TABLE SP.1 Percentage of mathematics departments whose institutions offer certification programs for some or all grades K–8, and also for secondary teachers, by type of department in fall 2015. (Data for K-8 from fall 2000, 2005, 2010 when available, in parentheses.)

	Percentage whose institutions have a certification program for:			
	K-5	6-8	K-8*	Secondary (9-
Mathematics Departments				
Univ (PhD)	52	47	(72,78,62)	75
Univ (MA)	63	64	(87,92,90)	92
Coll (BA)	52	50	(85,88,70)	75
Total Math Depts	53	51	(84,87,72)	77

TABLE SP.2 Percentage of mathematical programs at public two-year colleges (TYCs) having organized programs that allow various types of pre- and in-service teachers to complete their entire mathematics course or licensure requirements in fall 2015. (Fall 2005, 2010 data in parentheses.)

	Percentage of TYCs with an organized program in which students can complete their entire mathematics course or licensure requirements	
Pre-service elementary teachers	28	(30,41)
Pre-service middle school teachers	14	(19,24)
Pre-service secondary teachers	7	(3,13)
In-service elementary teachers	12	(12,25)
In-service middle school teachers	6	(15,12)
In-service secondary teachers	4	(2,10)
Career-switchers aiming for elementary teaching	16	(19,30)
Career-switchers aiming for middle school teaching	13	(14,17)
Career-switchers aiming for secondary teaching	5	(6,13)

TABLE SP.3 Percentage of public two-year colleges (TYCs) that are involved with teacher preparation in various ways in fall 2015. (Data from fall 2005, 2010 in parentheses when available.) This table can be compared to Table SP.4 CBMS 2010.

	Percentage of TYCs
Assign a mathematics faculty member to coordinate K–8 teacher education in mathematics	35 (38,36)
Offer a special mathematics course for preservice K–8 teachers[1]	55 (11,7)
Offer a special mathematics course for preservice secondary teachers[2]	19 (na)
Offer mathematics pedagogy courses in the mathematics department	9 (9,5)
Offer mathematics pedagogy courses outside of the mathematics department	6 (10,9)

[1]In 2010, this question specifically excluded four courses listed in the detailed course matrix.
[2]Did not collect in 2010.

TABLE SP.4 Among all four-year colleges and universities with a K-5 certification program, the percentage of mathematics departments requiring various numbers of mathematics semester hours for certification, by type of department, in fall 2015. (Table can be compared to Table SP.5 in CBMS2005 and CBMS2010, but the previous surveys asked for the number of courses. Also, the earlier surveys looked at K-8 and at "early" grades, while 2015 asked separately about K-5 and 6-8.)

	Percentage of departments with K-5 certification programs that require various numbers of mathematics courses for certification			
Number of semester hours in mathematics department required for K-5 certification	Univ (PhD) %	Univ (MA) %	Coll (BA) %	All Math %
0 required	8	0	2	2
1-3 required	9	0	6	6
4-6 required	20	37	19	22
7-9 required	22	26	23	23
10-12 required	17	13	11	12
More than 12 required	24	24	38	34
Number of semester hours in fundamental ideas of mathematics required for K-5 certification	Univ (PhD) %	Univ (MA) %	Coll (BA) %	All Math %
0 required	12	5	17	14
1-3 required	6	3	10	8
4-6 required	41	40	46	45
7-9 required	16	21	11	13
10-12 required	11	16	1	5
More than 12 required	14	15	15	15

Some percentages do not total 100% due to round-off.

TABLE SP.5 Among all four-year colleges and universities with a 6-8 certification program, the percentage of mathematics departments requiring various numbers of mathematics semester hours for certification, by type of department, in fall 2015. (Table can be compared to Table SP.5 in CBMS2005 and CBMS2010, but the previous surveys asked for the number of courses. Also, the earlier surveys looked at K-8 and at "early" grades, while 2015 asked separately about K-5 and 6-8.)

	Percentage of departments with grade 6-8 certification programs that require various numbers of mathematics courses for certification			
Number of semester hours in mathematics department required for 6-8 certification	Univ (PhD) %	Univ (MA) %	Coll (BA) %	All Math %
0 required	4	0	1	1
1-3 required	0	0	0	0
4-6 required	14	10	4	7
7-9 required	5	3	2	3
10-12 required	6	10	5	6
More than 12 required	71	77	87	83
Number of semester hours in fundamental ideas of mathematics required for 6-8 certification	Univ (PhD) %	Univ (MA) %	Coll (BA) %	All Math %
0 required	15	10	15	14
1-3 required	4	.	11	8
4-6 required	28	19	26	25
7-9 required	25	16	17	18
10-12 required	15	10	4	7
More than 12 required	13	45	28	29

Some percentages do not total 100% due to round-off.

SP.6

TABLE ~~SP.9~~ Among four-year colleges and universities with secondary pre-service teaching certification programs, for various courses, the percentage of mathematics departments whose program requires the course, or whose students generally take the course, or who offer a special course in the given subject that is designed for secondary teachers, by type of department, in fall 2015. (This table can be compared to Table SP.9, p. 54, in CBMS2010.)

	Percentage of departments with secondary certification program where:											
	Course is required				Course is generally taken, but not required				Math dept offers special course in the subject for secondary pre-service teachers			
Course	Univ (Ph.D) %	Univ (MA) %	Coll (BA) %	All math %	Univ (Ph.D) %	Univ (MA) %	Coll (BA) %	All math %	Univ (Ph.D) %	Univ (MA) %	Coll (BA) %	All math %
Advanced Calculus/ Analysis	69	64	49	54	13	13	16	15	9	3	10	8
Modern Algebra	72	89	81	81	9	12	14	13	23	4	2	6
Number Theory	25	37	11	17	26	24	24	24	7	.	9	7
Geometry	85	89	90	89	18	7	10	11	53	5	13	18
Discrete Mathematics	56	52	62	60	8	9	16	14	12	5	4	5
Statistics	66	88	85	83	23	7	12	13	4	8	3	4
Probability	62	68	50	55	15	2	18	15	6	9	6	7
History of Math	60	77	39	48	16	7	17	16	39	5	11	15

Some totals are less than 100% due to round-off.

TABLE SP.7 Among statistics departments at four-year colleges and universities with secondary pre-service teaching certification programs, for various courses, the percentage of statistics departments whose program requires the course, or whose students generally take the course, or who offer a special course in the given subject that is designed for secondary teachers, and the number or semester hours required for certification in grades K-5 and 6-8, by type of department, in fall 2015.

	Percentage of departments with secondary certification program where:								
	Course is required			Course is generally taken, but not required			Stat dept offers special course in the subject for secondary pre-service teachers		
Course	Univ (Ph.D) %	Univ (MA) %	All stat %	Univ (Ph.D) %	Univ (MA) %	All stat %	Univ (Ph.D) %	Univ (MA) %	All stat %
Introductory Statistics	36	57	41	36	0	27	17	29	20
Probability	24	33	26	13	14	13	8	14	9
Probability and/or statistics with calculus prerequisite	36	67	42	4	14	7	12	0	9
Upper level statistics course	12	17	13	9	43	18	8	0	6
Applied statistics course	12	17	13	9	29	14	4	0	3
Other	5	0	4	5	0	4	4	0	4
Number of semester hours required for K-5 grade teachers (%)									
None	85	50	73						
1-3 hours	0	0	0						
4-6 hours	11	50	23						
More than 6 hours	5	0	3						
Number of semester hours required for 6-8 grade teachers									
None	49	25	42						
1-3 hours	33	63	42						
4-6 hours	9	13	10						
More than 6 hours	9	0	6						

Some totals are less than 100% due to round-off.

TABLE SP.10 Percentage of mathematics, statistics, and public two-year college departments offering distance learning[1], and use of various practices with regard to distance learning in fall 2015. This table can be compared to Table SP.10 CBMS 2010 p. 55.

	Mathematics Depts				Statistics Depts			Two-Year Colleges
	Univ (PhD)	Univ (MA)	College (BA)	Total	Univ (PhD)	Univ (MA)	Total	
Give credit for distance learning not taught by faculty in your institution:								
Yes	60	74	60	62	52	42	50	58
No	40	26	40	38	48	58	50	42
Set a limit on the number of credits earned in distance learning classes	33	33	37	36	34	18	31	1
Percentage offering distance learning	63	73	45	52	69	50	64	87
Format of majority of distance learning:								
Complete online	63	60	74	69	70	50	66	69
Hybrid	36	33	21	26	18	50	23	22
Other	1	7	5	5	13	.	10	8
Instructional materials created by:								
Faculty	37	30	37	36	54	67	56	14
Commercially produced materials	9	6	11	9	3	.	3	19
Combination of both	55	65	52	55	43	33	41	67
How distance learning students take majority of tests:								
Not at a monitored testing site	15	15	26	22	10	17	11	11
Online, using monitoring technology	10	14	23	19	16	17	16	10
At proctored testing site	49	34	34	37	32	50	35	47
Combination of both	25	37	18	23	41	17	37	32

[1] Distance-learning courses are those courses in which the majority of instruction occurs with the instructor and students separated by time and/or place (e.g. courses in which the majority of the course is taught online, or by computer software, or by other technologies, including MOOCs that are offered for credit.)

TABLE SP.11 Percentages of public two-year colleges (TYCs) with various practices in distance-learning courses in fall 2015. (Data from fall 2010 are in parentheses.) This table can be compared to Table SP.11 CBMS 2010 p. 57.

Requirements of faculty whose entire teaching load is distance-learning courses regarding time required to be on campus to meet with students	% of TYCs	
Never	5	(8)
Only for scheduled meeting or student appointment	12	(6)
A specified number of office hours per week	32	(21)
Not applicable or unreported	51	(65)

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TABLE SP.12 Percentage of four-year mathematics and statistics departments, and public two-year college (TYC) programs, with courses offered in both distance and non-distance-learning formats, and comparison of various practices in the distance learning and the non-distance-learning formats, by type and level of department, in fall 2015. This table can be compared to Table SP.12 CBMS 2010 p. 57.

	Math				Stat			TYC
	Univ (PhD)	Univ (MA)	College (BA)	Total	Univ (PhD)	Univ (MA)	Total	
Some courses in both non-distance and distance-learning formats	91	94	90	91 .	85	100	88	na[1]
Of those with courses in both formats, the percentage where:								
Instructors hold comparable office hours on campus	71	52	57	59	64	83	68	na
Instructors participate in evaluation in same way	89	81	89	87	89	100	91	93
Same use of common exams as in face-to-face	52	64	58	58	44	50	45	67
Same course outlines as in face-to-face	94	91	95	94	85	100	88	97
Same course projects as in face-to-face	85	73	78	79	62	100	69	77
More course projects than in face-to-face	10	18	14	14	9	.	7	12

[1]See Tables TYE.3 and TYE.12.

13.A

TABLE SP.13.A Percentage of four-year mathematics departments offering various upper-level mathematics courses by distance learning, by department type, in fall 2015. This table can be compared to Table SP.13.A in CBMS2010 p. 58.

	Mathematics Departments			
	Univ (PhD)	Univ (MA)	College (BA)	Total
E23. Introduction to Proofs	2	.	3	2
E24-1. Modern Algebra I	2	.	.	0
E24-2. Modern Algebra II				
E25. Number Theory				
E26. Combinatorics				
E27. Actuarial Mathematics				
E28. Logic/Foundations (not E23)				
E29. Discrete Structures	1	.	.	0
E30. History of Mathematics	4	.	1	1
E31. Geometry	2	.	.	0
E32-1. Advanced Calculus I and/or Real Analysis I	1	.	.	0
E32-2. Advanced Calculus II and/or Real Analysis II				
E33. Advanced Mathematics for Engineering and Physical Sciences				
E34. Advanced Linear Algebra (beyond E17, E19)	2	.	.	0
E35. Vector Analysis				
E36. Advanced Differential Equations (beyond E18)				
E37. Partial Differential Equations				
E38. Numerical Analysis I and II	.	3	.	0
E39. Applied Mathematics (Modeling)	.	4	.	1
E409. Complex Variables	.	4	1	1
E41. Topology	.	4	.	1
E42. Mathematics of Finance (not E26, E38)				
E43. Codes and Cryptology				
E44. Biomathematics				
E45. Operations Research (all courses)	.	.	0	0
E46. Senior Seminar/ Independent Study in Mathematics				
E47. Other advanced-level mathematics	.	7	0	1
E48. Mathematics for Secondary School Teachers	.	7	1	1

Note: These estimates are based on small numbers and have large standard error. Blank entries represent courses with no responses while zero entries indicate percentages that round to 0%.

11.B

TABLE SP.~~13~~.B Percentage of four-year mathematics and statistics departments offering upper-level statistics courses by distance learning, by department type, in fall 2015. This table can be compared to Table SP.13.B in CBMS2010 p. 59.

	Mathematics Departments				Statistics Departments		
	Univ (PhD)	Univ (MA)	College (BA)	Total	Univ (PhD)	Univ (MA)	Total
E6. Introductory Probability and/or Statistics for Majors/Minors (no calculus prerequisite)	2	3	5	4	11	15	12
E7. Combined Probability & Statistics (calculus prerequisite)	2	3	.	1	4	17	7
E8. Probability (calculus prerequisite)	5	7	0	2	.	8	2
E9. Mathematical Statistics (calculus prerequisite)	3	7	0	2	.	8	2
E10. Stochastic Processes	.	3	.	0			
E11. Applied Statistical Analysis	2	3	.	1	6	8	7
E12. Data Science/Analytics	2	6	.	1	3	8	4
E13. Design & Analysis of Experiments	2	3	0	1	7	8	7
E14. Regression (and Correlation)	2	3	.	1	2	.	2
F15. Biostatistics	.	3	.	0	2	.	2
E16. Nonparametric Statistics	.	3	.	0			
E17. Categorical Data Analysis	.	3	.	0			
E18. Sample Survey Design & Analysis	.	3	.	0	2	8	3
E19. Statistical Computing and/or Software	2	3	.	1	4	8	5
E20. Bayesian Statistics	na	na	na	na			
E21. Statistical Consulting	na	na	na	na	.	8	2
E22. Senior Seminar/ Independent Studies	.	5	.	1			
E23. Other upper-level Probability & Statistics	2	5	0	1	2	15	6
E24. Other mathematical science courses	na	na	na	na	.	8	2

Note: These estimates are based on small numbers and have large standard error. Blank entries represent courses with no responses while zero entries indicate percentages that round to 0%.

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TABLE SP.14 Percentage of mathematics and statistics departments in four-year colleges and universities, and of mathematics programs at public two-year colleges, that offer various kinds of special opportunities for undergraduates, by type of department, in fall 2015. (Fall 2010 data in parentheses.) This table can be compared to Table SP.14 in CBMS2010 p. 60.

Percentage with special opportunities for undergraduates	Honors sections of courses for majors %		Math or Stat club %		Special programs for women %		Special programs for minorities %		Math or Stat contests %		Special Math or Stat colloquia for undergrads &		Outreach in K–12 schools %	
Mathematics Departments														
Univ (PhD)	69	(70)	94	(91)	41	(31)	25	(21)	91	(93)	77	(82)	61	(71)
Univ (MA)	39	(40)	91	(96)	37	(21)	31	(21)	78	(82)	87	(88)	77	(75)
Coll (BA)	28	(15)	56	(75)	16	(16)	8	(12)	64	(62)	53	(51)	43	(40)
Total Mathematics Departments	35	(26)	67	(80)	22	(19)	14	(14)	70	(69)	61	(60)	50	(49)
Statistics Departments														
Univ (PhD)	38	(43)	55	(48)	18	(19)	13	(22)	56	(24)	70	(67)	18	(30)
Univ (MA)	50	(55)	18	(45)	.	0	8	0	45	(36)	42	(82)	42	(18)
Total Statistics Depts	41	(46)	46	(47)	14	(13)	12	(15)	54	(28)	63	(71)	24	(27)
Two-Year College Mathematics Programs	28	(20)	32	(31)	15	(6)	15	(11)	40	(41)	21	(16)	46	(32)

Note: 0 means less than one-half of 1%.

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TABLE SP.15 Percentage of mathematics and statistics departments in four-year colleges and universities, and of mathematics programs in public two-year colleges, that offer various additional special opportunities for undergraduates, by type of department, in fall 2015. (Fall 2010 data, where available, in parentheses.) This table can be compared to Table SP.15, p. 61, of CBMS2010.

Percentage with additional opportunities for undergraduates	Undergrad. Research opportunity %		Indep. Studies opportunity %		Assigned advisors in dept. %		Senior thesis opportunity %		Math career day %		Graduate school advising %		Internship opportunity %		Senior seminar opportunity %		Consulting lab with clients %		Tutor, grade papers, or TA %
Mathematics Departments																			
Univ (PhD)	94	(96)	90	(96)	88	(90)	73	(63)	46	(40)	67	(67)	69	(50)	50	(47)	89		21
Univ (MA)	89	(91)	93	(100)	93	(100)	59	(56)	23	(46)	58	(70)	69	(67)	71	(66)	82		19
Coll (BA)	72	(83)	85	(94)	85	(90)	52	(58)	21	(17)	51	(46)	61	(55)	61	(59)	82		15
Total mathematics depts	77	(86)	87	(95)	86	(91)	56	(59)	25	(24)	55	(52)	63	(56)	60	(58)	83		17
Statistics Departments																			
Univ (PhD)	91	(85)	95	(90)	73	(89)	60	(54)	50	(30)	90	(66)	72	(69)	46	(30)	41	(32)	80
Univ (MA)	69	(82)	92	(100)	83	(73)	42	(27)	27	(45)	50	(64)	69	(91)	27	(27)	54	(55)	62
Total statistics depts	86	(84)	94	(93)	76	(84)	56	(46)	45	(35)	80	(66)	71	(75)	42	(29)	44	(39)	75
Two-Year College Mathematics Programs	17	(14)	41	(36)	49	(42)	na	na	na	na	na	na	na	na	na	na	na	na	na

14.
SP. 13

TABLE SP.27 Total number of majors (best estimate) who participated in various activities over Sept. 1, 2014, through Aug. 31, 2015.

Activity	All Math Depts	PhD Math	MA Math	BA Math	All Stat Depts	PhD Stat	MA Stat
Undergraduate research project in the mathematical sciences	12168	2091	1733	8344	575	534	42
Internship in mathematical sciences	6031	1198	766	4068	714	680	34
Mathematical or statistical consulting to client	975	243	170	562	317	300	17

(Moving this table up)

SP.14 15
SP13

TABLE SP.17 Percentage of all four-year mathematics departments offering interdisciplinary courses, by type of department, in fall 2015.

	Univ (PhD)	Univ (MA)	Coll (BA)	All department
Offered course in:	Offered course %	Offered course %	Offered course %	Offered course %
Mathematics and finance or business	46	44	31	35
Mathematics and biology	47	36	14	22
Mathematics and the study of the environment	16	8	3	6
Mathematics and engineering or the physical sciences	29	23	13	17
Mathematics and economics	15	11	9	10
Mathematics and social sciences other than economics	5	16	7	8
Mathematics and education	33	59	40	41
Mathematics and the humanities	8	9	14	13
Mathematics and computer science	27	41	30	31
Other	10	6	10	10

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TABLE SP.18 Percentage of departments offering dual-enrollment courses taught in high school by high school (HS) teachers, enrollments in various dual-enrollment courses in spring 2015 and fall 2015 compared to total of all other enrollments in fall 2015, and (among departments with dual-enrollment programs) percentage of departments requiring teacher evaluations, by type of department. (Fall 2010 data in parentheses.) The comparable data in the CBMS2010 report is in Table SP.18 p. 65.

	Four-year Mathematics			Two-year Mathematics			Four-year Statistics		
Percentage of departments with dual-enrollment courses	26% (17%)			63% (61%)			12% (8%)		
Number of dual enrollments in:	Dual Enrollments		Other enrollments	Dual enrollments		Other enrollments	Dual enrollments		Other enrollments
	spring 2015	fall 2015	fall 2015	spring 2015	fall 2015	fall 2015	spring 2015	fall 2015	fall 2015
College algebra	15534	30310	255416	32937	57523	292138	na	na	na
Precalculus	15090	15702	122302	18869	13178	87014	na	na	na
Calculus I [1]	6329	14480	344988	4596	6358	91993	na	na	na
Statistics	3866	3292	226441	11919	7064	251279	299	1179	89756
Other courses	8016	4780	na	8478	10046	na	na	na	na
Departmental teaching evaluations required in dual-enrollment courses			34% (40%)			72% (48%)			26% (0%)

[1]The question on dual enrollments did not differentiate between mainstream and non-mainstream calculus. To provide comparable data, the column for "Other enrollments" also combines mainstream and non-mainstream calculus even though separate statistics are shown elsewhere in this report.

17

TABLE SP.19 Percentage of departments in four-year colleges and universities and in public two-year colleges that assign their own full-time or part-time faculty members to teach, in high school courses that award both high school and college credit, and number of students enrolled, in fall 2015. (Fall 2010 data in parentheses.) This table was Table SP.19 in CBMS2010.

	Four-year Mathematics Departments	Two-year Mathematics Departments	Statistics Departments
Assign their own members to teach dual-enrollment courses	6	44	
	(4)	(22)	(0)
Number of students enrolled	4014	*	0
	(3,932)	(6,358)	

*The estimate of 36368 from the data shows very large standard errors. The only clear finding is that there has been a large increase in this practice, but not necessarily as large as the estimate indicates.

TABLE SP.20 Percentage of four-year mathematics departments requiring certain courses (or exit exam) in all, some, or none of their majors, by type of department, in fall 2015. These percentages can be compared to Table SP.20 in CBMS2010 p. 67.

	Required in all majors			Required in some but not all majors			Not required in any major		
Mathematics Department Requirements	Univ (PhD) %	Univ (MA) %	College (BA) %	Univ (PhD) %	Univ (MA) %	College (BA) %	Univ (PhD) %	Univ (MA) %	College (BA) %
Modern Algebra I	34	34	54	40	62	27	26	4	19
Real Analysis I	31	49	36	49	45	23	20	6	41
Modern Algebra I or Real Analysis I (major may choose either to fulfill this requirement)	21	33	24	23	27	14	56	40	62
A one-year upper-level sequence	48	26	28	19	43	6	33	31	66
At least one computer science course	55	67	69	19	13	6	26	20	25
At least one statistics course	31	46	59	37	47	8	32	8	34
At least one applied mathematics course beyond course E21	32	36	43	47	40	16	21	24	41
A capstone experience (senior project, thesis, seminar, internship)	32	68	76	27	17	5	41	15	19
An exit exam (written or oral)	3	10	31	3	15	2	94	75	67

19A

TABLE SP.21.A Percentage of mathematics departments that offer a major in statistics requiring certain courses (or exit exam) in all, some, or none of their majors, by type of department, in fall 2015.

	Required in all majors			Required in some but not all majors			Not required in any major		
Percentage of statistics departments that require:	Univ (PhD) %	Univ (MA) %	College (BA) %	Univ (PhD) %	Univ (MA) %	College (BA) %	Univ (PhD) %	Univ (MA) %	College (BA) %
(a) Calculus I	100	100	91	.	.	9			
(b) Calculus II	100	100	83	.	.	17			
(c) Multivariable Calculus	100	100	67	.	.	17	.	.	16
(d) Linear algebra/Matrix theory	92	100	83	6	.	17	2	.	.
(e) At least one Computer Science course	60	85	67	8	7	33	32	7	.
(f) At least one applied mathematics course, not incl. (a), (b), (c), (d)	42	47	.	8	.	16	49	53	84
(g) A capstone experience (e.g., a senior thesis or project, seminar, or internship)	16	100	83	18	.	.	66	.	17
(h) An exit exam (oral or written)	.	.	9	8	.	.	92	100	91
(i) One Probability Course	100	75	83	.	7	9	.	18	9
(j) One Mathematical Statistics Course	100	85	50	.	15	17	.	.	33
(k) One applied statistics course	74	85	75	8	15	25	18	.	.
(l) One Linear Models Course	29	43	67	8	57	9	62	.	25
(m) One Bayesian Inference Course	7	19	.	8	8	25	84	73	75

19.B

TABLE SP.21B Percentage of statistics departments requiring certain courses (or exit exam) in all, some, or none of their majors, by type of department, in fall 2015. This table can be compared to Table SP.21 in CBMS2010 p. 68.

	Required in all majors		Required in some but not all majors		Not required in any major	
Percentage of statistics departments that require:	Univ (PhD) %	Univ (MA) %	Univ (PhD) %	Univ (MA) %	Univ (PhD) %	Univ (MA) %
(a) Calculus I	97	83	3	17		
(b) Calculus II	97	83	3	17		
(c) Multivariable Calculus	88	50	5	33	8	17
(d) Linear algebra/Matrix theory	86	50	11	33	3	17
(e) At least one Computer Science course	86	67	6	17	7	17
(f) At least one applied mathematics course, not incl. (a), (b), (c), (d)	23	33	28	.	49	67
(g) A capstone experience (e.g., a senior thesis or project, seminar, or internship)	35	17	14	17	51	67
(h) An exit exam (oral or written)	2	.	6	17	92	83
(i) One Probability Course	75	50	11	17	13	33
(j) One Mathematical Statistics Course	89	33	8	33	3	33
(k) One applied statistics course	79	50	19	50	2	.
(l) One Linear Models Course	60	17	9	.	31	83
(m) One Bayesian Inference Course	11	17	15	.	74	83

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TABLE SP.23 Percentage of mathematics departments offering various upper-division mathematics courses at least once in the two-academic years 2014-2016 and 2015-2016, plus historical data on the two year period 2009-2011, by type of department. The table can be compared to Table SP.23 in CBMS2010 p. 70.

		Academic Years 2014-2015 & 2015-2016			
Upper-level mathematics courses	All Math Depts 2009-2011 %	All Math Depts 2014-2016 %	PhD Math %	MA Math %	BA Math %
Modern Algebra I	80	78	81	89	75
Modern Algebra II	27	27	57	48	17
Number Theory	51	37	59	65	27
Combinatorics	27	22	39	45	15
Actuarial Mathematics	13	21	38	40	14
Foundations/Logic	11	12	15	19	10
Discrete Structures	30	21	20	27	20
History of Mathematics	49	47	58	66	41
Geometry	74	71	79	77	68
Math for Secondary Teachers	35	33	45	59	26
Adv Calculus/ Real Analysis I	79	72	84	95	65
Adv Calculus/Real Analysis II	31	31	78	49	17
Adv Mathematics for Engineering/Physics	12	12	36	16	5
Advanced Linear Algebra	23	22	56	54	8
Introduction to Proofs	57	56	65	76	50

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TABLE SP.23 (continued) Percentage of mathematics departments offering various upper-division mathematics courses at least once in the two academic years 2014-2015 and 2015-2016, plus historical data on the two-year period 2009-2011, by type of department. The table can be compared to Table SP.23 in CBMS2010 p. 71.

		Academic Years 2013-2014 & 2015-2016			
Upper-level math courses, continued	All Math Depts 2009-2011 %	All Math Depts 2014-2016 %	PhD Math %	MA Math %	BA Math %
Vector Analysis	11	11	32	9	7
Advanced Differential Equations	16	16	58	23	5
Partial Differential Equations	26	29	71	61	14
Numerical Analysis I and II	42	43	66	74	33
Applied Math/Modeling	37	36	45	53	31
Complex Variables	44	43	64	55	36
Topology	25	28	51	53	18
Mathematics of Finance	12	13	35	23	7
Codes & Cryptology	11	11	19	18	8
Biomathematics	12	8	26	10	4
Operations Research	17	18	15	35	16
Math senior seminar/Ind study	65	66	63	81	65
All other advanced-level mathematics	25	25	34	47	19

TABLE SP.24 Percentage of mathematics and statistics departments offering various undergraduate statistics courses at least once in two academic years 2009-2010 and 2010-2011 and at least once in the two academic years 2014-2015 and 2015-2016, by type of department. This table can be compared to Table SP.24 in CBMS2010 p. 72.

		AY 2014-15 & 2015-16					AY 2014-15 & 2015-16		
Upper-level statistics courses	All Math Depts 2009-2011 %	All Math Depts %	PhD Math %	MA Math %	BA Math %	All Stat Depts 2009-2011 %	All Stat Depts %	PhD Stat %	MA Stat %
Introductory Probability and/or Statistics	na	18	14	28	16	na	48	54	31
Mathematical Statistics	42	34	47	42	30	78	73	82	46
Probability	37	37	53	41	32	63	70	77	46
Combined Probability and Statistics	26	32	33	45	30	37	48	48	46
Stochastic Processes	9	12	26	25	6	37	49	55	31
Applied Statistical Analysis	13	12	19	29	7	50	46	46	46
Experimental Design	10	9	13	26	5	51	59	58	62
Regression & Correlation	11	15	19	38	10	71	78	84	62
Biostatistics	4	7	11	9	6	27	36	40	23
Nonparametric Statistics	5	6	9	14	4	30	44	46	38
Categorical Data Analysis	1	4	8	11	2	31	30	35	15
Sample Survey Design	2	4	6	13	2	41	50	56	31
Stat Software & Computing	5	11	17	23	8	35/41*	62	64	54
Data Science	na	7	11	17	5	na	36	38	31
Bayesian Statistics	na	na	na	na	na	36	47	55	23
Statistical Consulting	na	na	na	na	na	29	34	38	23
Senior Seminar/ Independent Study	12	9	13	20	6	44	56	59	46

Note: 0 means less than one-half of one percent.

*In 2010, this appeared as two separate items in the statistics questionnaire, with 41 percent reporting courses in statistical computing and 35 percent reporting couses in statistical software.

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TABLE SP.25 Departmental estimates of the percentage of graduating mathematics or statistics majors from academic year 2014-2015 who had various post-graduation plans, by type of department, in fall 2015. (Data from fall 2010 in parentheses.)

	Mathematics Departments			Statistics Departments	
Departmental estimates of post-college plans	Univ (PhD) %	Univ (MA) %	College (BA) %	Univ (PhD) %	Univ (MA) %
Students who went into pre-college teaching	12	25	26	1	1
	(13)	(48)	(27)	(1)	(1)
Students who went to graduate school in the mathematical or statistical sciences	11	13	12	17	10
	(15)	(12)	(17)	(23)	(29)
Students who went to graduate or professional school outside of mathematics/statistics	8	4	7	10	1
	(10)	(4)	(8)	(5)	(5)
Students who took jobs in business, government, etc.	27	19	34	34	20
	(27)	(19)	(30)	(41)	(45)
Students who had other plans known to the department	3	3	4	3	0
	(5)	(3)	(4)	(2)	(3)
Students whose plans are not known to the department	40	36	16	36	68
	(30)	(14)	(13)	(29)	(18)

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TABLE SP.26 Percentage of four-year mathematics and statistics departments undertaking various assessment activities during the last six years, by type of department, in fall 2015. (Data from fall 2010 when known in parentheses.)

	Four-year Mathematics Departments			Statistics Departments	
Percentage using various assessment tools	Univ (PhD) %	Univ (MA) %	College (BA) %	Univ (PhD) %	Univ (MA) %
Consult outside reviewers	36	57	40	44	42
	(53)	(48)	(31)	(42)	(80)
Survey program graduates	67	83	59	70	67
	(71)	(80)	(71)	(63)	(70)
Consult other departments	44	42	38	46	17
	(54)	(45)	(26)	(47)	(60)
Study data on students' progress in later courses	63	77	62	21	33
	(62)	(65)	(55)	(41)	(40)
Assessed teaching objectives	78	81	85	98	67
Evaluate placement system	72	52	57	18	25
	(72)	(51)	(60)	(12)	(30)
Change undergraduate program due to assessment	80	76	70	76	75
	(78)	(76)	(69)	(61)	(80)

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TABLE SP.28 Percentage of mathematics and statistics departments that allow a student to meet an institutional or divisional graduation requirement using an Advanced Placement course

Meets requirement	All Math Depts	PhD Math	MA Math	BA Math	All Stat Depts	PhD Stat	MA Stat
Yes (%)	88	97	83	87	86	84	92
No (%)	12	3	17	13	14	16	8

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TABLE SP.29 Percentage of four-year mathematics and statistics departments reporting that various items are significant sources of information to the department about the types of pedagogy used.

Activity	All Math Depts	PhD Math	MA Math	BA Math	All Stat Depts	PhD Stat	MA Stat
Syllabi for classes	87	95	96	84	98	98	100
Teaching portfolios	16	23	28	12	36	35	42
Peer evaluation of instructors	64	78	74	60	64	60	75
Self-evaluation of instructors	51	28	47	57	29	22	50
Department discussions of teaching practices	69	66	64	71	73	68	92
None of these are available	2	2	3	1			

TABLE SP.30 Percentage of four-year mathematics and statistics departments reporting that various pedagogical strategies are used by some member of the department faculty.

Activity	All Math Depts	PhD Math	MA Math	BA Math	All Stat Depts	PhD Stat	MA Stat
Inquiry based class	58	56	71	57	54	56	45
Flipped classroom	58	61	52	59	39	35	55
Class conducted largely online	38	49	53	33	48	49	45
Activity based learning	66	64	71	65	77	70	100
Technology used to develop conceptual understanding	86	82	91	86	84	84	82

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TABLE SP.31 Percentage of mathematics and statistics departments reporting major changes in the kinds of pedagogy used in their departments, and the percentage citing various reasons for those changes.

Activity	All Math Depts	PhD Math	MA Math	BA Math	All Stat Depts	PhD Stat	MA Stat
Department experienced major changes over the last 10 years	60	62	65	58	80	78	85
Of those experiencing change, the percent attributing the change to:							
Educational research	61	67	77	56	49	53	36
Advocacy of some faculty member in the department	91	99	90	90	88	88	91
Advocacy by another department	16	23	14	15	16	21	0
Advocacy by institution's administrators	37	47	30	35	47	48	45
Advocacy by a professional organization	39	31	33	43	38	36	45

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TABLE SP.33 Percentage of four-year mathematics departments offering a minor in statistics, the number of students graduating with such a minor between July 1, 2014, and June 30, 2015, and the percentage of four-year mathematics departments offering a major in statistics.

	Mathematics Departments			
Number of tracks	Univ (PhD)	Univ (MA)	College (BA)	Total
Offer a minor in statistics (%)	13	52	10	16
Number of graduates	305	323	384	1012
Offer a major in statistics (%)	25	26	4	10

Some totals are less than 100% due to round-off.

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SP.28

Profile of 2014-2015 Postdocs who left the position at the end of the 2014-2015 academic year

	Doctoral Math	Masters Math	Bachelors Math	All Math	Doctoral Stat	Masters Stat
Postdocs during 2014-2015 academic year	1297	46	119	1463	100	0
Percent who left the position for fall 2015	39%	71%	89%	44%	30%	
Of those who left the position for fall 2015:						
Percent who took tenure-track position	36%	25%	68%	41%	24%	
Percent who took another postdoc position	22%	18%	0%	18%	13%	
Percent who took renewable appointment for fall 2015	13%	41%	27%	17%	51%	
Percent who took non-renewable appointment for fall 2015	6%	0%	0%	5%	6%	
Percent who took non-academic appointment for	6%	9%	4%	6%	6%	
Percent unemployed for fall 2015	0%	0%	0%	0%	0%	
Percent whose status is unknown for fall 2015	17%	7%	0%	13%	0%	

SP.29 30

Profile of Non-tenure-track faculty with renewable appointments

	Doc_Math	MA_Math	BA_Math	All_Math	Doc_Stat	MA_Stat	All_Stat
Renewable positions filled for 2014-2015	1641.1	850.2	1778.1	4269.4	214.4	50.7	265.1
Percent that Left renewable position for 2016	14%	14%	21%	17%	7%	11%	8%
Renewable positions filled for 2015-2016	1645.2	865.2	1808.5	4318.8	253.2	34.7	287.9
Percent Active in teaching	99%	100%	99%	99%	96%	100%	97%
Percent Active in research	17%	11%	17%	16%	36%	8%	33%
Percent that Attend research conf. with support	11%	9%	19%	14%	15%	8%	14%
Percent that Attend teaching conf. with support	23%	25%	37%	29%	15%	0%	13%
Percent that Serve on dept. committees	53%	59%	63%	58%	54%	62%	55%
Percent that Advise undergrad. research projects	12%	10%	20%	15%	16%	31%	18%
Percent that Serve as academic advisor	20%	24%	40%	29%	30%	31%	31%
Percent that Serve on univ. committees	14%	20%	39%	26%	12%	38%	15%
Percent that Serve as course coordinator	33%	21%	28%	28%	20%	54%	24%

Profile of Non-tenure-track faculty with fixed-term (non-renewable) appointments

SP-31

Reporting Group →	Doctoral Math	Masters Math	Bachelors Math	All Math	Doctoral Stat	Masters Stat	All Stat
Number of Fixed-term positions filled for 2014-2015	511.4	311.4	680.5	1503.3	47.8	5.3	53.1
Percent that left fixed-term position for 2015	31%	26%	31%	30%	54%	100%	58%
Number of Fixed-term positions filled for 2015-2016	574.1	382.5	658.5	1615.1	54.6	13.3	67.9
Percent Active in teaching	99%	100%	100%	99%	89%	100%	91%
Percent Active in research	37%	12%	41%	33%	52%	20%	46%
Percent that Attend research conf. with support	27%	7%	37%	26%	18%	20%	18%
Percent that Attend teaching conf. with support	11%	11%	24%	16%	0%	0%	0%
Percent that Serve on dept. committees	13%	31%	37%	27%	18%	20%	18%
Percent that Advise undergrad. research projects	3%	8%	27%	14%	7%	0%	6%
Percent that Serve as academic advisor	3%	4%	17%	9%	7%	0%	6%
Percent that Serve on university committees	1%	7%	12%	7%	0%	0%	0%
Percent that Serve as course coordinator	8%	7%	15%	11%	0%	0%	0%

Annual Survey
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Other Full-time Faculty Survey

www.ams.org/annual-survey/surveyforms.html

Return to: American Mathematical Society · P.O. Box 6248 · Providence, RI 02940-6248
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Web: www.ams.org/webdeptprofile

Institution name: _____

Department name: _____

City/State/Zipcode: _____ Date: _____

Name of person completing form: _____ Title: _____

Email: _____ Phone: _____

Please complete this form by June 1, 2016, keeping a copy for your records, and return it to the above address.

The purpose of this brief questionnaire is to obtain detailed information about the early career arcs of individuals with PhDs in mathematical sciences. The results of this survey will be reported in the next 2015 CBMS Statistical Abstract of Undergraduate Programs in the Mathematical Sciences in the United States.

1. Indicate the number of individuals in your department in 2014–15 who were postdoctoral faculty (those in a temporary position primarily intended to provide an opportunity to extend graduate training or to further research experience) _____ [1.a]; of these how many are not classifiable as postdoctoral research faculty in your department in 2015–16 _____ [1.b] (include postdocs who remain in your department in a different appointment).

   Of those reported in [1.b], give the number whose employment status in 2015–16 (at your institution or elsewhere) is

   _____[1.c] A tenure-track appointment
   _____[1.d] Another postdoctoral research appointment
   _____[1.e] A renewable appointment
   _____[1.f] A non-renewable appointment
   _____[1.g] A non-academic appointment
   _____[1.h] Unemployed
   _____[1.i] Unknown

2. Indicate the number of faculty in your department during 2014–15 not counted in [1.a] who were in renewable non-tenure-track positions (e.g. lecturer, teaching professional, professor of the practice) _____[2.a]; of these how many are not in your department in 2015–16 _____[2.b].

   Indicate the number of faculty in your department in 2015–16 in renewable non-tenure-track, non-postdoc positions _____ [2.c]

   Of those reported in [2.c], indicate the number who are typically engaged in each of the following activities (note that the sum of the values entered here may be larger than that in [2.c]):

   _____[2.d] Teaching
   _____[2.e] Research
   _____[2.f] Attend research conferences with financial support
   _____[2.g] Attend teaching conferences with financial support
   _____[2.h] Serve on department committees
   _____[2.i] Advise undergraduate research projects
   _____[2.j] Serve as academic advisor to undergraduates or graduate students
   _____[2.k] Serve on university/college committees
   _____[2.l] Serve as department course coordinators

3. Indicate the number of faculty in your department during 2014–15 not counted in [1.a] who were in fixed-term (not renewable) non-tenure-track positions _____[3.a]; of these how many are not in your department in 2015–16 _____[3.b].

   Indicate the number of faculty in your department in 2015–16 in fixed-term (not renewable) non-tenure-track, non-postdoc positions _____ [3.c]

   Of those reported in [3.c], indicate the number who are typically engaged in each of the following activities (note that the sum of the values entered here may be larger than that in [3.c]):

   _____[3.d] Teaching
   _____[3.e] Research
   _____[3.f] Attend research conferences with financial support
   _____[3.g] Attend teaching conferences with financial support
   _____[3.h] Serve on department committees
   _____[3.i] Advise undergraduate research projects
   _____[3.j] Serve as academic advisor to undergraduates or graduate students
   _____[3.k] Serve on university/college committees
   _____[3.l] Serve as department course coordinators

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