

ASA RELEASES STATISTICAL EDUCATION OF TEACHERS REPORT *Resource is blueprint for statistical education of pre-K–12 instructors*

ALEXANDRIA, VA, MAY 11, 2015 – The American Statistical Association (ASA) has issued the [Statistical Education of Teachers \(SET\) Report](#), which calls on mathematicians, statisticians, mathematics educators and statistics educators to collaborate in preparing pre-K–12 teachers to teach intellectually demanding statistics courses in their classrooms.

SET was commissioned by the ASA to clarify the recommendations for teacher statistical preparation in the Conference Board of the Mathematical Sciences’ [Mathematical Education of Teachers II](#) report. The ASA’s SET report, which also is a resource stakeholders can use to guide statistics instruction preparation of current and future teachers, was developed by a team of statistics and education experts chaired by Christine A. Franklin, senior statistics lecturer at the University of Georgia.

The focus on preparing teachers to teach statistics courses—especially in grades 6–12—was precipitated by the adoption of the Common Core State Standards (CCSS), the country’s first national educational standards, by 43 states and similar other state standards. The CCSM mathematics and related standards place emphasis on statistics and probability.

“Effective implementation of the rigorous CCSM and related state standards depends to a large extent on the teachers who will bring them to life in the classroom,” says Franklin. “The SET report offers recommendations for the statistical preparation and professional development of those teachers. Its recommendations will help teachers understand how statistical concepts are interconnected and their connections to other areas of mathematics.”

The SET report uses the [ASA Pre-K–12 GAISE Framework](#) as the structure for outlining the content and conceptual understanding teachers need to know in assisting their students develop statistical reasoning skills. Because statistics is mostly taught in mathematics classes at the pre-college level, it is particularly important that teachers be aware of the differences between the disciplines. As such, the SET report facilitates the understanding of key topics such as what sets statistics apart as a discipline distinct from mathematics, the difference between statistical and mathematical reasoning, and the role of probability in statistical reasoning.

In addition to clarifying MET II’s recommendations, the SET report also does the following: addresses the professional development of teachers; highlights the differences between statistics and mathematics that have important implications for teaching and learning; illustrates the statistical problem-solving process across levels of development; and makes pedagogical recommendations of particular relevance to statistics, including the use of technology and the role of teacher assessment. SET’s chapters cover the following broad topics:

- Chapter 1 outlines the motivation for the report
- Chapter 2 presents six recommendations regarding what statistics teachers need to know and the shared responsibility for the statistical education of teachers
- Chapter 3 describes CCSS’s mathematics requirements from a statistical perspective
- Chapters 4–6 provide recommendations to those responsible for teacher preparation or professional development of elementary-, middle- and high-school teachers
- Chapter 7 describes assessing teacher statistical knowledge, Chapter 8 provides a brief review of research, and Chapter 9 presents a history of statistics in grades pre-K–12.

SET is intended for everyone involved in the statistical education of teachers, both the initial preparation of prospective teachers and the professional development of practicing teachers. Its three main audiences are the following:

- Mathematicians and statisticians who are faculty members at two- and four-year colleges and teach courses taken by prospective and practicing teachers
- Mathematics and statistics education faculty members within colleges of education, mathematics or statistics departments who typically are responsible for the pedagogical education of mathematics and statistics teachers
- Educational administrators and policymakers at the national, state, school district and collegiate levels

“The dramatic increase in statistical content at the pre-college level demands a coordinated effort to improve the preparation of pre-service teachers and to provide professional development for teachers trained before the implementation of the new standards,” says Franklin. “The ASA’s SET report is the definitive blueprint for this collaborative undertaking.”

In an increasingly data-driven society, statistical literacy is becoming an essential competency for informed citizens to make everyday decisions based on data—whether following media coverage of current events, making personal financial decisions, assessing health risks or using statistical reasoning in the workplace.

“SET is a groundbreaking report that can support teacher educators with preparing school-level teachers in statistics. In our data-centric world, it is now a must that all students be statistically literate. For this to happen, our teachers, who are the key to student success, must also become statistically literate,” Franklin said, summing the SET report’s purpose.

Other members of the SET team include the following:

- Anna E. Bargagliotti, assistant professor of mathematics at Loyola Marymount University
- Catherine A. Case, doctoral fellow in the University of Florida College of Education
- Gary D. Kader, professor of mathematical sciences at Appalachian State University
- Richard L. Scheaffer, statistics professor emeritus at the University of Florida
- Denise A. Spangler, professor of mathematics education and associate dean of the University of Georgia College of Education

About the American Statistical Association

The American Statistical Association 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 about the American Statistical Association, please visit the ASA website at www.amstat.org.

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