

**Association of Teachers of Mathematics
in Massachusetts**

2018 Spring Conference

***Using Technology to Enhance
Mathematics Instruction***



Thursday March 22, 2018
Worcester State University
486 Chandler Street, Worcester, MA 01602

WELCOME TO THE 2018 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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Sandy Ollerhead and Michele Lippens

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Min-Jen Taylor

ATMIM Spring Conference

GENERAL SCHEDULE

7:30-8:30	Registration and Continental Breakfast	Student Center Lobby
8:30-8:45	Welcome and Conference Overview	Student Center Blue Lounge
9:00-10:00	Session 1	Sullivan Academic Center
10:15-11:15	Session 2	Sullivan Academic Center
11:15-12:15	Lunch and Visit with Exhibitors	Student Center Blue Lounge
12:15	“My Favorites”	Student Center Blue Lounge
1:15-2:15	Session 3	Sullivan Academic Center
2:30-3:30	Session 4	Sullivan Academic Center

EXHIBITORS

Be sure to visit with our exhibitors. Exhibits will be open from 7:30 a.m. – 1:15 p.m.

- Texas Instruments
- Pearson
- National Geographic Learning / Cengage Learning
- McGraw-Hill
- Houghton Mifflin Harcourt
- EVERFI

A special thanks to Texas Instruments for sponsoring our breakfast this morning!



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

Session 1 9:00 - 10:00

1 STEM Studio: A Creative Approach to Science, Technology, and Mathematics Teaching and Learning

Grades PK-5

Room 120

Science and Mathematics are beautiful subjects and lend themselves naturally to integration along with creative technology. We as teachers and learners can truly help our students see and appreciate the beauty and interconnectedness of these most fascinating subjects. In this workshop participants will experience seamless STEM integration that truly and meaningfully addresses Science and Math Content and Practice Standards as well as Digital Literacy and Computer Science Standards. We will use various models including Google platforms, Explain Everything, Adobe Spark, and more.

Tracy Manousaridis, Weston Public Schools, MA

Twitter Handle: @luvmathweston

Susan Erickson, Weston Public Schools, MA

Kate Benson, Weston Public Schools, MA

2 Utilizing Google Apps to Prepare Students for 21st Century Testing

Grades 3-5

Room 121

This workshop will go over how to utilize Google Classroom, Google Docs, Google Forms, Google Slides, and the Google add-on Flubaroo in order to prepare students for computer-based testing. We will look at ways to increase student production for open response prompt, along with how to utilize the suggested edits and comments tools on Google Docs to supply student feedback. We will also go over ways to help students practice answering multiple response problems (i.e. select all that apply) along with ways to produce "drag and drop" questions using Google Slides. A laptop and Gmail account is recommended for this presentation, but is not required.

Danielle Molinari, Braintree Public Schools, MA

Ellen Varone, Braintree Public Schools, MA

3 Using Technology to Deepen Understanding

Grades 6-8

Room 122

Challenge students to explore, discover, model, analyze, and explain mathematical relationships with pre-made and editable standards based activities using the TI-84 family of calculators. Middle school topics will be featured. The TI-84 CE calculators will be provided for the workshop, but no prior experience is necessary.

Nancy Johnson, Texas Instruments Regional Instructor

4 Getting Started with Desmos Activity Builder

Grades 6-12

Room 123

Learn how to use Desmos Activity Builder to facilitate conversations and provide opportunities for student discovery. Activities can be used as a formative assessment tool to collect data about student understanding of concepts and vocabulary. Use of teacher tools and dashboard including pacing, pausing, and anonymity will be modeled. Come play with math!

Jennifer Fairbanks, Hopkinton High School, MA

Twitter Handle: @hhsmath

5 It Can Be Done: Online Homework

Grades 9-12

Room 124

I use a free online platform for nightly homework and do nows. Students solve problems from their textbook and enter them online getting immediate feedback. I get useful reports and students are more engaged when going over homework. I will share how I do this in an urban setting with high needs high school students, including level 1 ELL students. A byproduct of this technology is the classroom culture, they never have nothing to do.

Renah Razzaq, Worcester Public Schools, MA

Twitter Handle: @RenahRazzaq

6 You Can Teach Computer Science

All grade levels

Room 125

Teaching computer science (CS) is an exciting extension of your skills as a math teacher. We will examine how teaching CS is different from teaching math and explore the wide range of resources available to support new CS teachers. This session will help you gain the confidence you need to offer an introductory CS course at your school!

Colleen Werner, Ipswich High School, MA

7 Cool and Fun Ways to Use Technology

Grades K-5

Room 120

We will explore how to use the available ways of using apps from a variety of grades that run either on a computer or tablet. We will look at apps and how we can adapt them or use them to make our math teaching even more exciting for the elementary grade student.

Susan Weiss, Solomon Schechter Day School, MA

8 Keep Everyone On Task and Engaged by Incorporating Technology into Your Math Workshop

Grades 3-5

Room 121

Do you find it difficult to keep your students engaged and on task doing meaningful work while you meet with small groups during math workshop? If you have access to iPad or Chromebooks, then this is the workshop for you! Learn about a variety of ways you can incorporate technology into your math workshop to ensure students who are working independently are receiving instruction, practice, differentiation, and immediate feedback while you are working in small groups.

Jenifer Carline, Norton Public Schools, MA

Twitter Handle: @JeniferCarline

9 Optimizing Google Classroom with Free Math Content

Grades 6 - 8

Room 122

Explore free math content that you can assign directly to your students through Google Classroom. ASSISTments is a free, online tool from Worcester Polytechnic Institute that offers you problem solving and skill practice problems, a problem builder to create your own content, and detailed student reports. Learn how to assign free math content directly to the Google Classroom stream.

Not a Google Classroom user? No problem!!

ASSISTments can be used with or without Google Classroom.

Cristina Heffernan, Worcester Polytechnic Institute, MA

Twitter Handle: @ChristinaHeff

10 Using Technology to Support Innovative Thinking in the Mathematics Classroom

Grades 6-12

Room 123

As we move towards a technology based MCAS in all subjects, student competency with technology is increasingly important. Using the Digital Literacy and Mathematics Standards as a guide we will explore innovative ways to use technology in assessments and to enhance instruction.

Christopher Szkutak, Whitman Hanson Regional School District

11 Action-Consequence-Reflection

Activities: Using Technology to Make Math Stick!

Grades 9-12

Room 124

In this hands-on workshop, participants will learn strategies for leveraging calculator and computer technology to engage students and guide them toward deeper mathematical understanding. Perform actions with technology and ask targeted questions to optimize students' reasoning about the mathematical implications. Discuss when and how to integrate technology so it promotes achievement and empowers learning. We will use TI Graphing Calculators, GeoGebra, and Desmos to explore classroom-ready activities for algebra, geometry, and precalculus learners.

Karen Campe, T3 National Instructor

Twitter Handle: @KarenCampe

12 Spreadsheets Across the Curriculum

All grade levels

Room 125

Take a tour with us. Discover an exciting new way to imagine mathematics, solve problems, learn the fundamentals of coding, and use spreadsheets. We will guide you on this tour through a series of engaging and dynamic mathematical and problem-solving experiences that cover a wide range of critical topics in the K-16 math curriculum. We will stop and explore some of the adventures your students can have as they learn problem solving in the Digital Age through Functional Thinking. You will leave with access to over 125 free problem-based-learning lessons, modules, and courses to take back to your classrooms and schools.

Peter Mili, Mathematics Educator, MA

Art Bardige, Mathematics Educator, MA

13 Be a Tech Ninja!: Leveraging Digital Platforms to Enhance Blended Learning and Math Instruction

All grade levels

Room 126

Want to build your capacity as a math teacher who uses technology in your classroom? I report on my findings from visits to high performing districts with 1:1 technology integration. In this working presentation, I offer insights into classrooms that promote technology use. Anecdotal evidence of instructional practices using technology "in action" will be offered. Time will be spent creating an authentic math lesson using one or more digital platforms.

Timothy Marum, Portsmouth School District, RI

14 Tangy Technology Tips for Teaching Facts and Fractions

Grades K-8

Room 120

Do your students struggle with their facts? Do they struggle with fractions? If the answer is yes, join Greg and learn firsthand how to use technology as part of a concrete-pictorial-abstract approach to teaching key concepts. We will explore how technology can be used together with concrete manipulatives to deepen understanding, develop strong reasoning skills, and develop the fact and procedural fluency kids need for middle and high school math.

Greg Tang, *GregTangMath.com*

15 When Technology is Not Enough: What Students Can't Do Without It

Grades 3-8

Room 121

Pre-toddlers are able to scroll through smartphones to find their favorite version of "Wheels on the Bus". It is vital that we educate students to function in a technological world. BUT, how is technology used in elementary and middle schools to enhance mathematical skills and knowledge and not become a detriment to them? This session will present higher level student work showing dependency on technology that is concerning and suggest ways to address these over dependencies.

Pamela Halpern, *Salem State University, MA*

Cara Goldberg, *Lexington Schools, MA*

16 Blended Learning in the Elementary Math Classroom

Grades 3-5

Room 122

Demonstration of blended learning in the math classroom including the many ways that technology can be used to empower, engage, and educate students in grades three to five. Specifically we'll look at the ways that tools/projects such as problem solving presentations, Google Draw math models, That Quiz, Symphony Math, TenMarks, and websites can be used in conjunction with paper/pencil, hands-on, and collaborative activities to meet the diverse needs of intermediate elementary learners.

Maureen Devlin, *Wayland Public Schools, MA*

Twitter Handle: @lookforsun

17 Assessment Validity and Security in the 21st Century Mathematics Classroom

Grades 6-12

Room 123

Coming from a one-to-one school where every teacher and student has an iPad, this has raised issues of assessment security. The ability to use equation solvers and/or share information with peers digitally both during and between classes has caused a new challenge for especially mathematics educators. I plan on showcasing techniques and programs that all but eliminate the issues that iPads and cell phones cause in terms of assessment validity and security.

Stephen Lauria, *Whittier Regional Technical High School, MA*

18 Using GeoGebra to Discover, Differentiate, Remediate, and Assess

Grades 9-12

Room 124

This workshop is open to ALL mathematics teachers. No previous GeoGebra experience is necessary. Participants will create a free GeoGebra account and will have opportunities to interact with several pre-made resources that powerfully illustrate how GeoGebra can effectively foster discovery learning, provide meaningful remediation, enhance differentiation opportunities, and serve as a source of ongoing formative assessment. In addition, we will explore the tools of GeoGebra's Graphing Calculator, Geometry, 3D, and Classic apps (on both laptops and smartphones) and experience how these apps can easily help teachers create classrooms where active, student-centered, discovery-based learning continually defines the classroom environment.

Timothy Brzezinski, *Dynamic Math Solutions*

Twitter Handle: @dynamic_math

19 Using Seesaw in the Math Classroom

All grade levels

Room 125

Learn about this FREE app/tool that is described as the "Making Thinking Visible Machine"! Seesaw is a student-driven digital portfolio that empowers students to independently document what they are learning at school. Students can use photos, videos, drawings, text notes, and links to show what they know. Please bring an iPad, Chromebook, or laptop to this interactive session.

Jen Hudak, *Beverly Public Schools, MA*

Twitter Handle: @jenhudak4

20 Making Your Way to Mathland

Grades PK-5

Room 120

What better place to learn math than in Mathland? Inspired by Seymour Papert, Mathland is a culture steeped in problem-solving opportunities where children naturally pick up the language through mathematical ways of knowing. In this hands-on workshop, we will create a Mathland experience and immerse participants in maker-minded math play. Explore Mathland culture through activities that employ 3D modeling, design engineering, and computational thinking.

Hilary Kreisberg, Lesley University, MA

Twitter Handle: @Dr_Kreisberg

Sue Cusack, Lesley University, MA

Twitter Handle: @SueCusack

Jacy Edelman, Lesley University, MA

Twitter Handle: @LesleySTEAM

21 Using Tinkercad and 3D Printing to Develop Ideas About Volume

Grades 3-8

Room 121

In this presentation we will focus on the concept of volume and the decomposition of volume of irregular shapes made up of rectangular prisms. We will discuss the ways in which volume is presented in a few curricula and how participants present these topics. We will then examine how teachers can facilitate the use of Tinkercad (a free, cloud-based CAD system) to help students investigate and understand volume. This will include a presentation of an example of curriculum materials that have been enhanced in this way, along with examples of 3D printed objects made in the course of learning about volume.

Susan Monaghan, Worcester State University, MA

22 Cell Phones in Math Class

Grades 6-8

Room 122

Cell phones have become a life necessity even in learning. There are several new apps that have been created to enhance math instruction. This workshop will consist of demonstrations of apps that can be used by students to help them engage in meaningful practice of mathematical concepts and by teachers to quickly collect data on student understanding. The following apps will be a part of this workshop: Kahoot (math games), Desmos (make graphing easy), UPC code creator, Plickers (data collector).

Alfred Johnson, Codman Academy Charter Public School, MA

23 Design Technology-Enhanced Curricula to Engage Students

Grades 6-12

Room 123

Learn how to implement the Standards for Mathematical Practice in online or blended courses highlighting instructional approaches using technology. Explore curriculum components such as course storyboard, online educational resources, community, and assessment. In addition, examine sample activities and student work that promote student learning and success.

Amy Miele, The Virtual High School (VHS, Inc.)

24 3D Printing Applications in the High School Math Classroom

Grades 9-12

Room 124

This session will present activities teachers could use in their classrooms to connect mathematics and technology and to create concrete 3D representations that model mathematical concepts. Topics include: modeling of volume of revolutions around an axis, transformations of 3D models, 3D modeling, scaling, and to introduce xyz coordinates. The session will go over creating math manipulatives on a 3D printer and using algebraic functions to make designs.

Jessica Jarboe, Milton Public School, MA

Daniel Jarboe, Milton Public Schools, MA

25 Engage Students Through Apps & More: GooseChase & Escape Rooms Oh My!

All grade levels

Room 125

Are your students OBSESSED with Snapchat and Instagram? Then this interactive session will open the doors for educators to use fun and engaging technology apps that get students up and out of their seats! Come try GooseChase and see what all the fun is about! You will have the opportunity to make one to take back to your class! Interested in an Escape Room? Learn how to create a Google Form for your first Escape Room that unlocks codes for each new activity!

Amanda Banks, Norton Middle School, MA