Math Murmurs

The Official Newsletter of the Association of Teachers of Mathematics in Massachusetts
an affiliate of the National Council of Teachers of Mathematics

A Message from the President, Steve Rattendi

What a way to finish off the year for ATMIM! The NCTM Annual Conference was a great success with excellent presenters, wonderful keynotes, exciting innovations to see from vendors, and wonderful colleagues from across the country and globe to learn from and network with. If you weren't able to join us at this conference, I do hope you will join us next year at one of our events.

There were many moments from the conference that have stuck with me. For one, Diane Briars' call for educators to help parents understand the Common Core State Standards. Specifically, she addressed the need for us to help the community separate the standards from a state's implementation (implementation timeline, assessment, etc.) of the Standards. I believe the Standards themselves, and, in particular, the Mathematical Practices are positive for mathematics education. We need to promote an understanding of those standards in the community – especially among our students' parents.

Another take-away was from Jo Boaler's keynote address. She has done a great deal of work on helping students, parents, and teachers understand how the brain learns mathematics. Her course for students is available for free at youcubed.org, and would be an excellent way to begin with students in September. I believe

A Quick Note about a Former ATMIM Board Member
Jane Young

Submitted by Steven Rattendi

Many teachers in Massachusetts were shocked to learn recently of the death of Jane Young, a recently retired mathematics teacher of 17 years from Lincoln-Sudbury High School, and before that a 20-year veteran teacher at Newton South High School. Jane and her husband died tragically while vacationing in the U.S. Virgin Islands.

Jane had been an active member of ATMIM serving on its Board of Directors in the late 80s and early 90s, presenting at conferences (including NCTM) to share her knowledge with others, and attending conferences to learn from colleagues.

Jane's extraordinary work as a teacher was honored in 1992 when she received the Presidential Award for Excellence in Mathematics and Science Teaching. Those that worked with Jane or were taught by her know that finding ways to reach all kids, caring deeply for the learning of her students and those of her colleagues, and mentoring all those she crossed paths with were cornerstones of who she was as a teacher.

ATMIM hopes to further spotlight Jane's work as an educator in a future edition of Murmurs.

Dates to Remember

In September ATMIM will start a book group with a book yet to be announced. Watch your email for more information..

October 29-30 2016
ATMNE FALL Conference
"Show us your Moxie - Distinctively Different Teaching"
Portland, ME

"Like us on Facebook to stay updated on upcoming ATMIM events!"

NCTM Boston 2015 Annual Conference Report
submitted by Steve Yurek

The Westin Seaport Hotel and the Boston Convention and Exposition Center were the venues for the 2015 NCTM Annual Meeting and Exposition held from April 15–18, 2015. ATMIM was the official host affiliate with Dr. Anne Collins, Director of Mathematics Operations at Lesley University, serving as the Local Area Coordinator. Since NCTM had hired its own staff to perform many of the duties usually undertaken by members of the host affiliate, ATMIM's main responsibility was publicity.   ATMIM reached out to ATMNE affiliates to advertise the conference, spreading the word to their members. Official attendance was 9,800 and when compared to recent annual conferences, Boston continues to be a very favorable place in which Math teachers like to meet.

The sessions and workshops were led by many of the state's, region's and nation's most influential mathematics educators and to list any specific ones would merely be a matter of personal preference. The venue was surely large enough to accommodate the nearly 10,000 attendees, as anyone who needed to travel from one end of the BCEC to the other will attest.

NCTM supplied ATMIM with a table and chairs, located just within the entrance to the BCEC. Volunteers were solicited from ATMNE and those who responded were scheduled for a one hour "stint" at the table. There were always at least 2 people (and many times more than that) at the table who answered questions from curious conference-goers.   Some questions were in relation to: what is ATMIM and how do I join, but most stopped by to chat and receive a free ATMIM pencil or a free stress brain. Still others were given plenty of

information and advertising about the ATMNE Fall Conference in Portland this October. Some even showed us their Moxie by trying a sample. Thanks to all the volunteers from all six ATMNE affiliates who gave up a portion of their conference time to help.

NCTM was very gracious to ATMIM as they received 60 complimentary registrations to the 3 day conference. The ATMIM Board voted to share these evenly with the other 5 affiliates. As a result, approximately 10 members from each affiliate were able to attend the conference free of charge.

Anne Collins reached out to the Boston Red Sox suggesting the possibility of having them recognize the fact that the NCTM conference was being held in Boston, and perhaps honoring the 2014 Fr. B. awardees. Not only did the Sox respond positively, they set aside almost 1,200 tickets at a special reduced price to be made available to NCTM attendees, and they declared Friday April 17, 2015 as Mathematics Educators Night at Fenway Park, As a result, not only did Lisa Mikus from Newton Public Schools and Anne Collins receive the ATMIM and ATMNE awards respectively, but the 2014 PAEMST New England State Finalists were also part of the on-field, pre-game festivities (see accompanying photos). It was certainly a night to remember for all involved. And to top it all off, the Sox won on a walk-off single by Xander Bogaerts in the bottom of the 9th)

The next NCTM Annual Conference will be in San Francisco from April 13-16, 2016

President's message continued from page 1

part of promoting the spirit of the Common Core must also involve the promotion of a more positive culture in this country around mathematics and an individual's potential to learn mathematics.

Finally, I was struck by the sheer number of presentations that dealt with student discourse in the classroom. I walked away with quite a few ideas to implement in my classroom immediately as well as some to ponder this summer as I think ahead to next year. I anticipate ATMIM taking up this theme in some of our PD offerings next year.

The ATMIM Board is planning for the 2015-2016 academic year. Plans include an online book study group, a Winter Conference and the return of our Spring Conference. We will give you more details about all of these PD opportunities as they are finalized.

The Association of the Teachers of Mathematics in New England (all ATMIM members are automatically members of ATMNE) will host its annual conference in Portland ME Oct 29-30. We hope you will include that two-day conference in your PD plans. The conference has a wonderful slate of Keynotes lined up: Don Balka (TODOS), Diane Briars (NCTM), Dan Meyers, and Greg Tang. Registration is already open. You can learn more about the conference by visiting www.atmne.net

This message is my last as President of ATMIM. In July, Nancy Johnson, a wonderful mathematics educator from Hopedale, will take over as President. It has been an honor to serve in this capacity over the last two years, and I look forward to continuing to support your state mathematics organization for many years to come.

Katherine L. (Kit) Norris elected to the
MA Mathematics Hall of Fame

Submitted by Joe Caruso

Kit Norris is a long-time mathematics teacher and currently serves as an educational consultant in mathematics. Kit has been involved in mathematics education in Massachusetts since 1971 as a teacher and teacher trainer. Kit served as a teacher and department chair at the Eaglebrook School in Deerfield, MA; as department chair at the Fay School in Southborough, MA; and as department chair, and Director of the Academic Program at the Fenn School in Concord, MA. Most recently Kit Norris served as an Adjunct Professor in the Graduate College of Education at Simmons College, teaching Methods in Mathematics for middle and high school teachers.

Kit has received the Presidential Award for Excellence in Teaching Mathematics because of her work developing successful teaching strategies for both students and teachers. Among her successful professional development programs is "First Steps in Mathematics." In addition she received A Woodrow Wilson National Travel Team Award, and a Klingenstein Fellowship for study at Columbia University Teachers College.

Kit has given numerous presentations at NCTM, NCSM, ATMIM, ATMNE, and the New England School Development Council. She has co-authored three publications, created three products marketed by Didax, trained consultants, written curriculum materials for Digi-Block and served on various committees, including the Program Committee for the 2015 NCTM National Conference in Boston. Kit is a member of the Board of Directors as Position Paper Editor, for the National Council of Supervisors of Mathematics where she identifies topics, supports authors, leads the critique of each position paper and guides its progression toward publication.

A sampling of recent presentations includes: NCTM 2014, New Orleans "Number Lines: Foundational Problem Solving Tool"; NCTM 2013 Denver "Understanding Fractions—A Gift from the Common Core"; ATMIM 2012 "A Gift from the Common Core—Understanding Place Value"; NCTM 2011 Indianapolis "What Our Textbooks Don't Tell Us About Fractions"; NCSM 2010 San Diego "Prime Leadership: Assessment".

Kit has co-authored with Art Johnson, "Teaching Today's Mathematics in the Middle Grades" published in 2006 by Pearson Education, Inc. In 2013, she co-authored "Great Tasks for Mathematics, K-5" and "Great Tasks for Mathematics, 6–8" and is a contributing author for NCSM's "It's Time" published by Solution-Tree. Her Didax products are: Common Core Collaborative Cards; Magnetic Fraction Number Line; and Active Place Value Chart. She also worked on the Digi-Block program.

Kit is currently traveling nationally with a network of colleagues to work with teachers and administrators in urban districts in order to improve student learning and achievement. She is also currently co-authoring "40 Mathematics Strategies to Engage K–5 Learners" to be published by Solution-Tree. She is constantly finding ways to help teachers and teams of teachers improve mathematical practices.

Congratulations Kit for this well-deserved honor.

ATMIM Election Results

submitted by Nancy Johnson

This year, our Board positions were uncontested but these Board members all bring enthusiasm, new ideas and a strong commitment to serve the needs of the ATMIM community.

Alison Mello, currently the Scholarship Chair for ATMIM, has served on the Board since 2013. She will take her involvement to the next level as President–Elect. As a curriculum director and consultant, combined with her work as a mathematics teacher and specialist, Alison appreciates and understands the important role ATMIM will play. In this time of great expectations and rapid change in mathematics education, teachers need more support than ever to meet the challenges they are confronted with on a daily basis.

Sandra Ollerhead, new to the Board, has been teaching high school mathematics for 19 years. She has worked with students of all abilities and levels. Sandra currently teaches at Mansfield High School where she was selected to serve as a member of the district's STEAM (Science, Technology, Engineering, Arts, and Mathematics) Vertical Team. As a member of this team, she has been working to make connections in the curricula within the various STEAM disciplines by creating multi-disciplinary projects. Sandra welcomes the opportunity to serve on the ATMIM Board in order to expand the great work the association has done to bring professional development opportunities to its membership.

Filiberto Santiago-Lizardi has completed his first year on the Board. Now, he will begin a three year position.   He is currently an eighth grade Mathematics/Algebra 1 teacher for Boston Public Schools. Twenty-three years of teaching and learning experiences have helped to shape his passion for teaching mathematics. Filibero brings to the Board a wide range of experience with middle school, high school and adult learners. Having been a math specialist, math coach, math department chairperson, grade level teacher leader, instructional leadership team member and presenter, he looks forward to staying actively involved in collaborating and networking with the ATMIM membership.

Technology: Great Games of logic for all grades

submitted by Susan Weiss

While at the NCTM, I visited lots of venders including HOODAMATH.com.
When I got home I tested the site, http:hoodamath.com. Indeed it has some interesting games.   At first I was confused as the directions are not clear but the activities are fun and challenging.   I tested out Mini Train.   A train travels around a town. You have to make a safe path for the train by dragging objects to make a path without causing the train to turnover or crash. There is a video that shows what should happen at each step. It is worth watching.   I found it really interesting but a bit hard to move the objects.   I did not try them on the iPad but I think it will be easier. I also tried the Ice Cream Truck. The goal is to get enough money to enable one to move from city to city. You have to decide how much to purchase in cones, ice cream, and toppings. The more you can sell the closer you get to the goal but you can't spend too much on supplies and don't go broke. It was challenging and worth the time to learn the rules. Try other games and see the challenges. First, carefully read the directions. Everything is free so you have nothing to lose.

An Interview with Ellen Metzger, the 2014 Rev. Stanley J. Bezuszka, S.J. Achievement Award for Mathematics Teaching and Learning

submitted by Joan Martin

Have you always had an interest in mathematics? No. As a young child, I wasn't interested in math. My family was very math-oriented – my father had been a math major in college, and my older siblings excelled at math in school and participated in math competitions. I used to dislike math and I remember being frustrated when the conversation got too "mathy" – probably because I was the youngest, and I did not understand what everyone else was talking about.

Did you like math at school? Even though I didn't see myself as a "math person", I actually did well in math at school. I took calculus my senior year in high school, but I struggled in that class. I found it confusing and overwhelming. I was much more interested in studio art and English.

Did you take math classes in college? Believe it or not, I only took one semester of math (second semester calculus) in college before I'd decided I'd had enough. I graduated from Middlebury College with a major in sociology and a concentration in studio art expecting to pursue a career in one of those fields. Towards the end of college, however, I became fascinated with American Sign Language, and spent a lot of time studying it. Shortly after graduation, I started a masters program at McDaniel College (then Western Maryland College) in Deaf Education thinking that I would like to teach reading or art to deaf students.

What was your first teaching job? My first teaching job was in the elementary school at the Learning Center for the Deaf in Framingham MA. I was thrilled to be at the Learning Center because it had at reputation as one of the best schools in the country for deaf students. The Learning Center happened to need a math teacher, so that's what I taught. It was not until I had been teaching math for a while there that I realized that I actually loved math!

After being a math teacher, how did you end up becoming a math specialist? After teaching math for many years, I decided to go back to school at Boston University for a masters degree in Math Education. I was still working at The Learning Center while taking my classes, so it took me about six years to get this second masters degree. That was OK though because I loved the program – the professors were great and I loved working out math problems and learning about teaching math. As part of my coursework, I re-took Calculus I and II, and I found that the calculus that had me confused as a teenager was much more clear to me

in my forties when I had time to dig deeper and to ask questions.

Do you still use sign language in your current position as a math specialist in Lincoln? No, I don't use it at all, and I miss it! But I do love my work in Lincoln. I am involved in so many different roles – helping kids who struggle with math, providing extensions for kids who excel, and working with teachers to figure out how best to align our work with the Common Core, just to name a few. The work is always challenging and never dull. From my previous experience working with Deaf students, I bring a heightened attention to visual representations, since the visual realm is so important in communication among the Deaf. I have found that visual representations, even for hearing students learning math, is an essential avenue for understanding many different math concepts.

What topics in mathematics are you especially interested in? So much interests me about math. Recently, I have become more interested in statistics, which I used to think was boring. Then I realized that, depending on what the statistics are about, it can be fascinating. The context is so important. The Common Core has a significant emphasis on statistics in middle school. Not all teachers are familiar with this content so I have made it a part of my work to figure out how to help teachers be more comfortable with teaching according to the standards.

What advice would you give students or even teachers who feel like they struggle with math as you once did? First, don't give up! Don't ever believe that you "can't do math." People often take for granted the math skills they do have and focus most on the parts that feel intimidating. Chances are, you know more math than you think you do. Remember that being confused – experiencing that disequilibrium that makes you ask questions and strive to clarify concepts -- is actually a good thing. As Wendy Ward Hoffer* says in her book, Minds on Mathematics: "Struggle is central to growth; when we wrestle to make sense, our hard-won comprehension will not easily be forgotten." I know this, having struggled to make sense of calculus twice, I was able to make sense of it. That made all the difference.

Hoffer, Wendy Ward (2012) Minds on Mathematics, Using Math Workshop to Develop Deep Understanding in Grades 4-8, Portsmouth, NH: Heinemann, p. 35.

ATMIM Senior Scholarship Award Winners

submitted by Alison Mello

ATMIM is pleased to announce four $500 scholarships determined on the basis of outstanding achievement or service in the field of mathematics. Each student was nominated by a member of the mathematics department of his or her school. There is an award specifically for a senior at a vocational, technical, or agricultural school and another to be given to a high achieving girl in the memory of Anne Elliot Smith (a mathematics teacher at Buckingham, Browne and Nichols, a member of the ATMIM Board and a 1985 Presidential Award winner).

Class of 2015 ATMIM Scholarship winners

Achievement: Non-Vocational School
Jae Seung Lee Newton South HS

Achievement: Vocational School
Eric Peterson Blackstone Valley Regional Vocational Technical High School

Service:
Albert Enyedy Milton HS

Anne Elliot Smith Award:
Stephanie Chin MA Academy of Math and Science at WPI

Congratulations to each of the winners and their teachers throughout their years of education

Lisa Mikus gets Rev. Stanley J. Bezuszka, S. J. Achievement Award

submitted by Joan Martin

Lisa Mikus is the 2015 winner of the Rev. Stanley J. Bezuszka, S. J. Achievement Award for Mathematics Teaching and Learning. Lisa is a fourth grade teacher at the Horace Mann School in Newton, MA. Known for her robust, enthusiastic classroom environment, Lisa instills in her students a love of learning. She is a remarkable model for teachers to teach mathematics effectively and for students to learn mathematics with joy. Fr. Bezuszka often spoke about learning to love math and loving to learn math. Lisa exemplifies this sentiment!

Lisa, unaware that she was even nominated for this award, was delightfully surprised to be led onto the field at Fenway Park celebrating Mathematics Educators on the evening of April 17, 2015. In the photo, Lisa stands with Steve Yurek, president of Association of Teachers of Mathematics in New England, Anne Collins, a previous Father B. awardee, and mascot Wally. Congratulations, Lisa!

Answers to Problems to Ponder

1.	E	6.	A
2.	A	7.	A
3.	C	8.	D
4.	B	9.	C
5.	A		

Problems to Ponder

Submitted by Polina Sabinin

Questions are from 2015 Math Kangaroo International Competition in Mathematics (www.mathkangaroo.org) Math Kangaroo 2015 was held on March 19, 2015

Elementary School

1. Which number is hidden behind the square in the equation to the right?

● + 4 = 7

■ + ● = 9

A. 2   B. 3   C. 4   D. 5   E. 6

2. My umbrella has KANGAROO written on top. It is shown in the picture on the right. Which of the pictures below also show my umbrella?

A.   B.

C.   D.   E.

3. There are 5 ladybugs (see picture below). Two ladybugs are friends with each other only if the number of spots that they have differ exactly by 1. On Kangaroo Day each of the ladybugs sent one text greeting to each of her friends. How many text greetings were sent?
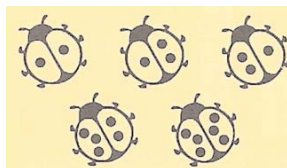
A. 2   B. 4
C. 6   D. 8   E. 9

Middle School

4. Four identical small rectangles are put together to form a large rectangle as shown. The length of the shorter side of the large rectangle is 10 cm. What is the length of the longer side of the large rectangle?
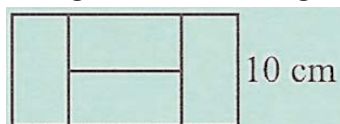
10 cm

A. 10 cm   B. 20 cm   C. 30 cm
D. 40 cm   E. 50 cm

5. The net of a cube with numbered faces s shown in the diagram. Sasha correctly adds the numbers on opposite faces of this cube. What three totals does Sasha get?
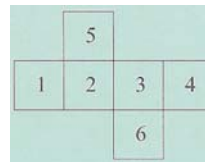
A. 4, 6, 11
B. 4, 5, 12
C. 5, 6, 10
D. 5, 7, 9
E. 5, 8, 8

6. In a group of kangaroos, the two lightest kangaroos weigh 25% of the total weight of the group. The three heaviest kangaroos weigh 60% of the total weight. How many kangaroos are the group?

A. 6   B. 7   C. 8   D. 15   E. 20

High School

7. Diana drew a bar chart representing the quantity of the four tree species registered during a biology excursion. Jasper thinks that a pie chart would better represent the ratios of the different tree species. What does the respective pie chart look like?

A.   B.   C.

D.   E.

8. The x-axis and the graphs of the functions $f(x) = 2 - x^2$ and $g(x) = x^2 - 1$ split the Cartesian plane into

A. 7 regions   B. 8 regions   C. 9 regions   D. 10 regions   E. 11 regions

9. There are 2015 marbles in a box. The marbles are numbered 1 to 2015. Marbles with equal sums of their digits are the same color, and marbles with different sums of their digits are different colors. How many different colors of marbles are there in the box?

A. 10   B. 27   C. 28   D. 29   E. 2015