

# MU ALPHA THETA NEWSLETTER

## M3 CHALLENGE PROVIDES FREE MATH MODELING RESOURCES

Moody's Mega Math (M3) Challenge, a rigorous team competition known for its distinctive hands-on learning experience for high school students, offers participants resources to use well into their careers. This year – the competition's 10th anniversary – marks the first time competitors will have access to licenses and subscriptions not previously offered during the annual contest.

The free competition, which challenges high schoolers to solve an applied problem through high-level mathematical models---with top teams required to present their papers to a panel of esteemed judges---has awarded nearly \$1 million in scholarship money since its launch. This year's Challenge problem will be unknown until Challenge weekend on **Feb. 28 and March 1, 2015**.

Students who register for the 2015 M3 Challenge will have yearlong access to free licenses to Wolfram Research's Mathematica Student Edition and Wolfram|Alpha Pro, both designed to guide students through mathematical concepts and modeling. The subscription and training materials are approved for use during Challenge weekend.

Recognizing the need for more practice problems and applicable ways to connect students to math modeling, organizers behind the M3 Challenge worked with professors and industrial mathematicians to develop the "Monthly Dialogue," an interactive portion of the Challenge website that offers a different applied math topic or modeling resource monthly. This new online feature is free and open to the public, and includes a live forum, where visitors can interact with fellow competitors, mathematicians and even the problem author in real time.

"The M3 challenge takes place once per year, but using math to understand and investigate real world problems happens every day," said M3 Challenge judge Dr. Ben Galluzzo. "By sharing ideas from the Challenge problem repository in our new Monthly Dialogue, we're providing high school students an opportunity to discover how math is applicable and relevant to their everyday lives. We're sparking interest in real world solutions, and motivating these students to start modeling with mathematics."

For the second year, students also have access to the free handbook "Math Modeling: Getting Started and Getting Solutions," published by the Society for Industrial and Applied Mathematics (SIAM). The handbook helps readers apply the math modeling process to everyday issues and is available for download here. Additionally, a printed version is available for purchase.

"In its first year, the M3 Challenge was only available to New York City area students. A decade later, we've expanded to include teams from 45 states and Washington, D.C.," said M3 Challenge Project Director Michelle Montgomery. "As we embark on our 10th anniversary, we're invigorated by the contest's impact. We continue to stay in touch with thousands of past Challenge competitors, many of whom are pursuing high-level careers in STEM fields."

Past Challenge problems have raised complex questions about school lunch affordability, national plastic recycling solutions, and ways to improve the United States census count. This year's Challenge problem promises to surprise and intrigue the thousands of students who participate.

**Interested students and coaches, including first time competitors and M3 veterans, have until Feb. 20, 2015 to form their teams and register at [m3challenge.siam.org](http://m3challenge.siam.org).** The Challenge is available to high school juniors and seniors. High schools located in the following states are eligible to form teams and participate in M3 Challenge: AL, AZ, AR, CO, CT, DC, DE, FL, GA, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, PA, RI, SC, SD, TN, TX, UT, VT, VA, WV, WI and WY.

# 2015 SALT LAKE CITY NATIONAL CONVENTION

Come spend a week in July in the beautiful mountains of Utah...

Have you ever stayed in an actual Olympic Village? Well, now you can...at the 2015 National Mu Alpha Theta Convention. Come join over 600 students and teachers at the University of Utah this July. (The Olympic Village is now part of the university.) Catch up with old friends, meet new ones, and experience the fresh air of the mountains. There will be some exciting speakers, some unique tests, and some awesome events to experience. Download the information packet online and sign up. The cost is the lowest it has been in years and includes room, all meals but one breakfast, all testing, and the field trip to Snowbird with an all-day Activity Pass ([www.snowbird.com/summer/activities/](http://www.snowbird.com/summer/activities/)). Come join us...you won't regret it.



The 45<sup>th</sup> Annual Mu Alpha Theta National Convention will be held July 19-24, 2015 in Salt Lake City at the University of Utah.

Before April 1: \$500 Early Registration  
After April 1: \$550 Regular Registration

Sponsors requesting single rooms will need to pay an additional \$270. All registration must be postmarked **by May 15th**. Visit [www.mualphatheta.org](http://www.mualphatheta.org) > National Convention for more information!

## NATIONAL CONVENTION GRANTS

**Mu Alpha Theta will award a limited number of \$3,000 Convention Grants to the 2015 Salt Lake City Convention.** Each grant will cover free registration for a sponsor and three students, who must not have graduated before the convention. Remaining funds may be used for additional student registration costs or to reimburse travel expenses.

To be eligible for a grant, a chapter cannot have attended a convention previously. The intent of the grant is to allow the teacher and students to experience a National Convention. Only schools who have a math sponsor and three eligible students should apply. The application deadline is April 1st. Go to [www.mualphatheta.org](http://www.mualphatheta.org) > Grants to download an application.

## NEED-BASED STUDENT CONVENTION SCHOLARSHIPS

**Mu Alpha Theta will provide one Need-Based Student Convention Scholarship to each school attending the 2015 Salt Lake City National Convention.** Any chapter that is attending may request an \$800 scholarship for one of their students in need of financial support. The scholarship will pay for the student's \$500 registration fee and up to \$300 in transportation. Need-based proof is minimal and the selection of the student is left up to the teacher traveling to nationals with the students, allowing the student receiving the scholarship to remain anonymous to others in the chapter.

It is the goal of these scholarships to allow more students to experience the excitement and fun of a Mu Alpha Theta National Convention. If you are planning on being in Salt Lake City, please look into providing one of these scholarships to a student at your school. The application can be downloaded online under National Convention > 2015.

## MATHEMATICAL MINUTES VIDEO CONTEST

The holiday break is a great time to film your video for the Mathematical Minutes Video Contest! Up to \$3,000 in prize money is available for winners. Schools are allowed no more than three submissions. Only the top submission per school is eligible for prize awards.

Eight videos will be chosen by March 31, 2015 for the final round of judging. Chapters will vote to rank the top eight videos. Up to \$3,000 will be available to be split amongst the entries by quality. Final award amounts will be determined by these votes, along with input from the Governing Council.

The Salt Lake City National Convention plans to award INTERSCHOOL points for any qualified videos submitted.

### UPCOMING DATES FOR MU ALPHA THETA'S FREE MATH COMPETITIONS

**Dec 1-Jan 15:** Log1 Contest Round 1

**Jan 1-31:** Log1 Contest Round 2

**Jan 12-23:** RCML Round 1

**Feb 1-28:** Log1 Contest Round 3

**Feb 9-20:** RCML Round 2

**Feb 28:** Math Minutes Deadline

Learn more at [www.mualphatheta.org](http://www.mualphatheta.org) > Contests > Mathematical Minutes. Entries due by Feb 28 at midnight EST.

## CHAPTER NEWS

### ST. CECILIA ACADEMY HOSTS "MATH IS 4 GIRLS" COMPETITION

On Tuesday, October 28, St. Cecilia Academy hosted a middle school "Math is 4 Girls" competition. This was an opportunity for middle school girls who enjoy and excel in math to participate in a day of hands-on activities and competition in the field of mathematics. 90 girls from 13 area middle schools, grades 6-8, participated.

The event was spearheaded by Sister Cecilia Anne, O.P. chair of the math department at St. Cecilia Academy and the SCA chapter of Mu Alpha Theta. The competition round consisted of Algebra I and Introductory Geometry as well as some pre-algebra, number properties, and logic.

The day included an individual competition exam, a team competition, and a lightning round. During the lightning round, the girls with the twelve top individual scores were invited to solve questions projected on the screen by buzzing in on individual iPads. Over 30 of members of Mu Alpha Theta led activities, proctored exams, and compiled scores. Activities included making 3D fractal models, exploring the Fibonacci sequence, launching water rockets, participating in a math scavenger hunt, exploring tessellations, and making



geometric string art projects.

“The beauty and power of mathematics cannot be underestimated. Girls, in particular, can benefit from exposure to math in an interactive environment, using a hands-on approach, learning to think clearly, work cooperatively and communicate effectively. True mathematics is so much more than memorizing and applying formulas- rather, it is centered around making sense of the world around us,” Sister Cecilia Anne, O.P. said.

The top three schools who earned the most points throughout the day were recognized. Team points were calculated by taking the average of the top three individual scores from members of each school, then adding on points earned during the team competition round.



## THOMAS A. EDISON PREPARATORY HIGH SCHOOL VISITS OSU

Last spring, members of Thomas A. Edison Preparatory High School's Mu Alpha Theta chapter traveled to Oklahoma State University to meet with Dr. Henry Segerman in the Mathematics Department.

Dr. Segerman gave a presentation which included hands-on activities and then joined the students at a local restaurant (Eskimo Joe's) to answer questions and talk about mathematics.

More information on Dr. Segerman can be found at his website, <http://www.segerman.org/>.

