

Subject: Mathworks Proof Points (December Newsletter)

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From: Mathworks at Texas State University

To: Amende, Patricia Lee

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Mission

To research and develop model programs and self-sustaining learning communities that engage students from all backgrounds in doing mathematics at a high level.

Mathworks is a center for innovation in mathematics education at Texas State University. The three pillars of Mathworks are:

- Summer Math Camps
- Teacher Development
- Curriculum

Support math learning opportunities for all students

[Donate online today](#) to the Mathworks Legacy Campaign!

Mathworks Staff

Max Warshauer, Director
Terry McCabe,
Associate Director
Hiroko Warshauer,
Research Coordinator
Patty Amende,
Business Manager
Judy Claypool,
Administrative Assistant

Mathworks Steering Committee

Winter 2018



Happy Holidays from Mathworks!

In this newsletter:

- **Upcoming Events**
 - Mathworks Math Contest
 - Research & Publications
 - Advancing the Strategic Plan
 - Celebrating Mathworks 30th Anniversary
 - Math Camp Dates for 2019
 - Mathworks Student Workers
 - Reflective Questions
 - Thank You to Our Donors

Results of the Mathworks Math Contest (MMC)

We had 518 students take the Mathworks Math Contest and 40 schools participate

Ernest Butler
Sarah Butler
Julie Cowan
Howard Falkenberg
Jeff Kodosky
Bob Rutishauser
Mike Starbird

Texas State University

Denise Trauth, President
Gene Bourgeois, Provost
Christine Hailey, Dean of
the College of Science
and Engineering
Susan Morey, Chair of the
Mathematics Department

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Forward this email to
friends and family.

Dear Alumni,

Have you recently...
Moved?
Started graduate school?
Landed a new job?
Written a book?
Received an award?

Or simply want to reconnect
with other alumni?
We at Mathworks love to
hear what alumni are doing
these days!
Simply fill out this [online
update form](#).

TEXAS STATE
UNIVERSITY
SAN MARCOS
The rising STAR of Texas

A member of the Texas State
University System

proctoring the test.

We wish to extend a congratulations to all students who took the exam. The average score was 2.41. This test is an extremely challenging exam that we hope will encourage students to explore mathematics at a high level.

- MMC Stats:

- Number of test takers: 518
- Number of girls: 178
- Number of boys: 340
- Average score: 2.41
- Number of schools participating: 40

Out of those students four will be selected to represent the United States at the Primary Math World Contest (PMWC). These students will be selected based on the test scores and their eligibility to attend the PMWC. This announcement is forthcoming.



Research & Publications



Graduate Students & Research Opportunities

Six Texas State doctoral students in Mathematics Education participated in the Mathworks summer programs. Their month-long learning began at the end of May with examining curriculum used in the Junior Summer Math Camp (JSMC) and the Guiding Principles that are the foundation of our Mathworks Programs. They prepared to team-teach a Level 4 or Level 5 JSMC class. Mathworks faculty Max, Hiroko, and Terry facilitated the graduate students' week-long preparation for teaching; learning the content and pedagogy in the Math Quest curriculum and designing an activity or research project to implement during the JSMC session. Our 2018 JSMC graduate students were James Douthitt, Katty Zied, Suby Kandasamy, Xiaowen Cui, Michael Hicks, and Diane Lueders. Ellen Robinson continued to teach in both the JSMC and

HSMC as a Lecturer in the Department of Mathematics after earning her Masters in Mathematics.

Nama Namakshi and Sonalee Bhattacharyya earned their PhDs at Texas State University. Their doctoral dissertations were informed by the Mathworks camp setting and participants.



"I can say with absolute certainty that I owe my success in my studies, many accomplishments in research, and a successful career in academia almost entirely to my experience at Mathworks. The training I received at Mathworks as a doctoral student was invaluable! Graduate students are encouraged by Mathworks faculty to pursue the area of their interest when doing research. My dissertation resulted from the interests I developed at Mathworks working on various research projects. The sheer diversity of experiences I had at Mathworks was extraordinary – teaching at math camp, participating in teacher professional development, publishing articles, presenting at conferences, developing curriculum, learning about various techniques of data collection and data analysis and the list goes on! As a recent faculty, I can now see how rare it is for any graduate student to get so many opportunities in different aspects of mathematics education (student learning, teacher education, informal math programs such as math camps, and curriculum development) from the very beginning of their doctoral studies. I believe Mathworks provides a great setting for graduate students to pursue their research and dissertation. I couldn't have completed my dissertation without the invaluable mentorship and encouragement of the Mathworks faculty throughout my doctoral studies."

-Nama Namakshi

Publications:

Three articles in issues of the journal Mathematics Teaching in the Middle School during the 2018 year. Published by the National Council of Teachers of Mathematics with a readership over 38,000, the articles were based on activities implemented at the JSMC in past summers.

- "Abacus Interactive" by Robinson, Cui, Warshauer, H., & Koehne appeared in March
- "Tortoise and the Hare: Investigating Rates" by Namakshi, Warshauer, H., Bhattacharyya, Koehne, and Warshauer, M. appeared in May
- "Collaboratively engaging with GCFs and LCMs" by Robinson, Cui, Warshauer, H., Koehne in September. The 2018 graduate students have drafted three new manuscripts and are preparing them for submission.

Conferences:

- Annual Meeting of the American Educational Research Association (AERA) in Toronto, Canada. Two graduate students Christina Koehne and Katty Zied will join Hiroko and Cody at the next April to present findings on a research study of professional development conducted at the JSMC.
- Annual Psychology of Mathematics Education North America Chapter (PMENA). Graduate student Michael Hicks to co-presented with Max and Hiroko at the in November and shared findings on how HSMC contributes to the development of mathematics identity, competence, and sense of belonging.



Collaborative Research

Cody Patterson, a former HSMC student and now a mathematics education faculty at UTSA, collaborates with Texas State graduate students and Mathworks faculty to work on research in the JSMC and HSMC settings.

Joining with Mathworks faculty, Hiroko Warshauer, Max Warshauer, and Terry McCauley and graduate students in mathematics education including Christina Koehne, Katty Zied, Xiaowen Cui, and Sonalee Bhattacharyya, the team is examining professional development of pre-service and in-service teachers – what a mix of participants offers. Their work will be presented at the 2019 Annual Meeting of the American Educational Research Association (AERA) in Toronto, Canada in April.

Cody has also used the HSMC setting to study how peer mentors' criteria for proof validity and clarity at the HSMC may differ from those of professional mathematicians. Working with Texas State PhD student Xiaowen Cui, they presented their research at the 2017 Conference on Research in Undergraduate Mathematics Education (RUME).

Currently, Cody is working with two Texas State MS students in mathematics, Lino Guajardo and Maria Tomasso, to examine how peer mentors support students in learning about proofs. They will present their work at the 2019 RUME Conference.

"This year the camp reminded me about the core of algebraic thinking which many of my college students have forgotten by that point in their education. This reminder of a time in a child's mind before algebra will improve my day-to-day teaching by allowing me to encourage a conceptualization of algebraic expression and equations. "

-2018 Texas State University Mathematics Lecturer, JSMC Master Teacher

"As a teacher, it is great to hear how the lesson was perceived by other observers. That unique perspective is rarely found in a typical classroom."

- 2018 Master Teacher



Advancing the Strategic Plan

Mathworks initiatives include:

- Supporting and sustaining the Mathworks Fellows Program that provides Texas State undergraduates with an early introduction to teaching.
- Providing fellowships to graduate Research Assistants who work with Mathworks on curriculum development, teaching, and research.
- Developing a named Professor position to support research and sustained

- Developing a named Professor position to support research and sustained excellence

Celebrating 30 Years of Success

The Mathworks initiatives will sustain and enhance Mathworks core programs--

- Summer math camps for K-12 students
- Teacher Professional Development for pre-service and in-service teachers
- Curriculum Development of new and innovative methods of teaching

Underlying each of these pillars is research that is integrated into our Ph.D. program in mathematics education. Your help is critical to Mathworks developing one of the leading centers for Math Education in the country.

As we celebrate our 30th anniversary, Mathworks has grown from a small camp with 12 high school students to a thriving research center that can impact math education throughout the state and nationally. Math camp students have received state , national, and international recognition. Our undergraduates receive a unique hands-on introduction to teaching working with middle school students and master teachers. Our graduate students are pioneering new and innovative methods of teaching, providing a research base for all of the programs that we conduct. Thank you for your help in making this possible! Donate now at this [link!](#)



30 Years of Excellence in Mathematics

In 2019, Mathworks will celebrate its 30-year anniversary. Mathworks began with its first summer math camp in 1990. We are planning special events for 2019 to commemorate the successes of our students and plans for the future. We invite all our former students and teachers to send in stories and memories of their time at Mathworks for a memory album we are putting together. We especially appreciate any ideas and suggestions you might have for special events. Please send in stories, pictures and memories to mathworks@txstate.edu or max@txstate.edu. Thank you and we hope to see you again soon!



Math Camps Dates for 2019

Applications will open on January 1, 2019 for next summer's math camps. With three camps to choose from, students at different levels can participate in a math program best suited for their experience and background. There is still lots of time before summer begins, but it's never too early to start planning!

Junior Summer Math Camp Half-Day: JSMCH (Grades 3 - 8)

- June 10th - June 21st, 2019
- [Find out more about the half-day JSMCH here!](#)

Junior Summer Math Camp Residential: JSMCR (Grades 6 - 8)

- June 9th - June 21st, 2019
- [Learn more about the residential JSMCR here!](#)

Honor Summer Math Camp: HSMC (Grades 9 - 11)

- June 23rd - August 3rd, 2019
- [Find out more about the HSMC here!](#)



Student Workers

One of Mathwork's greatest assets is our talented and hard-working student workers. They give 110% of themselves and are incredibly dedicated to making sure our summer camps run smoothly. This special group of students describes themselves

Gaby Garcia - My name is Gabriela Garcia, and I am a senior *Terry Scholar at Texas State University. I am majoring in Biology, and double-minoring in Biochemistry and Honors Studies. In my free time I enjoy practicing yoga, cooking, trying new foods and hanging out with my pets. My favorite thing about working at Mathworks is watching applications come to life when students begin to arrive on campus.

Kristen Magreehan - I am 19 years old and from Lubbock, Texas. I am a *Terry Scholar at Texas State University and a sophomore majoring in Interdisciplinary Studies - Curriculum and Instruction with an EC - 6 ESL Generalist Certification. I also teach a Chemistry lab. I enjoy this job because I get the opportunity to be creative. I love the mission behind Mathworks. Mathworks is impacting so many kids' lives and I am honored to be a part of the program.

***Terry Scholars:** Terry Scholars are distinguished by a deep rooted desire to enrich the general welfare of the community and an established record of leadership. In

order to select Scholars with the greatest potential for success, the Foundation's selection committees focus on candidates with a demonstrated history of involvement in activities, outstanding scholastic achievement and a well-rounded personality marked by a desire to succeed.



Max's Reflective Questions:

If you would like to answer a few questions from Max, he would love to hear from you!

Click here: <https://goo.gl/forms/5hXe2ouZebalOQbj2>

Thank You to Our Donors



The Mathworks mission is to research and develop model programs and self-sustaining learning communities that engage students from all backgrounds in doing mathematics at a high level. Your donations make it possible:

- For students to attend the programs regardless of their financial background.
- For students to engage in original research projects.
- For Mathworks to provide high-quality mathematics learning experiences for all students.

Thank you to H.E.B Tournament of Champions for supporting the 2019 Half-Day Junior Summer Math Camp program with a generous donation of \$16,000. This donation support 40 student scholarships.



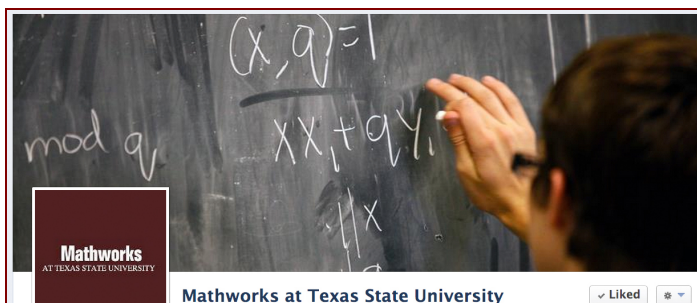
Thank you to the San Marcos Lions Club for supporting the 2019 Junior Summer Math Camp (JSMC) - Half-Day program with a gracious donation of \$1,600.





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