



WISCONSIN
MATHEMATICS
COUNCIL, INC.

NEWSLETTER



MEASURING Mathematical Proficiency

Wisconsin Mathematics Council

47th Annual Conference
May 7-8, 2015

Pre-conference • May 6, 2015
Green Lake Conference Center • Green Lake, WI

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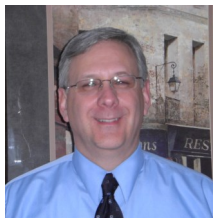
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MEASURING MATHEMATICAL PROFICIENCY

The count down is on for the 47th Wisconsin Mathematics Council's Annual Conference. We hope that you are able to attend this exciting annual event in order to collaborate with close to 1,500 mathematics teachers on May 6-8, 2015. Since 47 is the fifteenth prime number (and this is the 2015 conference), here are the last five (of 15) prime ways to re-energize the teaching and learning of mathematics across the state.

- 1. Outstanding Pre-Conference Activities:** Join us on Wednesday, May 6th for two exciting day-long pre-conference workshops. The first workshop, **Mindset Revolution: Teaching Mathematics for a Growth Mindset**, will be led by Dr. Jo Boaler, Professor of Mathematics Education at Stanford University and co-founder of *youcubed*. During this workshop, you will be engaged in a variety of mathematical tasks that will help you consider what it means to teach math for a growth mindset. The second workshop, **Teaching Like a Techie**, will be led by Kevin Krenz, mathematics teacher at Monona Grove High School. This workshop will focus on how to design and create powerful lessons with a variety of freely available technology tools, such as Desmos, GeoGebra, and Plotly.
- 2. Presentations and Interactive Workshops:** There are over 100 sessions focused on building students' mathematical proficiency. A sample of titles include:
 - ♦ Using Tape Diagrams to Grow Conceptual Understanding and Math Practices in Students
 - ♦ Formative Assessment Strategies
 - ♦ Using Multiple Representations to Build Conceptual Understandings of Fractions
 - ♦ Developing the Principles to Actions Mathematics Teaching Practices
 - ♦ Interventions In Action
 - ♦ Solving Revealed: Creating eBooks in Math with Book Creator
- 3. Two New Day-Long Strands:** This year we will have day-long strands focused on Science, Technology, Engineering, and Mathematics (STEM) and Computer Science. Sessions include:
 - ♦ Introductory Programming with Java, and Understanding by Design Approach
 - ♦ Learn How to Program Using Alice!
 - ♦ Mathematical Proficiency for Majoring in Actuarial Sciences and Operations Research
 - ♦ Ready, Set, STEM! Using Lego Mindstorms in the Mathematics Classroom
- 4. Celebrate Pi:** To honor this year's special Pi Day celebration (3/14/15), WMC will bring you several Pi related activities before and during the Annual Conference. Check out the WMC website (wismath.org) for Pi tasks and lesson plans to help you celebrate this event in your own classroom. At the conference, join us for activities
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MESSAGE FROM THE PRESIDENT



The *Math Proficiency for Every Student* conferences were very well received again this year. An excellent team from Howard County Public Schools in Maryland shared their expertise on developing discourse structures to engage students, and then measuring the growth of their learning through the SLO process. Cheryl Tobey shared insights and resources on the effective use of formative assessments in the mathematics classroom, and the importance of feedback for students to measure their learning progress. There were many opportunities to dialogue with math educators from across the state during the two conferences, and I was particularly interested in a few conversations about personalized learning.

Some districts are moving to a one-to-one environment to build a system for personalized learning, I immediately wondered how they are planning to make this work with mathematics. I have witnessed scenarios where children have been placed on a computer-based program that is designed to move each child at his/her own pace. In each case, I have not observed great evidence of deep understanding of the mathematics. Settings where the students are relying most heavily on a digital resource are more individualized learning environments than personalized learning environments. Individualized learning is when each child is given a device and an assignment. Personalized learning is when children are engaged in math discourse, sharing thoughts, strategies, and ideas. The Mathematical Practice Standards are lacking in any computer-based program that is designed to cover a full level, or course, of mathematics.

The use of a blended approach that strategically uses quality digital tools appears to have promise, but it would require a great deal of professional development and advanced planning. It sounds like many districts are moving to a one-to-one environment with the idea that it will push into a blended environment of personalized learning. This could be true in the long run, but most descriptions of actual classroom environments at this time are individualized learning environments. Does anyone have evidence that an individual learning environment is an effective approach for learning mathematics? Hattie's research seems to refute this approach. "While much of learning and testing in our schools has been aimed at the individual, more often we learn and live with each other." (Hattie, *Visible Learning for Teachers, Maximizing Impact on Learning*, 2012).

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WISCONSIN TEACHER OF MATHEMATICS SPRING 2015 JOURNAL

The Spring 2015 issue of the *Wisconsin Mathematics Teacher* will focus on how educators have embedded the Standards for Mathematical Practice into their classrooms. The editorial panel would like to showcase examples of rich mathematics tasks and activities that engage students in the habits of mind that we seek to develop in students. We are interested in articles that address the following essential questions:

- ♦ What tasks or activities have you implemented that focus uniquely on one or more Standards for Mathematical Practice?
- ♦ How do you help your students understand the meaning of the Standards for Mathematical Practice?
- ♦ How do you assess students' proficiency in the Standards for Mathematical Practice?

If you have ideas or questions for this focus issue or wish to submit an article for review, please visit the WMC website for more information (www.wismath.org/resources/). Please see instructions to the right on how to submit your article(s).

Wisconsin Teacher of Mathematics, the official journal of the Wisconsin Mathematics Council, is published twice a year. Annual WMC membership includes a one-year subscription to this journal and to the *Wisconsin Mathematics Council Newsletter*.

The *Wisconsin Teacher of Mathematics* is a forum for the exchange of ideas. Opinions expressed in this journal are those of the authors and may not necessarily reflect those of the Council or editorial staff.

Submissions are welcome! E-mail a copy of your manuscript to the journal editor at wmc@wismath.org.

- ♦ Send an electronic copy of your manuscript to the Wisconsin Mathematics Council. Manuscripts may be submitted at any time for review.
- ♦ Manuscripts should be typed, double-spaced.
- ♦ Include all figures and photos in .jpg format; submit high resolution copies of figures and student work. Please do not place figures or photos within the document; rather indicate their placement in the document, e.g., Figure 1 here.
- ♦ All fractions need to be formatted as follows— $\frac{2}{3}$. *Do not accept auto formatting of fractions.*
- ♦ All manuscripts are subject to a review process. Include name, address, telephone, email, work affiliation and position.

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The deadline for the Spring issue is February 28, 2015.



YOUR WMC BOARD OF DIRECTORS

Get to know the members of the WMC Board of Directors. A different Board member is featured in each issue. We hope you enjoy learning about your WMC Board!

Name and Title	Lori Williams, Statewide Representative
Position	K-12 Math Specialist, Manitowoc Public School District (MPSD)
Experience	This is my 28 th year as a teacher in the MPSD. I began with 11 years as a fourth and fifth grade “looping” teacher. After that, I spent three years as an instructional resource teacher – one building, about 20 first through sixth grade teachers, all subject areas to help coach the teachers. Next I spent 10 years as a differentiation specialist as co-coordinator for the gifted and talented program. For the past 3 years, I have been the K-12 math specialist for the district, providing supports and trainings in best practices for math instruction.
Education	<ul style="list-style-type: none"> ◆ B.S. in elementary Education with a minor in science, 1986, Northern Michigan University in Marquette, Michigan. ◆ Masters of Education in Professional Development (ME-PD), 2000, UW-Eau Claire ◆ Ph.D. in Urban Education, 2010, UW-Milwaukee: Major advisor – Dr. DeAnn Huinker
Family	I’ve been married to a very supportive and patient man, Jim, for 31 years. We have two grown children: Teri Lynn who teaches first grade and is getting married in August and Christopher who works at O’Hare airport.
Personal Interests	I enjoy reading, walking, quilting, and biking in my free time. I also enjoy working as a math consultant for districts around the state.



GIVE THE GIFT OF WMC

Consider gifting a Wisconsin Mathematics Council membership to encourage your student teacher to start down his or her professional development path. Student memberships are only \$10. Mention that this is a gift when you submit the application, and WMC will send your pre-service teacher a letter of welcome!

UPDATES FROM THE WMC FEBRUARY 13TH EXECUTIVE COMMITTEE MEETING

The WMC Executive Committee met on February 13th at the Comfort Inn & Suites in DeForest. Meeting highlights included:

- ◆ Reviewing the WMC position statements
- ◆ Discussing technology improvements at the Green Lake Conference Center
- ◆ Confirming dates for the 2015 MPES Conferences
- ◆ Reviewing the slate of Board candidates
- ◆ Reviewing the WMC website policy

DPI UPDATES



High School Mathematics Summit - “Bringing Coherence to High School Mathematics,” March 17, 2015 UW-Milwaukee/CESA 7

- ◆ This full-day summit will bring together mathematics leaders and teachers from across the state to discuss the need for new and innovative approaches to addressing student needs in high school mathematics.
- ◆ To register, go to <http://bit.ly/HSSummit>.
- ◆ Substitute and travel funds available.

PAEMST Updates

- ◆ Applications for the 2015 Presidential Awards for Excellence in Mathematics and Science Teaching are now open. This year’s award is open to teachers at grades 7-12. Applications are due May 1, 2015. Additional information about this prestigious award can be found at: <https://www.paemst.org/>.
- ◆ Congratulations to 2014 mathematics state finalists Michelle Butturini, Reedsville Elementary School in the Reedsville School District; Tina Parker, Sam Davey Elementary School in the Eau Claire Area School District; and Sarah Trimner, Mountain Bay Elementary School in the DC Everest Area School District. These three outstanding teachers will be recognized at the WMC Annual Conference.

Assessment Updates

- ◆ To monitor the most up-to-date information about the state’s summative assessments, visit the “Assessment in Wisconsin” webpage. <http://oea.dpi.wi.gov/assessment>
- ◆ Monthly Assessment updates ‘Tea with Troy’: <http://oea.dpi.wi.gov/assessment>

Standards Update

Local school districts throughout Wisconsin are moving forward with implementation of the Common Core State

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Standards and DPI continues to develop and curate resources to support improved teaching and learning. Visit DPI's Mathematics webpage for available resources. <http://math.dpi.wi.gov/>

Legislative Update

- ♦ YouTube: https://www.youtube.com/watch?v=j102EbnjpMY&index=1&list=PLambIxavELhZkBoIY0cPJt15hjv4_CKY

WMC ELECTIONS

WMC will hold elections for open Board positions between March 20-April 3, 2015. All WMC members are eligible to vote in the election and will be sent the online link on March 20th. If WMC does not have a member's email address, a paper ballot will be sent. Visit the WMC website for more information.

Election results will be announced at the WMC Annual Meeting on May 7th during the Annual Conference in Green Lake.

IGNITE SESSION RETURNS TO WMC ANNUAL CONFERENCE

The Wednesday evening Ignite session will be returning to the WMC Annual Conference. This conference kick-

off session involves speakers from many backgrounds speaking on a variety of topics. Each presenter is given five minutes to present, and uses a 20 slide PowerPoint that auto-advances every 15 seconds.

Confirmed speakers for this year's session are Sandy Atkins, Jennifer Bay-Williams, Calvin Irons, Jenn Kosiak Eli Luberoff, Kevin McLeod, Mary Mooney, and Michelle Parks .

This year's session promises to be funny, inspirational, light-hearted, motivational, and a great way to start your conference. We hope to see you all at this year's Ignite session on Wednesday, May 6th at 8:00 p.m.

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such as a Pi Medallion Search, the Friday Morning Pi Run/Walk, and a reciting of the first 2015 digits of Pi.

5. **Wednesday Evening IGNITE Session and Social Event:** Join local and national presenters for quick and lively five-minute presentations followed by snacks at a WMC social event.

We hope you save the date for this prime 47th WMC Annual Conference!

Jennifer Kosiak and Maggie McHugh
Conference Program Co-Chairs

You're in Good Company...

WMC members include all levels of teachers from pre-kindergarten to university instructors, mathematics teacher leaders, administrators, and mathematics specialists. Anyone whose goal is to improve mathematics education in his or her classroom, building, district, or state is welcome to join.

WMC supports its members to improve their professional effectiveness and their mathematical skills through

- ♦ Professional Development
- ♦ Publications
- ♦ Recognition
- ♦ Student Activities
- ♦ Networking



Don't let your WMC membership lapse...Renew your membership today!



WMEF NEWS

WMEF Activities at the WMC Annual Conference



Celebrate *Pi Day of the Century*, when the digits of pi match the year, by participating in the 4th Annual Pi Run on Friday, May 8th during the WMC Annual Conference. Your registration of \$20 includes a 2015 Pi Run t-shirt and pi shoelaces.

An abbreviated bucket raffle will be held on Thursday evening following the Celebrate WMC activities. Tickets are \$5 each or five for \$20. This year's prizes include a Green Bay Packers football, Brewers tickets, a necklace, and cash gift certificates. The Heads and Tails Raffle will be held at the reception, and tickets are \$20 each. The prizes for the Heads and Tails Raffle will be \$500 gift certificates from Best Buy.

WMEF Grants

WMEF strives to encourage creativity in the classroom, enhance instructional methods, promote the effective teaching of mathematics at all levels, and improve student interest and scholastic achievement. To that end, WMEF provides both Professional Development Grants and Extracurricular Grants. Professional Development Grants provide up to \$1500 to encourage and support the efforts of an individual or team of mathematics educators.

Grant funds are available to:

- Develop and implement creative and imaginative teaching approaches and techniques
- Develop new print and non-print instructional curricula and teaching support materials
- Implement teaching techniques and strategies that will increase student achievement in mathematics (This was listed twice in the original.)
- Offset the cost of technology to use in the classroom in the teaching of mathematics
- Pay for travel expenses to and from a conference or workshop
- Pay for Conference or Workshop registration
- Pay for hotel accommodations for a conference or workshop
- Support graduate studies in mathematics or mathematics education

Extracurricular grants provide up to \$500 to fund projects such as creating a math club, forming a weekend math circle, holding a family math night, or any other student-centered activity that promotes student involvement beyond the regular classroom.

Four grants were awarded for the 2014-15 academic year. Christopher Collins, one of the grant recipients,

will be speaking at the WMC Conference about his grant project, Global Math Collaboration.

WMEF plans to expand the grants program in 2015. These competitive grants are available to any educator who has a focus on mathematics including elementary, middle, or secondary teachers; mathematics supervisors or specialist may also apply for WMEF grants.

For more information and grant application forms please visit the WMEF website at www.wmefonline.org and click on Grants and Scholarships on the menu bar. The deadline for applications is July 1, 2015.

WMC MATH CONTEST REMINDER

The 2015 State Mathematics Contests, sponsored by WMC, will take place the week of March 2-6, 2015 and will include contests for both middle and high school students. The contest will be held at each school's home site, and schools choose the day the team will participate.



Here's an example of a contest problem:

There are six colored vases in a row on a shelf, one of which is blue. The green one is not on the far right. The red one is between two others. The white one is immediately to the left of the orange one. The yellow one lies between the red one and the white one but is adjacent to neither of them. From left to right, what order are the vases in? Use the first initials of the colors to write your answer, for example, BGORWY.

Solution

From the clues given, the first position is not red, yellow, or orange. The second position is not yellow. The third position is not red or white, and neither is the fourth position. The fifth position is not yellow, and the sixth position is not green, red, white, or yellow. Looking at the fourth and fifth sentences, the positions would have to either be RxYxWO or WOYxRx.

The first configuration violates the third sentence, which says that red is between two others, so we go with the second. Finally, because green is not on the far right, the correct order of the vases is WOYGRB.

You can view past contests, solutions and more information on the WMC website <http://www.wismath.org/resources/math-contests/>.



WMC HISTORY—JUST TEN YEARS AGO

By Jane Howell

Ten years ago, the WMC Executive committee was made up of the following individuals:

- ♦ Mary Rosin – President
- ♦ Marge Wilsman – Past President
- ♦ Sue Hanson-Otis – President-Elect
- ♦ Mike Weidner – Treasurer
- ♦ Mike Tamblyn – Secretary

WMC had reached the point where relying on all volunteer services was simply not working, so they hired a company to manage the WMC activities. Chase-Pheifer and Associates was the first company to be hired for this purpose.

WMC committees, which identify issues of importance and interest, have varied over the years. The working structure of the Board of Directors in 2004-2005 included five committee clusters. Committees were made up of many WMC volunteers, which provide a valuable service and expertise to the organization. Board members served as liaisons with committees and subcommittees by providing committee reports and recommendations to the entire Board of Directors. Clusters included:

- ♦ Leadership / Governance
- ♦ Policy
- ♦ Service
- ♦ Publications
- ♦ Professional Development

At the August 9, 2004 Board of Directors meeting the scholarship amounts were raised from \$1,200 to \$1,500. The Board authorized a plan to offer a three-year membership at a cost where members would save \$5. The NCTM position paper on calculators and their use was supported, and WMC drafted its own policy statement, which can be found on the WMC website at www.wismath.org under “About” on the menu bar.

The January 2005 Board meeting was conducted via a conference call. The annual meeting held at the WMC Annual Conference included the usual reports, and the new Board members were announced: Mike Tamblyn, Secretary, Jane Fazio, Grades 6-8 Representative, Dave Ruskiewicz, Technical College Representative, and Mary Walz, At-Large Representative.

The August 16, 2005 Board meeting minutes included a number of committee reports, and Mike Weidner presented new financial policies, which were approved. Linda Uselmann presented guidelines for vendor sessions at the Annual Conference which were also approved.

LOOKING FOR 25 YEAR AWARDEES

Have you been teaching mathematics in Wisconsin for 25 years or more? If so, make sure to apply for the WMC 25 Year Award, and you will be recognized at the WMC Annual Conference for your dedication to teaching mathematics. To download the application form, visit the WMC website and click on the Opportunities tab, under Awards. The deadline for submitting your application is April 15, 2015.

ROUNDING UP: NCTM'S MEMBER REFERRAL PROGRAM

Rounding Up is NCTM's new member referral program, an opportunity for you to refer colleagues and friends for NCTM membership—and, in return, receive great gifts and prizes. With your help, your non-profit membership association can grow to the next level, help more people, serve you even better, and be a stronger advocate for mathematics education.

Your very first referral (and every one thereafter) enters your name in our prize drawing for a free trip to NCTM's 2016 annual meeting in San Francisco or an Apple iPad. With your second referral, you'll receive \$5 in NCTM bucks to spend on resources, conferences, or membership renewal from NCTM. Accumulate more bucks with every two referrals, plus receive *additional* gifts (like VISA gift cards) for reaching 10, 15, and 20 new members and being our top recruiter.

It only takes a few moments to participate and the rewards add up quickly. This year's program runs through June 30, 2015. For more information, please visit <http://www.nctm.org/membership/content.aspx?id=8948>.

Not an NCTM member? Join today to enjoy great member benefits (including exclusive resources) plus the rewards of participating in the member referral program. To join please visit <https://www.nctm.org/profile/login.aspx>.

NEWS FROM NCTM



The National Council of Teachers of Mathematics is pleased to announce our new website! Designed to make it easier for teachers to access the materials they need the most, the website gives you easy access to the most-used resources. Whether you are a NCTM member or not, check out everything that NCTM has to offer at www.nctm.org.

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MET Grants

Congratulations to Maggie McHugh, La Crosse Design Institute, who recently was awarded a MET PreK-6 Classroom Research Grant. This grant is supported by the Edward G. Begle Fund and the National Council of Teachers of Mathematics. The purpose of this grant is to support and encourage classroom-based research in precollege mathematics education in collaboration with the college or university mathematics educators. The research must be a collaborative effort involving a college or university mathematics educator and one or more grades Pre-K-6 classroom teachers. The next deadline for applications for MET Grants is May 4, 2015. Please check the website at www.nctm.org/grants/ for information on all grants, awards and scholarships.

NCTM 2015 Annual Meeting

Register now for the NCTM 2015 Annual Meeting in Boston. Join thousands of education professionals for the nation's premier math education event. Make your hotel reservations now. Rooms sell out quickly.

When renewing your WMC membership, don't forget to renew your NCTM membership, too!

ADMINISTRATOR TRACK OFFERED AT ANNUAL CONFERENCE

A special administrator's track will be offered on Thursday at the Annual Conference in Green Lake. Building on the *Effective Leaders, Effective Educators* conference series last year, this special day of programming will feature Tim Kanold as well as a number of other national leaders in mathematics education.



Here is a glimpse at the preliminary line up:

- ♦ Breakfast Meeting/Intro Session with Tim Kanold
- ♦ *Turning Your Instruction and Assessment Vision (TPOV) into Action!* – Tim Kanold keynote
- ♦ *"Radical" and "Real" Ways to Help Students Become Proficient in Understanding Operations and Number – K-8* – Jennifer Bay-Williams keynote
- ♦ *The Mindset Revolution: Teaching Mathematics for a Growth Mindset* – Jo Boaler keynote
- ♦ *Administrators - What Do You Need to Know About*

Teaching and Learning Mathematics? – Becky Walker

Please share this information with your district administrators and encourage them to attend. Remember that administrators receive a free registration with one paid registration from the school or district. Contact WMC for information about the administrator track or the free registration offer.

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Regardless of the device selected for any one-to-one setting, it is still just a device. The existence of highly effective mathematical teaching practices will ultimately form the foundation for a real personalized learning experience in mathematics. The integration of quality digital content or tools in the mathematics learning environment will effectively enhance learning for each student when it is planned for, and used, appropriately.

This leads me to once again recommend the book *Principles to Actions: Ensuring Mathematical Success for All*, that was released nearly a year ago by NCTM. The book is a call to action, and I am asking you to stand up and take action to ensure all students experience learning environments that cultivate the successful learning of mathematics. With this in mind, please look at how your district is approaching personalized learning in mathematics and determine if it is addressing the eight Mathematical Teaching Practices identified in *Principles to Actions*. Here is a link to the executive summary of the book where you can quickly find descriptions of the Mathematical Teaching Practices, Guiding Principles, and recommended actions: https://www.nctm.org/uploadedFiles/Standards_and_Positions/PtAExecutiveSummary.pdf.

I would contend that these eight practices should be regular components of math lessons within any approach to personalize learning in schools. As math educators and leaders, we need to take an active role in the discussions surrounding personalized learning in our districts.

There are many opportunities to learn about effectively integrating technology tools and digital resources into your teaching at our upcoming WMC Annual Conference in Green Lake. There will also be sessions related to the eight Mathematical Teaching Practices. I hope you can join us for one, two, or three days of wonderful professional development focused on the teaching and learning of mathematics. I always look forward to invigorating conversations with math educators at the Annual Conference. See you in May!

Doug Burge
WMC President 2013-2015



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