

Appendix VII

Four-Year Statistics Questionnaire



SURVEY OF UNDERGRADUATE PROGRAMS IN THE MATHEMATICAL SCIENCES

General Information

Statistics Questionnaire

As part of a random sample, your department has been chosen to participate in the NSF-funded CBMS2015 National Survey of Undergraduate Mathematical Sciences Programs. The presidents of all U.S. mathematical sciences organizations have endorsed it and ask for your cooperation, even though it is a very complicated survey.

We assure you that no individual departmental data, except the names of responding departments, will be released.

This survey provides data about the nation's undergraduate statistical effort that is available from no other source. You can see the results of a similar survey fielded five years ago by going to www.ams.org/cbms, where the CBMS 2010 report is available online.

All departments in this survey are in universities and colleges that offer at least a bachelor's degree.

They may or may not offer an undergraduate major in statistics. Most of the statistics departments in our random sample also offer higher degrees in statistical sciences.

We have classified your department as belonging to a university or four-year college. If this is not correct, please contact Ellen Kirkman, Survey Director, at 336-758-5351 or at Kirkman@wfu.edu.

Please report on undergraduate programs in the statistical sciences (including probability) that are under the direction of your department. Do not include data for other departments or for branches or campuses of your institution that are budgetarily separate from your own. Also, if your department is broader than just statistics (e.g., Department of Statistics and Computer Science or Statistics and Operations Research), please report on all the courses offered by your department.

This survey may be completed either online or using a hard-copy questionnaire. We recommend using the online system because it will do some of the work for you; e.g., it will automatically skip those questions that are not applicable (based on the response you give), gray out portions of questions that do not apply, remind you of previous responses, and provide definitions when you let your cursor hover over certain highlighted words.

If you have any questions while filling out this survey form, please call the Survey Director, Ellen Kirkman, at 336-758-5351 or contact her by e-mail at Kirkman@wfu.edu. For help with the online questionnaire, call Westat at 855-680-1849 or send an email to cbms2015@westat.com.

Please return your completed questionnaire by October 31, 2015, either online or by mailing a hard copy to:

**CBMS Survey
Westat
1600 Research Boulevard, RB 3103
Rockville, MD 20850-3129**

Please retain a copy of your responses to this questionnaire in case questions arise.

A. General Information

Statistics Questionnaire

A1. Name of your Institution: _____

A2. Name of your Department: _____

A3. We have classified your department as being part of a university or four-year college. Do you agree?

Yes..... → If Yes, go to A4 below.No → If No, please call Ellen Kirkman, Survey Director, at 336-758-5351.A4. If your college or university does not recognize tenure, check this box. A5. Contact person in your department: A6. Contact person's e-mail address: A7. Contact person's phone number including area code:

A8. Contact person's mailing address:

a. Street b. Street2..... c. City..... d. State..... e. Zip code

B. Dual-Enrollment Courses

Statistics Questionnaire

Definition: We use the term dual-enrollment courses to refer to courses conducted on a high school campus and taught by high school teachers, for which high school students may obtain high school credit and, simultaneously, college credit through your institution.

B1. Does your department participate in any dual-enrollment programs of this type?

Yes —————> If Yes, go to B2.

No —————> If No, go to B4.

B2. Please complete the following table concerning your dual-enrollment program (as defined above) for the previous term (spring 2015) and the current fall term of 2015.

Course	Total Dual Enrollments	
	Last Term= Spring 2015	This Term= Fall 2015
a. Statistics.....		

B3. Are the high school instructors in the dual-enrollment courses reported in B2 required to participate in a teaching evaluation program conducted by your institution?

Yes

No

B. Dual-Enrollment Courses (continued)

Statistics Questionnaire

- B4. Does your department assign any of its own full-time or part-time faculty to teach courses conducted on a high school campus for which high school students may receive both high school and college credit (through your institution)?

Yes —————> If Yes, go to B6.

No —————> If No, go to Section C.

- B5. In Fall 2015 how many students are enrolled in the courses conducted on a high school campus and taught by your full-time or part-time faculty and through which high school students may receive both high school and college credit (through your institution)?

Number of students.....

- B6. Does your institution participate in a program that allows high school students to enroll in statistics courses on your campus for high school credit and, simultaneously, college credit?

Yes

No

*In subsequent sections we ask about course enrollments in your department; please **do not** include any of the enrollments reported in this Section B.*

C. Distance Learning

Statistics Questionnaire

Definition: Distance learning courses are those courses offered by your institution for credit, in which the majority of the instruction occurs with the instructor and the 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. (a MOOC is a “massive open online course”).

C1. Does your institution give (transfer) credit for any distance learning courses in statistics that are not taught by faculty in your institution?

Yes

No

C2. Does your institution have a specific limit on the number of credits earned (or number of courses taken) in distance learning classes that may be counted toward graduation?

Yes

No

C3. Has your department taught any distance learning courses during the calendar years 2013-2015?

Yes → go to C4.

No → If No, skip to Section D.

C4. Which best characterizes the format/structure of the majority of your distance learning courses? (Check one box)

Completely online: Instruction takes place completely online.....

Blended/Hybrid: Instruction takes place in a combination of face-to-face and
online formats

Other

C5. Which one response best describes the general pattern for how the instructional materials used in your distance learning courses are determined? (Check one box.)

Course instructors create materials

Course instructors choose commercially produced materials.....

Course instructors choose a combination of both.....

C. Distance Learning (continued)

Statistics Questionnaire

C6. In most of your distance learning courses, how are the majority of the tests administered? (Choose one response.)

- Not monitored (e.g., online or by correspondence)
- Online, but using some kind of monitoring technology
- At a monitored testing site
- Combination of the above

C7. Are there any courses that you offer in both non-distance learning and in distance learning formats?

- Yes → If Yes, go to C8 below.
- No → If No, go to C10.

C8. Do the course instructors in your distance learning courses generally: (Check one response on each line.)

	Yes	No
a. Hold office hours to meet with students on campus as in comparable non-distance learning courses taught on campus? ...	<input type="checkbox"/>	<input type="checkbox"/>
b. Participate in evaluation of instruction in the same way as faculty who teach comparable non-distance learning courses?	<input type="checkbox"/>	<input type="checkbox"/>

C9. Which, if any, of the following practices apply to the majority of distance learning courses in your department? (Check one response on each line.)

	Yes	No
a. Same common departmental tests and examinations as in the non-distance-learning course.....	<input type="checkbox"/>	<input type="checkbox"/>
b. Same common course as in the non-distance-learning course	<input type="checkbox"/>	<input type="checkbox"/>
c. Same course projects as in the non-distance-learning course	<input type="checkbox"/>	<input type="checkbox"/>
d. More course projects than in non-distance-learning course	<input type="checkbox"/>	<input type="checkbox"/>

C10. In the three calendar years 2013-2015 has your department taught (for credit) any distance learning courses that could be characterized as a MOOC?

- Yes → If Yes, go to C11 below.
- No → If No, go to Section D.

C. Distance Learning (continued)

Statistics Questionnaire

C11. In which of the following content areas has your department taught a MOOC (for credit) during 2013-2015? (Check all that apply.)

- Introductory Statistics
- Statistics course requiring previous statistical knowledge
- Teacher Preparation
- Other (specify) _____

C12. What is the total number of students enrolled in MOOCs (for credit) offered by your department in Fall 2015?

D. Faculty Profile (Fall 2015)

Statistics Questionnaire

Please indicate whether the following types of faculty are actively teaching one or more courses in fall 2015.

Definitions

- **Full-time faculty.** Faculty who are full-time employees in the institution and more than half-time in the department. For example, if a tenured physics professor with a joint appointment in your department teaches a total of two courses in fall 2015, with exactly one being in your department (i.e., statistics is 50% of the fall teaching assignment), then that person would be counted as part-time in your department.
- **Permanent faculty.** If your institution does not recognize tenure, please report full-time departmental faculty who are permanent on line D1a and report all other faculty on the remaining lines as appropriate.
- **Other full-time faculty.** Full-time faculty who are not tenured or tenure-eligible, faculty with renewable positions, postdoctoral faculty, visiting faculty.

Faculty Type	Teach in Fall 2015	
	Yes	No
D1. Full-time faculty		
a. Tenured or tenure-eligible faculty	<input type="checkbox"/>	<input type="checkbox"/>
b. Other full-time faculty	<input type="checkbox"/>	<input type="checkbox"/>
D2. Part-time faculty	<input type="checkbox"/>	<input type="checkbox"/>
D3. Graduate teaching assistant(s) who teach courses independently (not counting the teaching of recitation sessions)	<input type="checkbox"/>	<input type="checkbox"/>

E. Probability and Statistics Courses (Fall 2015)

In the next several pages, you will enter data about courses your department is teaching. For each course that is taught, you will be asked to enter the fall 2015 enrollment and the number of sections of the course. Depending upon the type of course, you will be asked about distance learning enrollment and the numbers of each kind of faculty (tenure-eligible, part-time, etc.) who are teaching the course. Also, you may not teach some of your advanced courses in every term; for those courses we also ask whether the course was offered in spring 2015 or will be offered in spring 2016 (please combine the winter and spring terms if your institution uses the quarter system); please answer these questions regardless of whether you offer the courses in fall 2015.

The following instructions apply throughout Section E (pages 8-11).

- Report distance learning enrollments separately from other enrollments. Distance learning courses are those courses offered by your institution for credit, in which the majority of the instruction occurs with the instructor and the 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. (A MOOC is a "massive open online course").
- Do NOT include any dual-enrollment sections or enrollments in these tables. (In this questionnaire, a *dual-enrollment* section is one that is conducted on a high school campus, taught by a high school teacher, and allows students to receive high school credit and, simultaneously, college credit from your institution for the course. These courses were reported in Section B.)
- For Introductory Statistics classes, you will be asked to list separately classes taught in a large lecture format (with recitation/problem/laboratory sections) and sections that meet as a class with an instructor at a regularly scheduled time (and do not split into recitation sections). For example, you will be asked for both the number of large lecture courses (E1-1 column c) and the total number of recitation sections for all the large lectures (E1-2 column c). There are other formats for handling large classes, but please treat any large class that is broken up into smaller units as a "lecture/recitation" class (even if there is no lecture); if neither the lecture/recitation or individual class format seems an appropriate description of the enrollment, enter the enrollment under "other".
- For all courses except as marked in E1 and E2, please do not treat recitation sessions as separate sections. Instead, please treat both the lecture component and any associated recitation sessions as a single section.
- Report a section of a course as being taught by a *graduate teaching assistant (GTA)* if and only if that section is taught *independently* by the GTA, i.e., when it is the GTA's own course and the GTA is the instructor of record.
- If your institution does not recognize tenure, report sections taught by your permanent full-time faculty in column (d) and sections taught by other full-time faculty in column (e). If your institution does recognize tenure but has faculty with renewable contracts, report these faculty as other full-time faculty (column e)
- Full-time faculty teaching in your department and holding joint appointments with other departments should be counted in column (d) if they are tenured, tenure-eligible, or permanent (if your institution does not recognize tenure) in your department. Faculty who are not tenured, tenure-eligible, or permanent in your department should be counted in column (f) if their fall 2010 teaching in your department is less than or equal to 50% of their total fall teaching assignment, and they should be reported in column (e) otherwise. (Example: if a tenured physics professor with a joint appointment in your department teaches a total of two courses in fall 2015, with exactly one being in your department, then that person would be counted as part-time in your department.)
- Do not fill in any shaded boxes.
- Any unshaded box that is left blank will be interpreted as reporting a count of zero.
- Except where specifically stated to the contrary, the tables in Section E deal with enrollments in fall term 2015
- If a section is co-taught by multiple faculty, categorize the section in terms of the most senior faculty member teaching that course.
- If your department is broader than just statistics (e.g., Department of Statistics and Computer Science or Statistics and Operations and Research), please use E24 to report on the courses outside of probability and statistics.
- If a course is cross-listed in both statistics and another department (such as mathematics, psychology, or engineering), count all students regardless of how the course is listed on the students' transcripts.

E. Probability and Statistics Courses (Fall 2015) (continued)

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total distance education enrollments ¹ (a)	Total enrollment NOT in distance education and NOT dual enrollments ² (b)	Number of sections corresponding to column (b) (c)	Of the number in column (c), how many sections are taught by:				
				Full-time faculty ³			Part-time faculty (g)	Graduate teaching assistants ⁴ (h)
				Tenured, or tenure-eligible (d)	Other full-time faculty with Ph.D. (e)	Other full-time faculty without Ph.D. (f)		
STATISTICS								
COURSES DESIGNED FOR NON-MAJORS/MINORS (General Education Courses)								
E1: Introductory Statistics (no calculus prerequisite)								
E1-1. Lecture with separately scheduled recitation/problem/laboratory sessions ⁵								
E1-2. Number of recitation/problem/laboratory sessions associated with courses reported in E1-1 ⁶								
E1-3. Individual sections, not in E1-1, that meet as a class with an instructor at a regularly scheduled time								
E1-4. Other sections not listed above								

¹ Students receive the majority of their instruction online, or by computer software, or by other technology where the instructor is NOT physically present, including MOOCs that are offered for credit.

² Do not include any dual-enrollment courses, i.e., courses taught on a high school campus by a high school instructor for which high school students may obtain both high school credit and, simultaneously, college credit through your institution.

³ Count faculty with joint appointments in column (d) or (e) if more than 50 percent of their fall 2015 teaching assignments are within your department, and in column (f) otherwise.

⁴ Sections taught independently by GTAs .

⁵ Report an introductory statistics class along with its recitation/problem/laboratory sessions as one section in column (c) of E1-1 and E2-1.

⁶ Example: suppose your department offers four 100-student sections of a course and that each is divided into five discussion sessions that meet separately from the lectures. Report 4*5=20 recitation/problem/laboratory sessions associated with the course, even if each discussion meets several times per week.

E. Probability and Statistics Courses (Fall 2015) (continued)

Please refer to the course reporting instructions at the beginning of Section E.

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total distance education enrollments ¹ (a)	Total enrollment NOT in distance education and NOT dual enrollments ² (b)	Number of sections corresponding to column (b) (c)	Of the number in column (c), how many sections are taught by:				Graduate teaching assistants ⁴ (h)
				Full-time faculty ³			Part-time faculty (g)	
				Tenured or tenure-eligible faculty (d)	Other full-time faculty with Ph.D. (e)	Other full-time faculty without Ph.D. (f)		
STATISTICS								
COURSES DESIGNED FOR NON-MAJORS/ MINORS (General Education Courses)								
E2: Introductory Statistics (calculus prerequisite) (for non-majors)								
E2-1. Lecture with separately scheduled recitation/problem/ laboratory sessions ⁵								
E2-2. Number of recitation/problem/ laboratory sessions associated with courses reported in E2-1 ⁶								
E2-3. Individual sections, not in E1-1, that meet as a class with an instructor at a regularly scheduled time								
E2-4. Other sections not listed above								
Other Introductory Statistics Courses								
E3. Statistics for pre-service elementary or middle grade teachers								
E4. Statistics for pre-service high school teachers								
E5. Other introductory-level Probability or Statistics courses for non-majors/minors								

¹ Students receive the majority of their instruction online, or by computer software, or by other technology where the instructor is NOT physically present, including MOOCs that are offered for credit.

² Do not include any dual-enrollment courses, i.e., courses taught on a high school campus by a high school instructor for which high school students may obtain both high school credit and, simultaneously, college credit through your institution.

³ Count faculty with joint appointments in column (d) or (e) if more than 50 percent of their fall 2015 teaching assignments are within your department, and in column (f) otherwise.

⁴ Sections taught independently by GTAs.

⁵ Report an introductory statistics class along with its recitation/problem/laboratory sessions as one section in column (c) of E1-1 and E2-1.

⁶ Example: suppose your department offers four 100-student sections of a course and that each is divided into five discussion sessions that meet separately from the lectures. Report 4*5=20 recitation/problem/laboratory sessions associated with the course, even if each discussion meets several times per week.

E. Probability and Statistics Courses (Fall 2015) (continued)

◆ Cells left blank will be interpreted as zeros.

Name of Course (or equivalent)	Total enrollment fall 2015 (a)	Number of sections corresponding to column (a) (b)	Number of sections corresponding to column (b) taught by tenured or tenure- faculty (c)	Was this course taught in ANY term of the previous academic year? (d)		Will this course be offered in the next term (spring 2016)? (e)	
				Yes	No	Yes	No
PROBABILITY & STATISTICS							
Upper Level							
E6. Introductory probability and/or statistics for majors/minors (no calculus prerequisite)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E7. Combined Probability & Statistics (calculus prerequisite)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E8. Probability (calculus prerequisite)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E9. Mathematical Statistics (calculus prerequisite)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E10. Stochastic Processes				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E11. Applied Statistical Analysis				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E12. Data Science/Analytics				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E13. Design & Analysis of Experiments				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E14. Regression (and Correlation)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E15. Biostatistics				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E16. Nonparametric Statistics				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E17. Categorical Data Analysis				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E18. Sample Survey Design & Analysis				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E19. Statistical Computing or software				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E20. Bayesian Statistics				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E21. Statistical Consulting				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E22. Senior Seminar/Independent Studies				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E23. All other upper level Probability & Statistics				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E24. All departmental courses other than Probability or Statistics				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E. Probability and Statistics Courses (Fall 2015) (continued)

Statistics Questionnaire

E25. Do you offer any advanced undergraduate courses in statistics (E6-E24) as distance-learning courses?

Yes..... → If Yes, go to E26 below.

No → If No, go to Section F.

E26. Please indicate which advanced undergraduate statistics courses you offer as distance-learning courses. (Check all that apply.)

Definition: Distance learning courses are those courses offered by your institution for credit, in which the majority of the instruction occurs with the instructor and the 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. (a MOOC is a “massive open online course”).

Course	Offer as distance learning
E6. Introductory Probability and/or Statistics for Majors/Minors (no calculus prerequisite)	<input type="checkbox"/>
E7. Combined Probability & Statistics (calculus prerequisite)	<input type="checkbox"/>
E8. Probability (calculus prerequisite)	<input type="checkbox"/>
E9. Mathematical Statistics (calculus prerequisite)	<input type="checkbox"/>
E10. Stochastic Processes	<input type="checkbox"/>
E11. Applied Statistical Analysis	<input type="checkbox"/>
E12. Data Science/Analytics	<input type="checkbox"/>
E13. Design & Analysis of Experiments	<input type="checkbox"/>
E14. Regression (and Correlation)	<input type="checkbox"/>
E15. Biostatistics	<input type="checkbox"/>
E16. Nonparametric Statistics.....	<input type="checkbox"/>
E17. Categorical Data Analysis.....	<input type="checkbox"/>
E18. Sample Survey Design & Analysis.....	<input type="checkbox"/>
E19. Statistical Computing and/or Software	<input type="checkbox"/>
E20. Bayesian Statistics	<input type="checkbox"/>
E21. Statistical Consulting	<input type="checkbox"/>
E22. Senior Seminar/ Independent Studies	<input type="checkbox"/>
E23. Other upper level Probability & Statistics	<input type="checkbox"/>
E24. Other mathematical science courses	<input type="checkbox"/>

F. Undergraduate Program (Fall 2015)

Statistics Questionnaire

If you do not offer a major in statistics, check here and go to F5. Otherwise go to F1.

F1. Report the total number of your departmental majors who received their bachelor's degrees from your institution between July 1, 2014, and June 30, 2015. Include joint majors and double majors¹.....

F2. Of the undergraduate degrees described in F1, please report the number who majored in each of the following categories. Each student should be reported only once. Include all double and joint majors¹ in your totals. Use the Other category for a major in your department who does not fit into one of the earlier categories.

Area of Major	Male	Female
a. Statistics		
b. Biostatistics		
c. Actuarial Science		
d. Joint ¹ Statistics and Computer Science		
e. Joint ¹ Statistics and Mathematics		
f. Joint ¹ Statistics and (Business or Economics)		
g. Statistics Education		
h. Other		

¹ A "double major" is a student who completes the degree requirements of two separate majors, one in statistics and one in another program or department. A "joint major" is a student who completes a single major in your department that integrates courses from statistics and some other program or department and typically requires fewer credit hours than the sum of the credit hours required by the separate majors.

F. Undergraduate Program (Fall 2015) (continued)

Statistics Questionnaire

F3. To what extent must majors in your department complete the following? Check one box in each row.

	Required of all majors	Required of some but not all majors	Not required of any major
a. Calculus I	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Calculus II	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Multivariable Calculus.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Linear Algebra/Matrix Theory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. At least one computer science course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. At least one applied mathematics course (not including a, b, c, d above)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. A capstone experience (e.g., a senior project, a senior thesis, a senior seminar, or an internship)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. An exit exam (written or oral)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. At least one upper level Probability course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. At least one upper-level Mathematical Statistics course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. At least one applied statistics course.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. At least one upper-level Linear Models course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. One Bayesian Inference course.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F4. Please give your best estimate of the percentage of your department's graduating majors from the previous academic year 2014-2015 (reported in F1) in each of the following categories. Please make the totals add to 100 percent.

a. Who went into pre-college teaching	<input type="text" value=""/>	%
b. Who went to graduate school in the statistical sciences.....	<input type="text" value=""/>	%
c. Who went to professional school or to graduate school outside of the statistical sciences	<input type="text" value=""/>	%
d. Who took jobs in business, industry, government, etc.....	<input type="text" value=""/>	%
e. Who had other post-graduation plans known to the department	<input type="text" value=""/>	%
f. Whose plans are not known to the department	<input type="text" value=""/>	%

F. Undergraduate Program (Fall 2015) (continued)

Statistics Questionnaire

F5. Many departments today use a spectrum of program-assessment methods. Please indicate whether each of the following apply to your department’s undergraduate program-assessment efforts during the last six years.

	Yes	No
a. We conducted a review of our undergraduate program that included one or more reviewers from outside of our institution.....	<input type="checkbox"/>	<input type="checkbox"/>
b. We asked graduates of our undergraduate program to comment on and suggest changes in our undergraduate program.....	<input type="checkbox"/>	<input type="checkbox"/>
c. Other departments at our institution were invited to comment on the preparation that their students received in our courses.....	<input type="checkbox"/>	<input type="checkbox"/>
d. Data on our students’ progress in subsequent statistics courses were gathered and analyzed.....	<input type="checkbox"/>	<input type="checkbox"/>
e. We have assessed teaching objectives in courses required in our major.....	<input type="checkbox"/>	<input type="checkbox"/>
f. We have a placement system for first-year students and we gathered and analyzed data on its effectiveness.....	<input type="checkbox"/>	<input type="checkbox"/>
g. Our department’s program assessment activities led to changes in our undergraduate program.....	<input type="checkbox"/>	<input type="checkbox"/>

F6. Which of the following are significant sources of information to the department about the types of pedagogy used in instruction in your department? (Check all that apply.)

- a. Syllabi for classes
- b. Teaching portfolios
- c. Peer evaluations of instructors.....
- d. Self-evaluations of instructors.....
- e. Department discussions of teaching practices
- f. None of these are available go to F10

F7. Which of the following pedagogical strategies are used by some member of your department faculty: (Check all that are used.)

- a. Inquiry based class
- b. “Flipped classroom”
- c. Class conducted largely online
- d. Activity based learning.....
- e. Technology used to develop conceptual understanding.....

F8. Has your department seen major changes over the last ten years in the kinds of pedagogy used in your department?

Yes Go to F9

No Go to F10

F. Undergraduate Program (Fall 2015) (continued)

Statistics Questionnaire

F9. Which of the following factors were significant reasons for the changes made to the kinds pedagogy used in your department over the last ten years? (Check all that apply.)

- a. Educational research
- b. Advocacy of some faculty member in our department.....
- c. Advocacy by another department
- d. Advocacy by institution’s administrators.....
- e. Advocacy by a professional organization

F10. For each of the following opportunities, indicate whether or not it is available to your undergraduate statistics students through your department or institution.

	Yes	No
a. Honors sections of departmental courses	<input type="checkbox"/>	<input type="checkbox"/>
b. An undergraduate statistics club	<input type="checkbox"/>	<input type="checkbox"/>
c. Special statistics programs to encourage women	<input type="checkbox"/>	<input type="checkbox"/>
d. Special statistics programs to encourage minorities.....	<input type="checkbox"/>	<input type="checkbox"/>
e. Opportunities to participate in statistics contests.....	<input type="checkbox"/>	<input type="checkbox"/>
f. Special statistics lectures/colloquia not part of a statistics club	<input type="checkbox"/>	<input type="checkbox"/>
g. Statistics outreach opportunities in local K–12 schools	<input type="checkbox"/>	<input type="checkbox"/>
h. Undergraduate research opportunities in statistics.....	<input type="checkbox"/>	<input type="checkbox"/>
i. Independent study opportunities in statistics	<input type="checkbox"/>	<input type="checkbox"/>
j. Assigned faculty advisers in statistics	<input type="checkbox"/>	<input type="checkbox"/>
k. Opportunity to write a senior thesis in statistics.....	<input type="checkbox"/>	<input type="checkbox"/>
l. A career day for statistics majors	<input type="checkbox"/>	<input type="checkbox"/>
m. Special advising about graduate school opportunities in statistical sciences	<input type="checkbox"/>	<input type="checkbox"/>
n. Opportunity for an internship experience or part-time employment in a professional statistical opportunity	<input type="checkbox"/>	<input type="checkbox"/>
o. Opportunity to participate in a senior seminar	<input type="checkbox"/>	<input type="checkbox"/>
p. Supervised consultation working in a consulting lab with clients	<input type="checkbox"/>	<input type="checkbox"/>
q. Opportunity to tutor, grade papers, or TA in the department	<input type="checkbox"/>	<input type="checkbox"/>

F. Undergraduate Program (Fall 2015) (continued)

Statistics Questionnaire

F11. Give your best estimate of the number of all of your majors who have participated in each of the following activities over the past year September 1, 2014 – August 31, 2015;

- a. Undergraduate research project in statistics _____
- b. Internship in statistics _____
- c. Statistical consulting to client _____

F12. a. Does your department offer a minor in statistics?

Yes _____ → If Yes, go to F12b.

No _____ → If No, go to F13.

F12.b. How many students graduated with a minor in statistics from your department between July 1, 2014 and June 30, 2015? _____

F13. Does your institution allow a student to meet an institutional or divisional graduation requirement in the mathematical sciences using an Advanced Placement course (taken while the student was in high school)?

Yes

No

F. Undergraduate Program (Fall 2015) (continued)

Statistics Questionnaire

F14. Responses to this question will be used to project total enrollment in the current (2015-2016) academic year based on the pattern of your departmental enrollments in 2014–2015. Do NOT include any numbers from dual-enrollment courses in answering question F14. Please provide head counts, not full-time equivalents.

1

- a. Previous fall (2014) total student enrollment in your department's undergraduate courses (remember: do not include dual-enrollment courses¹):
- b. Previous academic year (2014–2015) total enrollment in your department's undergraduate courses, excluding dual enrollments and excluding enrollments in summer school 2015:
- c. Total enrollment in your department's undergraduate courses in summer school 2015:

¹ In this question, the term “dual enrollment courses” is used to mean courses taught on a high school campus, by high school teachers, for which high school students may obtain high school credit and, simultaneously, college credit through your institution.

G. Introductory Statistics Instruction

Statistics Questionnaire

The following questions are about instruction in course E1: Introductory Statistics for non-majors/minors (no calculus prerequisite) on page 9.

- G1. How many different kinds of introductory statistics courses designed for non-majors (general education courses) that have no calculus prerequisite does your department offer? (e.g. statistics for social scientists, for life scientists, etc.)

1 2 3 More than 3

The following questions are about instruction in course E1: Introductory Statistics (no calculus prerequisite) on page 9. If you offer more than one such course, choose the course that is aimed at the most general audience.

- G2. In most sections of course E1, the percentage of class sessions in which real data are used is generally approximately:

0-20% 21-40% 41-60% 61-80% 81-100%

- G3. In most sections of course E1, the percentage of class sessions in which in-class demonstrations and/or in-class problem solving activities/discussions generally take place is approximately:

0-20% 21-40% 41-60% 61-80% 81-100%

G. Introductory Statistics Instruction (continued)

Statistics Questionnaire

G4. Which, if any, of the following kinds of technology are used in the majority of sections of course(s) E1?

	Yes	No
a. Graphing calculators	<input type="checkbox"/>	<input type="checkbox"/>
b. Statistical packages (e.g., R, JMP,SAS, SPSS, Minitab)	<input type="checkbox"/>	<input type="checkbox"/>
c. Educational software(e.g. software linked to the textbook)	<input type="checkbox"/>	<input type="checkbox"/>
d. Applets	<input type="checkbox"/>	<input type="checkbox"/>
e. Spreadsheets (e.g. Excel, GoogleDocs, Access)	<input type="checkbox"/>	<input type="checkbox"/>
f. Web-based resources including data sources or data analysis.....	<input type="checkbox"/>	<input type="checkbox"/>
g. Classroom response systems (e.g., clickers)	<input type="checkbox"/>	<input type="checkbox"/>
a. Online textbooks.....	<input type="checkbox"/>	<input type="checkbox"/>
b. Online videos.....	<input type="checkbox"/>	<input type="checkbox"/>

G5. Do the majority of the sections of course(s) E1 require assessments beyond homework, exams, and quizzes (assessments such as projects, oral presentations, written reports)?

- Yes
- No

G6. Which, if any, of the following topics are covered in the course E1? (Check all that apply.)

- a. Conditional probability
- b. Simulation to explore randomness.....
- c. Resampling techniques
(e.g. bootstrapping, randomization tests).....
- d. None of these topics.....

G7. Are there other introductory statistics courses at your institution, offered by departments outside of the mathematical sciences?

- Yes..... → If Yes, go to G8.
- No → If No, go to Section H.

G8. Enter the Fall 2015 total enrollment in all such introductory courses, offered outside of the mathematical sciences, at your institution. _____

H. Pre-service Teacher Education in Statistics

Statistics Questionnaire

Question regarding the statistical preparation for secondary (generally grades 9-12) pre-service teachers of statistics:

- H1. Considering the teacher preparation program at your institution, for each of the following core areas indicate whether the core area is required of all students seeking certification that leads to obtaining credentials to teach statistics at the secondary school level (generally grades 9-12) in public high schools of your state, if the course is generally taken by those seeking certification (if it is not required), and if in that core area your department offers a special course that is specifically designed for pre-service secondary statistics teachers.

Course	Required		Generally Taken		Special Course Offered	
	Yes	No	Yes	No	Yes	No
a. Introductory Statistics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Probability and/or statistics with calculus prerequisite	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Upper level statistics course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Applied statistics course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Other (name)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- H2. How many semester hours of courses in statistics from your department are required by your institution's program of certification for pre-service middle grades (6-8) teachers? _____

- H3. How many semester hours of courses in statistics from your department are required by your institution's program of certification for pre-service elementary grades (K-5) teachers?

I. Comments and Suggestions

Statistics Questionnaire

If you found some question(s) difficult to interpret or answer, please let us know. We welcome suggestions to improve future surveys (e.g., CBMS 2020).

Comments: _____

Thank you for completing this questionnaire. We know it was a time-consuming process and we hope that the resulting survey report, which we hope to publish in spring 2017, will be of use to you and your department.

Please keep a copy of your responses to this questionnaire in case questions arise.