	0 (8)	833 (756)	0 (0)	857 (731)	56 (65)	10 (17)	942 (749)	0 (1)	1469 (1,434)	238 (475)	93 (136)	2005 (1,821)	0 (0)	3416 (2,553)
Non-doctoral (F)	2 (6)	0 (1)	480 (449)	0 (0)	361 (326)	18 (26)	9 (11)	540 (427)	0 (1)	686 (659)	99 (203)	45 (127)	882 (828)	0 (0)	1612 (1,263)
Total Mathematics	4596 (4,621)	998 (994)	3170 (2,495)	1150 (1,001)	1445 (1,101)	2365 (2,434)	618 (775)	1339 (986)	31 (18)	1911 (1,787)	5018 (5,693)	1675 (1,848)	2752 (2,448)	137 (6)	4326 (3,161)
Total Mathematics (F)	637 (525)	260 (270)	1133 (946)	234 (226)	512 (433)	605 (605)	252 (284)	847 (516)	3 (7)	835 (761)	1445 (1,611)	659 (673)	1303 (987)	51 (0)	1901 (1,484)
Statistics Depts															
Doctoral Faculty	649 (579)	220 (207)	226 (184)	113 (71)	91 (84)	123 (145)	40 (57)	13 (20)	3 (15)	21 (9)					
Doctoral (F)	137 (95)	71 (84)	107 (61)	22 (18)	19 (15)	16 (20)	19 (18)	8 (7)	0 (7)	5 (0)					
Non-doctoral Faculty	0 (1)	0 (2)	143 (31)	0 (0)	37 (21)	0 (2)	0 (0)	19 (37)	0 (0)	5 (20)					
Non-doctoral (F)	0 (0)	0 (0)	129 (20)	0 (0)	19 (11)	0 (2)	0 (0)	8 (20)	0 (0)	3 (7)					
Total Statistics	649 (580)	220 (209)	369 (215)	113 (71)	128 (105)	123 (147)	40 (57)	32 (57)	3 (15)	27 (29)					
Total Statistics (F)	137 (95)	71 (84)	237 (82)	22 (18)	38 (26)	16 (22)	19 (18)	16 (26)	0 (7)	8 (7)					

TABLE F.1.1 Number of faculty, and of female faculty (F), in mathematics departments combined and of statistics departments combined in fall 2015. (Fall 2010 figures are in parentheses.)

	Tenured	Tenure-eligible	OFT	Post-docs	Part-time
Mathematics Depts	Univ (PhD) + Univ (MA) + Coll (BA)				
Doctoral Faculty	11,681 (12,191)	3,188 (3,456)	3,481 (2,603)	1,317 (1,024)	1,940 (1,332)
Doctoral (F)	2,568 (2,505)	1,118 (1,088)	1,379 (744)	288 (232)	588 (429)
Non-doctoral Faculty	298 (557)	103 (161)	3,780 (3,326)	0 (1)	5,742 (4,718)
Non-doctoral (F)	120 (235)	54 (139)	1,903 (1,705)	0 (1)	2,659 (2,249)
Total Mathematics	11,979 (12,747)	3,291 (3,617)	7,261 (5,929)	1,317 (1,025)	7,682 (6,050)
Total Mathematics (F)	2,688 (2,740)	1,171 (1,227)	3,282 (2,449)	288 (233)	3,248 (2,678)
Statistics Depts	Univ (PhD) + Univ (MA)				
Doctoral Faculty	772 (724)	260 (264)	239 (204)	116 (86)	112 (93)
Doctoral (F)	153 (115)	90 (102)	115 (68)	22 (24)	25 (15)
Non-doctoral Faculty	0 (3)	0 (2)	162 (69)	0 (0)	43 (41)
Non-doctoral (F)	0 (2)	0 (0)	137 (40)	0 (0)	21 (18)
Total Statistics	772 (727)	260 (267)	401 (272)	116 (86)	155 (133)
Total Statistics (F)	153 (117)	90 (102)	253 (108)	22 (24)	46 (32)

61% (5.9 SEs) (see CBMS2005 Table F.3, p. 105 for 2000 and 2005 estimates). Table F.3 in this chapter shows that, from fall 2010 to fall 2015, the estimated number of tenured faculty in doctoral-level statistics departments increased by 12% (2.5 SEs), and the estimated number of tenure-eligible faculty increased by 5% (1.1 SEs); from fall 2005 to fall 2010, the estimated number of tenured faculty in doctoral-level statistics departments decreased by 24 (4%), and the estimated number of tenure-eligible faculty increased by 30 (17%).

From Table F.3 we see that in masters-level statistics departments from fall 2010 to fall 2015 the estimated number of tenured faculty decreased by 24 faculty (16% (1.4 SEs)) and the estimated number

of tenure-eligible faculty decreased by 17 faculty (30% (1.7 SEs)).

Numbers of other full-time mathematics and statistics faculty

The category “other full-time faculty” is defined to be all full-time faculty who are not tenured or tenure-eligible, faculty with renewable positions, post-doctoral faculty, and visiting faculty; note that in the CBMS tables postdoctoral faculty are included in the count of other full-time faculty, and also are broken out from that category in the category “postdocs”. “Postdoctoral appointments” are defined as “temporary positions primarily intended to provide an opportunity to extend graduate training or to further research

TABLE F.2 Number of tenured, tenure-eligible, postdoctoral, and other full-time faculty in mathematics departments at four-year colleges and universities by gender and type of department in fall 2015. (Note: Postdoctoral faculty are included in other full-time totals.)

	Univ (PhD)			Univ (MA)			Coll (BA)			Total						
	Tenured	Tenure-eligible	Other full-time	Post-docs ¹	Tenured	Tenure-eligible	Other full-time	Post-docs ¹	Tenured	Tenure-eligible	Other full-time	Post-docs ¹				
Men, 2015	3958	739	2037	916	1760	366	493	28	3573	1015	1450	85	9292	2120	3979	1030
Women, 2015	637	260	1133	234	605	252	847	3	1445	659	1303	51	2688	1171	3282	288
Total, 2015	4596	998	3170	1150	2365	618	1339	31	5018	1675	2752	137	11979	3291	7261	1317
Men, 2010	4096	724	1549	775	1829	490	470	10	4082	1175	1461	6	10007	2390	3480	792
Women, 2010	525	270	946	226	605	284	516	7	1611	673	987	0	2740	1227	2449	233
Total, 2010	4621	994	2495	1001	2434	775	986	18	5693	1848	2448	6	12747	3617	5929	1025

¹ A postdoctoral appointment is a temporary position primarily intended to provide an opportunity to extend graduate training or to further research experience. Postdoctoral faculty are included in the other full-time-faculty totals throughout CBMS2015. This contrasts with publications of the AMS-ASA-IMS-MAA-SIAM Annual Survey since 2003, which list postdoctoral faculty as a category separate from other full-time-faculty. Before 2003, separate counts of postdoctoral faculty were not collected by the Annual Survey.

Note: Round-off may make marginal totals seem inaccurate.

TABLE F.3 Number of tenured, tenure-eligible, other full-time, and postdoctoral faculty in statistics departments, by gender, in fall 2015 and 2010. (Postdoctoral faculty are included in other full-time faculty totals.)

	Doctoral Statistics Departments			Masters Statistics Departments			Total			
	Tenured	Tenure-eligible	Other full-time Postdocs ¹	Tenured	Tenure-eligible	Other full-time Postdocs ¹	Tenured	Tenure-eligible	Other full-time Postdocs ¹	
Men, 2015	512	148	132	107	21	16	618	170	148	94
Women, 2015	137	71	237	16	19	16	153	90	253	22
Total, 2015	649	220	369	123	40	32	772	260	401	116
Men, 2010	485	125	133	125	40	31	610	165	164	62
Women, 2010	95	84	82	22	18	26	117	102	108	24
Total, 2010	580	209	215	147	57	57	727	267	272	86

¹ A postdoctoral appointment is a temporary position primarily intended to provide an opportunity to extend graduate training or to further research experience. Postdoctoral faculty are included in the other full-time-faculty totals throughout CBMS2010. This contrasts with publications of the AMS-ASA-IMS-MAA-SIAM Annual Survey since 2003, which list postdoctoral faculty as a category separate from other full-time-faculty. Before 2003, separate counts of postdoctoral faculty were not collected by the Annual Survey.

experience”, and these positions occur primarily (but not exclusively) in doctoral-level departments. The most consistent trend in the CBMS2015 data on faculty is the growth in the estimated numbers of other full-time faculty.

Table S.15 in Chapter 1 showed that the estimated number of other full-time faculty (including postdocs) in all levels of mathematics departments combined increased by 1,332 faculty (22% (6.1 SEs) increase) from fall 2010 to fall 2015 to 7,261 faculty; this number includes an increase of 292 postdoc faculty (a 28% (4.8 SEs) increase) from fall 2010). The estimated number of other full-time mathematics faculty increased by 1,300 faculty from 2005 to 2010, and, hence, there was an estimated increase of 2,632 other full-time mathematics faculty (a 57% increase) from 2005 to 2015 (the estimated number of mathematics postdocs increased 61% over that ten-year interval). In fall 2000, there were 3,533 estimated other full-time mathematics faculty; hence this category of full-time mathematics faculty has more than doubled in the past 15 years. Data for 2000 and 2005 can be found in CBMS2005 Table S.17, p. 38.

Using Tables F.1 or F.2 in this chapter, we observe that the increases in other full-time faculty extend across the three levels of mathematics departments.

In the doctoral-level mathematics departments, the estimated number of other full-time faculty increased from fall 2010 to fall 2015 by 675 faculty, a 27% (10 SEs) increase. In the masters-level mathematics departments, the estimated number of other full-time faculty increased from fall 2010 to fall 2015 by 353 faculty, a 36% (4.6 SEs) increase. In the bachelors-level mathematics departments, the estimated number of other full-time faculty increased from fall 2010 to fall 2015 by 1,332 faculty, a 22% (6.9 SEs) increase. In fall 2000, the number of other full-time faculty was estimated at 1,449 at the doctoral-level mathematics departments, 793 at the masters-level mathematics departments, and 1,292 at the bachelors-level mathematics departments [CBMS2005 Table F.2, p. 104], and hence, over the past fifteen years, the estimated number of other full-time faculty has more than doubled at the doctoral and bachelors-level mathematics departments, and increased 69% in the masters-level mathematics departments.

Furthermore, increases in the estimated numbers of postdocs among the three levels of mathematics departments are also seen in Tables F.1 or F.2. In doctoral-level mathematics departments, the estimated number of postdocs increased from fall 2010 to fall 2015 by 149 postdocs (15% (2.8 SEs)) to 1,150

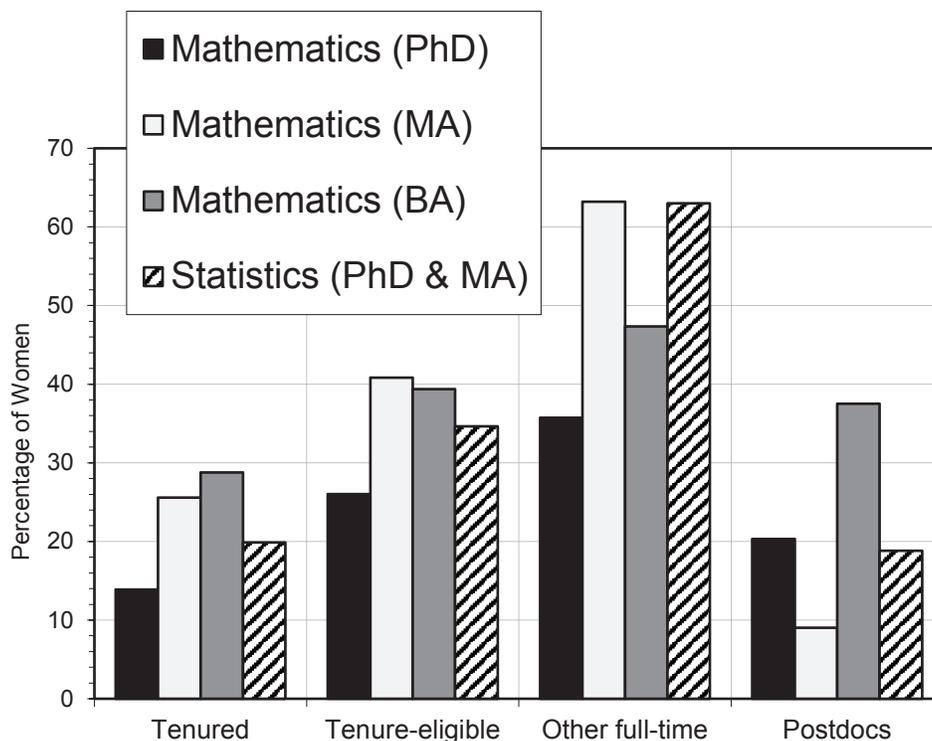


FIGURE F.3.1 Percentage of women in various faculty categories, by type of department, in fall 2010.

TABLE F.4 Percentage of tenured and tenure-eligible mathematics department faculty at four-year colleges and universities belonging to various age groups by type of department and gender in fall 2015.

Mathematics Depts.		<30		30-34		35-39		40-44		45-49		50-54		55-59		60-64		65-69		>69		Average age 2015	
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	Average age 2010	Average age 2005	
Univ (PhD)																							
Tenured Men		0	1	5	8	8	10	10	12	8	9	10	12	8	9	12	13	9	9	54.4	55.4	55.9	
Tenured Women		0	0	1	2	2	2	2	1	1	0	2	1	1	0	2	3	1	0	50.0	50.5	51.1	
Tenure-eligible men		1	6	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.3	36.3	36.0	
Tenure-eligible women		0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.3	36.8	36.3	
Total Univ (PhD)		1	9	12	12	10	12	12	13	9	9	12	13	9	9	12	13	9					
Univ (MA)																							
Tenured Men		0	0	4	6	9	10	8	10	6	5	8	10	6	5	10	10	6	5	53.8	54.1	55.1	
Tenured Women		0	1	2	3	5	3	3	3	1	1	3	3	1	1	3	3	1	1	52.1	50.7	51.6	
Tenure-eligible men		1	4	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38.3	37.3	36.1	
Tenure-eligible women		1	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	38.7	39.1	37.7	
Total Univ (MA)		2	8	12	12	14	14	14	13	7	6	13	7	6	6	13	7	6					
Coll (BA)																							
Tenured Men		0	1	4	7	9	9	9	7	8	4	7	8	5	4	9	11	6	4	52.9	54.0	53.6	
Tenured Women		0	1	2	4	3	5	2	3	1	0	2	3	1	0	5	3	1	0	49.6	50.9	50.8	
Tenure-eligible men		2	6	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.2	37.2	36.6	
Tenure-eligible women		1	4	2	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	38.9	37.4	37.0	
Total Coll (BA)		3	12	13	14	13	15	15	10	11	4	11	6	4	4	10	6	4					

Note: 0 means less than half of 1%.

TABLE F.4 (cont.) Percentage of tenured and tenure-eligible mathematics department faculty at four-year colleges and universities belonging to various age groups by type of department and gender in fall 2015.

Statistics Depts.	<30		30-34		35-39		40-44		45-49		50-54		55-59		60-64		65-69		>69		Average age 2015	
	%		%		%		%		%		%		%		%		%		Average age 2010	Average age 2005		
Univ (MA)																						
Tenured Men	0	0	7	8	10	5	7	13	11	5	7	11	5	7	13	11	5	5	52.5	na	55.6	
Tenured Women	0	0	5	2	0	0	0	2	2	0	0	2	0	0	2	2	0	0	49.8	na	47.5	
Tenure-eligible men	3	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.4	na	35.0	
Tenure-eligible women	0	7	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.5	na	34.6	
Total Univ (MA)	3	11	16	15	10	5	7	15	13	5	7	15	5	7	15	13	5					
Univ (PhD)																						
Tenured Men	0	1	5	7	7	8	9	8	6	7	9	8	6	7	8	6	7	54.2	52.7		55.2	
Tenured Women	0	1	2	3	3	3	2	1	1	0	2	1	1	0	1	1	0	48.1	45.6		48.0	
Tenure-eligible men	2	9	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	34.9	33.7		34.5	
Tenure-eligible women	1	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.2	33.2		34.4	
Total Univ (PhD)	4	16	13	13	11	11	11	9	6	7	11	11	6	7	9	6	7					

Note: 0 means less than half of 1%.

postdocs. In masters-level mathematics departments, the estimated number of postdocs increased from fall 2010 to fall 2015 by 13 postdocs (72% (1.3 SEs)) to 31 postdocs. In bachelors-level mathematics departments, the estimated number of postdocs increased from fall 2010 to fall 2015 by 131 postdocs (from 6 postdocs), indicating a dramatic change (4.7 SEs increase) in the use of postdoctoral appointments at bachelors-level mathematics departments.

Even larger increases in the estimated numbers of other full-time faculty were observed in statistics departments. Table S.15 of Chapter 1 showed that the estimated number of other full-time faculty (including postdocs) in doctoral and masters-level statistics departments combined, from fall 2010 to fall 2015, increased by 129 faculty to 401 (a 47% (5.9 SEs) increase). Furthermore, the estimated number of postdocs increased by 29 postdocs, an increase of 35% (2 SEs), from fall 2010 to fall 2015.

From Table F.3 we see that in the doctoral-level statistics departments the estimated number of other full-time faculty increased by 154 faculty to 369 faculty (a 72% (7 SEs) increase from 2010), and, over that time period, the estimated number of postdocs increased by 42 postdocs (a 59% (2.8 SEs) increase from 2010) to 113 postdocs. In fall 2010, the estimated number of other-full time doctoral-level statistics faculty increased by 52 faculty from the fall 2005 estimate, and the estimated number of postdocs increased by 20 postdocs from the fall 2005 estimate. Hence, the estimated number of other full-time statistics faculty in doctoral-level departments

increased from 163 in 2005 to 369 in 2015, and the estimated number of postdocs increased from 51 in 2005 to 113 in 2015, so both estimated numbers have more than doubled from 2005 to 2015. In fall 2000, there were 99 estimated other full-time faculty in doctoral-level statistics departments; hence, this category of faculty has more than tripled in the past 15 years. However, in the masters-level statistics departments Table F.3 shows that the estimated number of other-full time faculty actually declined from fall 2010 to fall 2015 by 25 faculty (a 44% (3.6 SEs) decline), and the estimated number of postdocs declined by 12 faculty (an 80% (6 SEs) decline).

Chapter 2 contains data from a special topic survey on employment of postdocs after the completion of the postdoc appointment, and on the responsibilities of other full-time faculty who are in renewable, and in non-renewable, positions. See Tables SP.29-SP.31 of Chapter 2.

Numbers of part-time mathematics and statistics faculty

Table S.13 and Figures S.13.2 and S.13.3 in Chapter 1 showed that the number of part-time faculty in all levels of mathematics departments combined, in fall 2015, was estimated at 7,682, with SE of 282; this estimate represents an increase of about 27% (more than 5 SEs from the fall 2010 estimate), ending the pattern of small declines in numbers of part-time faculty observed since 2000 (when the estimate was 7,301). The fall 1995 estimate was 5,399 part-time

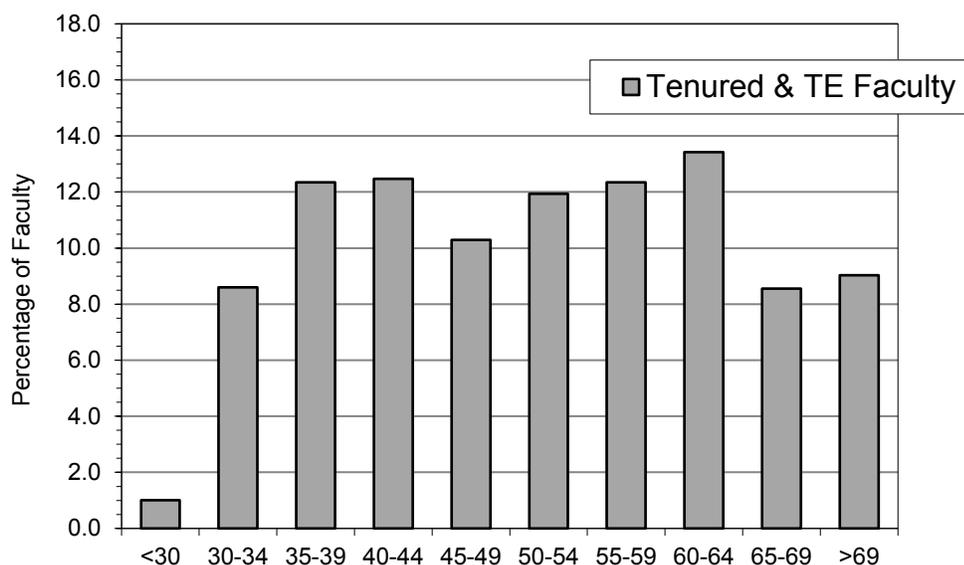


FIGURE F.4.1 Percentage of tenured and tenure-eligible faculty in doctoral mathematics departments in various age groups in fall 2015.

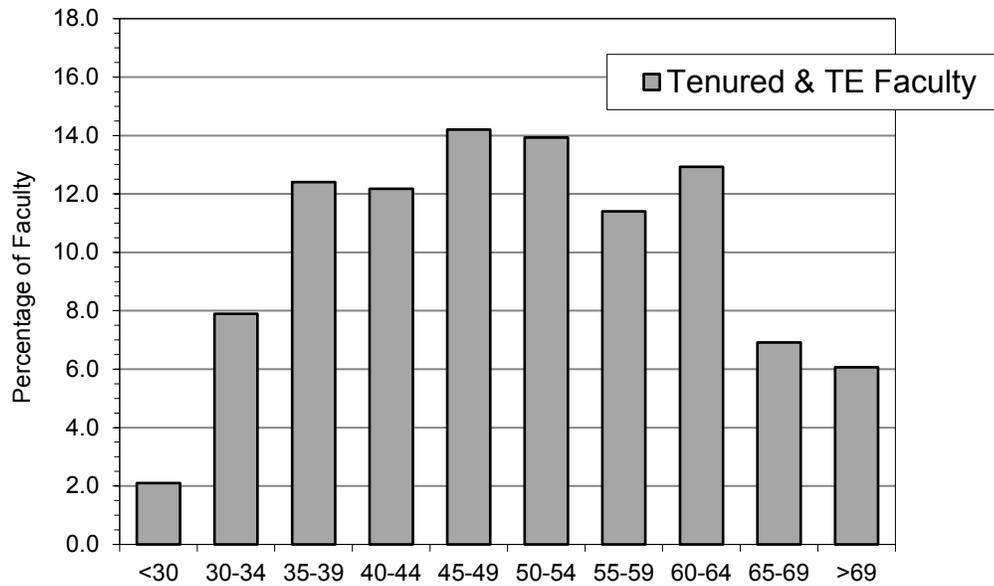


FIGURE F.4.2 Percentage of tenured and tenure-eligible faculty in masters-level mathematics departments belonging to various age groups in fall 2015.

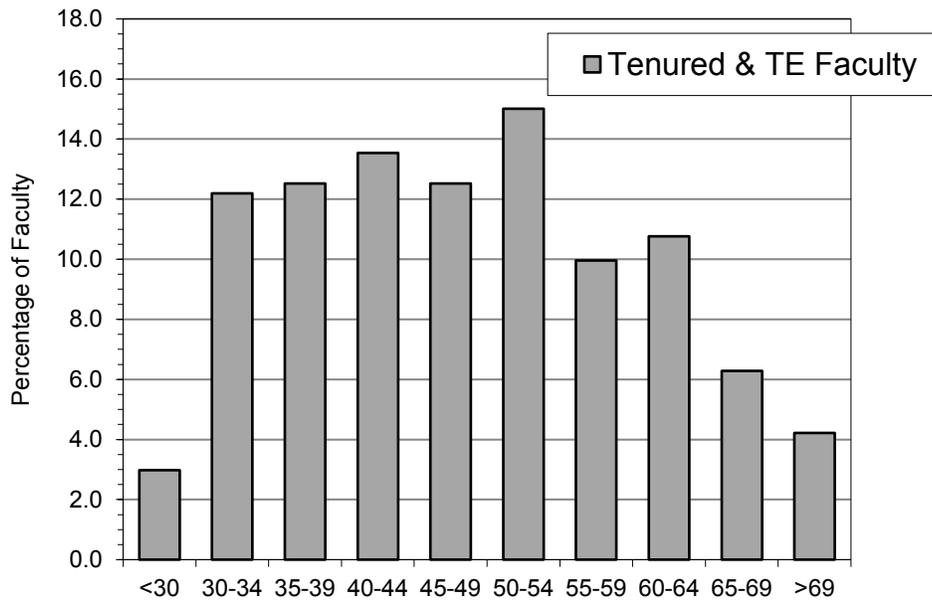


FIGURE F.4.3 Percentage of tenured and tenure-eligible faculty in bachelors-level mathematics departments belonging to various age groups in fall 2015.

TABLE F.5 Percentages of full-time faculty belonging to various ethnic groups, by gender and type of department, in fall 2015. Except for round-off, the percentages within each departmental type sum to 100%.

	Percentage of Full-time Faculty					
		Black, not Hispanic	Mexican American/ Puerto Rican/ other Hispanic	White, not Hispanic	AIAN or NHPI ¹	Unknown
	%	%	%	%	%	%
PhD Mathematics Departments						
All full-time men	15	1	3	55	0	2
All full-time women	5	0	1	16	0	1
MA Mathematics Departments						
All full-time men	11	2	3	46	0	2
All full-time women	6	1	1	26	0	1
BA Mathematics Departments						
All full-time men	6	2	1	53	0	2
All full-time women	4	1	1	30	0	1
All Statistics Departments						
All full-time men	22	1	2	45	0	2
All full-time women	11	0	1	15	0	1

¹ Includes the federal categories *American Indian or Alaskan Native* (AIAN) and *Native Hawaiian or Other Pacific* (NHPI).

Note: Zero means less than one-half of one percent.

mathematics faculty [CBMS2005 Table S.14, p. 31], so that over the past twenty years, the estimated number of part-time mathematics faculty has increased about 42%. This increase in the numbers of part-time mathematics faculty, combined with the increase in the numbers of other full-time faculty, and a decline in numbers of tenured and of tenure-eligible faculty is a cause for some concern. Tables F.1 and F.2 in this chapter break down the number of part-time faculty further.

From Table F.1 we see that most of the growth in the numbers of part-time faculty in mathematics departments occurred at the doctoral and bachelors-levels departments. From fall 2010 to fall 2015, the estimated number of part-time mathematics faculty increased 31% (5.5 SEs) at doctoral-level departments, 7% (0.9 SEs) at masters-level departments, and 37% (4.9 SEs) at bachelors-level departments.

Table S.13 and Figure S.13.5 in Chapter 1 showed that the number of part-time faculty in doctoral-level statistics departments in fall 2015 was estimated at 128 faculty with a SE of 20; this estimate represents an increase of about 22% (1.2 SEs) over fall 2010. The number of part-time faculty in doctoral-level statistics departments remained relatively stable over the three CBMS surveys 2000-2010. From Table F.1 we see

that the number of part-time faculty in masters-level statistics departments in fall 2015 was estimated at 27 with a SE of 8; this number is almost identical to the 29 part-time masters-level statistics faculty estimated in fall 2010.

From Table F.1 we see that, in fall 2015, 71% of part-time faculty in doctoral-level statistics departments had a doctoral degree (compared to 41% in doctoral-level mathematics departments); a similar pattern occurred in the 2010 CBMS survey.

Non-doctoral faculty

Data on non-doctoral faculty, faculty without a doctoral degree, can be found in Table S.14 in Chapter 1, and in Tables F.1 and F.1.1 in this chapter, where the tables label faculty as “having a doctoral degree” and “having other degree” (which we will refer to as “non-doctoral”). The general trend, from fall 2010 to fall 2015, was a decrease in the numbers of non-doctoral full-time mathematics and statistics faculty. The increase in estimated numbers of doctoral faculty may be related to the increased number of new Ph.D.s; as noted in Table S.15 of Chapter 1, according to the National Center for Educational Statistics, the number of Ph.D.s who completed their degree from mathematics and statistics departments between

July 1, 2010 - June 30, 2015 was 1,862 greater than the number of Ph.D.'s who completed their degree between July 1, 2005-June 30, 2010, a 26% increase in the number of new Ph.D.s. The percentage of full-time non-doctoral faculty was generally larger in mathematics departments than in statistics departments. From Table S.14 in Chapter 1 we saw that in fall 2015, the percentage of full-time mathematics faculty with a doctorate was estimated at 83% of all mathematics faculty, up from 82% in fall 2010, and the estimated percentage of full-time statistics faculty with a doctorate was 96% of all statistics faculty, up from 94% in 2010.

The estimated percentage of non-doctoral faculty was much larger among part-time faculty than among full-time faculty, particularly in mathematics departments, and the number of doctoral part-time faculty increased significantly in doctoral-level and bachelors-level mathematics departments. From Table F.1.1 we see that doctoral faculty were estimated to be 25% of all part-time mathematics faculty in fall 2015 (and 22% in fall 2010), and doctoral faculty were estimated to be 72% of part-time statistics faculty (and 70% in fall 2010). By Table F.1, in doctoral-level mathematics departments, doctoral part-time faculty comprised an estimated 41% of part-time faculty in fall 2015, up from 34% in 2010; the estimated number of doctoral part-time faculty in doctoral-level mathematics departments increased by 59% (8.7 SEs) from fall 2010 to fall 2015. In masters-level mathematics departments, doctoral part-time faculty comprised an estimated 23% of part-time faculty in fall 2015, up from 20% in 2010; the estimated number of doctoral part-time faculty in masters-level mathematics departments increased by 25% (1.2 SEs) from fall 2010 to fall 2015. In bachelors-level mathematics departments, doctoral part-time faculty comprised an estimated 21% of part-time faculty in fall 2015, up from 19% in 2010; the estimated number of doctoral part-time faculty in bachelors-level mathematics departments increased by 50% (3.2 SEs) from fall 2010 to fall 2015. In doctoral-level statistics departments, doctoral part-time faculty were estimated to comprise 71% of part-time faculty in fall 2015, down from 80% in 2010; the estimated number of doctoral part-time faculty in doctoral-level statistics departments increased by 8% (0.4 SEs) from fall 2010 to fall 2015.

From Table F.1.1 we see that most of the non-doctoral full-time faculty were other full-time faculty, and the number of other full-time faculty with a doctorate, who are not postdocs, increased significantly, perhaps due to the growing number of new Ph.Ds. From Table F.1 we see that the estimated number of other full-time faculty with a doctorate, who are not postdocs, in doctoral-level mathematics departments increased from 738 to 1,186 faculty, a 61% increase, from fall 2010 to fall 2015, and over the same time period,

the estimated number of other full-time faculty with a doctorate, who are not postdocs, in masters-level mathematics departments increased 66%, the estimated number of other full-time faculty with a doctorate, who are not postdocs, in bachelors-level mathematics departments increased 62%, and the estimated number of other full-time faculty with a doctorate, who are not postdocs, in doctoral-level statistics departments increased from 113 to 216 faculty, almost doubling.

It follows from Table F.1.1 that, in fall 2015, the percentage of women among all full-time mathematics faculty with a doctorate was estimated at 26%, a percentage that is less than 31%, the estimated percentage of women among all full-time mathematics faculty. In fall 2015, the percentage of women among all full-time statistics faculty with a doctorate was 26%, while women comprised 27% of all full-time statistics faculty.

Gender

Table S.15 in Chapter 1 notes that according to the National Center for Educational Statistics, from July 1, 2010 - June 30, 2015, 31% of the Ph.D.s that were awarded went to women; and, according to the Annual Surveys, the percentage of women receiving Ph.D. degrees in the mathematical sciences has remained close to 30% each year over the last fifteen years. The 2015 CBMS survey shows that the percentages of women faculty in most categories continue to grow, though the numbers of women faculty (and of male faculty) are not up in a number of categories (e.g. the total estimated number of tenured, and of tenure-eligible, mathematics faculty decreased from 2010 to 2015 (Table S.15 of Chapter 1)). Perhaps the most interesting change is the increase in the estimated number of tenured women at doctoral-level mathematics departments (see Table F.1).

Table S.15 of Chapter 1 showed that the estimated total number of female full-time mathematics faculty in four-year mathematics departments combined increased by about 9% (4.8 SEs) from fall 2010 to fall 2015. This table further estimated that in fall 2015, women comprised 31% of all full-time mathematics faculty, 22% of all tenured mathematics faculty, 36% of all tenure-eligible mathematics faculty, and 22% of all mathematics postdocs, all of these estimated percentages, except the percentage of women postdocs, are a few percentage points above the percentages estimated in 2010. In fall 2010, these percentages of women faculty were estimated at 29% of all full-time faculty, 21% of all tenured faculty, and 34% of all tenure-eligible faculty, and 23% of all postdocs. Tables F.1, F.1.1, and F.2 in this chapter provide more detail on estimated numbers of women faculty in mathematics departments.

Table S.15 in Chapter 1 showed that the estimated number of women in doctoral-level and masters-level statistics departments combined increased by 20% (4 SEs) from fall 2010 to fall 2015. In statistics departments, in fall 2015 women were estimated to comprise 27% of all full-time faculty, 20% of tenured faculty, 35% of tenure-eligible faculty, and 19% of all postdocs; all of these percentages, except the percentage of tenure-eligible faculty and the percentage of women postdocs, were higher than in fall 2010, when the percentages of women faculty were estimated at 26% of all full-time faculty, 16% of tenured faculty, 38% of tenure-eligible faculty, and 28% of all postdocs. Figure S.15.1 in Chapter 1 gave a bar graph displaying the percentages of tenured and tenure-eligible women in mathematics and statistics departments in fall 2010 and fall 2015; from this figure one can see the changes in these categories of faculty, and that, in 2015, the distributions in mathematics departments and statistics departments look more similar than they did in 2010. Tables F.1, F.1.1, and F.3 in this chapter provide more detail on estimated numbers of women faculty in statistics departments.

Tables F.1, F.2, and Figure F.3.1 provide data on the estimated numbers of women in different levels of mathematics departments and different types of appointments. In doctoral-level mathematics departments, the most significant change was an increase in the estimated number of tenured women faculty in fall 2015 (while the estimated number of all doctoral-level tenured faculty declined), which was up 21% (7.5 SEs) over fall 2010. From fall 2010 to fall 2015, in doctoral-level mathematics departments, the estimated number of tenure-eligible women was down 4% (1 SE), the number of other full-time women faculty was up 20% (6.2 SEs), and the number of postdoc women was up 4% (0.3 SEs). In masters-level mathematics departments, the most significant change was the increase in the estimated number of other full-time women faculty in fall 2015, which was up 33% (4 SEs) over fall 2010. The estimated number of tenured women faculty in masters-level mathematics departments was identical in fall 2010 and 2015, the estimated number of tenure-eligible women was down 11% (1.5 SE) from fall 2010, and estimated number of postdoc women faculty, which is still very small, dropped from 7 in fall 2010 to 3 in fall 2015. In bachelors-level departments, the most significant change was the increase in the estimated number of other full-time women faculty in fall 2015, which was up 32% (4.6 SEs) over fall 2010. From fall 2010 to fall 2015, in bachelors-level departments, the estimated number of tenured women faculty declined by 10% (2.6 SEs), the estimated number of tenure-eligible women faculty was down 2% (0.4 SE), and the estimated number of postdoc women faculty went from 0 postdocs to 51 postdocs, with SE 13.

Tables F.1 and F.3 and Figure F.3.1 in this chapter provide data on the estimated numbers of women in different levels of statistics departments and different types of appointments.

In doctoral-level statistics departments, the most significant changes were an increase in the estimated number of other full-time women faculty in fall 2015, which was up 62% (6.4 SEs) over fall 2010, and an increase in the estimated number of tenured women faculty in fall 2015, which was up 44% (5.2 SEs) over fall 2010. From fall 2010 to fall 2015, the estimated number of tenure-eligible women faculty in doctoral-level statistics departments was down 15% (2.6 SE), and the estimated number of women postdocs was up 22% (1.3 SEs). These changes follow an estimated 4% decrease in the number of tenured women, and a 17% increase in the number of tenure-eligible women, from 2005 to 2010 [CBMS2010 Table F.3, p. 106]. In masters-level statistics departments, the most significant change was the 39% (3.3 SEs) decrease, from fall 2010 to fall 2015, in the estimate of other full-time women faculty. From fall 2010 to fall 2015, in masters-level statistics departments, the other types of appointments did not change significantly: the estimated number of tenured women faculty was down 27% (0.9 SEs) and the estimated number of tenure-eligible women increased by 6% (0.2 SEs).

Table F.1.1 states that in fall 2015 women comprised an estimated 42% of the part-time positions across all levels of mathematics departments combined (this percentage is down from 44% in fall 2010); by Table S.15 of Chapter 1, in fall 2015, women comprised 31% of full-time positions. In fall 2015, women comprised 30% of the part-time positions across both levels of statistics departments combined (this percentage is up from 24% in fall 2010). From Table F.1 we deduce that the estimated percentage of part-time positions occupied by women in fall 2015 was 44% in bachelors and masters-level mathematics departments, and 35% in doctoral-level departments.

It is interesting to compare the estimated percentages of women at doctoral-level mathematics departments to that at doctoral-level statistics departments; we note that women comprise a higher percentage of both tenured and tenure-eligible positions in doctoral-level statistics departments than in doctoral-level mathematics departments. From Table F.1 we see that, in fall 2015, women were estimated to comprise 14% of tenured faculty in doctoral-level mathematics department faculty, and 21% of tenured faculty in doctoral-level statistics department faculty; women were 26% of tenure-eligible mathematics faculty and 32% of tenure-eligible statistics faculty. The percentage of women in postdoc positions is about the same in mathematics and statistics departments: 20%

of mathematics postdoc faculty and 19% of statistics postdocs.

Age distribution

Table S.16 in Chapter 1 presented the estimated age distribution of tenured, and of tenure-eligible, faculty broken down by gender, for all levels of mathematics departments (combined) in fall 2015, and Table S.17 in Chapter 1 presented this same data for doctoral and masters-level statistics departments (combined). Tables S.16 and S.17 also showed the average ages within each type of appointment (tenured or tenure-eligible) and each gender in fall 2005, 2010, and 2015, and, for each age group, the total percentages across all types of appointments in fall 2015, which are displayed in Figure S.16.1 and S.17.1 of Chapter 1. Table F.4 of this chapter presents the finer estimated breakdown of faculty ages by level of mathematics and statistics department, and Figures F.4.1, F.4.2, and F.4.3 display these distributions of ages, broken down by gender, for doctoral-level, masters-level, and bachelors-level mathematics departments, respectively. The percentages within each level of department total 100%, except for possible round-off errors. The standard errors of the percentages in Table S.16 and F.4 are all less than 0.5%, but are as high as 3% for doctoral-level statistics departments in some entries of Tables S.17 and F.5. The SEs are very high for the estimates of Table F.4 for masters-level statistics departments, making the estimates for masters-level statistics departments very unreliable.

When the data in mathematics departments were aggregated, as they were in the Chapter 1 tables, it appeared from Table S.16 that across all levels of mathematics department faculty combined, from 2005 to 2015, the estimated average ages of both tenured men, and of tenured women, rose slightly; furthermore, the estimated average age of tenured men appeared to be approximately 4 years greater than that of tenured women in mathematics departments. The average age of tenure-eligible men and women in mathematics departments both appeared to decline from fall 2005 to fall 2015.

In statistics departments, from Table S.17 of Chapter 1, it appeared that the estimated average age of tenured men rose over the last 10 years (and was roughly comparable to the average age of tenured men in mathematics departments), and that the estimated average age of tenured women in statistics departments in fall 2015, while above the average age in 2005, was slightly less than the average age in 2010 (perhaps due to the large (31% (3.6 SEs)) increase in tenured female statistics faculty in all levels of statistics departments combined (Table F.3) from fall 2010 to fall 2015). The average age of tenured women in statistics departments appeared to be about 3 years less than the average age of tenured women in

mathematics departments, again reflecting the large number of women among new Ph.D.s in statistics reported in the Annual Surveys over the last 15 years. The estimated average ages of tenure-eligible men and of tenure-eligible women in statistics departments were slightly larger in 2010 than in 2005, and slightly smaller in 2015 than in 2010; the estimated average ages of tenure-eligible men and of tenure-eligible women in statistics departments were about 2 years less than the comparable average ages in mathematics departments, perhaps reflecting greater use of postdoc appointments in mathematics.

From Tables S.16 and S.17 in Chapter 1 we also note that the estimated percentage of tenured plus tenure-eligible faculty age 65 or more continues to increase. In mathematics departments, in fall 2000, this percentage was estimated at 5%, in fall 2005 at 8%, in fall 2010 at 12%, and, in fall 2015, at 13%. Similarly, in statistics departments, in fall 2000, it was estimated at 6%, in fall 2005 at 8%, in fall 2010 at 10%, and, in fall 2015, at 14%. The average age of tenured men in mathematics rose from an estimate of 52.4 in fall 2000 to 54.9 in fall 2015. Table S.20 in Chapter 1 recorded the number of deaths and retirements in the year preceding each of the CBMS surveys of 2000, 2005, 2010, and 2015; the numbers of reported deaths and retirements increased significantly in each of the three levels of mathematics departments and in the doctoral statistics departments from 2009-10 to 2014-15; the largest change was observed for the bachelors-level mathematics departments, where the number of deaths and retirements reported in 2014-15 was more than double the number reported in 2009-10.

The estimated distributions of the age groups for tenured and tenure-eligible faculty (combined) in mathematics departments, broken down by gender, in fall 2015 was displayed in Figure S.16.1 in Chapter 1. One notes that the distribution of women's ages appears more skewed to lower ages for women than the distribution of men's ages, and the distribution for men is slightly skewed toward higher ages. The analogous data for statistics departments appeared in Figure 17.1, where the distribution of women's ages is even more skewed toward lower ages, and the distribution of men's ages appears slightly bimodal. The shapes of these distributions is similar to the shapes observed in the 2010 survey.

Table F.4 in this chapter can be used to estimate age distributions across different levels of departments. We note, again, that the standard errors for the masters-level statistics department are rather large, so those estimates may be unreliable. Generally, the trends observed for all departments combined appear in most levels of departments. For example, in each level of mathematics and statistics departments (with the exception of bachelors-level mathematics depart-

ments from 2010 to 2015), the estimated average age of tenured men increased from 2005 to 2010 and from 2010 to 2015; further, the estimated average age of tenured men is greater than the estimated average age of tenured women. One difference in the age distributions is that the estimated percentage of faculty age 65 or more in fall 2015 in mathematics departments is 18% at the doctoral-level departments, 13% at the masters-level departments, and 10% at the bachelors-level departments; moreover, the percentage of faculty age 34 or less in fall 2015 is estimated at 10% at the doctoral and masters-level departments, and 15% at the bachelors-level departments. This pattern can also be noted from the graphs of the age distributions for the three levels of mathematics that appear in Figures F.4.1 (doctoral-level mathematics), F.4.2 (masters-level mathematics), and F.4.3 (bachelors-level mathematics). Over the past 15 years, from 2000 to 2015 the average age of tenured men at doctoral-level mathematics departments increased from an estimated 52.1 in 2000 to 55.9 in 2015.

Race, ethnicity, and gender

Table S.18 in Chapter 1 gave estimated percentages in various racial/ethnic groups of full-time faculty in all levels of mathematics departments combined, by gender, and by type of appointment in fall 2015; Table S.19 gave the same data for doctoral and masters-level statistics departments combined. Table F.5 in this chapter presents these percentages broken down by the three levels of mathematics department (and for doctoral and masters-level of statistics departments combined), and by gender, for all types of appointments combined. Table F.6 in this chapter presents the distribution of racial/ethnic groups for part-time mathematics and statistics faculty, broken down by level of mathematics department (and for both levels of statistics departments combined), and by gender. The standard errors for percentages in Tables S.18, S.19, F.5, and F.6 round to 1% or less, except that for some of the entries of Table F.5 for statistics departments the SEs are as large as 3%.

The Annual Surveys follow the federal classification for racial and ethnic groups. However, in the text of this report some of the more cumbersome federal classifications will be shortened. For example, "Mexican-American/Puerto Rican/other Hispanic" will be abbreviated to "Hispanic". Similarly, the federal classifications "Black, not Hispanic" and "White, not Hispanic" will be shortened to "Black" and "White", respectively, and "American Indian or Alaskan Native and Native Hawaiian/Pacific Islander" will be shortened to "AIAN & NHPI". For a small percentage of the faculty, race and ethnicity data were listed as "unknown" by the responding departments, and these faculty are listed as "unknown".

The estimated percentages of faculty in various racial/ethnic groups in all level of mathematics departments combined, presented in Tables S.19 in CBMS2010 and Table S.18 of Chapter 1, look quite similar. The estimated percentage of the category White men was slightly lower in fall 2015 than in fall 2010 (it declined from 2005 to 2010, also), and the categories White women, Asian men, and Asian women faculty were slightly higher in fall 2015 than in fall 2010 (the estimated percentage of White women faculty also increased from fall 2005 to fall 2010). Table S.18 showed that, in fall 2015, 77% of all full-time mathematics faculty were classified as White, slightly less than the same percentage in fall 2010 (79%); the percentage of female White faculty increased slightly from 23% in fall 2010 to 24% fall 2015. There are entries less than 1% in the Black and Hispanic faculty categories for tenure-eligible faculty and postdocs in mathematics departments, suggesting that the percentages of these under-represented groups in the tenured categories are not likely to increase soon.

The estimated percentages of faculty in various racial/ethnic groups in doctoral and masters-level statistics departments combined, observed in Table S.19, were also quite similar in the 2010 and 2015 CBMS surveys. The estimated percentages of Asian men and women were both higher in fall 2015 than in fall 2010, giving a combined total estimate of Asians as 33% of statistics faculty in 2015 (compared to 28% in 2010). The percentage of White men in statistics departments was estimated at 49% in 2010, and 45% in 2015, and the percentage of White women in statistics departments was estimated at 15% in both 2010 and 2015.

Table F.5 in this chapter breaks these numbers down by level of department, but aggregates over type of appointment. Comparing Table F.5 to the corresponding tables in previous CBMS surveys, we note that in the doctoral-level mathematics departments, the estimated percentages of faculty in the categories Asian men, Asian women, and Hispanic men were slightly larger in fall 2015 than in fall 2010, while the percentage of faculty in the category White men, that was estimated at 69% in fall 2000, 66% in fall 2005, and 59% in fall 2010, was estimated at 55% in fall 2015; furthermore, Black and Hispanic faculty, that were each estimated at 1% in fall 2000, were estimated at 1% and 4%, respectively, in fall 2015. At masters-level mathematics departments, the estimated percentage of faculty in the category White men, that was 58% in fall 2000, had dropped to 46% in fall 2015, and the percentages of Black and Hispanic faculty, that were estimated at 2% and 6%, respectively, in fall 2000, were estimated at 3% and 4%, respectively, in fall 2015. At bachelors-level departments, the percentage of faculty in the category

TABLE F.6 Percentages of part-time faculty belonging to various ethnic groups, by gender and type of department, in fall 2015. Except for round-off, the percentages within each departmental type sum to 100%.

	Percentage of part-time Faculty					
	Asian %	Black, not Hispanic %	Mexican American/ Puerto Rican/ other Hispanic %	White, not Hispanic %	AiAN or NHPI ¹	Unknown %
PhD Mathematics Departments						
All part-time men	8	2	2	47	0	4
All part-time women	5	1	1	28	0	2
MA Mathematics Departments						
All part-time men	5	3	4	38	0	7
All part-time women	2	1	2	34	0	5
BA Mathematics Departments						
All part-time men	3	3	1	45	0	4
All part-time women	2	1	1	35	1	4
All Statistics Departments						
All part-time men	11	2	1	55	0	3
All part-time women	8	1	1	18	0	0

¹ Includes the federal categories *American Indian or Alaskan Native* (AIAN) and *Native Hawaiian or Other Pacific Islander* (NHPI).

Note: Zero means less than one-half of 1%.

White men, that was estimated at 60% in fall 2000, had dropped to 53% in fall 2015, and the estimated percentages of faculty in the categories Black and Hispanic faculty, that were estimated at 3% and 1%, respectively, in fall 2000, were estimated at 3% and 2%, respectively, in fall 2015. At the masters and doctoral-level statistics departments combined, the percentage of faculty in the category White men, that was estimated at 66% in fall 2000, had dropped to 45% in fall 2015, and the percentages of faculty in the categories Black and Hispanic faculty, that were estimated at 1% and 3%, respectively, in fall 2000, were estimated at 1% and 3%, respectively, in fall 2015. The estimated distributions from the 2000 survey can be found in CBMS2000 Table F.6 (mathematics departments) and F.7 (statistics departments), p.104-5.

Of the non-White racial/ethnic groups, the estimated percentage of faculty in the category Asian faculty varies the most across the various levels of departments. According to Table F.5, in fall 2015,

the percentage of Asian faculty was estimated at 20% in doctoral-level mathematics departments, 17% in masters-level mathematics departments, and 10% in bachelors-level mathematics departments, and 33% in statistics departments. In fall 2000 these percentages were estimated at 14% in doctoral-level departments, 10% in masters-level departments, 7% in bachelors-level departments and 19% in statistics departments.

Table F.6 shows the estimated racial/ethnic distribution of part-time faculty. These percentages are not very different from the distribution of full-time faculty; for example, at doctoral-level mathematics departments in fall 2015 the estimated percentages of full-time Black and Hispanic faculty were 1% and 4%, respectively, and for part-time faculty these percentages were both 3%; for full-time Asian faculty the estimated percentage was 20% and for part-time faculty it was 13%.