ASA, MAA DEVELOP GUIDELINES FOR TEACHING INTRODUCTORY STATISTICS COURSE

Principles targeted at non-statistics departments offering intro statistics course

ALEXANDRIA, VA, and WASHINGTON, DC, FEBRUARY 12, 2014—Two leading national organizations—the American Statistical Association (ASA) and the Mathematical Association of America (MAA)—have developed recommended qualifications for an instructor teaching a modern introductory statistics course.

In the joint statement, titled "Qualifications for Teaching an Introductory Statistics Course," the two groups encourage effective teaching in undergraduate statistical education and offer a series of qualifications and resources that will assist non-statistics departments at universities and colleges with hiring qualified candidates or training existing instructors in the necessary skill set.

The statement was developed by the ASA-MAA Joint Committee on Undergraduate Statistics to address the rapidly growing interest in statistics at the undergraduate level—both in introductory classes and in majors—and to recognize that statistics is taught in many departments where sufficient experience teaching statistics may be lacking.

"The importance of statistical thinking and knowledge is rising across the entire collegiate educational spectrum," says ASA President Nat Schenker. "To meet this growing demand, more and more colleges and universities are offering introductory statistics courses in non-statistics departments. These ASA-MAA guidelines will help faculty leaders create the best course to prepare students for using solid statistical reasoning in their chosen career fields."

"Mathematics faculty, even those who lack formal training in statistics, are often called upon to teach introductory statistics courses," says MAA President Robert L. Devaney. "These guidelines offer concrete directions to departments seeking to improve the quality of their statistics courses."

Among the qualifications cited by the ASA and MAA are the following:

- Experience with data and appropriate use of technology to support data analyses
- Deep knowledge of statistics and appreciation of the differences between statistical thinking and mathematical thinking
- Understanding the ways statisticians work with real data and approach problems and experiencing the joys of making discoveries using statistical reasoning
- Mentoring by an experienced statistics instructor for an instructor unfamiliar with the data-

driven techniques used in modern introductory statistics courses

The ASA and MAA further recommend non-statistics department faculty leaders hire an instructor who has at least a master's degree with a strong concentration in statistics. However, since this objective often is not possible, the individual hired should have at minimum the equivalent of the following qualifications:

1. Two statistical methods courses including content knowledge of data collection methods, study design and statistical inference.
2. Experience with data analysis beyond material taught in the introductory class. This experience could come from advanced courses, projects, consulting or research.

The ASA and MAA also strongly encourage statistics instructors to avail themselves of the many resources provided by the statistics education community, including workshops, minicourses or conferences on teaching statistics; web resources; and articles exploring the key pedagogical differences between the two fields. See the joint statement for a complete list.

Questions or comments about the ASA-MAA joint statement and its recommendations and resources can be directed to Ron Wasserstein, ASA executive director, or Michael Pearson, MAA executive director.

About the American Statistical Association

The ASA is the world's largest community of statisticians and the second-oldest continuously operating professional society in the United States. Its members serve in industry, government and academia in more than 90 countries, advancing research and promoting sound statistical practice to inform public policy and improve human welfare. For additional information, please visit the ASA website at www.amstat.org.

About the Mathematical Association of America

The Mathematical Association of America is the largest professional society that focuses on mathematics accessible at the undergraduate level. Formed in 1915, the association members include university, college, and high-school teachers; graduate and undergraduate students; pure and applied mathematicians; computer scientists; statisticians; and many others in academia, government, business and industry who are interested in the mathematical sciences.

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For more information:
Jeffrey A. Myers, ASA
Office: (703) 684-1221, Ext. 1865
Mobile: (540) 623-7777
Email: Jeffrey@amstat.org

Ivars Peterson, MAA
Office: (202) 319-8481
Email: ipeterson@maa.org