

MU ALPHA THETA NEWSLETTER

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News from the President

Welcome back to the 2011-2012 school year. I am Elizabeth Botzner from Cincinnati, Ohio and will be serving for the next two years as your President. This fall is a bittersweet one for me as I am newly retired and as school begins I feel the tug of the classroom. I envy all the lucky sponsors out there who are in the process of meeting new members and planning club activities. Fall is always hectic and one way you can save some time is to use the Teacher Resources on the Mu Alpha Theta National website (www.mualphatheta.org). The activities tab has "Math in a Box" with lots of great ideas for meetings and practices (and if you have any activities you like and want to share, send them to Kay Weiss so she can include them for other sponsors to use).

The 2011 National Convention held at the Embassy Suites Frisco Hotel and Convention Center was amazing. The hosts, Todd Taylor from Vestavia Hills High and Bonnie Campbell from Hoover High, did an outstanding job. Besides a week of challenging competition, participants enjoyed a daytrip to Six Flags over Texas. Sweepstakes winner for 2011 was Buchholz High School from Gainesville, Florida.

Congratulations to Kyle Julian from Vestavia Hills High School for winning the 2011 Kalin Award, the most prestigious student award given by Mu Alpha Theta.

Tom Norris from Thomas Jefferson High School was awarded the Huneke Distinguished Sponsor Award and Ziwei Lu from Buchholz High School was honored with the Sister Scholastica Most Committed Sponsor Award.

The 2012 National Convention will be held at the Boston Park Plaza Hotel, right off Boston Common, from July 8-13, 2012. If your school is new to the summer conventions, the Mu Alpha Theta Educational Foundation is offering Convention Grants worth \$3,000. See www.mualphatheta.org > *National Conventions* > *Attend Free* for more details on the convention and the grants.

Mu Alpha Theta sponsors two free contests for individuals and schools during the school year. The Log 1 Contest, <http://log1.wamath.net>, offers chapters three rounds of topic tests at the Mu, Alpha, and Theta levels. The Rocket City Math League, <http://www.rocketcitymath.org/>, is

open to everyone and has a team contest as well as three rounds for individuals. These contests are all done right at your school.

Mu Alpha Theta uses multiple methods to communicate with its 1800+ chapters and 89,000+ student members. This newsletter is one such method and contains not only news, but contact information and articles from other sponsors and student officers. (You can also see old newsletters archived at: <http://www.mualphatheta.org/Archives/NewsletterArchive.aspx>.) Remember to make sure you and your members read through each newsletter for offers and check our homepage often for updates. Also, make sure the National Office has your current email. It is important for sponsors and students to keep informed of what is going on with their Honor Society.

Online, you can find information about applying for our new Chapter Grants, (see details elsewhere in the newsletter). Students can apply for Summer/Research Grants, Scholarships, and Awards.

The next meeting of the Governing Council is in January 2012. If you have items that you think should be discussed, please don't hesitate to contact your regional governor, myself or Kay Weiss.

Have a great year,

Elizabeth Carol Retzner
Mu Alpha Theta President

Thank you to those who have served
Mu Alpha Theta:

Retired Sponsors:

- Hamilton Southeastern HS, Fishers, IN: Susan Wong, 14 yrs
- Huntington HS, Huntington, WV: Jim McGinnis, 38 yrs
- St. Dominic HS, Oyster Bay, NY: Frank Mammano
- Hampton HS, Hampton, VA: Ruth Hopson, 42 yrs
- Bartlett HS, Anchorage, AK: Sandra DeTerra
- Lowell Catholic HS, Lowell, MA: Thomas Doherty, 5 yrs
- Homewood-Flossmoor HS, Flossmoor, IL: David Brewczynski
- Gibbs HS, St. Petersburg, FL: Carol Grayson
- Winfield HS, Winfield, WV: Audrey Boley, 16 yrs
- Collins Hill HS, Suwanee, GA: Carol Cloud, 11 yrs
- Spaulding HS, Rochester, NH: Barry Smith, 30 yrs
- Parkway West Senior HS, Ballwin, MO: Mary Lee Vivian
- Port Chester HS, Port Chester, NY: Marian Fritzsche
- Jamestown HS, Williamsburg, VA: Linda Hite, 13 yrs
- Felix Varela Sr HS, Miami, FL: Libia Fonseca
- Salem HS, Salem, MO: Darlene Crocker
- Memorial HS, San Antonio, TX: Juan Silva, 15 yrs
- East Anchorage HS, Anchorage, AK: Carol Combs, 10 yrs
- Travis HS, Austin, TX: David Moll
- Lyman HS, Longwood, FL: Candice Dorsey
- Lyman HS, Longwood, FL: Susan Brown
- Norman HS, Norman, OK: Laniel Gibson, 30 yrs
- St. Louis Catholic HS, Lake Charles, LA: Charles Zebley
- Jack Britt HS, Fayetteville, NC: Mary Groening, 5 yrs

Sign up for the

Boston National Convention

The 42nd Annual Mu Alpha Theta
National Convention will be held

July 8 - 13, 2012

in Boston, MA at the Historic
Boston Park Plaza Hotel, right off
Boston Common.

Before April 1, 2012:

\$585 Early Registration

After April 1, 2012:

\$625 Regular Registration

All registration must be postmarked
by **May 15th**. Go to www.mualphatheta.org > *National
Convention* for more information!

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Add the *new* Mu Alpha Theta and Chi Alpha Mu pages to your favorites on Facebook. See you online!

National Office News

Another new school year has begun. What an exciting time for students and teachers alike. Mu Alpha Theta moves forward after another record breaking year. We finished the 2010-2011 school year with over 89,000 student members in over 1830 chapters, including schools in Belgium, China, Colombia, Great Britain, Japan, Malaysia, Poland, Puerto Rico, the Georgian Republic, Singapore, and South Korea. We provided more than \$140,000 in scholarships, grants, awards and prizes for our members, chapters and sponsors. Additionally, Mu Alpha Theta presented a Mathematics award to innovative Science Fair projects at fairs around the world, including \$3000 in awards to three top projects at the International Science and Engineering Fair in Los Angeles last May. We financially support both the AMC and USAMO contests, including providing book awards to the top scoring AMC 12 winners and the finalists of the USAMO competition. We also provide free copies of Maple Software to the top individual scorers in the ARML competitions.

Please alert your students to all our financial support opportunities, free math competitions, free TI Calculator and CAS software, and scholarship opportunities. There is so much more to Mu Alpha Theta membership than just a certificate and your name in the National Database as a member of our Mathematics Honor Society. This fall, we are offering Chapter Grants of up to \$1000 to help support your activities or math projects. See the criteria listed elsewhere in the newsletter.

As in the past, The National Office is typically staffed from 10:00 AM – 6:00 PM central time, Monday through Friday. The office will be closed on most major National holidays, including during Thanksgiving from Nov. 23 -25, and during the winter break from Dec 22 - Jan 4. We do not take a spring break, since this is usually our busiest time of the year. If you have orders needed before January 4, please make sure to get them to the office before December 22, so we can mail them before we close for the holidays.

Please note that we do not charge separate mailing or handling fees for your orders. However, we did institute an additional \$15 postage charge, should a school order four or more small orders in the same semester, to cover the additional costs we incur.

If you need an order expedited, we offer a set fee of \$15 for 2 Day FedEx delivery or \$25 for Overnight FedEx delivery. Expedited orders must be completed by 5 pm Central time to allow for pick up.

If you are joining us in Boston next July, please note the earlier dates for the convention and think about celebrating July 4th in Boston.

Need anything? Have some ideas to share? Just let us know and have a great school year!

Kay Weiss
Executive Director

National Convention Grants

Mu Alpha Theta will award a limited number of \$3000 Convention Grants to the 2012 Boston Convention. Each grant will cover free registration for a sponsor and three students, who must not have graduated before the convention. The remaining funds may be used for additional student registration costs or to reimburse travel expenses. To be eligible for a grant, a Mu Alpha Theta chapter cannot have attended a National Convention previously. No chapter that has already been awarded a grant may apply. The intent of the grant is to allow the teacher and students to see what our National Convention is all about. Only schools who have a math sponsor and three eligible students should fill out the application.

To apply, complete the application, which consists of the names of the applicants and two paragraphs about the activities your chapter has participated in during the past year. We also ask how attending the National Mu Alpha Theta Convention will benefit your chapter. Email the application by April 1st to matheta@ou.edu or snail mail to:

Mu Alpha Theta / National Convention Grant / University of Oklahoma / 601 Elm Ave, Room 1102 / Norman, OK 73019

Schools selected will be contacted before the end of April by phone and email. The only responsibility of the winners is to fill out a survey after the Convention regarding their experiences. Applying schools should be ready to submit enrollment information should they be selected. Winners of the grants are encouraged to bring more than three students. Additional attendees will be granted the early bird registration rate, as long as full payment for them is received by the May 15th deadline.

Free Texas Instrument Calculators!

Mu Alpha Theta purchased a number of TI-84 Plus and TI-89 Titanium graphing calculators to give away. We will provide up to three calculators to a school to give away as prizes at competitions you are running. Sponsors may also give calculators as prizes to their own outstanding students as a reward or auction them off to raise money for their club. Preference will be given to schools that have never received free calculators in the past. If you want some, email Kay Weiss with your request today at matheta@ou.edu!

Free Hard Problems DVD!

Mu Alpha Theta is offering a free copy of the DVD Hard Problems to any active chapter requesting one. Hard Problems is a feature documentary about the extraordinarily gifted students who represented the United States in 2006 at the world's toughest math competition - the International Mathematical Olympiad (IMO). One DVD per chapter while supplies last.

Congratulations to our 2011 Award Winners!

- High School Andree Award presented to **Rebekah Rose**
Lake Highlands High School in Dallas, TX
- College Andree Award presented to **Shelby Robinson**, University of Arkansas
Former member at Cabot HS in Cabot, AR
- Rubin Award presented to **Thomas Jefferson High School** in Auburn, WA
- Sister Scholastica Award presented to **Ziwei Lu**
Buchholz High School in Gainesville, FL
- Huneke Award presented to **Tom Norris**
Thomas Jefferson High School in Auburn, WA
- Kalin Award presented to **Kyle Julian**
Vestavia Hills High School in Vestavia Hills, AL
- National Convention Sweepstakes Winner **Buchholz High School** in Gainesville, FL

Guidelines for Mu Alpha Theta Chapters on Social Networking Sites

It has come to the attention of the Mu Alpha Theta Governing Council that a number of chapters have established groups, pages, or other accounts on social networking sites such as MySpace, Facebook, Twitter, etc. The Council accepts the fact that these pages exist and even encourages other chapters to follow suit. Chapters that have such accounts are using them to distribute information, have open discussions of mathematical topics, and even promote Mu Alpha Theta on the internet.

However, many of the pages that exist on these sites use the Mu Alpha Theta name and logo, but are not necessarily established by one of our chapters. For example, on Facebook, when Mu Alpha Theta is typed into their search engine, more than 30 pages come up that are simply called Mu Alpha Theta. In reading each of those 30 plus pages, some have been set up by chapters, some have not, and the origin of the rest of the pages is unclear. Beyond those 30 pages, other chapter sites are found that are more obviously created by one of our chapters.

Therefore, the Governing Council would like to suggest the following guidelines for use of social networking sites. These guidelines are designed to help avoid confusion about the origin of Mu Alpha Theta related pages on networking sites, and to protect the integrity of the name and copyrighted logo of Mu Alpha Theta.

- Only an active chapter of Mu Alpha Theta may establish a page or account on a social networking site using the name "Mu Alpha Theta" and our logo as part of the page.
- Please include the name of your school at the beginning of the title, for example "John Smith High School Mu Alpha Theta."

Note: If you currently have a page, we ask that you change the title of your page to include the school's name as described above.

- Because students graduate and personnel changes, the chapter sponsor or another adult **MUST** be an administrator. If a sponsor change occurs in a chapter, the new sponsor must be added to as an administrator when the old sponsor is removed or the page needs to be deleted. This will ensure that another set of eyes is reviewing posted content.

A member of the Governing Council will be contacting administrators wherein the origin of the page or other social media is unclear in an effort to help clear up and enhance the presence of Mu Alpha Theta on the internet.

National Governing Council Election

This spring, Mu Alpha Theta Chapters will vote on a President-Elect and a new Governor for Region 1 and Region 2. Each office is a four year commitment. The President-Elect serves one year in that position, two years as President, and one year as Past-President. Each chapter has a single vote. **YOUR VOTE AND INPUT ARE EXTREMELY IMPORTANT TO MU ALPHA THETA!**

Once elected, members of the Governing Council attend two meetings a year. The winter meeting in January or February is usually held in Dallas, TX or Norman, OK at the National Office. The summer meeting is held prior to and during the first days of the summer National Convention. Governing Council members are reimbursed for travel expenses, receive per diem and free registration at the National Convention during their term.

We would love to have volunteers for these national offices. If you are interested or you wish to nominate someone, please email the name and a brief VITA to the Nominating Committee headed by Past-President Tom Tosch, tomtosch@comcast.net. The Nominating Committee is responsible for selecting candidates. See the National Constitution for other duty information before submitting a name. If you are nominating someone, please make sure they have agreed to run prior to submitting their name. Self nominations are allowed, but not all names suggested may appear on the ballot, depending on background and experience in Mu Alpha Theta.

SPONSORS

New Chapter Grants

The Governing Council of Mu Alpha Theta has voted to set aside \$20,000 in the 2011 budget to provide Chapter Grants. A grant will provide up to \$1000 to reimburse expenses. No chapter will be granted more than \$1000 over time, should the grant program be continued in future years, but a chapter may apply more than once, if they have not reached their \$1000 limit. Grants will be competitive and not all grant requests may be funded.

Grant funds may be used to support events that stimulate an interest in mathematics. A chapter might use funds to pay a speaker's honorarium to bring someone special to the school. Funds may be used by a chapter hosting a competition to purchase awards, pay for testing, food, etc. If the event is put on as a fundraiser, however, the money will only be granted to offset a loss or to reduce participant costs. (Documentation of prior and current year charges would be required to show the decrease in expense to participants.) If this is your first year to host an event, we will provide support, should you have expenses not covered by other sources.

Funds may also be used to support a club activity for its members where extra funding might be needed. The chapter would submit expected costs when requesting funding and submit receipts for the reimbursement. Grant money is not specifically intended to send students to state, regional, or national math competitions, but such expenses will be considered. Funding will NOT be granted for Mu Alpha Theta competitions or State Mu Alpha Theta sponsored competitions. Funds will be provided for other purposes, not mentioned here, depending on the rationale for requested funds.

Free Mathematica Software!

Mu Alpha Theta has free copies of the computer algebra system Mathematica that it will award to a maximum of three students per active chapter. Students should be studying Calculus to receive a copy. To request copies, sponsors may email matheta@ou.edu with the names and email addresses of the students. The Mathematica software is a downloadable file and the license is good for one school year.

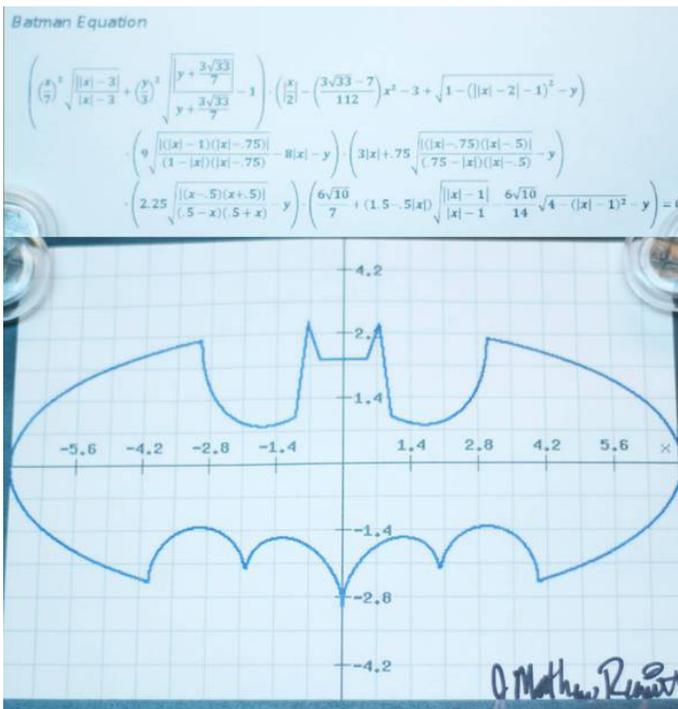


Looking for a gift for your members? Our tassel is an excellent option! Members can display it on their lockers, backpacks, or at home.

Mu Alpha Theta also has other merchandise available. To see a complete list, go to www.mualphatheta.org > Teacher's Resources > Merchandise.

Mathematics and Superheroes?

Check out this math teacher's fun equation posted by a student online at reddit.com:



http://www.reddit.com/r/pics/comments/j2qjc/do_you_like_batman_do_you_like_math_my_math/

Chapter News

Mu Alpha Theta Members Take Top Prizes in Moody's Mega Math Challenge 2011

The winning team of this year's Moody's Mega Math Challenge was from Pine View School in Osprey, FL. The five Mu Alpha Theta team members, Caroline Bowman, Patrick Braga, Anthony Grebe, Alex Kiefer, and Jason Oettinger, were awarded the top prize of \$20,000. This was the school's first time ever competing in the Challenge.

The Moody's Mega Math Challenge is an Internet-based applied math contest organized by the Society for Industrial and Applied Mathematics, SIAM. \$100,000 in scholarship prizes are awarded to winning teams by The Moody's Foundation. Over 2,500 students in the 18 states along the East Coast competed this year.

"It was awesome. We are still sort of in shock, I think," said Pine View's Caroline Bowman, describing the moment the award was announced. "It was such a mix of feelings – of course, you're nervous, you want to compete at the top, but at the same time you're thinking you're already in the top six so you cannot be unhappy, no matter what."

"It was a great experience overall because it gave us the opportunity to work with a real-world problem—to do something that real analysts would do," said teammate Jason Oettinger. "I have participated in other projects that work with math, but nothing to this scale."

Also among the top six teams competing in the final round were Mu Alpha Theta members from T.R. Robinson High School (Tampa, FL) and Eastside High School (Gainesville, FL). Robinson took the Fourth Place award of \$7500 and Eastside took Fifth Place with \$5000.

For more information, go to <http://m3challenge.siam.org/>.

SOURCE: SIAM's News Release April 29, 2011

Mu Alpha Theta Members Take Bronze Medals at the 2011 China Girls Math Olympiad.

Haotian (Tiffany) Wu, a junior at Clements High School in Sugar Land, TX, and Elaine Hou, a sophomore at King High School in Tampa, FL, competed this past summer in the 2011 China Girls Math Olympiad, CGMO, held on July 28 - Aug 3, 2011, in Shenzhen, near Hong Kong in Southern China's Guangdong Province.

The team spent three weeks preparing for the competition at the Mathematical Olympiad Summer Program (MOSP) offered by the MAA on the campus of the University of Nebraska, at Lincoln. The USA Math Olympiad Team also prepares at the program.

"The MAA is extremely pleased to see these outstanding results," said Steve Dunbar, Director of the American Mathematics Competitions and Governing Council member of Mu Alpha Theta. "Our selection process through the USA Math Olympiad and Junior Math Olympiad is rigorous, and the training at the Mathematical Olympiad Summer Program (MOSP) is equally rigorous. The medals won by the girls show that U.S. students are very capable of meeting all these challenges."

The CGMO started in 2002 as a competition for girls in China, but has expanded to include teams from around the world. This is the fifth year in a row that Mathematical Sciences Research Institute (MSRI), in partnership with the Mathematical Association of American, has sponsored the U.S. team.

Zuming Feng served as coach assisted by Inna Zakharevich (MIT) and Maria Monks (UC Berkeley). Feng, who teaches at Phillips Exeter Academy, is the Director of MOSP and has coached the U.S. team at the International Mathematical Olympiad (IMO) since 2003.

SOURCE: MSRI Press Release August 4, 2011

Chance for your student and department to win up to \$5000!

Check out the Who Wants to Be a Mathematician National Contest conducted by the American Mathematical Society. This contest is open to high school students, including homeschoolers, and there is no fee to participate. The top 10 final contestants will win prizes, cash for themselves, and cash for your department (the minimum cash prize is \$500 for the student and \$500 for the department). The top prize is \$5000 for the winning student and \$5000 for the math department of that student's school.

The 2012 contest will take place Friday, Jan 6 at the Hynes Convention Center in Boston. The event is part of the Joint Mathematics Meetings, which take place January 4-7, 2012. The AMS will reimburse reasonable travel expenses and room and board for each contestant and a parent/guardian for a maximum of two nights.

Contestants are chosen based on their scores on a qualifying test, administered by teachers (or in the case of home-schooled students, by whomever does the teaching at home). Request a qualifying test by emailing the AMS Public Awareness Office, paoffice@ams.org, with the subject line "National Math Contest." In the body of the message, include your name, school, contact information, and courses taught this year.

The deadline for receipt of tests is Wednesday, Oct 19. The AMS will select 10 contestants from different regions of the US and will notify those qualifiers beginning Friday, Oct 21.

See more about the contest at <http://www.ams.org/programs/students/wwtbam/wwtbamnational>. There is also a link to this contest and others at <http://www.mualphatheta.org/Contests/national.aspx>.

SOURCE: AMS Public Awareness Email

Science and Engineering Fairs

Have your members participate in a local or regional Science and Engineering Fair this year. Mu Alpha Theta continues its ongoing support of a special "Mu Alpha Theta Award" at these regional and international competitions. It provides \$3000 in cash awards each year at the Intel International Science and Engineering Fair in May and provides judges to the event.

The Mu Alpha Theta Award is given to the most challenging, thorough, and creative investigation of a problem involving mathematics accessible to high school students. Components of the investigation may include, but are not limited to, mathematical proof, mathematical modeling, statistical analysis, visualization, simulation, and approximation.

The 2011 Internation Science Fair Award Winners were:

Matthew Russel Bauerle

Bauerle Home School, Fenton, MI

He won a \$1000 prize for his project: Reformulating the Newton Direction Computation as a Linear Least Squares Problem for Smoothed Overdetermined L1 Functionals.

Aishwarya Amanda Vardhana

Jesuit High School in Portland, OR

She won a \$1000 prize for her project: A Novel Implementation of the Elliptic Curve Method, Stage 2: Using Weierstrass and Edwards Elliptic Curves for Faster Factorization.

John Tilla Parish IV

Home School in Colorado Springs, CO

He won a \$1000 prize for his project: On the Verge of Where It Wasn't: A Multiple Model Approach to Estimation and Tracking Using Extended Kalman Filtering and Intelligent Selection of Integrated Models.

Thank you for all you do and for helping us to serve you better!!

CONTESTS & COMPETITIONS

Actuarial Foundation's Project Math Minds

Seeking Students for the 2012 Project Math Minds Scholarship Competition!

Introduce your students to the world of actuarial math and give them the opportunity to receive as much as \$5,000 in scholarship awards. The Actuarial Foundation is seeking Mu Alpha Theta high school students to participate in the 2012 Project Math Minds scholarship competition!

In Project Math Minds, students use mathematics to solve problems that an actuary might address on the job. This year's competition calls on students to use the math of debt, interest rates, and economics to estimate the costs of going to college versus the financial return after leaving college. The top project will be eligible for a \$5,000 scholarship. 2nd and 3rd place scholarships between \$1,000 and \$4,000 may also be awarded.

Encourage your students to participate in the 2012 Project Math Minds scholarship competition! Go to www.actuarialfoundation.org/programs/youth/MuAlphaThetaProject.shtml for instructions, rules, data, and guidelines for submissions.

Projects must be postmarked by **February 1, 2012** and volunteer actuaries are available to help. Winners will be announced by April 1, 2012.

Rocket City Math League

The RCML is a free, year-long, international math contest open to all middle, high school, and two-year college students enrolled in Pre-Algebra through Calculus and above math courses. It is administered by the students at Grissom High School in Huntsville, AL supported by a grant from Mu Alpha Theta.

Participants are placed into one of five divisions based on the level of math courses in which they are enrolled. Each division will be given three, 12 question tests lasting 45 minutes. A two-level, interschool team test is also available. Tests are sent to registered schools via email before each round, and scores are entered into an online database. Trophies are mailed to the top-ranked students and schools at the end of the year. Mu Alpha Theta also provides other prizes, as well, including copies of *Mathematica*, the DVD *Hard Problems*, and TI graphing calculators. Testing dates for the 2011-2012 competition are:

- **Interschool Test: Oct 31 – Nov 14, 2011**
- **Round One: Jan 16 – 27, 2012**
- **Round Two: Feb 13 – 24, 2012**
- **Round Three: March 12 – 23, 2012**

Register at www.rocketcitymath.org. For more info, visit our website at www.mualphatheta.org > Contests > Rocket City.

AMC

AMC 8: November 15, 2011

(Standard Registration Deadline: Oct 8, 2011, Express Registration Deadline Oct 30, Expedited Registration Deadline: Nov 5)

AMC 10A/AMC 12 A: February 7, 2012

(Standard Registration Deadline: Dec 17, 2011, Express Registration Deadline Jan 14, Expedited Registration Deadline: Jan 31)

AMC 10 B/AMC 12 B: February 22, 2012

(Express Registration Deadline Feb 1, Expedited Registration Deadline: Feb 15)

AIME I: March 15, 2012

AIME II (Alternate): March 28, 2012

USAMO: April 24-25, 2012

Log 1 Contest

This is an excellent opportunity for schools to participate in a mathematics competition similar to our National Convention contests. Schools compete against other schools from across the country and the world, while staying right at their own school.

The 2011-2012 Log 1 Contest will be run by Mount Rainier HS Math Team in Des Moines, WA. The contest will consist of three rounds. In the first two rounds, students take one of two tests. The first round tests cover: Circle/Polygons/Pi or Equations/Inequalities and will be available for download on **Dec 1, 2011**. Each Topic Test will consist of fifteen open-answer problems to be solved without a calculator in thirty minutes. The second round tests are Number Theory or Applications and will be available for download on **Jan 1, 2012**. The third round is an Individual test of general mathematics knowledge and will be available for download on **Feb 1, 2012**. Problems will range from easy to difficult, to provide confidence and challenges to all students.

The top ten individuals in each division in each region will receive a plaque and the next fifteen will receive a certificate. The top ten schools in each region will receive a plaque. The Mu Alpha Theta Educational Foundation will provide the following cash awards to the top three schools in each region: \$1000 for first place, \$750 for second place, and \$500 for third place. Other prizes will be awarded randomly to participating schools.

To register or for information, see <http://log1.wamath.net>.

Purple Comet! Math Meet

This is an annual, free, online, international team mathematics competition for middle school and high school students. Team registration begins Feb 1, 2012 and the competition will take place **April 17-26, 2012**.

For more information, go to <http://purplecomet.org/>.

STUDENTS

National Student Delegate Officers:

President
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dkang55@gmail.com

Vice President
Yue Sha
Region II
Baton Rouge HS
Baton Rouge, LA
sandishappy@gmail.com

Secretary/Treasurer
Andrew Tang
Region III
Jefferson County IB
Birmingham, AL
JCIBtang@gmail.com

Parliamentarian
Chloe Choe
Region I
Thomas Jefferson HS
Auburn, WA
chloechoe3@yahoo.com

Message from your Student Delegate President

Hello everyone,

Last July's National Convention in Dallas was filled with unforgettable experiences. Although we nervously waited outside the doors every morning to take our tests, we spent the rest of our time with people who shared our same interests and our passion for math.

At the convention, I got to know the students who will serve as this year's student delegate officers. Yue Sha, from Baton Rouge Magnet High School in LA, is our Vice President; Andrew Tang, from Jefferson County IB School in AL, is our Secretary; and Chloe Choe, from Thomas Jefferson High School in WA, is our Parliamentarian. From our first meetings together, we have discussed ideas for the next National Convention in Boston, and we have been thinking about how to serve the interests of the students of Mu Alpha Theta.

Our primary goals for next year's convention are to increase participation, have more interactive speaker sessions, and think about possible new tests and competitions. We are eager to make the next National Convention, as well as future conventions, better and more exciting than ever before.

As the school year progresses, I encourage you to stay actively involved in Mu Alpha Theta as an organization. We also hope you will all be able to attend the National Convention in Boston. It is always exciting to see friends we met at past conventions the next summer, as well as to see many new faces. I am sure that everyone, new or experienced, will find attending extremely meaningful and rewarding.

Daniel Kang
Student Delegate President

Go online to www.mualphatheta.org for more opportunities like this one!

Mu Alpha Theta Scholarships

Mu Alpha Theta will award up to twenty \$4000 scholarships this year. Any graduating high school senior or two-year college student who is an active member of a current Mu Alpha Theta chapter is eligible. The nominee should be an outstanding mathematics student and should have shown loyalty and dedication to their Mu Alpha Theta chapter, enthusiastically participating in local projects with evidence of service in the area of mathematics. **Each chapter may submit applications for up to three active, student members.** It is up to the chapter sponsor to determine what names to submit, if more than three students wish to apply. One Mu Alpha Theta Scholarship has been designated as the Mary Rhein Memorial Scholarship. The most outstanding student selected for a Mu Alpha Theta Scholarship will be designated as the winner of the Mary Rhein Memorial Scholarship and will receive an additional \$1000. In addition to the qualifications above, this student will also have participated in local, regional and national mathematics competitions with distinction. Members may apply for these scholarships by downloading the application from the scholarship link at www.mualphatheta.org. **The application must be postmarked before March 1, 2012.** Furthermore, as of a decision made by the Governing Council this July, Mu Alpha Theta will now allow funds to be used within the first 18 months from the date the scholarship was awarded.

Summer Grant Experiences

Each year, Mu Alpha Theta offers Summer Grants of up to \$2000 for full members to work on a mathematical research project or attend a summer mathematics course not available at their high school or two-year college. Would you like to participate in a program like those described below? Here are reports from two of this year's recipients:

John C. Deeble from Fontainebleau High School in Mandeville, LA attended MathWorks/San Marcos, TX.

John's Program Comments: "Mathworks Honor's Seminar Math Camp was a refreshing delve into the less-learned subject of Number Theory. The coursework was challenging and we moved quickly. It was a radically different style of learning mathematics than school work for a couple of reasons. First, we came up with everything that was taught, before it was taught, in "study groups" where we were asked probing questions that forced us to the conclusions or "theorems" that would be reviewed the next day. Second, there was more of a focus on proofs than applications. If we wanted to use any property of mathematics, it had to be proven or introduced axiomatically first. Initially this was frustrating as I did not want to spend any amount of time proving things that seemed obvious, for example $0 \cdot n = 0$ or $1 \cdot n = n$. However I realized that these proofs offer a feeling of closure, as if now I can feel like I truly know why Math works at the most basic level. The concepts were not basic for long; it became increasingly challenging as we worked towards the principle of quadratic reciprocity and the explanation behind RSA encryption.

In addition to the study groups we learned Mathematica. We designed programs that would express any number as a continued fraction, and programs that could create linear combinations of two integers such that the linear combinations would be equivalent to the greatest common denominator of the two integers. One of the benefits of this course in Mathematica was that at the end of the camp, we all got student editions of Mathematica.

All in all, it was a valuable learning experience and I am very grateful for the Mu Alpha Theta scholarship which allowed me to attend."

Hayley Sypniewski from Mt. Notre Dame High School in Cincinnati, OH attended Ross Mathematics.

Hayley's Program Comments: "The Ross Mathematics Program at OSU was an amazing experience. The program focused on number theory, but, as opposed to a traditional educational experience, much of the learning done was based around personal discovery. Instead of being taught number theory and having proofs given to me, the Ross program required that I discover for myself why many things in mathematics, that I might have taken for granted, are true. The Ross Program not only challenged me to work harder than any previous program or class, but it also made me develop a deeper appreciation of the formulas and equations I used on a daily basis in my high school classroom. This definitely follows the Ross Program's motto 'think deeply of simple things' as by the time I finished my first week of the program I realized that nothing was as simple as it seemed. Starting with basic axioms such as additive identity, multiplication, addition, etc, students constructed proofs of why $a|a$ and why $a > b \wedge b > c \Rightarrow a > c$. The true beauty of the program rested in how, by the time the program ended, these basic proofs had built on top of each other to prove less obvious conjectures such as quadratic reciprocity, Pell's equation, and Mobius inversion.

At the end of the program, not only did all of us learn about number theory, but we also formed really strong friendships. After working hard for eight weeks to prove up to 31 sets worth of proofs, camaraderie arose amongst the first years, junior counselors, and counselors which created a really powerful sense of community. We all knew how it felt to be stuck on a set or to feel disappointed when we received a redo on a proof we thought was legitimately correct. By the end of the first few weeks of the program, I had already become really good friends with people from all over not just America but also the world. The people I met at Ross were not only the smartest group of people I've known, but also the most interesting. Everyone had talents and personalities which contributed to the Ross community and all of these personalities blended together to create an environment where there was never a dull moment even during a busy day of work.

I would definitely recommend this program to anyone with a strong interest in mathematics. This program not only exposed me to why many things in math work, but it also changed the way that I looked at much of the world. The Ross Mathematics Program taught me to stop thinking 'this is true,' but rather to question why this is true and to develop a deeper understanding of the things around me."



Thank you to all Mu Alpha Theta chapters who participated in Study Buddy last year! This year Study Buddy tutoring will commence on **September 12, 2011**. Tutors who were enrolled in the program last year should have received an email inviting them to re-activate their account for the new school year.

Study Buddy is a cutting edge web based online peer-to-peer tutoring program designed to address low math scores of underperforming middle and high school students. This homework assistance program utilizes the latest interactive, collaborative technology to bring students from different locations across the country together for online math homework help. Study Buddy relies solely on volunteers like you to help struggling students.

Convenience – Volunteering from your computer after school or at home, in the evening and/or on the weekend, the ability to schedule yourself in half hour segments and having the flexibility to choose when you wish to help makes Study Buddy an easy volunteer option.

Students – As a Mu Alpha Theta high school member, you will be paired with students who are struggling and may not otherwise have access to a tutor due to economic and/or geographic reasons. Student tutors commit to tutoring one hour per month. Your participation will be tracked by software and will serve as community service credit hours. Your unique tutor log book tracks your community service hours and saves your tutoring sessions automatically. Starting this year, you now have the ability to print out a summary of your volunteer community service hours at any time to turn into your teacher sponsor for credit.

Teachers - We encourage you to enroll your Mu Alpha Theta members in Study Buddy and can do so with minimal effort! Detailed reports of tutor activity will enable you to monitor your students' participation in the program.

2012 Mu Alpha Theta Convention Grant – Study Buddy is proud to announce the second annual Mu Alpha Theta Convention Grant. NSTEP will provide up to \$3000 to cover costs to the Mu Alpha Theta National Convention in Boston, MA for three students and their teacher sponsor from one school. All chapters participating in Study Buddy are eligible to compete for this grant. Please inform NSTEP of your interest in attending under the Convention Grant in order to be considered. Congratulations to Mountain Pointe High School in Phoenix, Arizona, winner of the 2011 Convention Grant!

NSTEP welcomes inquiries from both teachers and students. Please email them directly at gmartin@nstep-online.org with questions about how you can integrate Study Buddy into your classroom or Mu Alpha Theta chapter! For additional information, please visit <http://www.studybuddyhelp.org>. Tutor registration is already underway!

Congratulations to the 2011 Scholarship Winners!

Mary Rhein Scholarship:

Katharine M. Daly, of Palos Verdes Peninsula High School in Rolling Hills Estates, CA, will be attending MIT in Cambridge, MA this year.

Mu Alpha Theta Scholarships:

Dalton J. Allan - MIT
Ryan M. Breaud - Mississippi State University
Daniel T. Cooper - Harvard University
Austin W. Davis - Carnegie Mellon University
Francis Jordan Gaspay - University of Washington
Jacob S. Geiger - Yale University
Kathryn A. Gertz - MIT
Hansol Kang - MIT
Jonathan F. Li - Harvard University
Sean M. Messenger - Harvey Mudd College

Tyler P. Morrison - Harvard University
Rodrigo Paniza - MIT
Victoria S. Png - Duke University
Daniel S. Romero - University of Florida
Alexander J. W. Sappington - Princeton University
David K. Tang-Quan - Harvard University
Neil D. Vijapura - Florida State University
Samuel A. Yang - University of Pennsylvania
David T. Zhang - Harvard University
William T. Zhang - Harvard University