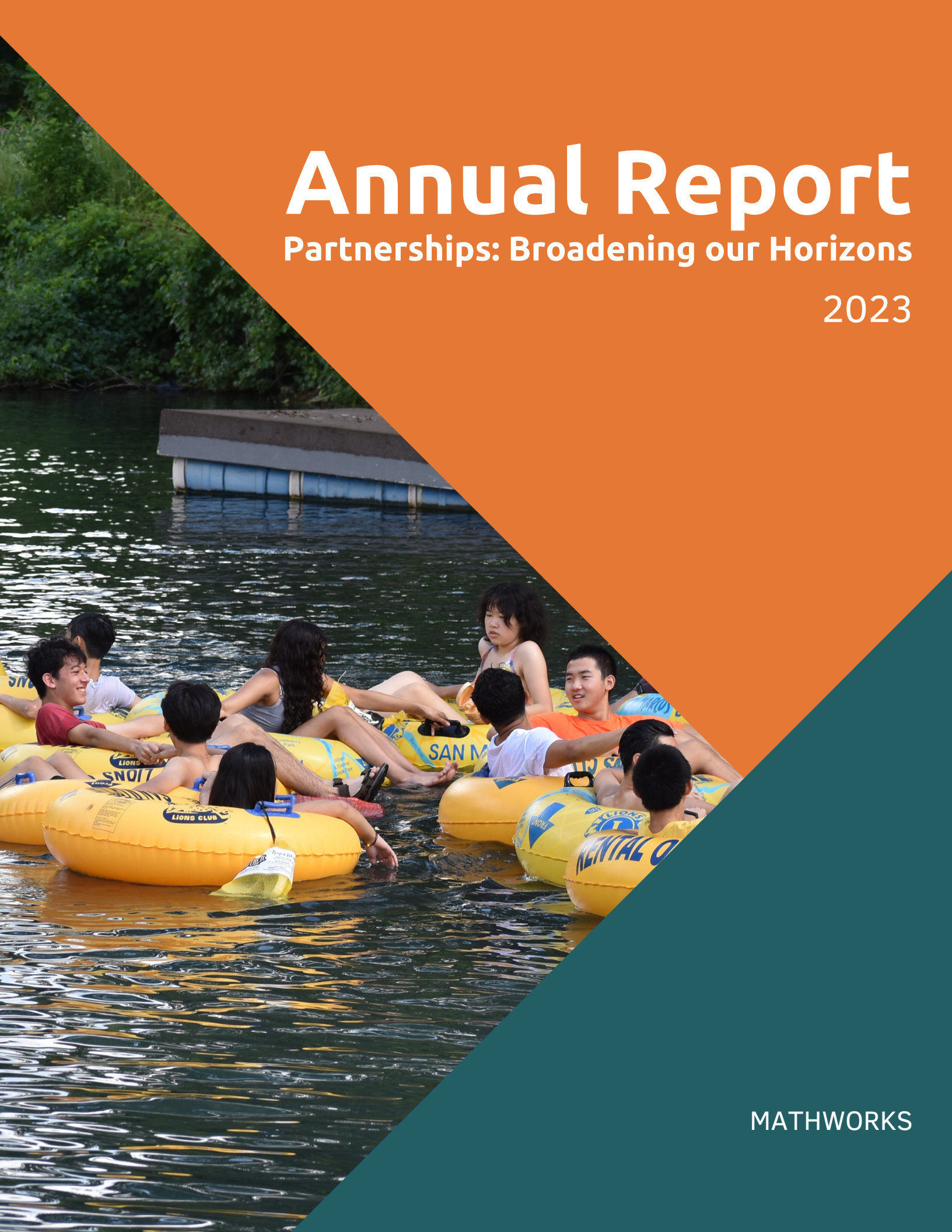


Annual Report

Partnerships: Broadening our Horizons

2023



MATHWORKS

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Letter from our Director

Dear Friends of Mathworks,

In our 2023 Annual Report, we highlight alumni from all of our programs; give a snapshot of last summer's math camps; and describe new initiatives and scholarships sponsored by the Webber Family Foundation, Silicon Labs, G. R. White Trust, and H-E-B Tournament of Champions.

It has been an exciting year, and we all look forward to new successes as we embark on Phase II of our Mathworks Legacy Campaign. In this new campaign, our goal is to raise \$6.25 million for the Mathworks Endowments to enhance and sustain four key areas:

Mathworks Math Camp Scholarships:

HSMC Scholarships: \$6,000 each.

Each named endowed scholarship costs \$150,000.

Goal: Raise \$1.5 million to endow 10 scholarships.

JSMC Residential Scholarships: \$2,000 each.

Each named endowed scholarship costs \$50,000.

Goal: Raise \$.5 million to endow 10 scholarships.

JSMC Half-day Scholarships: \$400 each.

Each named endowed scholarship costs \$10,000.

Goal: Raise \$1 million to endow 100 scholarships.

Teacher Professional Development (TPD Teachers): \$5,000 each.

Each endowed TPD teacher costs \$125,000.

Goal: Raise \$750,000 to endow 6 TPD teachers, each conducting a local summer math camp or after school program for 12 students.

Mathworks Fellows: \$1,000 each (u. grad); \$4,000 each (graduate)

Each endowed undergraduate Mathworks Fellow costs \$25,000.

Each endowed graduate Mathworks Fellow costs \$100,000.

Goal: Raise \$500,000 to endow 20 Undergraduate Mathworks Fellows.

Raise \$500,000 to endow 5 Graduate Mathworks Fellows.

Mathworks Statewide Coordinator: \$60,000.

Goal: Raise \$1.5 million to endow a coordinator for Mathworks replication and support.

We invite your help and participation in this effort. Together we can achieve Mathworks' vision of engaging all students in doing mathematics at a high level. Please contact me anytime if you have suggestions or ideas that we can pursue. Hope to hear from you soon.

With warmest best regards,

Max Warshauer

Mathworks 2023 Annual Report

Partnerships: Broadening our Horizons

Mission

Mathworks is a center for innovation in mathematics education at Texas State University. Our mission is to research and develop model programs and self-sustaining learning communities that engage K-12 students from all backgrounds in doing mathematics at a high level.

Leadership Council

Max Warshauer, Director
Eugene Curtin, Associate Director
Will Boney, Assistant Director for Research Projects
Tim Chase, Assistant Director for Outreach
Cody Patterson, Assistant Director for Teacher Education
Hiroko Warshauer, Assistant Director for Research and Curriculum Development

Administrative Support

Patty Amende
Judith Claypool
Kaelie Garcia

Mathworks Steering Committee

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Stephen Lee
Tom Long
Alan Tinsley
William F. Scott

Alumni Feedback



Hannah Guan (JSMCR 2018, Counselor 2022, PWMC team member 2018)

Now a freshman at Harvard: Returning from the JSMCR, I founded the first math organization named San Antonio Math Include (SaMi) to provide greater access to STEM education to students from all cultures, social spheres, or math experiences. In five years, SaMi has grown to an international network connecting 42,190 students to 879 tutors, principals, counselors, teachers, and after-school coordinators in 910 schools across 42 states and 15 countries. ...My journey from an immigrant family to a freshman at Harvard College has been profoundly shaped by my experiences at the JSMCR. It not only empowered me to become a confident woman in math but also inspired me to spread my transformative experience to tens of thousands of students across the globe, providing them with opportunities and hope for a brighter future in STEM. As we move forward, I am committed to expanding Mathworks' impact and making further strides in reducing educational inequalities.

Scarlett Kerr (JSMCR 2022, 2023)

At my school, finding people with a similar passion for learning was difficult, but at camp, it was as if everyone instantly clicked with me. Furthermore, that first camp experience ignited an even stronger enthusiasm for academics within me. I realized that I wanted to concentrate on mathematics and pursue a career in STEM. That summer, I not only advanced another year in math but also made the decision to skip a grade. This past year, my return to camp exceeded all expectations. The Mathworks community is extraordinary, and it has the incredible ability to make mathematics not just understandable but genuinely enjoyable.



Nadhira Salsabila (Indonesia, JSMCR 2012)

My name is Nadhira, and I was one of the participants in the Residential JSMC 2012 program from Indonesia, along with three other students from the Mathematics Education Clinic Indonesia. It was a fantastic experience that I still fondly remember, spending two weeks in the university dormitory and immersing myself in student life in the US. I have many cherished memories of studying with fellow campers and counselors, solving math problems during late-night group sessions. JSMC was a pivotal point in my life, inspiring me to pursue higher studies overseas.

Fast forward four years to 2016, I am now working full-time as a Software Engineer at PayPal, a global financial services company. I was recently awarded as one of the Singapore 100 Women in Tech 2023 list, by the Singapore Computer Society. My two-week stay in Texas sparked hope and confidence within myself, showing that I could step out of my comfort zone and live, study, and work overseas, away from my family and friends in Indonesia.

Alumni Feedback

Sydney Robinett (JSMCH Fellow 2017, 2018)

My name is Sydney Robinett and I attended Mathworks June 2017 and again in 2018 before graduating December 2018. I have now taught in two public schools in Dallas, Texas, a private international school in Qingdao, China, and an American embassy partnered international school in Vilnius, Lithuania. ...Working with Mathworks not only built my confidence in teaching to students in my class but thinking of ways to make math engaging, intercultural, motivating, and interactive. I have co-chaired a National math competition in China along with chairing a school wide peer buddy program that encourages high school students to tutor elementary students in math and reading.



Miztly Suley Munoz Mundo (JSMCH Fellow 2023)

I am attending college at Texas State University, I am currently in my third year, still double majoring in Mathematics and Education. This math camp has influenced me in a positive way. During the math camp, I was able to see how each kid has its own strengths and weaknesses, and that sometimes because of what is going on in their homes is the reason why they might behave in a certain way, and that stuck up with me.

Ben Salinas (HSMC Student 2004, 2005. HSMC/JSMC Counselor 2006, 2007, 2008)

After graduating from Olin College of Engineering with a degree in Engineering with a concentration in Product Design, I have been working at Luminaire Coffee, an engineering consulting firm we started in college. I, personally, do firmware development for our projects. The reason I continued to come back to HSMC as a counselor while I was in college because I realized I was getting invaluable experience as a counselor. The amount of latitude that Max gave the counselors to be involved in running the program taught me more than I could have learned at an internship. As counselors, we were able to identify problems and were empowered to try to solve them. This further honed my ability to communicate and develop consensus.



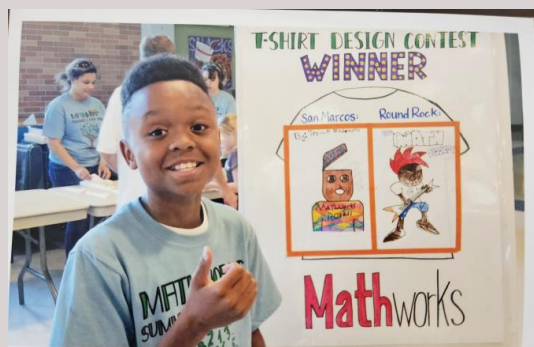
Alumni Feedback

Eduardo Reyna (Teacher Profesional Development in JSMCH, 1996)

My name is Eduardo Reyna, a teacher at Brown Middle School in McAllen, Texas. I have been involved in the Texas State University Math Camps for some time now. I thank all involved with this endeavor for allowing me to be a part of this awesome undertaking. I'm beginning my 51st year as a teacher. My colleagues often ask me why I have stayed for so long. The knowledge, experience, insights, and friendships I have gained by being a part of the university's Summer Math Camps have been a big reason why.

Emily Scott (JSMCH Fellow 2022, 2023)

Currently, I am still attending undergraduate school at Texas State University. Mathworks has also been a huge factor in the reason I stay in the education field. I am able to see real life experiences of classroom management, creating a welcoming classroom culture, and what it means to have a growth vs. fixed mindset. I enjoy my time every year in the program and continue to learn so much as I prepare to begin my career.



Trent Medearis (JSMCH 2016)

Trent has been on the road each week, most recently to Oklahoma and Illinois with many school visits in Texas, as Trent is thankfully a top academic achiever (top 6% at Hays High School in Buda, Texas) and captain of his athletics team. Mathworks is the 1st program that exposed him to a thorough application process and the importance of working outside of school in learning activities and having fun too. Trent went on to attend the AusPrep pre-engineering camps during the summer in late middle school, having already gotten use to extending his learning time into the summer. He accepts challenges in the area of math, logic and even design thanks to the seeding of principles the Mathworks program offered.

Programs

Mathworks conducted three in-person math camp programs this summer and an Academic Year Program to prepare students for success in algebra and higher-level mathematics.

1. JSMCH, a two-week half-day camp from June 5 to June 15, 2023
2. JSMCR, a two-week residential camp from June 5 to June 16, 2023
3. HSMC, a six-week residential camp from June 18 to July 30, 2023



Financial Need Statements of Scholarship Recipients

Half-Day Junior Summer Math Camp

Parent, Martindale, TX. Adjusted Gross Income: \$30,000. Received a full scholarship.

“My daughter attended this camp last year and fell in love with it. She loves math. We are a household of 3 I am a single mom of 2 kids who works as a special education paraprofessional while going to school to get certified to be a special education teacher so money is extremely tight.”

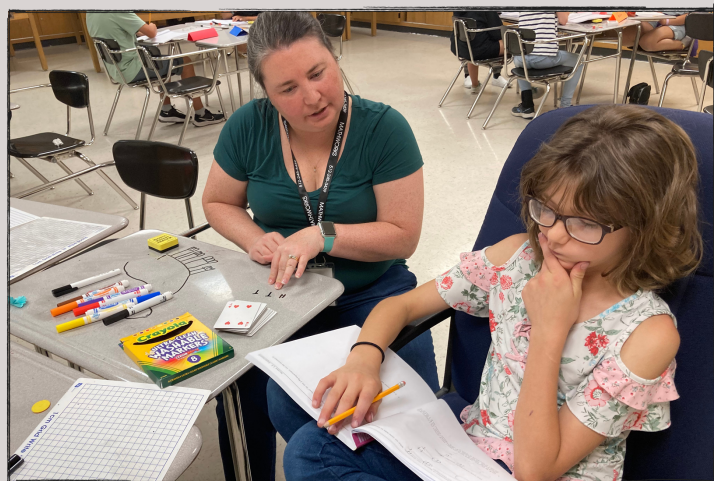
Parent, San Marcos, TX. Adjusted Gross Income: \$60,000. Received a full scholarship.

“My children have attended this math camp for over 5 years because of this scholarship opportunity. I am a single mother of 2 who works 3 jobs to provide what is necessary for my children to not go without. I do not receive child support from camper’s father. Camper has an IEP and his diagnosis is in the area of Specific Learning Disability in Math. I know that him being a part of this program makes a difference in his academic abilities. He is an amazing student just needs more support academically. Thank you for the opportunity.”

Parent, San Marcos, TX. Adjusted Gross Income: \$43,000. Received a full scholarship.

“We are a family of 4 with one spouse working full-time, and 2 kids in elementary, I have been working less than part-time since pandemic. My 4th grader did well with math camp last year and she asked to continue this summer, I was hoping she could continue math enrichment since she got significantly delayed academically during virtual school. She has shown some improvement during this current 4th grade year and I am hoping she continues.”

85 Total JSMCH Scholarships Awarded: \$34,000



Financial Need Statements of Scholarship Recipients

Residential Junior Summer Math Camp

Camper, Austin, TX. Adjusted Gross Income: \$75,380. Received a full scholarship.

“We are a family of 5 people (2 parents and 3 children). Father is a language instructor at the University of Texas at Austin and mother is presently staying at home, taking a semester break from her schooling at ACC. With a single income, we face some financial hardships. That's why, to cover this program cost, we would need some form of financial aid.”

Camper, Baltimore, MD. Adjusted Gross Income: \$1,500. Received a full scholarship.

“I was able to attend HSMC last year and it was the best experience of my entire life. The only reason I was able to attend is that I got a full scholarship for the camp. I live with my stepdad, mom, and 3 siblings who are under 12 years old. The only person who works in our family is my dad and my mom is a housekeeper.”

Camper, Austin, TX. Adjusted Gross Income: \$74,530. Received a full scholarship.

“We are a family of 5 people (2 parents and 3 children). Father is a language instructor at the University of Texas at Austin and mother is presently staying at home, taking a semester break from her schooling at ACC. With a single income, we face some financial hardships. That's why, to cover this program cost, we would need some form of financial aid.”

Camper, San Marcos, TX. Adjusted Gross Income: \$78,000. Received a full scholarship.

“We are a family of 4, and my husband has recently started his own electric company, but he doesn't get a set income. Some months are a little tougher than others. I just recently started a new job, so it's still taking a little time to get into a comfortable income. My son really enjoyed the mathworks program last year, and I really want to fuel his love for math. He has been talking about the overnight math camp the whole year, since it would be his first overnight camp. I don't have \$1800 saved to invest in this program. I would also be willing to pay monthly payments if you have the option. I don't want my kid missing out on the program because I can't afford it up front.”

14 Total JSMCR Scholarships Awarded: \$22,700



Financial Need Statements of Scholarship Recipients

Honors Summer Math Camp

Camper, San Marcos, TX. Adjusted Gross Income: \$32,000. Received a full scholarship.

“My father is legally responsible for mine and my sister's summer activities but cannot afford Math camp on his annual school district para-professional salary for us three. His full-time job is his only source of income. My sister (age 17) now has a summer job to assist us and I would really appreciate the opportunity to attend Math camp with a full scholarship.”

Camper, Owings Mills, MD. Adjusted Gross Income: \$51,347. Received a full scholarship.

“We are a family of 5. My older brother is in the university, and he is undocumented, so he pays out of state tuition. I have a full scholarship in my current school. My father is the only one that works.”

Camper, West Vancouver, BC, Canada. Adjusted Gross Income: \$29,000. Received a full scholarship.

“I am so incredibly grateful that HSMC was willing to provide financial aid for my family last year so that I could attend camp. I really hope to say that things have gotten better with my family this year and I no longer need to apply for financial aid, but unfortunately, things haven't gotten any better for my family... My family is very supportive of my participation in HSMC again this year though, as they know how much I have been looking forward to camp and how much I would be able to learn. However, the costs are still a huge challenge for my family, so I really hope that HSMC would be able to give me some support. Thank you so much.”

Camper, Reisterstown, MD. Adjusted Gross Income: \$1,500. Received a full scholarship.

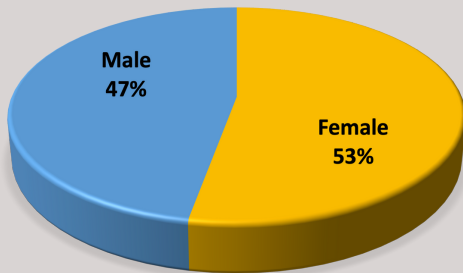
“I was able to attend HSMC last year and it was the best experience of my entire life. The only reason I was able to attend is that I got a full scholarship for the camp. I live with my stepdad, mom, and 3 siblings who are under 12 years old. The only person who works in our family is my dad and my mom is a housekeeper. This year, I have had the greatest impact on my academic life...”

22 Total HSMC Scholarships Awarded: \$91,200



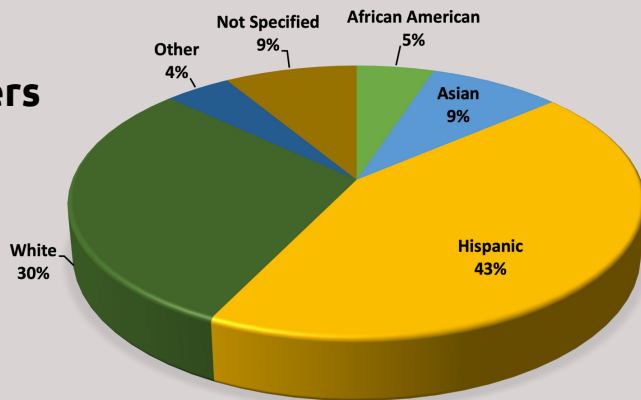
Junior Summer Math Camp Half-Day

JSMCH is a two-week, multi-level commuter math camp for students in grades 3–8.



Campers:	138
Mathworks Master Teachers:	10
Texas State Graduate Students:	5
Professional Development Teachers:	3
Mathworks Fellows:	22
Mathworks Faculty:	3
Mathworks Staff:	4

JSMCH Campers



What did you like about camp?
“The way Mathworks makes math fun!”
- JSMCH Camper

What did you like about camp?
“The food, friends, fellows, and teachers.” - JSMCH Camper

Junior Summer Math Camp Mathworks Fellows

22 undergraduate students were each awarded \$1000 by Mathworks to gain an early experience in teaching by:

- Helping JSMCH campers develop their mathematical thinking skills
- Reflecting on teaching with practicing teachers
- Discussing mathematics content and pedagogy in seminar

***"Having a supportive, experienced master teacher allowed me to figure out ways to work through problems and create a classroom environment conducive to deep learning."
- Mathworks Fellow***

***"Written reflections gave us time to actually think deeply about our teaching skills, how applied them and what we can do to improve."
- Mathworks Fellow***



"I enjoyed the seminars because I was able to learn new and interesting math problems and understand different ways of thinking." - Mathworks Fellow

Graduate Students

Five Mathematics students in the Texas State PhD program in Mathematics were each awarded \$4,000 by Mathworks to participate in a five-week summer program to:

- Co-teach Levels 4 and 5 in the JSMCH using the Mathworks *Math Quest* Curriculum
- Design and conduct research in the JSMCH
- Draft a manuscript for publication in a national journal for K-12 teachers

“I appreciate having the ability to work in a K-12 setting – both teaching and research wise.”

- Texas State Graduate Student

“Mathworks camp opened up a whole new realm of teaching experience for me....I have gained a new level of respect for teachers and for the challenge of enacting research-based activities in a classroom.”

- Texas State Graduate Student



Products of Graduate Research in 2023



MATHWORKS
Center for mathematics education
research and development

Mathworks provides research opportunities for graduate students to study:

- Innovative K-12 curriculum
- K-12 student learning
- Professional development
- Preservice teacher learning
- Informal summer programs



Math Department faculty working with Mathworks include:
Will Boney, Tim Chase, Ellen Couvillion, Eugene Curtin,
Cody Patterson, Jian Shen, Hiroko Warshauer,
Max Warshauer and others.

www.txstate.edu/mathworks mathworks@txstate.edu 512-245-3439

Graduate Student Publications:

- **"Hints as scaffolds to build students' problem-solving skills".** (*Texas Mathematics Teacher*)
- **"Piquing student interests: Using voting to engage students in mathematics"** (*PMENA*)
- **"Students Perceptions of Support Provided by a Summer Math Camp"** (*High School Journal*)

Manuscripts in preparation:

- **Venn Diagrams**
- **Stories behind the Graph**
- **Group work generates Functions that tell a Story**



Professional Development

Three Professional Development Teachers, ten Master Teachers, and five Graduate Students participated in daily professional development workshops during the JSMCH.



“I was able to listen and observe some great methods in order to teach math in a more meaningful way. I enjoy being in a classroom.” - PD Teacher

“Math camp for me has been like Math therapy. I feel like it will allow me to create a new relationship with mathematics both as a learner and as an educator. It helped me develop a deeper understanding of mathematical ideas and relationships.”

- PD Teacher

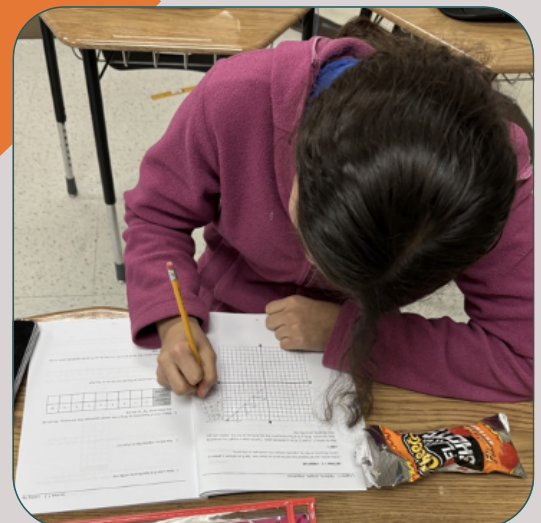
“The professional development seminars were great. They gave me the opportunity to build relationships with professionals and experts in the field of math... I also enjoyed the extra PD time which made me a more effective teacher by allowing me to reflect on how to best approach problems.” - PD Teacher

After School Math Enrichment Program

Two Programs in south Texas funded by the Webber Family Foundation

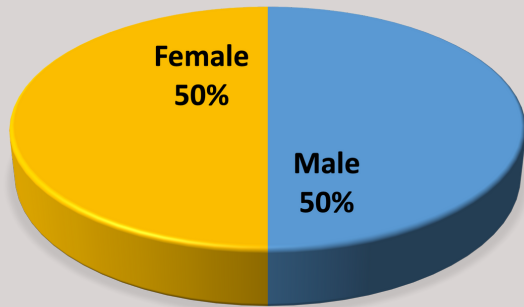
- Garza Middle School in Weslaco, TX (10 students)
- Brown Middle School in McAllen, TX (20 students)
- Two experienced teachers and one new PD teachers from JSMCH 2023
- 30 weeks of one to two days per week for 1-1.5 hours per session
- Use *Math Quest*, the Mathworks math camp curriculum
- Each teacher receives a \$2000 stipend
- All students receive materials with no fee for attending

"As students walked into class, 4 of them said this was their favorite class. They said they couldn't wait to come. Throughout the class, several students said, 'I love this class' ". - Patricia Carreon's class



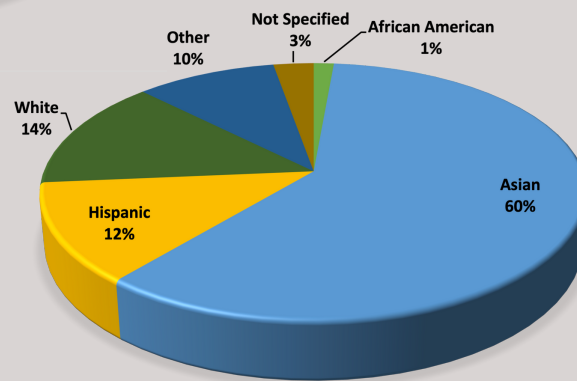
Junior Summer Math Camp Residential

JSMCR is a two-week, residential program for middle school students.



Camper Applications: 214
Campers: 72
JSMCR Counselors: 20
Mathworks Faculty: 3
Mathworks Staff: 4

JSMCR Campers

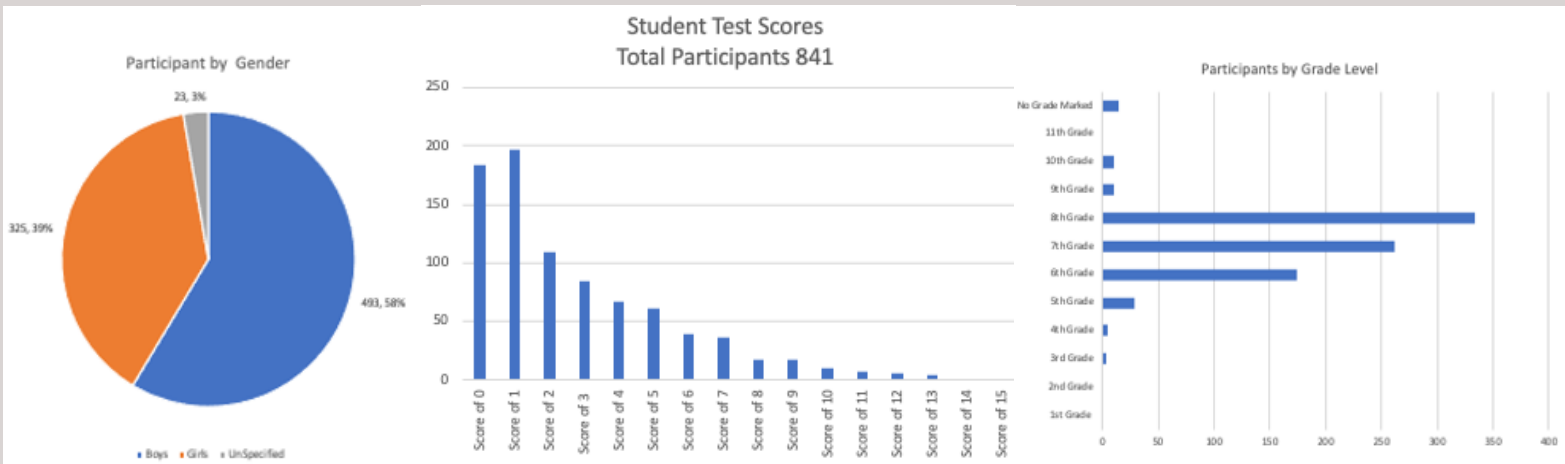


“Math camp is different from school because the topics are more in depth and difficult. You are also encourage to know the solution deeply instead of just getting the answer. People are expected to work together, unlike individual work at school.” – JSMCR Camper



Mathworks Math Contest

Over 800 students from across the United States participated in the 2022 Mathworks Math Contest (MMC). Top-scoring students were recognized, and four students who performed exceptionally well were chosen for the Mathworks team for the Primary Math World Contest: Rhea Ghosal, Nathan Liu, Judy Song, and Vincent Wang.



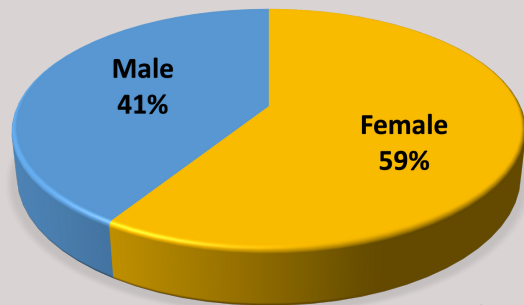
Primary Math World Contest

The Mathworks team participated virtually in the Primary Math World Contest, sponsored by the Po Leung Kuk in Hong Kong, on July 13, 2023. The team was named the champion of the Blue Group in the competition and was the second runner-up for the Po Leung Cup, awarded to the top team from a non-Asian country.



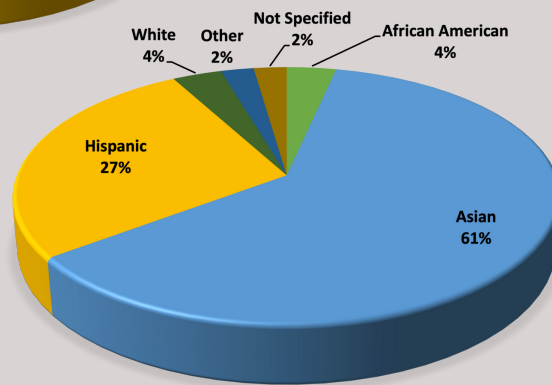
Honors Summer Math Camp

HSMC is a six-week, residential program for high school students.



Camper Applications: 467
Campers: 78
HSMC Counselors: 20
Mathworks Faculty: 7
Mathworks Staff: 4
Research Mentors: 9
Research Projects: 10

HSMC Campers

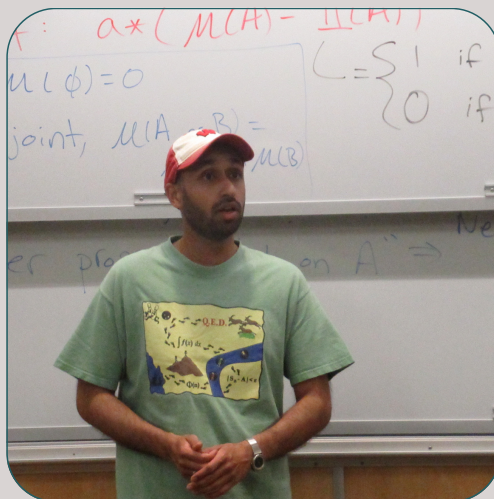


“I had an unforgettable experience at camp this year, learning so much math while creating friendships that would last a lifetime. I grew as a person, discovered new things about myself, and made so many new memories. I’ve never had another camp or other experience hit me this hard to the core or impact me this much, both in terms of math and as a person.” – HSMC Camper



Honors Summer Math Camp Colloquium Speakers

- Sameer Deshpande – *A Personalized Approach to Probability*
- Hiro Tanaka – *The Euler Characteristic*
- Bob Inman – *Personal Reflections*
- Betseygail Rand – *Residential Segregation Patterns and Single-Member Voting Districts: When is a fair district plan available?*
- Daniel Wang, Alex Yi, Isabella Quan – *Alumni Panel*
- Mike Starbird – *Cutting Cake for Greedy People – Topology to the Rescue*
- Christina Koehne – *Thinking about Thinking Deeply: Strategies for GCF & LCM Reverse Engineering*
- Steve McAdam – *Ptolemy's Theorem*



Grants & Philanthropic Support

- Silicon Labs-\$8,000
- HEB Tournament of Champions-\$16,000
- Webber Family Foundation-\$25,000
- Lions Club - \$2,000
- G. R. White Trust \$13,600
- AMS Epsilon Fund - \$5,000
- Step Up For State - \$5,895



Endowment Report

Texas State University Development Foundation	
Mathworks Endowment Report	
1/31/23	
Endowment Name	FY23 Approved Distribution (Budget)
Texas Mathworks Quasi-Endowment	29,500.00
The Kodosky Foundation Mathworks Endowment	89,200.00
Alumni Legacy Endowed Scholarship for Honors Summer Math Cam	11,700.00
KLE Mathworks Teacher Student Development Program	16,700.00
Sarah and Ernest Butler Endowed Scholarship in Mathworks	15,000.00
RGK Foundation Endowment in Mathworks	20,100.00
Herb Carter Endowment in Mathworks	7,400.00
Sam Baethge Endowed Scholarship in Mathworks	-
	\$ 189,600.00

Our Partners

Institutions

Texas State University
Texas State University System
San Marcos CISD

Endowments

Sarah & Ernest Butler
Herb Carter & Family
Mathworks HSMC Alumni
KLE Foundation
Kodosky Foundation
RGK Foundation
Sam & Edwina Baethge

Grants & Donations

Webber Family Foundation
G. R. White Trust
H-E-B Tournament of Champions
San Marcos Lions Club
Silicon Labs
AMS Epsilon
Mu Alpha Theta
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