

A professional development offering for: Mathematics Teachers Grades 9-12, Curriculum Leaders, Principals, and Assistant Principals



Engage in Mathematics: Meaningful Discussions with Modeling and Statistics in Grades 9-12



Featuring Delta Education Presenter Polina Sabinin

Thursday, April 12, 2018 at the MSAA Office, Franklin

Sign-In/Registration: 8:00 am to 8:30 am

Workshop: 8:30 am to 3:00 pm

Fees: Member \$195/Non-Member \$260

6 Professional Development Hours

PD Content Area: *Mathematics*

Modeling and statistics are essential components of the Common Core Mathematics Standards at the secondary level. Many educators and policy makers believe that Statistics will soon replace Calculus as the capstone course for all students. Statistics run our Google searches and hide behind every advertisement, movie, poll, and radio show. To be independent in the 21st Century, students must be critical consumers of statistical information. This workshop will focus on activities that prompt students to tell statistically rich stories about 1-variable and 2-variable data. Participants will collect real data, organize it, present it, and infer from it. The stories about 1-variable data will include different ways to describe a typical individual and outliers in the population as well as how the individuals vary in that population. Emphasis will be on ways to connect statistics to other strands of mathematics and real-world situations. Participants will be provided with a variety of refreshing Common Core aligned activities and strategies for use in their classrooms. Please bring a TI-83/84 (or later) calculator or a tablet to the workshop.

Participants will:

- Gather, organize, analyze, interpret, and present 1- and 2-variable data using a survey and direct measurements.
- Think deeply about working with data including identifying sources of error, outliers, and appropriate visual representations of data.
- Analyze appropriateness of different measures of central tendency and variation.
- Use statistics to infer information about populations.
- Analyze students' misconceptions about modeling and statistics stemming from earlier grades.
- Explore a variety of Common Core aligned classroom activities to engage all high school students.
- Experience the "Standards for Mathematical Practice" and "Mathematical Teaching Practices" in action.

Dr. Polina Sabinin is an Associate Professor of Mathematics at Bridgewater State University. She is a faculty fellow at the Office of Teaching and Learning at BSU. Through her outreach at the Center for the Advancement of STEM Education at BSU, Polina works with in-service and pre-service teachers at all grade levels. Polina is also the state director for the international Math Kangaroo Olympiad. Polina has served as the Associate Director of the Center for Mathematics Achievement at Lesley University. She is currently co-authoring *LogicGym*, a teacher's manual that introduces students to logic through an engaging visual game. Polina earned her Bachelor of Science in biology with a minor in mathematics from the University of Calgary where she also earned a Master's degree in oncology. Her doctorate research focused on mathematics education, specifically children's development of algebraic and proportional reasoning.

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