



# The TMTA Bulletin



Volume 66, Issue 2

Winter 2022

## TMTA Executive Committee

**President:** Andy Stultz

Hixson High School

Email: [stultz\\_william@hcde.org](mailto:stultz_william@hcde.org)

**Past President:** Lisa Elliott

West Creek High School

Email: [lisa.elliott@cmcss.net](mailto:lisa.elliott@cmcss.net)

**Secretary:** Steve Gadbois

Memphis University School

E-mail: [steve.gadbois@musowls.org](mailto:steve.gadbois@musowls.org)

**Treasurer:** Stephanie Kolitsch

University of Tennessee at Martin

E-mail: [skolitsc@utm.edu](mailto:skolitsc@utm.edu)

**NCTM Representative and Parliamentarian:** Ryan Nivens

East Tennessee State University

E-mail: [nivens@mail.etsu.edu](mailto:nivens@mail.etsu.edu)

**Vice-President for Elementary:** Jessica Willings

Jefferson County School System

E-mail: [jwillings@jcboe.net](mailto:jwillings@jcboe.net)

**Vice-President for Middle Schools:** Lea Keith

East Robertson High School

E-mail: [lea.avrit@gmail.com](mailto:lea.avrit@gmail.com)

**Vice-President for Secondary Schools:** Jennifer Axley

Webb School of Knoxville

Email: [Jennifer\\_axley@webbschool.org](mailto:Jennifer_axley@webbschool.org)

**Vice President for Two-Year Colleges:** James Adair

Dyersburg State Community College

Email: [adair@dscc.edu](mailto:adair@dscc.edu)

**Vice-President for Colleges/University:** Jennifer Meadows

Tennessee Technological University

E-mail: [jrmeadows@tntech.edu](mailto:jrmeadows@tntech.edu)

**Examinations Director:** David Ray

University of Tennessee at Martin

E-mail: [davidray@utm.edu](mailto:davidray@utm.edu)

**Contest Coordinator:** Becky Darrough

Austin Peay State University

E-mail: [darroughr@apsu.edu](mailto:darroughr@apsu.edu)

**Contest Awards Chair:** Jackie Vogel

Austin Peay State University

Email: [vogelj@apsu.edu](mailto:vogelj@apsu.edu)

**TMTA Bulletin Editor:** Lisa Elliott

West Creek High School

E-mail: [lisa.elliott@cmcss.net](mailto:lisa.elliott@cmcss.net)

**Membership Coordinator:** Stephanie Kolitsch

University of Tennessee at Martin

**Social Media:** Jessica Willings

Jefferson County School System

## INSIDE THIS ISSUE

- 1** TMTA Executive Committee
- 2** President's Message
- 3** Affiliates and Calendar of Events
- 4** Math Camp
- 5** Scholarship and Grant Information

- 6** Facebook Teacher Groups
- 7** Test Writers Needed
- 7** Pi Day
- 8** Teacher Groups and Submission Information

## **President's Message**

Education has been my passion for over 25 years. As educators, we put our students' needs ahead of almost everything else. I have seen teachers make significant sacrifices to help students, especially during the last two years. Recently, some of my students were talking about how dissatisfied they were with the school. I reminded them that the school is not the bricks, desks, cafeteria, or gym. The school is the people. The students are the school. The students can make the school a wonderful place of learning. Change begins with their attitude. Of course, I realized this as a message to myself. The school is me. I want my students to have the best experience. I want them to remember school as a wonderful time of learning, growing, and achievement. To the extent I have control over their experiences, I want to do everything I can to provide excellent opportunities, all the while keeping in mind that learning, growing, and achievement do not always present themselves equally in all students. Excellence presents itself many ways. As difficult as it is to provide the best possible outcomes for all students, we must always strive for that goal. Even in the midst of virtual learning, COVID sickness, substitute shortages, and many other challenges, we must press on. Last October, at our annual conference, I met teachers who were striving for such excellence. It was inspiring for me to listen to them speak passionately about the craft of teaching, and how to reach students with challenging material. TMTA is a wonderful group in which we can reach out to each other for advice and support.

This fall, our annual conference will be in Chattanooga. If you have never been a speaker at a conference, I want to encourage you to think about speaking. Experienced teachers have lessons they have perfected over the years. They have insights into the curriculum that is priceless. Do not fall into the trap of thinking everyone knows what you know. For younger teachers, you are also invited to speak. The innovations you have are vital to the teaching profession. Whether it is new technology or a new idea you have for a lesson, young teachers who share ideas are an inspiration to everyone.

Every teacher in every level has a big job. Let me encourage you to keep doing the vital work. You are the school. You are providing the BEST experiences for students. Thank you for all you are doing for students in the state of Tennessee.

Andy Stultz

# Affiliates

## CAMTA

Chattanooga Area Mathematics Teachers' Association  
Emily McDonald  
Hixson High School  
[mcdonald\\_emily@hcds.org](mailto:mcdonald_emily@hcds.org)

## MAC-O-TOM

Memphis Area Council of Teachers of Mathematics  
Elizabeth Kirby  
Shelby County School System  
[kirbyea@scsk12.org](mailto:kirbyea@scsk12.org)

## MT<sup>2</sup>NW

Mathematics Teachers of Tennessee – Northwest  
Crystal Johnson  
East Junior High School  
[crystal.johnson@fcsk12.net](mailto:crystal.johnson@fcsk12.net)

## (MT)<sup>2</sup>

Middle Tennessee Mathematics Teachers  
Teresa Agee  
Martin Luther King Jr. Academic Magnet School  
[Teresa.Agee@mnps.org](mailto:Teresa.Agee@mnps.org)

## SM<sup>2</sup>EA

Smoky Mountain Educators' Association  
Alice Carson  
Powell High School  
[Alice.carson@knoxschools.org](mailto:Alice.carson@knoxschools.org)

## TAMTE

Tennessee Association of Mathematics Teacher Educators  
Becky Darrough  
Austin Peay State University  
[darroughr@apsu.edu](mailto:darroughr@apsu.edu)

## TMATYC

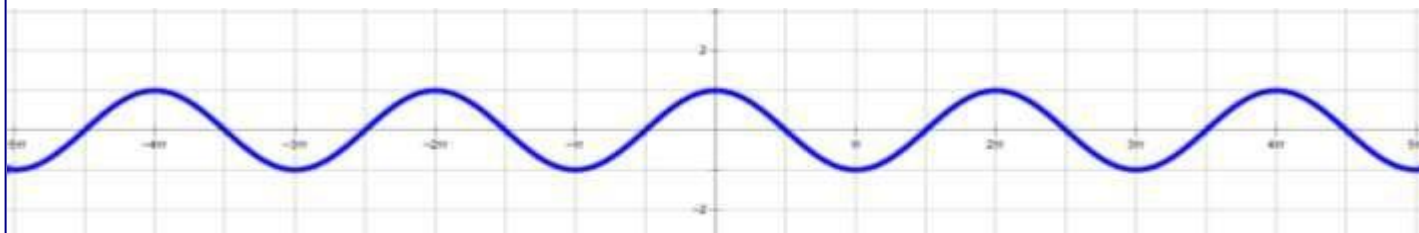
Tennessee Mathematics Association of Two Year Colleges  
Ellen Matheny  
Pellissippi State Community College  
[ebmatheny@pstcc.edu](mailto:ebmatheny@pstcc.edu)

## UETCTM

Upper East Tennessee Council of Teachers of Mathematics  
Pam Stidham  
Kingsport City Schools  
[pstidham@k12k.com](mailto:pstidham@k12k.com)

## TATM Student Affiliate

Tennessee Aspiring Teachers of Mathematics  
Susan Conner  
Austin Peay State University  
[Sconner6@my.apsu.edu](mailto:Sconner6@my.apsu.edu)



## Calendar of Events

Middle School Math Contest

April 8, 2022 Virtually

High School Math Contest

April 5, 2022

NCTM Annual Conference

Sep 28 – Oct 1, 2022 Los Angeles, CA

TMTA Mathematics Conference

October 21-22, 2022 Chattanooga, TN

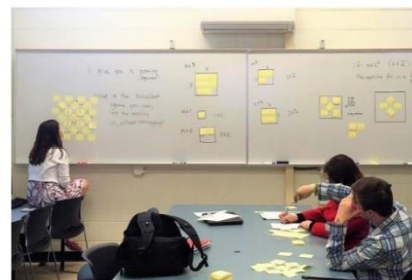
## Math Camp with Dr. Lara Pudwell

Lara Pudwell is a 1999 graduate of White Station High School in Memphis. She earned a BS in mathematics and a BA in computer science from Valparaiso University in 2003 and a Ph.D. in mathematics from Rutgers University in 2008. Since then, she has returned to Valparaiso University where she is a Professor of Mathematics and Statistics, teaching courses including calculus, linear algebra, discrete mathematics, and combinatorics. Her work in the classroom has been recognized with the 2014 Henry L. Alder Award for Distinguished Teaching from the Mathematical Association of America and the 2021-2022 Valparaiso University Excellence in Teaching Award. She is a coauthor of *A Mathematician's Practical Guide to Mentoring Undergraduate Research* (MAA Press, 2019), a past Chair of the Indiana Section of the Mathematical Association of America, and the Executive Director of MathPath, a national summer camp for middle schoolers who love mathematics. In addition, she has over 30 research publications and has given numerous other national and international conference presentations related to her research and her work with students. She served as the keynote speaker at the TMTA Conference at Memphis University School in October 2021.

### Promoting Mathematical Discovery

Being a mathematics professor is easily my dream job: I love mathematics and I love interacting with students. Two of my favorite parts of going to work each day are (a) the opportunities to encourage students as they strengthen their “math muscles” and cultivate a growth mindset, and (b) witnessing moments of joy as a new idea really clicks in my students’ minds for the first time. Thinking back, my most memorable moments as a K-12 student arose from thoughtfully designed activities that had a variety of levels of entry for students with varying backgrounds. These interactions with math, where I was given the space to think through problems presented as interesting and challenging puzzles, sparked delight that has stuck with me for the decades since. These memories continue to inspire my approach to teaching in a variety of contexts.

In addition to my work with college students, I’ve worked with MathPath, a national residential



summer camp for 11-14-year-olds who love mathematics, since 2019. This camp brings middle schoolers from across the country to explore mathematics together for a month. Each week, each student selects two classes (one for the mornings and one for the afternoons). A hallmark of MathPath instruction is that it’s highly *interactive*. In other words, the program cultivates the kind of experience with math that has stuck with me since my early mathematical life in Memphis – and it’s a joy to be part of providing this environment for new generations of students. For example, for the last two summers, I’ve taught the MathPath course in “Proof by Story”. While writing proofs at the level of an undergraduate combinatorics course could sound daunting, these middle schoolers take to the stories we write about binomial coefficients with a lot of imagination – there are stories about aliens, and sentient chicken nuggets, and more, and they have a laughter-filled time coming up with follow-up questions... and follow-up “story proofs”. These students aren’t just learning math; they are also having fun doing it as they bring their interests and personalities to the problems we solve.

Thanks to my work at MathPath, I’ve learned about many reliable sources for interactive activity ideas. Whether you’re looking for inspiration for a new activity in your own classroom or for resources to point out to engaged students, I hope you find these helpful too.

<https://artofproblemsolving.com/>

This website offers books and classes for students starting in grade 5, and a number of the students who come to MathPath have already started to find mathematical community by participating in Art of Problem Solving (often called AoPS) courses for enrichment. However, beyond their paid resources, AoPS has a useful free Wiki page that points to a myriad of programs and opportunities for students who love math.

<https://momath.org/>

The National Museum of Mathematics is based in New York City, but you don't need to be local to New York to make use of their fantastic resources. The museum regularly offers both in-person and online events for a variety of age groups, as young as preschool. One awesome series is their monthly Math Encounters public lecture series, which is free and is always guaranteed to have an interactive component. The Museum maintains an active YouTube channel with recordings of many of its past events, so it's possible to get inspiration even if you missed the original program you were interested to see.

<https://mathcircles.org/activities>

Math circles are extracurricular groups where students come together to explore mathematics in an open-ended way. MathCircles.org maintains a list of existing math circles around the country that students can join. They also maintain a list of

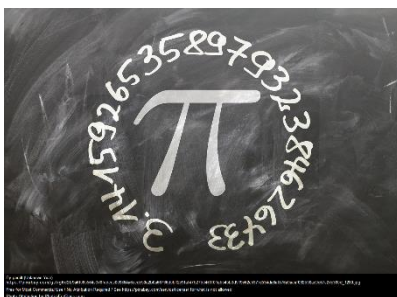
mathematical activities that can be filtered for different age levels.

<https://epsiloncamp.org/> (ages 7-11)

<https://www.mathpath.org/> (ages 11-14)

<https://www.mathcamp.org/> (ages 13-18)

MathPath, the camp I now direct, is one of three camps that were founded by the same mathematician. Epsilon Camp serves younger students, and USA/Canada Math Camp serves older students, but the philosophy of all three camps is similar. Rather than training students to focus specifically on problem-solving for contests, these camps allow students to explore new mathematical topics in a discovery-oriented way and at the same time have a lot of fun with their peers. If you have students who love math and would benefit from being in an immersive environment with other kids who share that passion, we'd love to get an application from them!



**Desiree McCullough**

## **Advanced Degree Scholarship Award**

***Are you pursuing an advanced degree to improve your mathematics teaching?  
There are scholarship funds available to support your learning!***

The TMTA Desiree McCullough Advanced Degree Scholarship Award is awarded to a TMTA member currently teaching in Tennessee and pursuing either a Masters, Ed.S., or doctoral degree to improve his or her mathematics teaching.

The award includes a \$1000 Scholarship and free TMTA membership for a year.

All you need to do is click on this link: <https://tmta.wildapricot.org/page-18062> and follow the directions on the application.

The deadline for the application is May 1. Don't delay! *We want to support you in your pursuit of teaching excellence!*

*Congratulations to our first recipient, Samantha Drown of Rutherford County.*



## **TMTA Scholarship Opportunities**

### **Dr. Henry Frandsen Scholarship for Teachers**

#### **Criteria:**

- Applicants must be committed to teaching mathematics in Tennessee at either the secondary or elementary level
- Applicants must have declared an appropriate major at their institution
- Deadline May 1<sup>st</sup>

#### **Recent Past Winners:**

- 2013: Taylor Satterfield
- 2014: Leanna Ruth Murdoch
- 2015: Elizabeth Barlow (UT Knoxville)
- 2016: Courtney Wright (MTSU) and Hillary Grant (UT Knoxville)
- 2018: Allison Brown and Jenna Dula
- 2019: Isamar Rachal (Austin Peay State University)
- 2020: Kaycie Hartwig (APSU) and Maggie Weaver (UM)
- 2022: Now accepting applications at <https://tmta.wildapricot.org/page-18062>

## **TMTA Grant Opportunities**

### **\$1000 Classroom Mini-grant**

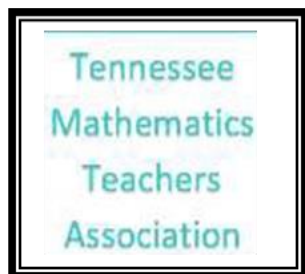
#### **Criteria:**

- Applicant's school or district must demonstrate need
- Applicant must attend the TMTA Fall Conference to receive your award
- Applicant must speak at the next TMTA Fall Conference about your use of the mini-grant
- Application deadline is September 1st

#### **Recent Past Winners:**

- 2013: Tammi Terry
- 2014: Lea Keith
- 2015: Emily McDonald
- 2016: Deana Secrest
- 2017: Teresa Agee
- 2021: Kendra Poszywak
- 2022: NOW TAKING APPLICATIONS at <https://tmta.wildapricot.org/Grant>

**Join the TMTA Facebook page at  
Tennessee Mathematics Teachers Association – TMTA!**



## Test Writers Needed!

High school math test writers are needed! Each of the six exams (Algebra I/Integrated I, Algebra II/Integrated III, Geometry/Integrated II, Precalculus, Calculus and Advanced Topics, Statistics) is a 40 question multiple choice test, with each question having five possible responses. Writers should include additional questions for consideration. TMTA will pay a single stipend of \$500 to the author once the test has been submitted, reviewed, corrected if necessary, and accepted for use. Qualified applicants should work in a post secondary setting and have at least a year of experience. A test writer guideline is available for interested applicants.

If you are interested, please e-mail the Examinations Director, David Ray.

### Examinations Director

David Ray

Department of Mathematics and Statistics

E-mail: [davidray@utm.edu](mailto:davidray@utm.edu)



If you would like copies of some previous tests, these are available on the TMTA website:

<https://tmta.wildapricot.org/Contests>.

## Happy Pi Day!

How can we promote mathematics and enjoy Pi Day in a remote teaching world? There are a plethora of online activities available. Here is just a sampling.

1. NCTM Pi Day  
<https://www.nctm.org/piday/>
2. The Exploratorium  
<https://www.exploratorium.edu/>
3. The Joy of Pi  
<https://www.joyofpi.com/>
4. Pi Day  
<https://www.piday.org/>
5. Teach Pi  
<http://www.teachpi.org/>
6. Visualizing Pi  
<https://visual.ly/community/Infographics/education/visualizing-pi>
7. Museum of Mathematics  
<https://momath.org/pi-day-2020/>
8. Pi Day Article with links  
<https://www.cnn.com/2010/TECH/03/12/pi.day.math/index.html>

For those of you meeting face to face, many of these activities can also be used in a traditional classroom. Happy Pi Day!

Compiled by Dr. Jackie Vogel

Do you need to find a support group specific to your teaching?

Check out the following Facebook Groups.

- ❖ Teach With Tech
- ❖ Teachers using Canvas
- ❖ AP Statistics Teachers
- ❖ Distance Learning For Upper Elementary Teachers
- ❖ Technology In The Classroom With Google Tools And More
- ❖ Canvas For Secondary Educators
- ❖ <https://www.facebook.com/groups/HyperDocs>
- ❖ <https://www.facebook.com/groups/breakoutedumath>
- ❖ <https://www.facebook.com/groups/MidTNMath>
- ❖ <https://www.facebook.com/groups/1653035008300751>
- ❖ <https://www.facebook.com/groups/GCforTeachers>
- ❖ <https://www.facebook.com/groups/MathTeacherCoach>
- ❖ <https://www.facebook.com/groups/445786889466638>
- ❖ <https://www.facebook.com/groups/135807663706569>
- ❖ <https://www.facebook.com/groups/234085607832150>
- ❖ <https://www.facebook.com/groups/BMMmembersOnly>
- ❖ <https://www.facebook.com/groups/STEMteachersgroupMSHS>
- ❖ <https://www.facebook.com/groups/147158235484661>
- ❖ <https://www.facebook.com/groups/147158235484661>
- ❖ <https://www.facebook.com/groups/BuildMathMinds>

---

Are you looking for some ice breakers?

<https://selatmeigs.weebly.com/ice-breakers---lessons.html>

---

There are two versions of math in the lives of many Americans: the strange and boring subject that they encountered in classrooms and an interesting set of ideas that is the math of the world, and is curiously different and surprisingly engaging. Our task is to introduce this second version to today's students, get them excited about math, and prepare them for the future.

Jo Boaler

\*\*\*\*\*

If you would like to share information, lesson plan ideas, or tips for instruction, please email Lisa Elliott at [Lisa.elliott@cmcss.net](mailto:Lisa.elliott@cmcss.net). Please note the photos used are from NCTM, TMTA, or creative commons.