

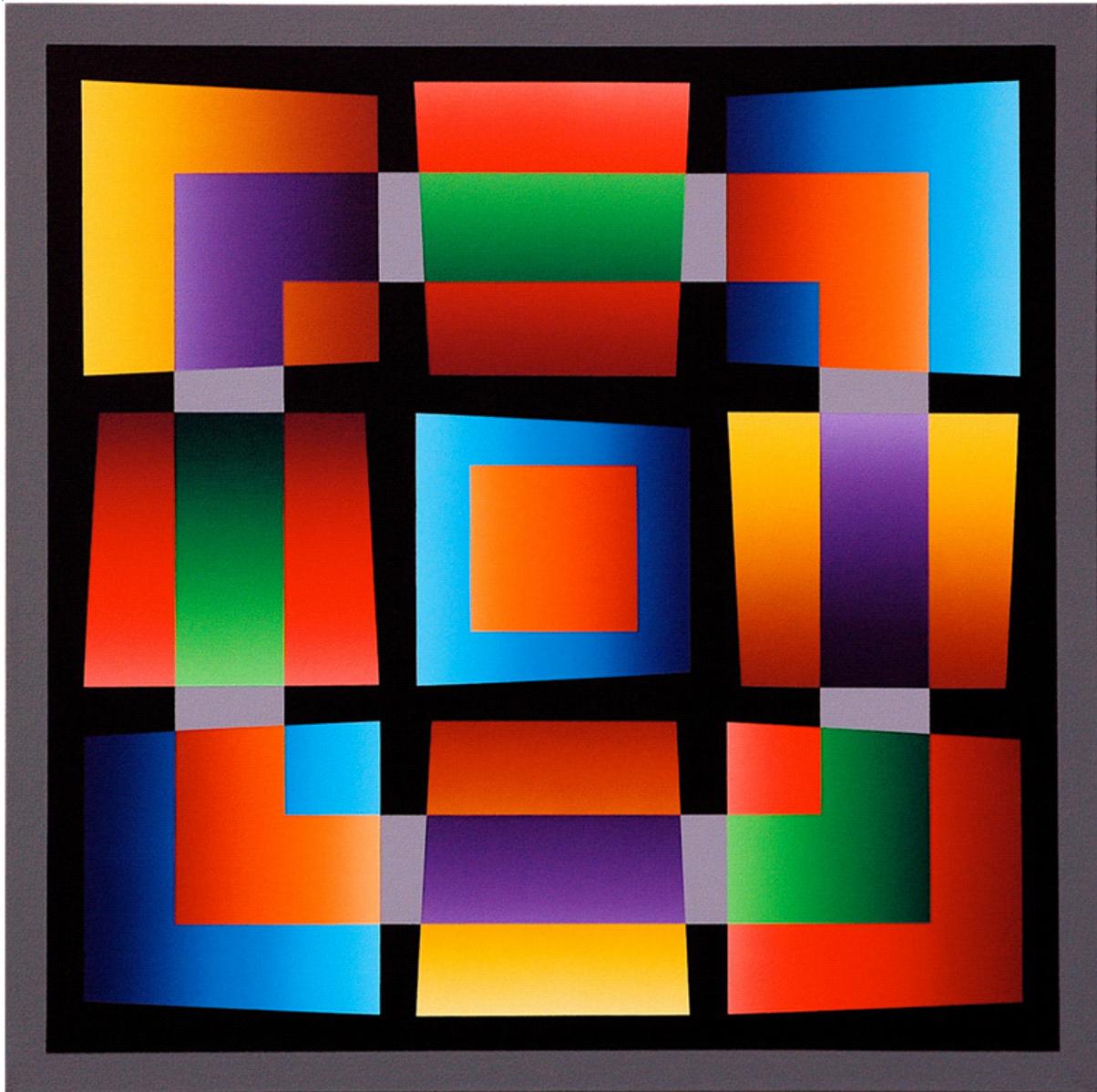


eREFLECTIONS

eREFLECTIONS

**Vol IV
No. 3
Summer
2014**

Publication of the Georgia Council of Teachers of Mathematics



*Used by permission. © Francis Tansey.
Visit www.francistansey.com to see more.*

eREFLECTIONS is a publication of the Georgia Council of Teachers of Mathematics
PO Box 5865, Augusta, GA 30916
1-855-ASK-GCTM



REFLECTIONS

Links to Contents

From the President's Pen by Dan Funsch	3
2014 Mathematics Summer Academies	5
The "S" in STEM Isn't Just for Science by Kimberly Wills	6
Announcement from the GDOE	8
GCTM State Math Tournament News by Chuck Garner	9
10 Tips for Motivating Reluctant Learners	10
GCTM Middle School Math Tournament News by Chuck Garner	11
What Can I Do About Student Engagement and Accountability in My Classroom? by Michelle Mikes	12
Get Ready, and Get Set during the Summer, and Go for a New School Year! by Bonnie Angel and Kristi Caissie	14
Do You Pecha Kucha? by Cheryl Hughes	16
Georgia ARML Team Earns Eighth Place in Nation by Chuck Garner	19

From the President's Pen

School's out!
I hope that 2013-2014 was a great year for you and your students. As it does for our students, the summer seems to pass all too quickly and, before we know it, a new year beckons.

My hope is that during this summer you are able to take time to spend with family and friends to renew and revive those essential relationships that provide reason and meaning to our work during the school year.

Even though school may be out and our classrooms empty for a spell, GCTM continues its work throughout the summer on your behalf. Let me mention just a few things:

- With support from GCTM, the Georgia Department of Education has taken the lead to plan and administer the 2014 Summer Mathematics Academy. Unlike past summers, this professional development opportunity is being offered to Georgia teachers principally through existing LEA's. GCTM has, however, arranged to have seats in each session set aside for GCTM members who are not employed in the public sector. If you are a GCTM member and have not been able to secure a spot through your system, contact GCTM's Academy Director, Peggy Pool, via the "interest form" on the Academies tab of the gctm.org website.
- Recently, GCTM surveyed its membership with regards to their experiences with and attitudes toward the Common Core Georgia Performance Standards (CCGPS). I am thankful to the many of you across the state who took time to respond. Your responses will shape the direction and scope of our advocacy efforts for the coming year.
- One of the benefits of GCTM membership is a level of advocacy that GCTM can provide which



Dan Funsch
President

is difficult for individuals to achieve. Our March 2014 Math Day at the Capitol provided GCTM with opportunities to interact with members of the General Assembly regarding the real pros and cons of CCGPS. These exchanges have continued over the last months, bringing the voice of GCTM members to our legislators.

- Both as an organization and as individual members, GCTM should not sit on the sidelines of our political world. GCTM will never advocate for a particular candidate but will diligently work to support good legislation and policy. As a member-based organization, GCTM acts as an information hub. It represents your views to the General Assembly and, in a complementary manner, provides timely information to you about political issues. An example of this will occur on Thursday, October 16 at The Georgia Mathematics Conference when GCTM will host the candidates for State Superintendent of Education for a round-table discussion at Rock Eagle. We hope that this will provide our membership a direct opportunity to hear the candidates speak to the issues that directly impact our work.
- During this summer I urge you to spend some time browsing the GCTM web site. You will find information about this year's GMC at Rock Eagle, Oct 15-17, 2014. Also you might want to take time to look through archived issues of eReflections for ideas and articles that your might have overlooked earlier.

I would be remiss if I did not encourage you to take a few minutes this summer to submit nomination(s) for one or more GCTM awards. Colleagues in your schools, supporters from outside the profession, and mathematics education folks have each their own category of awards. Your nomination is a way to pay back the debt you owe to those who inspire and support you. Information about the awards and the nomination process is available under the Awards tab on gctm.org.

Lastly, be sure to take some time for personal relaxation with family and friends. It's a great way to rejuvenate your spirit.



eREFLECTIONS



Susan Craig
Membership Director

HELP!

At the end of a busy academic year one is prone to reflection - what is good...what can be better?

Would you take a moment to do so with me? It seems funding, teacher expectations, and other factors have taken their toll on GCTM membership. From nearly 3000 members a few years ago we are at about 2300.

Over the last few years we have offered free membership to the Georgia Mathematics Conference attendees, in hopes all would see the value of membership in our wonderful organization, and renew, even if you must fund renewal yourself. \$20 is money out of your pocket, but, these days, approaches the cost of a meal at the drive through burger stop. The perks are probably more intangible than not, but there are wonderful advantages to having a resource such as GCTM to support you and your students as you teach each day in your classroom.

It would seem membership numbers would be up with the many activities GCTM has initiated and supported the last few years. The Summer Academies were very successful and attended in large part by nonmembers. Yet only a tiny percentage joined GCTM as a result. Most everyone sings praises of the conference at Rock Eagle. The eREFLECTIONS journal is exceptional in supporting you. Yet membership numbers are down.

We want to know what GCTM can do for you. What can the organization offer you that would make careerlong membership more inviting, what can we do better?

I met a teacher at Rock Eagle last year who had taught for 24 years and had never heard of GCTM and the annual conference. How can we change that? Please [email me](#) your suggestions and ideas. We want to hear from you!

GCTM is its membership! We need you! Please introduce us to your colleagues.

Thanks for you help! Have a wonderful summer!

Why join GCTM?

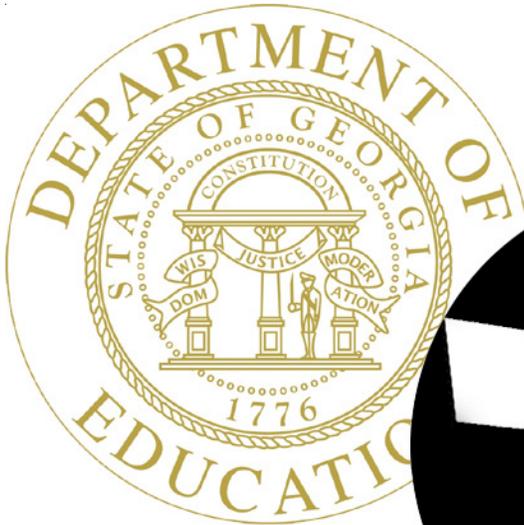
Latest and greatest resources!

Professional development opportunities

Support to help me be a better teacher!

Sharing ideas with others!

2014 Mathematics Summer Academies



The Georgia Department of Education will host the 2014 Summer Academies *"Sowing the Seeds: Growing Mathematical Content Understanding"* at seven locations across the state. There will be 15 grade level/course sessions at each site: Kindergarten, Grade 1, Grade 2, Grade 3, Grade 4, Grade 5, Grade 6, Grade 7, Grade 8, Coordinate Algebra, Analytic Geometry, Advanced Algebra, Pre-Calculus, Statistical Reasoning, and AMDM. Each session will be the same at each of the seven locations.

Public school teachers interested in attending should contact their district to become registered. Teachers from private schools, home schools, pre-service teachers, and teachers unable to register through their school districts will have an opportunity to register for a limited number of seats through GCTM's website under "Academies" in April.

Visit our [website](#) for up-to-date information on the academies.

Academy Dates	Academy Locations
June 3 & 4	Tucker High School, DeKalb County
June 10 & 11	Lee County Middle School - West Campus, Lee County
June 17 & 18	Adairsville Middle School, Bartow County
June 24 & 25	Spalding High School, Spalding County
July 8 & 9	Swainsboro High School, Emanuel County
July 15 & 16	Ware County High School, Ware County
July 22 & 23	Chestatee High School, Hall County



REFLECTIONS

The "S" in STEM Isn't Just for Science

By Kimberly Wills

Have you ever thought about hosting a full-day STEM experience, but thought of a short STEM night or MATH night as a large feat in itself? Sometimes, the simple question "Where to start?" can cause enough anxiety to derail your STEM team's plans. However, I have learned that the letters in STEM not only stand for the obvious "Science, Technology, Engineering, and Mathematics," but, when planning an engaging and informative full-day STEM experience for your students, please know that the acronym STEM stands for System, Teamwork, Ingenious, and Manage.

The "S" appropriately stands for system, which refers to the "whole body." The first step to hosting a successful STEM Day is to communicate with everyone in your school's system. Now, you might think I'm only talking about the faculty, staff, and parents from your school, but in actuality those people are only a part of your school's system. To make your STEM Day a success, you will need to reach out to everyone in your community. Here in Augusta and the surrounding region, we have access to Plant Vogtle, the Savannah River Site, Westinghouse, Southern Company, and several other large science, manufacturing, and technology companies. There are also several colleges, such as Georgia Regents



Georgia

University and University of Georgia that have students that require community outreach services, such as pharmaceutical and

nursing residents. Don't count out high school students, either. High school students taking AP biology, engineering, and nursing courses would find this opportunity great for their portfolio.

To call and just ask for help would probably get you nowhere, so ask for the educational specialist or manager at these businesses. I also recommend contacting local educational groups that offer students extracurricular workshops. One local group, based in Augusta, is Bricks4kids. They focus on engineering standards and use Legos to communicate the

engineering principles to young children. The CSRA Makers, another local group, provides youth classes focused on technology at their trendy location called "The Clubhouse." In communicating with volunteers, groups, and businesses, make sure you provide the following information:



- Date of event
- Purpose of the event and expectations
- Time frame (ex. 9am to 12pm or 12pm to 3 pm)
- Grade level(s)

I have found that simply doing these four simple steps will boost participation within the community and involvement with local groups and businesses.

The "T" may also stand for "teamwork" because it will take a team for this day to run efficiently. The ideal team size is no more than four to five people, but definitely no less than three. It should include a school administrator to ensure all activities and plans are approved during the planning phase. Organizing time slots and speakers takes more than just one set of eyes; it needs to be reviewed by at least one member of the grade level team, such as the team captain. The team must be prepared to determine:

- How will the day flow? Will there be an assembly or kickoff or End of day celebration?
- How many speakers needed? What length of time will be given to each speaker?

The "S" in STEM Isn't Just for Science *cont.*

- Expectations of speakers: content, age level, participation, safety, etc.
- How will the speakers or presenters be greeted? Directed in the building? Assisted in the classrooms?
- How will the speakers schedule be communicated to the teachers? To the speaker?
- Will breakfast and/or lunch be provided? Do we have funds or need donations?
- What is your timeframe and deadlines for each objective?

The "E" stands for "ingenious," which I know doesn't quite fit into the acronym STEM. However, when planning an all-day event, sometimes your team is going to need to be very creative! When looking for speakers for the lower grades, it becomes clear that many people did not feel comfortable working with the young mathematicians, engineers, and scientists. Earthfare, a local grocery store, agreed to teach the students about mathematics and nutrition by doing a cooking demonstration and allowing the kids to create healthy treats. This idea was perfect for the younger grades, but we could not clone the Earthfare participant to be in each grade level. I was able to solve this problem by helping parents move through the building and replicate the lesson in other grades. That was not only ingenious, but also resourceful. Many speakers will be willing to help you, but not sure what you are expecting them to demonstrate, build, or teach. Therefore, it is best to have some simple experiments, science kits, or mathematics and engineering activities available for them to choose from or use for developing their own ideas. Make sure you let the volunteers know that they are expected to do "hands-on" activities during their session. STEM day is for the kids, and kids learn best when they can participate in the lesson!

The last letter, "M," is really the umbrella of the event. To manage the event is to run the event successfully, all while coping in a difficult situation. You

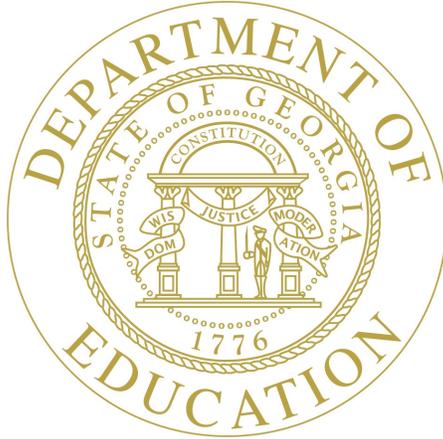
may see this as a conundrum, but realize that all planning, hosting, and managing events like a STEM Day at your school is an intensive learning opportunity. Surely the best way to manage such a large and complex event is to create a master schedule for each grade and fill in time slots as your volunteers confirm. Also, communicate often to reduce the number of problems you will face on the big day. However, don't try to micro-manage the situation! Lunches running late, speakers showing up late, and presentations going over time can and will happen and are outside of your control. Therefore, it is important to focus on the main goal of STEM Day, which is to empower students with innovative ideas. In managing your school's STEM Day, don't forget to take time to reflect when all the dust has settled. This will help you to prepare for next year; you may want to send out surveys to gather the participants' thoughts and ways to improve. Remember, though: gather input from not just the body, but the whole system. Continue to network with them throughout the year and build on those relationships. Networking is an ongoing process that will make each year's STEM Day easier, and can lead to more opportunities to offer your students. From the new relationships, my school will be inviting back Capitol City Bank, one of our STEM participants, to begin another activity. Also, we will be looking at having an afterschool program focused on engineering conducted by Bricks4kids, an educational organization in our community.

During our STEM day the hustle and bustle began to overshadow the purpose, but when a student came by me and said to his friend, "This was the best day ever," I seem to have managed to meet my goal! Reaching out to people in the community, working with a team of dedicated individuals, exploring and creating learning opportunities, and managing to keep the purpose of the event as the target are all required to have a successful STEM Day.



REFLECTIONS

Announcement from the GDOE



The Georgia Department of Education (GaDOE) is accepting proposals for grants awarded by the Georgia Mathematics and Science Partnership (MSP) Program. All proposals must be physically received in suite 1754 at the GaDOE by 5:00 p.m. on Thursday, June 12, 2014. The RFP and corresponding proposal framework document for the MSP Program grants are posted on the MSP Program page, go to www.gadoe.org and type "MSP" in the search engine.

The Georgia MSP Program seeks to improve the content knowledge and ability to analyze student thinking of cohort groups of mathematics and/or science teachers of grades K-5, 6-8, and/or 9-12 in order to increase the achievement of their students. These improvement efforts are designed, implemented, and evaluated by strong partnerships between college and university faculty, high-need school systems, RESAs, and other qualifying partners. (A program synopsis is attached.)

Any Georgia high-need school system or consortium may submit a proposal for funding consideration in partnership with an institution of higher education. In order to qualify as high-need, a school system must demonstrate that at least 40% of its students qualify for the free and reduced meal plan according to the most recent data collected by the GaDOE. Such data is included in the appendix of the RFP.

Georgia MSP Program funding may be used to support the following endeavors:

- To provide mathematics and/or science teachers, including special education teachers, in grades K through 12 with intensive and follow-up content training aligned to the State Standards in mathematics and/or science;
- To advance the disciplinary content depth, pedagogical content acumen, and cognitive disciplinary instructional skills of grades K-12 teachers of mathematics and/or science;
- To provide advanced college-level course work to K-12 teachers of mathematics or science; and
- To include building-level administrators meaningfully in follow-up mathematics and science content training sessions.

For additional information, please contact:
Amanda Buice, MSP Program Specialist, GaDOE
205 Jesse Hill, Jr. Drive, SE
1754 Twin Towers East
Atlanta, GA 30334
Phone: 404-657-8319
Fax: 404-656-5744
E-mail: abuice@doe.k12.ga.us

GCTM State Math Tournament News

By [Chuck Garner](#), VP for Competitions

The 38th annual GCTM State Math Tournament was held at Middle Georgia State College in Macon, Georgia on April 26, 2014. Schools are invited to the state tournament based on their performance on previous Georgia tournaments throughout the 2013-2014 school year. Thirty-three invited schools attended this year's state tournament. Four students are selected to represent each school. Seventeen individuals were also invited to try-out for the state-wide Georgia ARML team, making a total of 149 participants.



*[Chuck Garner](#)
VP for Competitions*

The tournament consisted of a very challenging written test of 45 multiple-choice questions and 5 free-response questions with a 90-minute time limit; 10 individual ciphering problems, each problem with a two-minute time limit; and a team round. The team round consisted of 12 problems for each team to solve while working together within eighteen minutes.

The student with the best improvement at the state tournament over the previous year was given the Steve Sigur Award for Most Improved Performance. This award, named in honor of the great mathematician, teacher, and mentor Steve Sigur, went to Parth Kumar of Cambridge High School. Each participant and their school sponsor was given a 2014 State Tournament T-shirt.

The top five teams and the top fifteen individuals are listed below.

TOP TEAMS:

1. **Gwinnett School of Math Science and Technology**
2. **Northview High School**
3. **Westminster**
4. **Wheeler High School**
5. **Rockdale Magnet School for Science and Technology**

TOP INDIVIDUALS:

1. **David Xing, Northview High School**
2. **Nolan Handali, Norcross High School**
3. **Timothy Giesecking, Gwinnett School of Math Science and Technology**
4. **Jeremy Rachels, Rockdale Magnet School**
5. **Porter Adams, Westminster**
6. **Parth Kumar, Cambridge High School**
7. **Nilai Sarda, Westminster**
8. **Ben Chen, Campbell High School**
9. **Jason Fan, Gwinnett School of Math Science and Technology**
10. **Anirudh Udutha, Wheeler High School**
11. **Mark Wang, Gwinnett School of Math Science and Technology**
12. **Pranav Rekapalli, Westminster**
13. **Matthew Torrance, Woodward Academy**
14. **Josh Brunner, Gwinnett School of Math Science and Technology**
15. **Derek Tang, Johns Creek High School**

An item analysis of the competition problems can be found [here](#).

State Tournament registration is free, but schools must be invited. The next State Mathematics Tournament is scheduled for April 25, 2015.



**eREFLECTIONS is designed by The Digital Pen,
Rome, GA**

www.thedigitalpen.com - 706-346-8731



REFLECTIONS

10 Tips for Motivating Reluctant Learners

1. Be enthusiastic about mathematics. Show your students the beauty of mathematics, not just the mechanics.



2. Don't assume that just because a student looks like they are not interested, means they cannot learn. Don't assume a student will not do well because they never have in the past.

3. Reluctant learners are not always incapable learners. There could be other reasons they are reluctant. Sometimes they are waiting for a challenge!

4. Communicate with other educators. Maybe they know a background story that will help you better understand a student you are having difficulty with.

5. Ask the student questions. Show you care. To quote Dr. Maya Angelou, "I've learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel."



6. Use class time for more than lectures. "Don't always be the sage on the stage. It is better to be the guide on the side!"

7. Challenge students respectfully. Don't embarrass, humiliate or make fun of them, but build a connection with them and challenge them academically and in a witty or playful way.

8. Be fair with class rules. Many students are turned off to education by the seeming disparity of the way discipline is meted out. Be sure you are consistent and fair.



9. Deal with discipline issues immediately and proportionally. Major issues should be handled right away and with severity that matches the offense. Minor infractions should be just that - something minor.

10. Make personal connections. It is a good habit to say hello to each student by name each day. It shows that you value them as a person.



When working to motivate a reluctant learner, find out what they are interested in outside of school, and make a connection that way. Watch them perform, watch them play a sport, find out what type of video games they play and show an interest, or anything else that will connect you to them. Our students are people, just like us, and they want to know that someone is interested in them personally, just as we do.

Many of us have heard these things before, but it is always good to hear them again. These points were taken from a speech by a young adult who had been a reluctant learner in school. They were published in an article in EdWeek magazine and adapted here.

*This, therefore, is Mathematics:
She reminds you of the invisible forms of the soul;
she gives life to her own discoveries;
she awakens the mind and purifies the intellect;
she brings to light our intrinsic ideas;
she abolishes oblivion and ignorance which are
ours by birth...*

-Diadochus Proclus (410-485)

GCTM Middle School Math Tournament News

By [Chuck Garner](#), VP for Competitions

The GCTM Middle School Math Tournament was held at Thomson Middle School in Centerville GA on April 19, 2014. Middle schools across the state were invited to register up to eight students to compete. The tournament consisted of a 30 question multiple-choice test with a 45-minute time limit; 10 individual ciphering problems, each problem with a two-minute time limit; 3 rounds of four pair ciphering problems (in which students from a school formed teams of two), each round with a four-minute time limit; and a four-person team "power question," in which the team solves a complex problem with a 10-minute time limit.

The tournament is designed to challenge middle school students and to reinforce classroom skills. However, we also make sure the students have fun! At the conclusion of the tournament, students participate in a fun "Frightnin' Lightnin'" Round, where students must be quick on the draw to answer math problems posed orally. The winners of this round get candy!

Trophies went to the top five teams and the top ten individuals. The top teams are below.

TOP TEAMS:

1. Stratford Academy, Macon
2. Sculley Academy, Suwanee
3. Oconee County Middle School, Watkinsville
4. Riverside Middle School, Evans
5. Sutton Middle School, Atlanta

One hundred seventeen students from sixteen schools participated. Sponsors that are members of GCTM only had to pay a \$10 registration fee or submit five multiple-choice questions for possible inclusion in a future tournament. The next GCTM middle school tournament is scheduled for April 18, 2015.

The following problem had the highest number of correct responses (87 of the 117 students answered it correctly), and is therefore considered the easiest question on the written test.

Test Problem #12: Suppose $A \times B = 8$, $B \times C = 28$, and $A \times C = 14$. Compute $A \times B \times C$.

- a) 15 b) 28 c) 50 d) 54 e) 56

The most difficult problem on the written test, measured by the least number of correct responses (24) is the following.

Test Problem #28: How many numbers n have the property that both $n/2$ and $2n$ are four-digit whole numbers?

- a) 1500 b) 2000 c) 3000 d) 4500 e) 5000

As for the Individual Ciphering problems, the easiest problem was the first one. 91 students answered this problem correctly.

Individual Ciphering #1: There are 216 students and 9 teachers taking a bus trip, and each bus holds 49 people. How many buses are needed?

However, the problem with the least number of correct responses (only 40 students answered correctly) was the following.

Individual Ciphering #2: Solve $\frac{1}{2}(7x+5) = -36$.

For the Pair Ciphering questions, the students work with a partner and with a calculator. In each round, they receive four problems at once to work on together. Of the 58 pairs of students participating in the pair ciphering round, 32 pairs answered the following correctly:

Pair Ciphering #1-2: Which number must be removed from the set 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 in order for the average of the remaining numbers to be 6.1?

Only three pairs of students answered this question correctly:

Pair Ciphering #3-4: A convex polygon contains 14 diagonals. What is the sum of the measures of the interior angles of the polygon in degrees?

Answers: E; A; 5; -11; 5; 900

Chuck Garner, Ph.D., has been teaching math to young people for 20 years. Currently, he teaches single- and multi-variable calculus, linear algebra, math of industry and government, and the history of mathematics, in addition to coaching the math team, at Rockdale Magnet School for Science and Technology. He serves as Vice-President for Competitions for the GCTM and is the Governor-at-Large for High School Teachers for the Mathematical Association of America's Board of Governors. He is a proud husband of Julie and father of Ray and Scott.



What Can I Do About Student Engagement and Accountability in My Classroom?

By Michelle Mikes, Math Supervisor 6-12, Cobb County School System

This is something we all aspire to acquire supported by our own choice of professional learning.

What are you doing personally to support your personal evaluation of the TKES Teacher Assessment on Performance Standards #9?:

"Evaluates & identifies areas of personal strength and weaknesses related to professional skills and their impact on student learning & sets goals for improvement. Participates in ongoing professional growth activities based on identified areas for improvement (e.g., mentoring, peer coaching, course work, conferences) & incorporates learning into classroom activities."

Teachers assuming responsibility to define their own professional growth by choosing the professional development differentiated by your own personal needs-what a novel idea! What is your plan for the 2014-2015 school year? Is your plan pedagogical in nature or content driven? Across the state of Georgia, as well as the nation, is the murmur from educators on how to engage the 21st century learner. How do you motivate and engage diverse learners by optimizing teaching strategies, growing in your content knowledge and building relationships with students and colleagues? Reminders of the resources below may help you to promote a classroom of engaged learners and be used for your teacher evaluation in the area of assuming responsibility of personal growth...

Pedagogy K-12

This summer, you may want to read the book that is highly recommended by local educators: *Engaging Students with Poverty in Mind* by Eric Jensen.

Learn the 7 factors that are crucial to engaging disadvantaged students: health and nutrition, vocabulary, effort and energy, mind-set, cognitive capacity, relationships, and stress level. Many times, these same factors may be considered for all students.

Another great, enjoyable, easy read, *Teach Like a Pirate* by Dave Burgess, provides inspiration, practical techniques, and innovative ideas that will help you increase student engagement, boost your creativity, and transform your life as an educator. Many times math teachers know their content and the skills students must attain, but the presentation or the "hook" to engage our students is typically lacking. This is a realistic classroom teacher's view of engaging the learner.

And, having background research information on *How the Brain Learns Mathematics* by David Sousa is an excellent resource of understanding how the brain processes mathematical concepts and why some students develop math anxiety. This book provides clear connections to effective strategies and implications on planning mathematics lessons including memory systems and lesson timing to engage students.

But, I taught it-why are my student assessment scores not improving? Take advantage of the State Formative Instructional Practice Assessment modules: <http://www.gadoe.org/Curriculum-Instruction-and-Assessment/Assessment/Pages/GeorgiaFIP.aspx> to improve your understanding, analyzing of data and student feedback.

If STEM is a focus of your classroom:

Do you want to incorporate more real world STEM lessons to engage students? If you haven't already, check out the new state STEM lessons for 6-12 available at: <https://www.georgiastandards.org/Common-Core/Pages/STEM-Frameworks-of-Instruction.aspx>?

What Can I Do About Student Engagement and Accountability in My Classroom? *cont.*

And, an interesting application at: <http://www.cdc.gov/excite/> that provides a collection of teaching and reference materials developed by the CDC to introduce and excite youth K-12 about the knowledge and skills utilized by public health professionals. The CDC site itself lends to great real-time statistics that could be incorporated into your classroom lessons. Great short snip-it of STEM videos in relation to math to help you create relevancy in your lesson, go to: <http://www.gpb.org/fast-forward/stem-central/math-central>

Building your content knowledge

Take advantage of the standards based SEDL videos for quick overviews of our standards at http://secc.sedl.org/common_core_videos/. The Learn Zillion videos are not only for students, but teacher growth as well at <http://learnzillion.com/>. Learn content from the free student modules for Math Courses 6-12

at <http://www.gavirtuallearning.org/Resources/SharedLandingPage.aspx>.

Do you want to incorporate graphing calculators? Try Texas Instruments <http://education.ti.com/en/us/pd/online-learning> to help yourself learn the ins and outs.

And, of course, check with your local school districts for offerings and your county's supporting RESA for PD available this summer. Alternatively, there are typically free MOOC's posted for content growth-just google!

Whatever you choose, set up your plan, document it, and share with your fellow teachers and administration on how you assumed personal responsibility for your own professional growth.

Michelle has 12 years experience as a math teacher for grades 8 - 12 in Cobb and Bartow Counties. She has been a Math Supervisor for grades 6 - 12 for 9 years with Cobb County Schools. The certifications she holds include Interrelated, TSS & Leadership, and she received the John Neff Award in 2012 from GCTM.



If you are interested in math education, look at the free materials available at http://iae-pedia.org/Math_Education_Digital_Filing_Cabinet. Then check out the collection of math education quotes available at http://iae-pedia.org/Math_Education_Quotations.

IAE has published many books in the fields of computers-in-education and math education. For

example, browse through the list of free books (mostly written for teachers) available at http://iae-pedia.org/David_Moursund_Books and http://iae-pedia.org/Robert_Albrecht#Free_Books_by_Bob_Albrecht.

To learn more about Brain Science (cognitive neuroscience) as it applies to education, see http://iae-pedia.org/Brain_Science. This site contains short discussions of 37 different topics that all teachers should know about.

For a quick overview of all of the free materials available from Information Age Education, see http://iae-pedia.org/Main_Page. It describes the IAE-pedia (a Wiki), the IAE Newsletter (published twice a month), the IAE Blog (which has had close to a million hits so far this year), and about 60 books. IAE does not sell anything and does not keep mailing lists of people who download our free materials.



REFLECTIONS

Get Ready, and Get Set during the Summer, and Go for a New School Year!

By Bonnie Angel, NW Region Rep and Kristi Caissie, Intern

Teachers give all that they have to give during the school year to ensure that they get the most learning from their students and that they give them the best! Our superintendent's motto for this school year has been "Give 5 for 5!" We were encouraged to give each student our best for 5 days each week! Sometimes, at the end of the year, you just need to get your feet back under you and face "real life" again, not just the four walls of the classroom. My daughter recently summed it up with a couple of pictures. The first picture was of a cat that looked calm and well groomed. The caption said, "Me at the beginning of the semester." The second picture was of a cat that looked like it had been electrocuted. Its hair was sticking out in all directions, and it had a wild look on its face. The caption read, "Me at the end of the semester." After seeing this post on her Facebook page, I thought, "Wow! That is exactly how I feel at the beginning of a school year AND at the end of the school year." This summer, I am going to make sure that I take the time to be better prepared for next school year, because as Benjamin Franklin said, "By failing to prepare, you are preparing to fail." I for one do not intend to fail!

Get Ready and Get Set!

1. Rest and rejuvenate this summer!

Spend some extra time with your family and friends. Educators often neglect the relationships that really mean the most to them because they are so focused on ensuring that the other 25 to 150 children entrusted to them each and every day are well taken care of physically, emotionally, and intellectually. Focus on those relationships that are your inspiration for what you do in the classroom. Plan some family/friend time!

Plan a special day just for you! Do something fun, new, or exciting! Take that special trip that you have always wanted to do. Spend the day relaxing, or take a hike in a park. Whatever it is, invest in you! You are worth it!

Read something inspiring to remind you of why you chose this profession! There are some great books that tell stories of educators and how they manage to stay focused on what is important in today's educational world. If you need ideas about good inspirational books to read, here is a great website that lists the [Top 6 Inspirational Books for Educators](#). Choose a good book, and remember what Dr. Seuss said: "Unless someone like you cares a whole awful lot, nothing is going to get better. It's not." Take some time to prepare yourself for making things better for your students!

2. Spend some time self-evaluating!

Think about the last year, and focus on being growth-minded. To quote Dr. Seuss again, "You have brains in your head; you have feet in your shoes. You can steer yourself in any direction you choose. You're on your own, and you know what you know. And you are the one who'll decide where to go." There is an insightful article called [Fixed Mindset vs. Growth Mindset: Which One Are You?](#) by Michael Graham Richard about ensuring that you reach your potential by being growth-minded. In today's educational world, it is important to keep in mind that there are things that we each do well, and there are things that we need to improve.

Spend some time with paper and pencil thinking about the last year in your classroom. You may even want to sit down with a cup of coffee or a glass of lemonade and really get honest with yourself about

Get Ready, and Get Set during the Summer, and Go for a New School Year! *cont.*

your classroom. What do you feel works really well? What lessons or areas of study do you teach really well? What is not working out for you or the students? Do you need new rituals and routines? What lessons or areas of study do you need to improve? Look at your data. Can you identify areas of needed improvement? Think about your evaluation or discussions with administration. Did they have suggestions for improvement?

3. Review your curriculum!

Take the time to study the Standards for Mathematical Practice. Are you using these to their fullest capabilities in your class? These are the standards that help the students see the math in everyday life and develop the reasoning and understanding of mathematics. Using these standards in your classroom will help the students answer the questions of why and how as they relate to the mathematics. The summer is a great time to review these standards and to think about how you will redevelop your math class to ensure that the students are learning to think critically. Here is a list of websites that you will want to check out while thinking about developing the practices for mathematical thinking:

- a. [The Common Core Website for the Standards for Mathematical Practice.](#)
- b. [A Guide to the 8 Mathematical Practice Standards](#)
- c. [Understanding the Mathematical Practice Standards](#)
- d. [Carroll County Public Schools Website for Mathematical Practices](#)

The summer is also a great time to compile good resources for the area that you identified during your self-reflection as needing improvement in your classroom. Don't forget about the helpful webinars that

have been archived by the GaDOE for your viewing convenience. They are organized by grade levels and can be accessed through the Internet at [Mathematical Professional Learning Sessions webpage](#). You will also want to take the time to study and learn about any area of weakness or interest that you have identified. When you start exploring resources, you will want to consider the resources on [Carnegie Learning](#). Carnegie Learning offers quality math curricula for middle and high school teachers. On the right hand side of the page, you will even find a webinar about getting ready for the 2014-2015 school year.

4. Get caught up on the resources!

As the school year comes to an end, we all realize that our intentions of staying well informed about the resources available to educators have been overshadowed with meeting the needs of our students and the demands of the classroom. This makes the summer a great time to read all of the articles that you have saved over the school year and to explore other resources. Take the time to explore the [GaDOE's Math Wiki](#). This website has some great discussion links, and down the right-hand side, there are links for all grade levels for CCGPS. Also, on different grade-level pages, you will find links to other resources that include tasks and activities.

Take the time to read through your Grade Level Overview (elementary teachers) or explore what other states are using as resources to obtain a better understanding of the Common Core standards, such as [NC Common Core Instructional Support Tools](#). This website includes links to the unpacked documents, graphic organizers, and glossary of terms. This site is a great resource for ideas and information.

Be ready to **Go into the new school year** prepared to give each child your best!



Do You Pecha Kucha?

By Cheryl Hughes, Editor



The Pecha Kucha was created to solve a problem among those presenting new ideas in Japan. The problem was that professionals, mostly engineers, were creating presentations that seemed endless! They were just too long.

So the Pecha Kucha was invented to standardize the length of presentations and keep them short! A Pecha Kucha is a 20 frame presentation, usually in PowerPoint, and the presenter may only speak 20 seconds on each slide. The PowerPoint is programmed, so it moves on after 20 seconds, and therefore the speaker must also! In Japan they have Pecha Kucha nights where you sign up to present your new ideas or proposals by using a Pecha Kucha.

As teachers our first thought would be, "Could I use this in my classroom?" Of course we can! Here are a few suggestions:

1. We could use a Pecha Kucha (P.K.) to introduce a new topic or concept.
2. At the end of a unit of study, we could create the slides for a P.K. that could be used as review. The class could be divided into groups, given a copy of the P.K. and told to assign each member a slide and get ready to present, telling all they know about each

picture. The slides could contain drawings, topics, or mathematics problems worked incorrectly. This could be used as review before a summative assessment or as part of a formative assessment.

3. If students are equipped with technology, the teacher could give out topics and have students find their own pictures and create their own P.K.'s. This would work well as a project for in or out of class. It might be a good lesson plan for a substitute teacher.
4. For younger students or less available time, the P.K. could be shortened to 10 slides. Ten seconds on each slide would be fun also! We might find some fast talkers!

This video has some great ideas for the use of P.K.'s in the classroom.

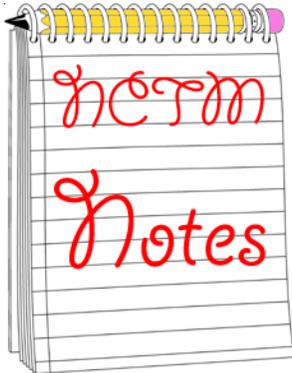
<http://www.youtube.com/watch?v=5x5FB2mxvZY>

You can see some examples of Pecha Kucha's here.

<http://www.pechakucha.org/channels/kids>

The possibilities are endless, or are they? Could an elementary teacher use a P.K.? What about using them in Middle School? I'm creating some P.K.'s for my high school classes this summer, one for every unit, and I plan to use them in the fall.

I challenge you to do the same, and bring one with you to Rock Eagle. Let's share how we use the Pecha Kucha in our classrooms. Maybe we'll start a new craze! Look for my workshop, "Do you Pecha Kucha?" Come and be part of it by sharing one of your presentations!



Dottie Whitlow
NCTM Representative

MESA Undergraduates Attend NCTM Annual Meeting in New Orleans

Three undergraduate grant awardees, Sarah Erwin, Rachel Pelletier, and Kate Fowler, all from the Mathematics Education Student Association of The University of Georgia (MESA), attended some great sessions and experienced lots of new ideas at this year's NCTM Annual Meeting and Exposition down in the Big Easy on April 9-12.



The awardees got to see firsthand some "behind the scenes" activities in addition to the individual sessions, including the Regional Caucus meetings and the 2014 NCTM Delegate Assembly. They also attended sessions on flipped mathematics classrooms, using technology, problem solving, using manipulatives, and many other informative and neat sessions that they selected from hundreds of possibilities.

In future years we hope to assist other undergraduates in acquiring grants by themselves to attend the conference either cost-free or at minimal cost. Experiences such as these can go a long way to furthering their ability to help your students (first and foremost), strengthening their impact in their teaching careers and increasing their marketability to potential employers. We look forward to increased undergraduate

involvement, particularly in early childhood and middle-grades cohorts.

Congratulations again to Sarah (MESA undergraduate representative), Rachel, and Kate, and thanks to Hamilton Hardison, the MESA Vice President and this year's grant administrator! Keep your eyes and ears open for some of their presentations from the conference - coming soon.

The NCTM President's Report (PowerPoint) presented by NCTM President Linda Gojak, the proceedings, and photographs from the NCTM 65th Delegate Assembly are posted on the [NCTM website](#).

Fall Regional Conferences

Registration is now open for NCTM's premier fall events - the 2014 Regional Conferences. This year's theme is "Great Math at Your Doorstep." The conference will be held in the following cities:

- Indianapolis, Indiana - October 29-31
- Richmond, Virginia - November 12-14
- Houston, Texas - November 19-21

Visit the [NCTM Regional Conference page](#) for complete information on programs, housing and registration.

Proposals for 2015 Regional Conferences

Speaker proposals for the 2015 Regional Conferences are due September 20, 2014.

[Submit your proposal.](#)





REFLECTIONS

2014 Summer Interactive Institutes for Pre-K-12



Join us in San Diego or Chicago this summer for NCTM's Interactive Institutes. Sessions begin in July, and topics are [Algebra Readiness for Every Student for Grades 6-8](#), [Connecting Number and Operations in the Classroom for Pre-K-Grade 5](#), and [Engaging Students in Learning: Mathematical Practices and Process Standards for Grades 9-12](#). Register early and save up to \$40 with discounted rates!

For more information, go to: www.nctm.org/institutes.

GCTM Sponsors Awards through GSEF

This year it was our privilege to sponsor the Georgia Council of Teachers of Mathematics Jr and Sr Awards at the 66th Georgia Science and Engineering Fair. The purpose of these awards is to encourage young minds and imaginations in a pre-collegiate competition. Nicky Ice, current Conference Coordinator for the Georgia Mathematics Conference, and Intern Treasurer, presented the awards on behalf of GCTM.

The winners are:

GCTM Junior Division Award
TI-84 Silver + Calculator with certificate
Alexandra Carpenter, Chapel Hill Middle School, Douglasville
Teacher: Christina Baxley

GCTM Senior Division Award
TI-89 Calculator with certificate
Anand Srinivasan, Roswell High School
Teacher: Laura Hunter



Georgia ARML Team Earns Eighth Place in Nation

By **Chuck Garner**, VP for Competitions

The 39th annual American Regions Mathematics League (ARML) tournament took place at UGA on Saturday, May 31st. The Georgia ARML "A1" team finished 8th in the nation in the A division. This marks the 25th consecutive year that the Georgia team finished in the top 10% at the "world series" of math team tournaments. Each member of the 8th place team earned plaques and books.



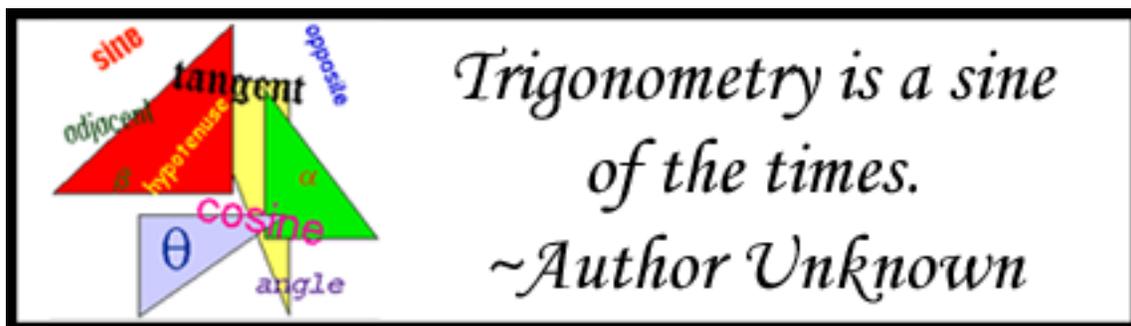
Chuck Garner
VP for Competitions

Held simultaneously at four sites around the nation (Pennsylvania State University, University of Nevada at Las Vegas, University of Iowa, and University of Georgia), this competition attracted 145 teams comprising over 2100 students from all over the U.S. as well as Canada, China, Macau, South Korea, Thailand, and Vietnam. Any geographically contiguous region may enter as many 15-person teams as it likes, whether that region is as small as a school district or as large as a state, as long as regions do not overlap. Georgia fields four teams of 15 students (plus one alternate, for a total of 61 students). Students are selected based on results from the state tournament, AMC scores, AIME scores, and winning scores at other Georgia tournaments. The Georgia A1 and A2 teams are made up of experienced ARML participants, while the Georgia A3 and B1 teams are considered "training" teams made up of promising newcomers to ARML.

The ARML tournament brings together the nation's finest students, where they meet, compete, and socialize, forming friendships and sharpening their mathematical skills. The contest is written for high school students, although some highly-talented middle and elementary school students attend each year. In fact, this year's Georgia ARML team included three talented middle school students and a brilliant 5th grader!

The tournament consists of four rounds. The Team Round is first, in which the 15 teammates have 20 minutes to solve 10 problems. Next is the Power Round, in which the team has 60 minutes to write proofs to complex, multi-part problems. (This year's Power Round asked students to prove results from graph theory). Next is the only round that is not team-oriented, appropriately called the Individual Round. For this round each student solves 10 problems independently. However, the students receive the problems two-at-a-time with a time limit of 10 minutes per pair of problems. (These problems are designed to challenge the best students; nationally, only twelve competitors got all 10 problems correct.) After a lunch break is the final round, the Relay Round. The 15 teammates form five relay teams of three each, where one person's answer is used in the next person's problem.

National sponsorship of ARML is mainly provided by the D. E. Shaw Group, an investment and technology development firm. Other national sponsors include the American Mathematical Society, Art of Problem Solving, Key Curriculum Press, Math League, Mu Alpha Theta, and Wolfram Research. Locally, sponsorship of the Georgia ARML teams is mainly provided by GCTM.





REFLECTIONS

Georgia ARML Team Earns Eight Place in Nation *cont.*

Coaches of this year's Georgia ARML team were Tom Fulton (Athena Health), Chuck Garner (Rockdale Magnet School), Debbie Poss (Lassiter High School), Carol Sikes (South Forsyth High School), Bobby Stecher (Stratford Academy) and Head Coach Don Slater (Lassiter High School). Joining the coaching staff this year were four former Georgia ARML participants: Harrison Brown, formerly at the University of Alabama; and Jonathan Johnson, Santhosh Karnik, and Bhanu Kumar, all currently seniors at Georgia Tech.

The members of the outstanding 2014 Georgia ARML team are listed on the next page with their school and grade.

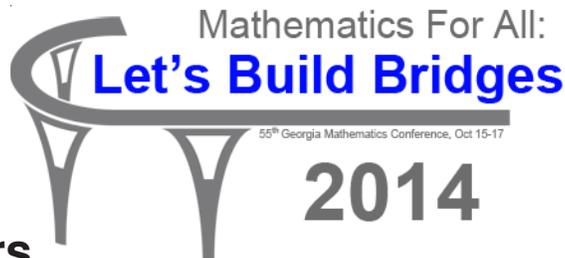
Chenthuran Abeyakaran, Chamblee High School, 9
Porter Adams, Westminster, 12
Jason Anderson, Lassiter High School, 11
Nischal Bandi, Stratford Academy, 8
Shishir Bandi, Stratford Academy, 10
John Barton, Columbus High School, 10
Anirudh Bikmal, South Forsyth High School, 10
Josh Brunner, Gwinnet School of Math, Science, and Technology, 11
Benjamin Chen, Campbell High School, 11
Ryan Chen, Brookwood High School, 11
Sarah Chen, Chattahoochee High School, 9
Daniel Chu, Pine Mountain Middle School, 8
Adam Ehrenberg, Paideia, 12
Jason Fan, Gwinnet School of Math, Science, and Technology, 9
Lily Ge, Lambert High School, 10
Timothy Giesecking, School of Math, Science, and Technology, 10
Nolan Handali, Norcross High School, 11
Eujin Jang, Walton High School, 10
Rickie Jang, Northview High School, 11
Hyunmin Kim, Northview High School, 10
Dong Jun Kim, Northview High School, 10
Woo Jae Kim, Northview High School, 10
Akhil Kota, South Forsyth High School, 11
Agni Kumar, Milton High School, 10

Parth Kumar, Cambridge High School, 10
Justin Lee, Northview High School, 11
Michael Li, Wheeler High School, 11
Alice Lin, Northview High School, 10
Nicholas Lindell, Lassiter High School, 12
Sam Marks, Wlato High School, 11
John Mori, Walton High School, 10
Sophie Mori, Walton High School, 12
Kalen Patton, Chattahoochee High School, 9
Michael Peng, Campbell High School, 9
Jeremy Rachels, Rockdale Magnet School, 12
Pranav Rekapalli, Westminster, 10
Madhav Sambhu, Johns Creek High School, 11
Nilai Sarda, Westminster, 10
Edward She, Lakeside High School (Evans), 12
John Shen, Westminster, 11
Kyung Min Shin, Northview High School, 11
Kevin Sholl, Wheeler High School, 11
Amy Su, South Forsyth High School, 10
Cathy Sun, Northview High School, 11
Derek Tang, Johns Creek High School, 10
Leonardo Tang, Northview High School, 9
Farita Tasnim, Columbus High School, 11
Matthew Torrance, Woodward Academy, 12
Anirudh, Udutha, Wheeler High School, 12
Mark Wang, Gwinnet School of Math, Science, and Technology, 12
Mike Wang, Gwinnet School of Math, Science, and Technology, 12
Oxford Wang, Northview High School, 11
Holden Watson, Sculley Academy, 5
David Xing, Northview High School, 12
Avery Yang, Paideia, 11
Matt Yi, South Forsyth High School, 11
Iris Yen, Dickerson Middle School, 8
Tony Zeng, Brookwood High School, 9
Bill Zhang, Northview High School, 9
William Zheng, Walton High School, 9
Irene Zhou, Northview High School, 9

To learn more about ARML, visit www.arml.com.



Georgia Mathematics Conference at Rock Eagle



Keynote Speakers

Wednesday, October 15, 2014

Cindy Moss - Discovery Learning

Cindy Moss, Director of Global STEM Initiatives for Discovery Education, is charged with supporting school districts in their work to develop and deploy student initiatives to drive science, technology, engineering and math achievement nationwide.

Prior to joining Discovery Education, Dr. Moss served as Director of PreK-12 STEM Education for the Charlotte Mecklenburg School system, the 17th largest district in the US. Dr. Moss moved into this role after 21 years as a classroom teacher, where she received numerous awards for excellence including RadioShack's National Teaching Award and the Milken National Educator Award.

Dr. Moss has a BS in Zoology from UNC-Chapel Hill where she was a Morehead Scholar, a Masters in Science Teaching from Syracuse University and a Ph.D. in Science Curriculum and Instruction from Curtin Institute of Technology in Perth, Western Australia.

Thursday, October 16, 2014

David Dockterman - Harvard University, Scholastic

David Dockterman is chief architect, learning sciences at Scholastic Education where he provides guidance on turning research into practice and programs. He was one of the founders of Tom Snyder Productions, a leading educational software developer and publisher that was acquired by Scholastic in 2001. Over his 25-plus years in the industry, Dockterman has led the development of scores of award-winning instructional technology programs, including Decisions, Decisions; Thinking Reader; FASTT Math; and TimeLiner. Most recently he served as a key adviser for the creation of Scholastic's MATH 180. Dockterman authored the books Great Teaching in the One Computer Classroom and Weaving Technology into Your Teaching. He also co-created and co-wrote Science Court, the highly acclaimed animated TV show that ran for three years on ABC's Saturday Morning. Before joining Tom Snyder Productions, Dockterman taught high school social studies. He has dedicated himself to supporting classroom teaching and the successful integration of technology into schools.

Friday, October 17, 2014

Kati Haycock - EdTrust, President

Kati Haycock, one of the nation's leading child advocates in the field of education, is President of The Education Trust. The organization was founded to promote high academic achievement for all students at all levels - pre-kindergarten through college. Although many organizations speak up for the adults employed by schools and colleges, Ed Trust speaks up for students, especially those whose needs and potential are often overlooked, by evaluating every policy, every practice, and every dollar spent through a single lens: what is right for students.

Haycock previously served as Executive Vice President of Children's Defense Fund, the nation's largest child advocacy organization.

A native Californian, Haycock founded and served as president of The Achievement Council, a statewide organization that provides assistance to teachers and principals in predominately minority schools in improving student achievement. Before that, she was director of the Outreach and Student Affirmative Action programs for the nine-campus University of California system.



REFLECTIONS

Special Features at Rock Eagle 2014

State School Superintendent Panel Discussion

All candidates running for State School Superintendent of Georgia have been invited to participate in a panel where they will be welcome to share their views on Georgia education priorities, especially those specific to mathematics.

In addition to the keynote speakers above, the following are Featured Speakers who will present workshops throughout the conference:

Kenneth Jones with Tim Howard

Cindy Moss
Christine Franklin
Brian Newsome
Claire Pierce
Kevin Moore

Miriam Leiva
Eric Milou
Tom Rearden
Sherry Parrish
Jan Scott

Continue to check our [web page](#) for more information on the Conference.



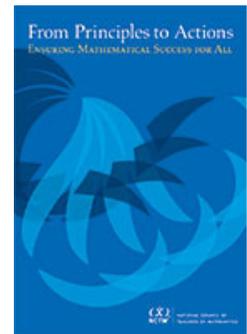
**NCTM has entered the
blogosphere!**

**Blogs have been created for
elementary teachers, middle
school teachers, and high
school teachers, with guest
bloggers chosen from our
peers.**

[Check them out!](#)

NCTM Releases PRINCIPLES TO ACTIONS

The widespread adoption of college- and career-readiness standards, including adoption in the United States of the Common Core State Standards for Mathematics (CCSSM) by forty-five of the fifty states, provides an opportunity to reenergize and focus NCTM's commitment to significant improvement in mathematics education. Thus, the release of NCTM's latest publication, *Principles to Actions*, which is designed to fill the gap between the development and adoption of CCSSM and other standards and the enactment of practices, policies, programs, and actions required for their widespread and successful implementation. The overarching message is that effective teaching is the nonnegotiable core that ensures that all students learn mathematics at high levels and that such teaching requires a range of actions at the state or provincial, district, school, and classroom levels. Get your copy at www.nctm.org shop online.



GCTM Executive Board

President - Dan Funsch

President-Elect - Kaycie Maddox

Executive Director - Tom Offinger

Membership Director - Susan Craig

NCTM Representative - Dottie Whitlow

Secretary - Debbie Kohler

Treasurer - Nickey Ice

IT Director - Paul Oser

REFLECTIONS Editor - Cheryl Hughes

VP for Advocacy - Shelly Allen

VP for Constitution and Policy - Patti Barrett

VP for Honors and Awards - Ned Colley

VP for Regional Services - Karen Lawrence

VP for Competitions - Chuck Garner

Conference Board Chair - Debbie Poss