

## MWM 2016 STATISTICS WORKSHOP PROGRAM

The primary goal of the MWM program in 2016 is to provide an opportunity for middle and high school teachers who teach mathematics and science courses to discuss and apply the data analysis and statistical concepts embodied in the Common Core Standards for Mathematics and in the Guidelines for Assessment and Instruction in Statistics Education (GAISE) Pre-K-12 Curriculum Framework endorsed by the American Statistical Association. Teachers will explore problems that require them to formulate statistical questions, collect, organize, analyze, and draw conclusions from data and apply basic concepts of probability. The MWM program will include examining what students can be expected to do at the most basic level of understanding data analysis and what can be expected of them as their skills develop and experience broadens.

**Program Chair:** Katherine T. Halvorsen, Department of Mathematics & Statistics, Smith College

### MIDDLE SCHOOL PROGRAM Schedule for Grades 5-8 Workshops Tuesday, August 2, 2016

8:00 - 8:30	Teachers arrive and register for MWM; coffee and pastries available.
8:30 - 8:45	Welcome by Katherine Halvorsen, MWM program chair; Ron Wasserstein, ASA executive director; Rebecca Nichols, ASA director of education; and representatives from the ASA Chicago Chapter
8:45 - 9:15	Pat Hopfensperger: Overview of GAISE Pre-K-12 Report, Statistics Education for Teachers (SET), and Statistics and Probability content in the Common Core State Standards for Middle and High School Mathematics
9:15 - 10:45	Session 1: Patrick Hopfensperger, Statistical Questions and Collecting Data Methods ( <i>Common Core Standards 6.SP.1</i> )
10:45 - 11:00	Break
11:00 - 12:30	Session 2: Christine Franklin, Measure of Center and Variability (MAD) ( <i>Common Core Standards 6.SP.2, 3, 4, and 5</i> )
12:30 - 2:00	Lunch provided with Navajo Math Circles video presentation.
2:00 - 3:30	Session 3: Christine Franklin, Investigating Sampling Variability: Gettysburg Address ( <i>Common Core Standards 7.SP.1 and 2</i> )
3:30 - 4:00	Evaluation and Reflection

**HIGH SCHOOL PROGRAM**  
**Schedule for Grades 9-12 Workshops**  
**Tuesday, August 2, 2016**

8:00 - 8:30	Teachers arrive and register for MWM; coffee and pastries available
8:30 - 8:45	Welcome by Katherine Halvorsen, MWM program chair; Ron Wasserstein, ASA executive director; Rebecca Nichols, ASA director of education; and representatives from the ASA Chicago Chapter
8:45 - 9:15	Christine Franklin: Overview of GAISE Pre-K-12 Report, overview of Statistics Education for Teachers (SET), and Statistics and Probability in the Common Core State Standards for Middle and High School Mathematics
9:15 - 10:45	Session 1: Katherine Halvorsen, Formulating Statistical Questions and Recognizing the Purposes of and Differences Among Sample Surveys, Experiments, and Observational Studies; Explain How Randomization Relates to Each ( <i>Common Core Standards High School S-IC.B. 3 &amp; 6</i> )
10:45 - 11:00	Break
11:00 - 12:30	Session 2: Anna Martin, Recognizing Data Types and the Appropriate Methods for Displaying, Summarizing, and Comparing Them; Using the Normal Distribution as a Measure of Extremeness ( <i>Common Core Standards for High School S-ID.A.1-4</i> )
12:30 - 2:00	Lunch provided with Navajo Math Circles video presentation.
2:00 - 3:30	Session 3: Anna Martin, Using Randomization Tests to Make Inferences and Justify Conclusions ( <i>Common Core Standards for High School S-IC.B.5</i> )
3:30 - 4:00	Evaluation and Reflection

**JOINT HIGH SCHOOL AND MIDDLE SCHOOL PROGRAM**  
**Schedule for Grades 5-12 Workshops**  
**Wednesday, August 3, 2016**

8:00-8:30	Teachers arrive. Coffee and pastries available.
8:30 - 10:00	Session 1: Patrick Hopfensperger, Comparative inferences about two populations - Census at School and Memory Test ( <i>Common Core Standards 7.SP.3 and 4, and S-ID.2</i> )
10:00 - 10:15	Break
10:15 - 11:45	Session 2: Christine Franklin, Investigating patterns of association in bivariate categorical data. Dependent and independent events. Compare middle school with high school expectations ( <i>Common Core Standards 8.SP. 4 and S-ID.5</i> )

11:45 - 1:15	Lunch provided with Navajo Math Circles video presentation
1:15 - 2:45	Session 3: Patrick Hopfensperger, Investigating patterns of association in bivariate quantitative data. Compare middle school with high school expectations ( <i>Common Core Standards 8.SP.1, 2, 3, and S-ID.6,7,8</i> )
2:45 - 3:00	Break
3:00 - 3:45	Session 4: Patrick Hopfensperger, ASA Project and Poster Competition
3:30 - 4:00	Evaluation and Reflection