

# **Association of Teachers of Mathematics in Massachusetts**

## **2017 Spring Conference**

***Taking Risks in the New Frontier:  
Rigor, Reasoning, and Relevance***



**Friday March 24, 2017  
Worcester State University  
486 Chandler Street, Worcester, MA 01602**

## **WELCOME TO THE 2017 ATMIM SPRING CONFERENCE**

The Association of Teachers of Mathematics in Massachusetts, [ATMIM](#), is an organization devoted to improving the mathematical education of students in Massachusetts.

The purpose of ATMIM is to provide for the interchange of evolving ideas and current research involving the teaching of mathematics and its applications, to cooperate with other organizations in the improvement of instruction and curriculum, to promote professional and social relations among mathematics teachers in schools and colleges, and to increase interest in mathematics.

ATMIM is an affiliate of the [National Council of Teachers of Mathematics \(NCTM\)](#) and the [Association of Teachers of Mathematics in New England \(ATMNE\)](#). All members of ATMIM are automatically members of ATMNE.

Learn more about ATMIM at our [website](#) and follow us on [Twitter](#) and [Facebook](#).

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Min-Jen Taylor

# ATMIM Spring Conference

## GENERAL SCHEDULE

7:00-8:00	Registration and Continental Breakfast	Student Center Lobby
8:00-9:00	Margaret J. Kenney Award Presentation— Dr. Mary Sullivan	Student Center Blue Lounge
9:15-10:15	Session 1	Sullivan Academic Center
10:30-11:30	Session 2	Sullivan Academic Center
11:45-12:45	Lunch and Visit with Exhibitors	Student Center Blue Lounge
12:45-1:45	Lunch Keynote—Dr. Anne Collins	Student Center Blue Lounge
2:00-3:00	Session 3	Sullivan Academic Center

## EXHIBITORS

Be sure to visit with our exhibitors. Exhibits will be open from 7:00 a.m. – 12:45 p.m.

- Texas Instruments
- McGraw-Hill
- Framingham State
- Cambridge College
- CREC
- CPM
- Pearson
- Edgenuity
- ETA-Hand to Mind
- Perfection Learning
- ESANE

A special thanks to Texas Instruments for sponsoring our lunch this afternoon!



Share your thoughts and takeaways from the conference by tweeting with the hashtag #ATMIMSpeaks.

## Margaret J. Kenney Award Presentation

Dr. Mary Sullivan

Student Center Blue Lounge 8:00-9:00 AM

### Take a risk: Be square in your math classroom!



*Explore problems that focus on squares - consider how they stimulate curiosity, connect across math content areas and grades, and engage students and teachers as co-investigators.*

Mary Sullivan from Dedham, MA has been selected to be the first *Margaret J. Kenney Presenter* at our 2017 ATMIM Spring Conference. Mary has been a frequent and popular speaker at mathematics conferences and is Professor Emerita of Mathematics and Secondary Education at Rhode Island College and past director of RI STEM Center. Mary, a former faculty member at Curry College, was a student, colleague, and close friend of Peg Kenney.

### About the Margaret J. Kenney Award:

The Margaret J. Kenney Award was created by ATMIM to honor the contributions of Peg Kenney, a recently deceased, beloved mathematics professor at Boston College. Peg will be greatly missed in the mathematics education community both locally and nationally. She was a gifted leader, author, and speaker. Peg was a past president of both ATMIM and ATMNE; she served on NCTM's Board of Directors and several committees. Her influence has been phenomenal. While her command of mathematics and its teaching was extensive, Peg had a particular interest in Number Theory, Discrete Mathematics, and Geometry. In order to honor Peg's legacy, each year members of the ATMIM board will select an exemplary Massachusetts teacher to give a content-rich presentation in one of these three areas of mathematics.

## Session 1 9:15 - 10:15 am

### 1 Building a Data Culture

All grade levels

Room 118

A colleague and I will describe a data collection system we have implemented for middle school math, and extend that conversation to help ease anxiety about the word "data" and make it a desirable tool for teachers.

**Kevin Cormier & Jamie Anderson**

North Middlesex Regional School District, MA

### 2 Harnessing the Power of Structure on the Path to Fluency

Pre-K – 2

Room 120

When elementary students have opportunities to explore structure through examining patterns and testing conjectures, they develop a greater understanding of numbers and operations. In this session we will consider routines that support students in making use of structure and how this work contributes to the development of procedural fluency.

**Mike Flynn, Mount Holyoke College, MA**

Twitter Handle: @MikeFlynn55

### 3 Link Numeracy and Literacy – Strategies to Engage Students

Grades 3- 5

Room 121

In this interactive workshop, participants will experience connections between numeracy and literacy using Standards for Mathematical Practice as the framework. Strategies such as headlines, reciprocal teaching and building vocabulary will be featured. Teachers and instructional coaches will experience and understand how effective strategies can be implemented in both disciplines.

**Kit Norris, Self-employed, MA**

### 4 Contemplate then Calculate: A Routine for Reasoning for ALL Students

Grades 6 - 8

Room 122

Participants will leave this session with a deeper understanding of mathematical structure and the essential role it plays in students' mathematical understanding. In addition, they will be able to articulate the components of Contemplate then Calculate, and the ways in which the designs of the instructional routine support ELLs and students with learning disabilities.

**Amy Lucenta, Lucenta Consulting, MA;**

Twitter Handle: @AmyLucenta

**Grace Kelemanik, Kelemanik Consulting, MA**

Twitter Handle: @GraceKelemanik

### 5 Solving the Same Problem Multiple Ways: Building Conceptual Understanding

Grades 6-12

Room 123

Is it important for students to know multiple ways of solving the same problem? This hands-on workshop will explore the benefits of teachers both sharing multiple approaches and encouraging students to come up with their own strategies. Together we will solve problems, observe new approaches and build conceptual understanding with our students.

**Matthew Beyranevand, Chelmsford Public School, MA**

Twitter Handle: @MathWithMatthew

### 6 Intro to Number Talks

Grades K - 8

Room 124

Change your students' views of mathematics, develop their mental math skills, teach them number sense and engage them each day in math experiences that will be critical for future learning.

**Jenifer Carline, Norton Public Schools, MA**

Twitter Handle: @JeniferCarline

**Kristie Dietz, Norton Public Schools, MA**

### 7 Making Sense of Algebra

Grades 7-10

Room 125

Do your students struggle with algebraic formulas and procedures? Let's get together to explore how making connections between numerical fluency, precise use of mathematical language, and geometric representations can help make sense of algebraic symbols. Strategies and activities discussed in this session are classroom tested (grades 7-10) and ready to use.

**Natalya Vinogradova, Plymouth State University, NH**

### 8 Hands-On Activity and the Standards for Mathematical Practice

Grades 9-12

Room 126

The Standards for Mathematical Practice, or Practice Standards, involve critical thinking skills that students from kindergarten through high school work to develop. This workshop provides hands-on engagement with the Practice Standards by exploring tasks that focus on place value in our number system.

**Elizabeth Raymond, Student at Westfield State**

University, MA

## Session 2 10:30 – 11:30 am

### 9 Creating Meaningful Writing Assessments in Mathematics

All grade levels

Room 118

We will explore ways to integrate writing in mathematics to develop a deeper understanding of concepts and encourage students to develop their own mathematical reasoning.

**Stephanie Iacadoro**, Duxbury Public Schools, MA

Twitter Handle: @mathiacadodo

**Theresa Raftery**, Duxbury Public Schools, MA

Twitter Handle: @traftery14

### 10 Executive Function: Biological Base of Mathematics

Pre-K – 2

Room 120

Frustration, disruptive behavior, and shying away from challenges are a few of the harmful side-effects when intentional targeting of the development of executive function is absent from PK-3 math instruction. What is EF? What does it look like? Why is it considered a biological base of mathematics? How can YOU help students develop these skills? Join us to explore the "how" and "why" of Executive Function.

**David Barry**, Boston Public Schools, MA

**Dr. Karen L. Anderson**, Stonehill College, MA

### 11 Developing Problem Solvers, NOT Problem Doers!

Grades 3 - 5

Room 121

Are your students depending on you to solve every problem in math class? It's time to break those bad habits and build your students' problem-solving abilities. Explore activities that promote teaching mathematics through problem solving so students are learning the math; not just memorizing it.

**Susan Hamilton**, Carnegie Learning, Inc.

### 12 Learn to Read Like a Mathematician with the 3-Reads Instructional Routine

Grades 6 - 8

Room 122

Participants will leave this session knowing what makes reading in math different than reading in other subject areas and the kind of information that is important to pay attention to when interpreting a math problem. They will understand the purpose and know the flow of the 3-Reads instructional routine, as well as the specific supports baked into its design for English-language learners and students with learning disabilities.

**Grace Kelemanik**, Kelemanik Consulting, MA

Twitter Handle: @GraceKelemanik

**Amy Lucenta**, Lucenta Consulting, MA;

Twitter Handle: @AmyLucenta

### 13 Looking for Patterns and Making Use of Structure: Making Sense of Practices

7 & 8 with Math Content

Grades K - 8

Room 123

In this workshop participants will use math content from grades 1-8 (e.g., why  $x$  to the 0 is always 1) to explore and illustrate practice standards 7 & 8. We will examine problems that highlight the power of patterns and structure for problem solving and generalizing mathematical concepts.

**Katherine Ariemma Marin**, Stonehill College, MA

Twitter Handle: @professormarin

### 14 Facilitating Productive Classroom Conversations Using Desmos Activity Builder

Grades 6-12

Room 124

Participants will experience a Desmos activity through a student lens and learn how to utilize the teacher dashboard and classroom conversation toolkit to facilitate individual and collaborative student thinking. We'll also discuss ways to adapt or create your own high quality Desmos activities. Bring a tablet or laptop to maximize your participation.

**Heather Kohn**, Marlborough Public Schools, MA

Twitter Handle: @heather\_kohn

**Linda Saeta**, MA

Twitter Handle: @LindaSaeta

### 15 Engaging Problem Solving to Motivate and Engage Students and Articulate the Common Core Standards

Grades 9-12

Room 125

In this hands-on workshop, participants will be introduced to a number of dynamic problems that engage and articulate the Common Core Standards for Mathematical Practice. Problems will be selected from contests, issues from *The Mathematics Teacher* and other sources covering number and operations, algebra, geometry, pre-calculus, discrete mathematics and calculus. Exploring the pathways to the solutions will take precedence. The use of technology and manipulatives will be helpful in solving these rich problems.

**Jay Schiffman**, Rowan University, NJ

### 16 Making Algebra II Real

Grades 9-12

Room 126

This presentation will highlight a project/problem-based approach to teaching Algebra II, giving examples of investigations and activity that illuminate the material in an Algebra II course.

**Christopher Szkutak**, Whitman Hanson Regional School District, MA

Twitter Handle: @WHRHS\_MrSzkutak

## Lunch Keynote

Dr. Anne Collins

Student Center Blue Lounge 12:45-1:45 PM

### I Taught It But They Didn't Learn it: Now What?



*This talk will hopefully shed some light on why we need to approach the teaching of mathematics differently than the way in which most of us were taught. Suggestions for engaging students in a multi-sensory approach to learning mathematics will be offered together with some examples that have proven to be successful in many classrooms with a variety of students.*

Dr. Anne Collins is the director of Mathematics Achievement Center at Lesley University. She is an author and leader in math education. Dr. Collins is a founding member of the board of the Massachusetts Mathematics Association of Teacher Educators (MassMATE) and has served as past presidents of state and regional mathematics teacher associations (ATMIM and ATMNE) and on the NCTM Board of Directors. In addition, she was the Massachusetts Statewide Mathematics Coordinator, has taught at every grade level and has served on several state advisory boards for mathematics education. She is the recipient of over \$8 million in grant funding to provide professional development in under-performing urban districts.

## Session 3 2:00 – 3:00 pm

### 17 Embracing Rich Math Tasks

All grade levels

Room 118

Participants will experience a variety of rich math tasks that can be implemented in any class. We'll look specifically at 3 Act Problems, Low-Floor High-Ceiling problems, Problems of the Week, etc. and how you can implement them in your classroom.

*Kathy Gruzynski, Belmont Day School, MA*

### 18 How Do You Know That? Promoting Higher-Order Thinking with Hand Signals

Grades 1 - 6

Room 120

Hand signals are a valuable tool in the math classroom. They build problem-solving stamina, develop students' ability to describe patterns and make conjectures, and aid teachers in assessing student thinking and learning. In this presentation, we will look at three hand signals that prompt higher-level thinking and heighten the quality and impact of discourse in the elementary math classroom.

*Ellie Cowen, Nashoba Regional School District, MA*

*Megan Nee, Framingham Public Schools, MA*

### 19 Coin Problems

Grades 6 - 8

Room 121

In this presentation we will consider two types of coin problems and their generalizations. We will use tables, working backwards, and algebraic techniques.

*Maria Fung, Worcester State University, MA*

### 20 Increasing Mathematical Discourse through Reasoning and Analysis

Grades K - 8

Room 123

Participants will engage in various activities and investigations which lead them to better understand how fostering mathematical discourse within the classroom is an effective way to help students utilize the Standards for Mathematical Practice and increase their ability to analyze and reason.

*Hilary Kreisberg, Lesley University, MA*

Twitter Handle: @Dr\_Kreisberg

### 21 The Amazing “One-derful”, 1

Grades 6-12

Room 125

Participants will see the power of the Giant One which can be used to find equivalent fractions, GCF and common denominators. It can be used to simplify fractions and for all operations (including division) of fractions. The Giant One can be used to model the Multiplicative Identity as well as be used for percents. Ratios, similarity, unit conversions and solving proportions can also be done efficiently with the Giant One.

*Barbara West, Retired, VT*

### 22 “I got an 86. What does that mean?”

Grades 9-12

Room 126

Why do we grade? Is a single number meaningful? When evaluating student work, we have an opportunity to guide students forward with feedback. Instead of identifying mistakes and subtracting points to determine a numerical grade, let's give evaluations dimension, depth, and character by answering the question, "What is my student struggling with?"

*Brian Abend, Worcester Academy, MA*

Twitter handle: @MrAbend

### 23 How Can Technology Support a Growth Mindset?

Grades 9-12

Room 126

Participants will learn about strategies to consistently implement a growth mindset in their classrooms. Rich learning tasks will be explored using TI-84 CE technology to engage students to investigate, explore, discover and discuss mathematics inside the classroom and beyond. All activities will be made available to participants including student handouts and teacher notes. Lessons will align to Common Core State Standards for grades 7 – 12.

*Nancy Johnson, Retired, MA*

Twitter Handle: @mathlc