Happy New Year!

Yes, I know this is a bit late. For many of us, we don’t think of January 1 as the start of a new year. It begins when our students enter our classroom on the first day of the school year. It’s a time rife with promise and excitement; we can’t wait to apply the lessons learned from past years and put our summer preparations into practice. This will be our best year yet! For new teachers, your pre-service training and your enthusiasm will carry you into this new era in your lives; this is the start of your teaching (and learning) journey.

For many teachers and students, this excitement will fade over the course of the year, when the long hours, deadlines, and frustrating moments chip away at the vision we originally had for the school year. During those moments, remember the hope you had at the start of the year and why you chose to be here in the first place to inspire and care for our students. Let your values and ideals be your guides during those stressful times.

On the RIMTA front, I am so excited for this school year! We will offer access to the online workshop, "Empowered Problem Solving", Robert Kaplinsky; start participating in Twitter chats with ATMNE; refine our communication process with our members; and host our Spring Conference with Steve Wybomney and Marian Small as featured speakers. It will be a wild ride, but the learning opportunities for us are so rich and diverse!

I hope to see all of you at least one of these professional learning events. I love meeting other math teachers, building my professional community, and (especially) learning from you. If you have any suggestions on how we can make RIMTA work better for you, please let me know. This is your organization and we want to aid your professional growth in any way we can.

Let’s make this our best year yet. You’ve got this!

Steve L.
SAVE THE DATE!!
RIMTA Spring Conference
March 14, 2020 (Pi Day)
"InsPiRe!"

Scheduled Featured Speakers!
• Dr. Marian Small, author of nearly two dozen math education books; featured speaker at NCTM regional and national conferences.
• Steve Wyborney, creator of Splat!, Esti-Mysteries, and Conversation Cubes; author of The Writing on the Classroom Wall.

...plus many other sessions, a Networking Lounge, and a social at which you can meet Steve and Marian!

We are now accepting speaker proposals. Go to https://forms.gle/S8oVbUpBKU8pAg7A to submit your proposal.

Check your email for further updates and check us out on Twitter #RIMTApi20!

Quotes to Inspire You
(or Make You Smile)

Probability is the only branch of mathematics in which good mathematicians frequently get results which are entirely wrong.
- Albert Einstein

In every specific natural science, there can only be found so much science proper as there is mathematics in it.
- Immanuel Kant

The above quotes are from the Dictionary of Mathematical Quotations, by Donald D. Spencer.

The greater the obstacle, the greater the glory in overcoming it.
- Moliere

LAST ISSUE!

As we on the RIMTA Board look to improve our communication structure, we have decided that this would be our last issue of the RIMTA newsletter in its current incarnation. In the future, we will provide updates through social media, email, and blog posts on our website, www.rimta.net. The posts will provide much of the same content as our newsletter, but in smaller chunks and in a more timely manner.

While these newsletters have been a labor of love for me personally, I and everyone else on the Board look forward to this new format and serving you, the RIMTA membership, to the best of our ability.

Sincerely,
Steve Levesque
Newsletter Editor (for a few more days)

Presidential Awards

Congratulations 2019 PAEMST Secondary State Finalists:
• Robert Mayne of Charlo High School in Wood River Junction (Mathematics)
• Jane Ramos of Vincent J. Gallagher Middle School in Smithfield (Science)

On their selection as the Rhode Island State Finalists for the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) for 2019! We recognize these teachers as outstanding educators who exemplify the highest standards of mathematics and science teaching at the secondary level (7-12).

These teachers will now be elevated to the national level for consideration as national finalists for the state. Good luck, Jane and Robert!

PAEMST is the highest honor bestowed by the United States government specifically for K-12 mathematics and science (including computer science) teaching. Since 1983, more than 4,700 teachers have been recognized for their contributions to mathematics and science education. Awarded as models to their colleagues, inspiration to their communities, and leaders in the improvement of mathematics and science education.

The PAEMST program is open to outstanding mathematics and science (including computer science) teachers in the 50 states; Washington, D.C.; the Commonwealth of Puerto Rico; Department of Defense Education Activity schools; and the U.S. territories as a group.

Presidential awardwiners receive a certificate signed by the President of the United States, a trip to Washington, D.C., to attend a series of recognition events and professional development opportunities, and a $10,000 award from the National Science Foundation. The National Science Foundation administers PAEMST on behalf of The White House Office of Science and Technology Policy.

For more information about PAEMST or to submit a nomination (Fall 2019 - elementary grades K-4), go to www.paemst.org.
Exclusive Interview with Marian Small

Dr. Marian Small is simply one of the foremost experts on mathematics education anywhere. Her breadth and depth of knowledge extend throughout all grade spans and all aspects of mathematics instruction. Recently, we had the chance to catch up to Marian and ask her a few questions as she prepares to speak at the RIMTA Spring Conference on March 14, 2020.

RIMTA: Which of the books you have authored is your favorite and why?
MS: I am not sure I have one favorite, although right now I am working on a K-8 digital math program for Canada called MathUp that addresses almost everything I care about. What I love most about it is that it tells teachers why I make the decisions I do in helping them put together lessons.

RIMTA: What new projects have you been working on?
MS: I have just finished a book on assessment in Gr 3 – 8 math for Teachers College Press and just finished a resource for Stenhouse called Understanding the Math We Teach and How To Teach It K-8. The latter book is a U.S. version of a book I wrote a number of years ago in Canada. I love that people find it such a comprehensive reference.

I am currently finishing up my Kindergarten work for MathUp, the program I mentioned above.

I have another book in the back of my mind that helps teachers see how their core values about what math teaching is really all about affects how they teach.

RIMTA: Where do you see math education heading over the next ten years?
MS: Although there are always those who want the way we teach to revert to the way it was done in the past, I think we are moving forward in math as an enterprise that focuses on understanding and thinking, more than students simply repeating what they’ve been shown and not knowing why they are doing what they are doing. I think understanding and problem solving are essential in an era where employers are looking for people who can think and make decisions.

RIMTA: What was the best advice about teaching you ever received?
MS: I am not sure anyone actually told me this, but implicitly I could see that doing everything in my power to help a student be right is critical—i.e. helping that student see that what he or she said makes sense in one way or another, and letting that see that I really want to hear what they have to say.

I think two other things that matter a great deal to me are having high expectations for all students, which I did learn about in teacher preparation, as well as teaching for divergence, rather than convergence, which I am not sure I was ever directly taught.

(Continued on p. 8)

News from the Rhode Island Department of Education

Submitted by Susan Pagliaro
RI Department of Education

Legislation Brief

During the closing days of the 2018-2019 session of the General Assembly, education reform legislation was passed by both the House and the Senate. Specifically, 2019 S 0663 Substitute B concerns educational standards and curriculum in Rhode Island. RIDOE is tasked with enacting the requirements set forth by the legislation and the agency is currently drafting plans to do so. The three main facets of the legislation concern the review of current academic standards for mathematics, ELA, science and technology, history and social studies, world languages, and the arts for prekindergarten through grade twelve; the development of a curriculum framework for each of those content areas; and the vetting of and recommendation to LEAs of high quality curriculum for mathematics, ELA, and science and technology.

PrepareRI Meeting at URI

One of the goals of RIDOE’s PrepareRI College Readiness initiative is to reduce the number of college entering freshmen who are required to take remedial mathematics courses before being allowed to enter credit bearing courses. An initial step in the plan is to open the lines of communication between high schools, higher education, and RIDOE in order to gain an understanding of the problem, recognize the challenges that each entity faces, and to investigate opportunities for progress. As such, the Office of College and Career Readiness sponsored the first of three meetings between representatives from URI, RIC, CCRI, RIDE, and a number of high school mathematics teachers from various communities throughout the state on Friday, August 23rd. Time was set aside for small heterogeneous group discussions to investigate the issue from the point of view of each stakeholder group followed up whole group discussions. Future meetings will focus on creating concrete action steps.

EdReports Curriculum Cohort

RIDOE jump-started their 2019-2020 curriculum adoption cohort using the EdReports resources with an orientation session on August 13th. The initial orientation will be followed by a series of six professional learning sessions during which LEA teams will become familiar with the EdReports suite of resources with the ultimate goal of selecting a high quality curriculum for mathematics and/or ELA. Additionally, time will be spent supporting teams in establishing an implementation plan including a professional learning component to support adoption.
WHAT IS YOUR "JUST ONE?"

My new favorite tool is FX Draw at Ereflex (www.erfex.com). FX Draw allows users to create drawings, mathematical expressions, and graphs, as well as statistics tools. It also contains a science drawing toolkit.

Jeff DeSilva
Johnston High School

Braining Camp (www.brainingcamp.com) offers a variety of virtual manipulatives from Rekenreks to pattern blocks to algebra tiles, along with tutorials and ideas for applying these tools. A $55 subscription gives one-year access to one teacher and all of that teacher’s students. Yes, every one of your students can have access on one subscription.

Steve Levesque
East Greenwich High School

AP Calculus Facebook Group: I know most think Facebook is a waste of time, but I have found that the social media platform is invaluable for the teaching community to share strategies and resources. It also is a great platform to ask colleagues for input and opinions about your own challenges. It’s nice to have a safe place to ponder a question and to see that others have the same question/concern. I have found great resources and a great bunch of people who are all super supportive of each other. (Editor’s Note: you can probably find a Facebook group for other subjects you teach, as well.)

Nancy Bucci
East Greenwich High School

STEPS FOR UNDERSTANDING MATHEMATICS (SUM)

Submitted by Meredith Astologo

The first EMLG meeting of the 2019/2020 school year will be held on Friday, November 15th from 9:00-3:00 at the Warwick Public Library on Sandy Lane. We are anticipating that RICAS data will be released by then and we hope to discuss any trends districts are identifying and what they are doing in response.

The Elementary Math Leaders Group is a network of elementary mathematics leaders from throughout Rhode Island who share resources and collaborate to solve the problems being faced in supporting math instruction. The group meets periodically and shares resources through an electronic repository. All elementary mathematics teachers, coaches, and administrators are welcome to participate in person or electronically. Please contact Meredith Astologo at meredith.astologo@nkdi.net to get more information or to join the group.

NEW CUBED CONFERENCE RECAP

Submitted by Lynn Rakatansky

The Third New Cubed Math Conference, held at Siena College near Albany on June 30 to July 3, 2019 was a great success. What makes this conference unique is that the workshops are set up with narrow grade bands for grades PreK-K, 1-2, 3-4, 5-6, 7-8, and high school topics including but not limited to Algebra, Geometry, Statistics, and Calculus, in order to focus in on topics specific to one’s teaching.

The presentations were excellent. There were some speakers who gave three talks, which allowed for extended and continuous learning. By holding this conference in the summer, no substitutes were needed and no instructional time with one's students was lost. It was affordable since it was held on a college campus. A STEM Camp was available for the children of participants. AMTNYS, AMTNJ, and ATMNE came together to create this conference for learning, teaching, and students.

Please consider joining us next summer for the Fourth New Cubed Conference scheduled for June 28 to July 1, 2020 at Siena College. Connecting with colleagues from New York, New Jersey, and New England enriches your teaching!
INTERVIEW WITH MARIAN SMALL (cont'd)

RIMTA: What would you say to educators to inform them of the relevance of your presentation in March?

MS: I think that looking at the mathematics content standards as a checklist of skills we need our students to achieve should not be the ultimate goal of mathematics education. It can be part of the goal as long as it is embedded in a broader purpose, namely that we want students who don't just do math, but are able to and enjoy thinking mathematically; this, I suspect, relates to the standards for practice. My presentations both for Grades K – 5 and Grades 6 - 12 teachers will focus on specific approaches that would allow us to develop students who embrace thinking mathematically, who embrace problem solving and who have confidence they can solve mathematical problems posed to them. We will contrast the types of questions posed to students in each of these two “systems”. I believe that without a focus on creating critical thinkers, we are doomed to continue a long-standing tradition of math being attractive only to the few and to continue to encourage the view that mathematics is simply not an appropriate domain for those who are creative.

RIMTA: What is your favorite teaching resource and why?

MS: I do not have a single favorite resource. I think it is actually important to foster the notion that no resource is the be-all and end-all, and every teacher (including me) should use a variety of resources as well as their own personal experiences to create rich math programs for our students.

High School (Questions from prior Rhode Island Math League meets)

Name the 179th natural number not divisible by 12.

Answer: 195

Given square ABCD, equilateral triangle BEC, and DB = s. Find the length of the altitude FE in terms of s.

Answer: \(0.6124s\) or \(\frac{\sqrt{6}}{4}\)

Thank You, LP!

Recently, the RIMTA Board lost one of its most passionate members. Lynn Prentiss, known by her friends as LP, resigned from the Board to focus on her professional responsibilities. During her tenure with the Board, Lynn served terms as President, Secretary, and Awards and Grants Chair; and she was the Co-Chair of the wildly successful 2018 ATMNE Conference. Her enthusiasm and energy are obvious to all who know her.

We on the RIMTA Board wish LP the best in her future endeavors.

Empowered Problem Solving Workshop

On October 10, RIMTA members gathered to reflect on the first module of Robert Kaplinsky’s Empowered Problem Solving online workshop. Described by Mr. Kaplinsky as an “innovative approach”, workshop registrants plan to meet approximately every three weeks to discuss the modules and share their best practices in an effort to enhance each other’s teaching. We look forward to seeing where this “book study” model leads!

While it is too late to register for this workshop and the discussion group, please check RIMTA’s communication for similar opportunities in the future.
**TECH CORNER**

by Tim Marum

This is an online adaptive learning program designed for children at the K-8 level. It assesses each student's progress and adjusts the lesson plan accordingly. It adapts to the individual student to personalize their lessons. The adaptive software sends data reports to teachers which indicate students' ongoing strengths and needs. Students are provided digital manipulatives and video tutorials to support problem solving.

**Dreambox Research / Rationale**

**Key Takeaways:**

1. Considered as an intervention that received a positive effectiveness rating from IES - WWC (What Works Clearinghouse), a pseudo-government entity research think-tank that vetted existing scholarly research to come to this conclusion.
2. More time spent on Dreambox yields higher gains in student math achievement.
3. Following Dreambox recommended lessons allows students to make quicker gains in their mathematical understandings.
4. Dreambox progress measure is positively associated with achievement gains on state tests and interim assessments.
5. Impact that Dreambox has on student math achievement can be complemented by good teaching and higher student motivation.
6. Gains on NWEA was a significant 2.3 points higher (5-5 percentile points higher) on average -- this increases to 6.4 percentile points for students at the 50th percentile.

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**AMS REPORT**

Submitted by Annette Emerson
American Mathematical Society

As the academic year begins, we offer the following free resources for K-12 math teachers:

- [https://www.ams.org/mathmoments](https://www.ams.org/mathmoments) Mathematical Moments, a series of downloadable poster PDFs and podcasts. Recent topics include how math was/is used against HIV and malaria, the Equal Earth Map Projection, the similarities between math and jazz, using math to fight deepfakes, math’s role in creating the first image of a black hole, and figuring out how making sharks can swim so fast.

- [https://www.ams.org/programs/students/math-poetry](https://www.ams.org/programs/students/math-poetry) Math Poetry. If you haven’t received the free poster on math poetry, with examples of poems written by middle school, high school and undergraduate students, please email pamelia@ams.org to request a copy. Combining math and poetry is a great way to engage students in expressing their more clever takes on math, and perhaps for you to make connections with your English department.

- [https://www.ams.org/math-imagery](https://www.ams.org/math-imagery) Mathematical Imagery. Encourage your students to look at mathematics from an art perspective. The site includes stunning origami, sculptures, digital prints, fiber works and more, created using mathematics, “illuminating” mathematical concepts.

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**Center for Education Policy Research**

**HARVARD UNIVERSITY**

**Key Findings Report • May 2016**

**DREAMBOX LEARNING ACHIEVEMENT GROWTH in the Howard County Public School System and Rocketship Education**

**Background of the Study**

By providing targeted instructional content and practice problems for students, educational software promises to help teachers work more productively. Software could allow teachers to reallocate their time to helping students one-on-one or in small groups and provide students with content and practice opportunities targeted at their current level of understanding. Unfortunately, there is little evidence yet that educational software is actually helping students progress more rapidly. Given the financial costs and the amount of time that students are spending on educational software, we need to identify more quickly what’s working and what’s not.

In 2014, the Center for Education Policy Research at Harvard University began working with the Howard County Public School System (HCPS) and the Rocketship Education (Rocketship) charter school network to measure the impact of the use of Dreambox Learning software on student achievement in their schools. Our goal was to develop a streamlined, low-cost evaluation model that could be replicated easily. Accordingly, rather than conduct a teacher survey or perform classroom observations to measure the fidelity of implementation, we relied on student log files to measure how students were using the software, both in and out of school. We also assembled historical data on student achievement on state assessments and the Northwest Evaluation Association (NWEA) MAP assessment, as well as student characteristics. This brief provides an overview of our findings. (For more details on our findings and methods, please read the technical appendix, which accompanies this summary.)
CSTA New England Conference

Come join your Computer Science colleagues from around New England for the 3rd Annual Computer Science Teachers Association New England Regional Conference, "Equity in Computing." (For those who are part of the Code.org cohort this year and need to fulfill the requirement of attending two CSTA meetings, the NE conference does not qualify.)

For more information visit the Conference website. A list of presentations will be posted soon.

https://sites.google.com/view/csta-newengland

Register at the following EventBrite link:


2019 Computer Science Education Leader Award

CSTA-RI would like to congratulate Bryan Lucas, CSTA-RI member and computer science/literacy teacher at Charlton Middle School, for being named the 2019 CS4RI/CSTA-RI Computer Science Education Leader of the year. The award recognizes an educator who demonstrates a strong commitment to computer science education in their schools, districts, and communities.

Mr. Lucas has been with the Charlton Regional School District since 2006 after a long and distinguished career with the United States Navy. His local and state involvement include working with the Center for Leadership and Educational Equity for middle school professional development and collaborating with University of Rhode Island faculty, the Rhode Island Department of Education and state offices to develop computer science curriculum for all Rhode Island schools under a National Science Foundation (NSF) grant. He also served on the advisory committee that developed the Rhode Island K-12 Computer Science Education Standards.

As the recipient of the award, Mr. Lucas will be working with CS4RI and CSTA-RI to share innovative practices and pedagogy in computer science.

Sincerely,

Joe, Mike, Holly, and Aimée
SAVE THE DATES

December 9: Association of Teachers of Mathematics in Connecticut
(ATOMIC) Conference, Cromwell, CT
March 13, 2020: Association of Teachers of Mathematics in
Massachusetts (ATMIM) Spring Conference,
Worcester, MA
March 14, 2020: RIMTA Spring Conference, New England Institute of
Technology, East Greenwich
March 17, 2020: New Hampshire Teachers of Mathematics Spring
Conference, Henniker, NH
April 1-4, 2020: NCTM Centennial Annual Meeting, Chicago, IL