
PCSM NEWSLETTER

Leaders in Mathematics Education

May 2008

PENNSYLVANIA COUNCIL OF SUPERVISORS OF MATHEMATICS

PRESIDENT'S MESSAGE

From the President

- Jane Wilburne

The long-awaited report from the National Mathematics Panel was presented to the President of the United States and Secretary of Education on March 13, 2008. The report, "*Foundations for Success*," highlights key points related to: curricular content, learning processes, teachers and teacher education, instructional practices, instructional materials, assessment, research policies, and mechanisms. As I read the report, I was impressed throughout with the emphasis on the need for research to expand the knowledge base of effective practices and programs for all teachers and students of mathematics. The other area I found important was the need to focus on critical foundations of algebra. Algebra has been identified as the gatekeeper for courses that lead to careers in the science, technology, engineering, and mathematics fields (p. 3). The report identifies essential concepts and skills needed to promote algebraic thinking and competencies: fluency with whole numbers,

Please check the date on the mailing label of the newsletter. If the date is 2008 (08) or earlier, it is time to renew your membership. Save money by renewing for three years. If each of us signs up a new member, our membership will double!

fluency with fractions, and particular aspects of geometry and measurement. This information coincides nicely with what Pennsylvania has been doing with the Standards Alignment System

(<http://www.portal.state.pa.us/portal/server.pt?open=512&objID=2050&&level=1&css=L1&mode=2>),

namely, looking at the mathematics curriculum with a more focused approach – which is a true step in the right direction! If you have not had a chance to read the report, please download it [<http://www.ed.gov/about/bdscomm/list/mathpanel/reports.html>], read it, and pass it on to colleagues. It has a wealth of valuable information.

There will be two NCSM leadership academies held this summer. The Western Institute will be held July 15-18, 2008 in Midway, Utah, and the Eastern Institute will be held July 29 – August 1, 2008 in Hunt Valley, Maryland. The leadership institutes are designed for K-16 mathematics education leaders (teams and individuals) who want to

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strengthen their school communities, eradicate

achievement gaps among students, and provide outstanding mathematics learning for all. If you would like further information, check the NCSM website at www.ncsmonline.org.

Also, keep the date Thursday, November 6, 2008 marked on your calendars for the annual PCSM conference in conjunction with PCTM. Plans are underway for some exciting keynote speakers. The conference will be held at the Split Rock Resort in the Poconos. It promises to be very informative – as well as an enjoyable social event for all mathematics educators.

Please feel free to pass this newsletter on to other mathematics educators and classroom teachers in your district or building and encourage them to join this organization. PCSM is open to anyone who is interested in key mathematical issues and policies related to promoting high-quality mathematics teaching and professional development. We are working on a website that will be available to all members, so watch for this exciting event!

Enjoy the end of the semester or school year and don't forget to take time for yourself. The spring flowers and weather are definitely a blessing after the cold winter!

Jane Wilburne
Jmw41@psu.edu

From the Editor

- **Cathy Schloemer**

When you receive this newsletter, it will be time for the end of another school year ... and summer renewal. What will you learn about teaching during your annual "summer sabbatical"? If you are not sure, check out the many summer opportunities listed in this newsletter!

The biggest news in mathematics education since our last newsletter has been the release of

Foundations for Success: The Final Report of

the National Mathematics Advisory Panel.

News sources have been filled with summaries, praise, and even some criticism of the report. I am including an article here that will summarize some major points of this important document.

Chris Czapleski, thank you again and again for your faithful help as my proofreader. I send this newsletter out with confidence because I know you "have my back."

Remember, this is your newsletter. Please send correspondence to me at:

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PENNSYLVANIA COUNCIL OF SUPERVISORS OF MATHEMATICS

EXECUTIVE BOARD MINUTES

Thursday, November 8, 2007

Present: Jane Wilburne, Presiding, A. Dowshen, G. Battisto, H. Field, M. Foley, K. Herbert, J. Martin, A. Massey, J. Mowbray, C. Schloemer, J. Zimmer

This meeting was held at the Radisson Hotel, Valley Forge, PA in connection with the 56th Annual Meeting of the Pennsylvania Council of Teachers of Mathematics.

President J. Wilburne called the meeting to order at 1:11 PM.

Minutes from the last Executive Board meeting were approved as distributed on a A. Massey/J. Martin motion.

The Treasurer and Membership Report indicated a balance of \$19068.03 as of October 26, 2007. There is a paid-up membership of 100 with 164 names in the database. K. Herbert reported that she plans to update the membership form and recommended that all 29 IU's be contacted to interest their curriculum people in PCSM.

It was announced that PCSM will need nominees for

President-Elect and Treasurer for next year. J. Zimmer

and K. Hebert respectively have volunteered to run.

Regarding NCTM, A. Massey asked if the affiliate dues have been paid and they have. She indicated that if we wish to prepare a resolution between now and April, she can send it in. C. Schloemer volunteered to replace A. Massey as NCTM representative. If she is unable to do so, then J. Zimmer will attend the caucus. It was moved by K. Herbert/J. Mowbray to provide up to \$800 in expenses to whoever goes. Motion passed.

PCTM representative J. Martin had no report since he was out of the country each time the PCTM Board met in the last year. H. Field and A Dowshen both volunteered to serve in this capacity.

Historian H. Field thanked A. Dowshen, K. Herbert and Fred Stewart for their hard work in writing the new constitution.

Newsletter Editor, C. Schloemer, would like to have suggestions as to what should be included. She schedules her work for the February issue over Christmas break, the May edition over Easter break, and the September issue in August. She raised the issue as to if and when we should have an electronic Newsletter. For now, it seems appropriate to have both.

Awards Chair G. Battisto noted that award nominees are needed. She puts a notice to that effect in the two Newsletter issues prior to the annual meeting. The current awards are: Outstanding Contribution to PCSM, Distinguished Service to PCSM, Outstanding Contribution to Supervision, Supervisor Hall of Fame and Past-President Award. H. Field agreed to search for criteria for these.

It was noted that we need a governmental relations representative. J. Wilburne will ask Jim Bohan to accept this position.

There was no old business.

Under new business, J. Zimmer suggested that Research for Better Schools may be willing to host listservs for the PCSM Board and PCSM members. She is willing to ask RBS about this. If they agree, she is willing to maintain these listservs. This was agreed to on a J. Battisto/M. Foley motion. J. Zimmer also suggested that we establish a web site of our own. Such a website costs her \$250 per year. She agreed to help set it up but others will have to take on the responsibility of maintaining it. It was moved by A. Massey/C. Schloemer that a reasonable amount be disbursed to do this.

J. Mowbray/M. Foley moved to send a copy of NCTM's

Mathematics Teaching Today to all members. Motion passed.

J. Wilburne thanked Past-President, M. Foley for all of her hard work for and help with PCSM.

The meeting was adjourned at 2:39 PM on a J. Martin/A. Massey motion.

Respectfully submitted,


John S. Mowbray
Secretary



PCSM AWARDS

It seems like just yesterday that we were getting accustomed to writing 2008 on our checks and suddenly it's May. Now is the time to think ahead to the PCSM Annual Meeting at Split Rock Resort on Nov. 6, 2008 and consider nominating a worthy colleague for one of the PCSM Awards. Available awards are: Distinguished Service, Outstanding Contributions to PCSM, Outstanding Contributions to Supervision and PCSM Hall of Fame Award. A nomination form is included with this newsletter. Nominations may be submitted at any time but should be sent by September 22, 2008 to allow sufficient time for engraving.

PCSM is an organization of outstanding leaders in mathematics education in Pennsylvania. There is no shortage of accomplishment among PCSM members, it is simply necessary for members to take the time to make nominations for annual awards. Nominations should be submitted to Gen Battisto, Awards Chair, at 37 Reeder St., Mt. Pocono, PA 18344 or electronically to genb@pnpa.net.



THE NCTM REPRESENTATIVE'S 2008 REPORT

Each year at the annual meeting of the National Council of Teachers of Mathematics (NCTM), representatives from the NCTM Affiliate Groups are invited to participate in Regional Caucuses and a Delegate Assembly. The Delegate Assembly is NCTM's formal structure for Affiliates to make recommendations about mathematics education issues or Council operational issues.

THE 2008 EASTERN REGIONAL CAUCUS

The Eastern Regional Caucus at the 2008 Annual Meeting of the NCTM in Salt Lake City, Utah, provided an opportunity for delegates and alternates to meet informally to share information and to discuss proposed resolutions. Our Eastern Regional II representative Bill Barnes, from Baltimore, Maryland, and the Eastern Regional I representative Maria Diamantis, from Branford, Connecticut, co-facilitated the Eastern Regional Caucus Meeting on April 9, 2008. The NCTM Board of Directors members who attended our caucus were incoming president Henry Kepner, Jacqueline Smith, and Marshalyn Baker. The representatives/ alternates who attended from Pennsylvania included Mary Lou Metz and myself. [Although unable to attend the caucus, Janie Zimmer also attended the Delegate Assembly with us the following day.]

Bill Barnes began the Caucus by asking each member to introduce himself/herself and tell one thing about his or her affiliate. Mary Lou Metz reported that she is in the process of organizing a student affiliate of NCTM. As the mean age of Affiliate members tends to continually rise, it was great to hear that Mary Lou is finding ways to encourage younger mathematics educators to get involved in Affiliate professional organizations.

When Barnes called for resolutions, quite a bit of discussion followed regarding subject-level end-of-year tests (for example, in Algebra II) and also the use of technology at the Annual NCTM meetings. Although we decided at this time not to draft a resolution regarding the issue of end-of-year tests, we did ultimately draft a resolution about technology. This resolution addressed the concern that the Annual Meeting includes only very limited opportunities for participants to experience hands-on technology, except at some calculator sessions. The result was Resolution 0.NR.08.01, detailed in the following report on the Delegate Assembly.

Before leaving the meeting, we also wrote notes of congratulations and farewell to Virginia Williams, Staff

Liaison of the three-person leadership team for the Affiliate Services Committee of NCTM, as she was retiring from service. These notes were presented to Williams at the Delegate Assembly the following day.

THE 2008 NCTM DELEGATE ASSEMBLY

Affiliate delegates gathered Thursday, April 10, at the Salt Palace Convention Center for speeches and presentations, and to discuss a resolution about technology. NCTM President Skip Fennell chartered two new Associate Affiliates – Coastal Council Of Teachers of Mathematics, Georgia, and Northeast Louisiana Association of Teachers of Mathematics. He then delivered the President's Report, discussing such strategic priorities as curriculum, equity, linking research and practice, professional growth and leadership, and advocacy. He particularly pointed out that K-8 *Focal Points* books, grade band by grade band, will soon be available, and that similarly formatted high school topic books addressing Algebra, Geometry, and Data Analysis and Probability, for example, should soon follow.

After Fennell's report, Suzanne Mitchell presided over the session. The following resolution was presented to the assembly, voted on, and passed by the delegates:

0.NR.08.01 (passed)

Be it resolved that the Delegate Assembly recommends that the NCTM Board of Directors strives to increase the opportunities for participants to use technology in sessions at the Annual Meeting and Exposition and Regional Conferences and Expositions. This should be done by providing computer labs, the Internet, and other state-of-the-art resources to support the use of technology in mathematics education.

This was my first time as a delegate. It was most interesting to be a member of the legislative process for NCTM, and I thank PCSM for providing me with this opportunity to serve our Affiliate in this capacity.

Respectfully submitted by
Cathy Schloemer
NCTM Representative for PCSM



Final Report of the National Math Panel

The National Mathematics Advisory Panel has called for the following "critical foundations" or benchmarks for U.S. school children.

Fluency with whole numbers:

1. By the end of grade three, students should be proficient with the addition and subtraction of whole numbers.
2. By the end of grade five, students should be proficient with multiplication and division of whole numbers.

Fluency with fractions:

1. By the end of grade four, students should be able to identify and represent fractions and decimals, and compare them on a number line or with other common representations of fractions and decimals.
2. By the end of grade five, students should be proficient with comparing fractions and decimals and common percents, and with the addition and subtraction of fractions and decimals.
3. By the end of grade six, students should be proficient with multiplication and division of fractions and decimals.
4. By the end of grade six, students should be proficient with all operations involving positive and negative integers.
5. By the end of grade seven, students should be proficient with all operations involving positive and negative fractions.
6. By the end of grade seven, students should be able to solve problems involving percent, ratio and rate and extend this work to proportionality.

Geometry and measurement:

1. By the end of grade five, students should be able to solve problems involving perimeter and area of triangles and all quadrilaterals having at least one pair of parallel sides (i.e. trapezoids).
2. By the end of grade six, students should be able to analyze the properties of two dimensional shapes and solve problems involving perimeter and area, and analyze the properties of three-dimensional shapes and solve problems involving surface area and volume.
3. By the end of grade seven, students should be familiar with the relationship between similar triangles and the concept of the slope of a line.

(Source: Draft of National Mathematics Advisory Panel final report as reported by John Hechinger. Contact Hechinger at john.hechinger@wsj.com. Hechinger's full article is available at from the Wall Street Journal, Wednesday, March 5, 2008, p. D 1. See http://online.wsj.com/article/SB120465579132610785.html?mod=personal_finance_yahoo.)

(Shared by Jerry Becker 3/10/08)

(For David Thornburg's critical commentary on the

National Math Panel's Report, please check out <http://districtadministration.com/pulse/commentpost.aspx?news=no&postid=49554> .)



Snippets: News You Can Use

(1) Japan's New Education Model: India

Article in the International Herald Tribune, Wednesday, January 2, 2008, by Martin Fackler
<http://www.iht.com/articles/2008/01/02/business/yen.php>

While Americans look to Singapore and Japan for ideas to improve mathematics education, Japanese eagerly enroll their children in schools with Indian curricula and expectations. Japan feels threatened by the growing economic strength of India and China, as well as India's increasing role in Internet business, knowledge-intensive industries, and software development. Can Japan regain its international status?

(2) Indian Scholars Discovered Basic Principle of Calculus 250 Years Before Newton and Leibnitz, Researchers Claim

Source: The University of Manchester (UK)

URL:

<http://www.manchester.ac.uk/aboutus/news/archive/list/item/?year=2007&month=august&id=121685>

Concepts of calculus, such as infinite series and a means to calculate pi to at least 9 places, were discovered in India centuries before Newton and Leibnitz, researchers have learned.

(Reported in COMET – 9(4) – 10 February 2008)

(2) Mathematics Instead of Art?

Article In *Education Week* [American Education's Newspaper of Record],
Volume 27, Number 21, January 30, 2008, pp. 26-27. See <http://www.edweek.org/ew/articles/2008/01/30/21perrin.h27.html?print=1>

If we abandon the arts in favor of mathematics, this report explains that we risk the loss of social, intellectual, emotional, and even spiritual skills and traits particularly nurtured by arts education.

(The United States has led the world in global creativity during most of modern history. For another excellent article about nurturing right-brained thinking and why it is critical that we do so, also read “What Knowledge Has the Most Worth” in *The School Administrator*, February 2008 issue at <http://www.aasa.org/publications/saarticledetail.cfm?ItemNumber=9737>)

(3) Algebra: Content and Pedagogy

In November 2006, the MAA, in a project funded by the NSF, brought together about 50 representatives from the mathematics and K-16 mathematics education communities to survey what has been learned about the teaching of algebra and to identify common principles that can serve as models for improvement, and to recommend directions for future research. The report is available electronically at <http://www.maa.org/algebra%2Dreport/>. A limited number of hard copies are available for distribution to working groups. For additional information contact Michael Pearson (pearson@maa.org).

(Shared by Jerry Becker, 1/08/08)

(4) Singapore Math Improves Student Scores

From the Los Angeles Times, Sunday, March 9, 2008. See http://www.latimes.com/news/local/la-me-math9mar09_0.1449785.story

A school in L.A. reports remarkable improvement in elementary students' math scores through the use of Singapore Math. Extensive teacher training is a must, since the books come without teacher guides. Could Singapore Math be in your school's future?

(Ed. note: For Singapore math materials in the U.S., pre-K through college, check out <http://www.singaporemath.com/>.)

(5) Why Do Men Dominate the Fields of Mathematics, Science, Engineering, and Technology?

Article in *Scientific American Mind*, November 2007: See <http://www.sciam.com/article.cfm?id=sex-math-and-scientific-achievement>

This succinct and yet thorough article provides an even-handed look at why males tend to outperform females in mathematical and scientific fields and suggests some not-so-obvious ways to support women's achievement.

Fractions Obsolete?

A recent flurry of articles suggested that the teaching of fractions, especially to elementary students, has become obsolete. (For example, read “Educators Divided by Fractions Debate: Penn Prof's Book Aims to Ignite Math Ideas” in the News-Journal [Delaware], Wednesday, December 26, 2007 at

<http://www.delawareonline.com/apps/pbcs.dll/article?AID=/20071226/NEWS03/712260337/1006/NEWS> .

Also, for another view, read “Fractions - Think Again” by John Gough in *Prime Number* vol. 6, no. 3, September 1991, pp. 3 - 7.)

January 12, 2008, Ms. Joyce Leslier sent Jerry Becker this response to some of the fractions debate, and I thought it was interesting enough to include it here in its entirety.

Hi Jerry,

I have long wanted to share my thoughts on this debate and would welcome your suggestions on how to better communicate my point: We must stop confusing this discussion of the utility of fractions with a discussion about our failure to teach fractions. It is regressive and elitist to think that the only students who need to understand fractions are the ones going on to advanced science and mathematics. This idea blames our failure to teach fractions on the children who have failed to learn it. The fact that we can't teach it seems to invite the idea that we shouldn't teach fractions. However, it is pretty easy to see that fractions are everywhere. A small list of important, every-day ideas, necessary to reason and understand the world include:

- part-whole relationships - one third of the pie,
- Probabilities - one chance in 10,
- Ratios - 1 teacher to 30 children,

These ideas show up in newspapers, in laws, in public meetings, and when a person is calculating doses of medicine or the size of some piping for a plumbing job. These are not esoteric concepts only needed for scientific

and mathematical studies. I teach both skills fragile

students and AP calculus students in high school. It is interesting that there are students in both groups that come to my classes without understanding fractions. More specifically, they don't understand how to add, subtract, multiply or divide fractions; sometimes they can perform some operations but have no understanding of what they are doing.

Before I can teach them how work with fractions, I have to convince them that fractions are important - because, by High School, they are pretty convinced that all they have to do is convert the fraction to a decimal.

I have to explain to them why decimals aren't enough, particularly the truncated decimals they get from their calculators.

I often do something like this:

I ask them to find the decimal representation for $1/3$. Some of them record it as .3, some record it as .33, some write .333 (with a bar over the last 3). Then I ask them to find one third of 12 by multiplying their decimal by 12. They get these different answers: 3.6, 3.96, 3.996. When the students consider how their choices of the decimal representation affect their answers (something they always knew at some level and which added to their sense of betrayal about math and calculators) we discover a whole bunch of confusions about the difference between rational and irrational numbers and about the fact that converting a fraction to a decimal introduces errors. We then conclude that if they use the fraction, even if they use it on the calculator, they are more likely to get an accurate answer and find that answer on their high-stakes multiple choice test.

Now, at this point I haven't taught the students to do anything with fractions except to understand that the fraction can be more accurate than the approximating decimal. They begin to use the fractions on their calculators so that $(1/3)*12 = 4$. But once they do this, they are ready to learn how to use, actually operate with fractions because they appreciate that the fraction has a particular advantage.

They also begin to learn the difference between rational numbers and irrational numbers. Two years ago, on PI Day, I printed out the first 100 digits of PI and asked each of my classes to help build "PI to one hundred digits" in the long hallway that connects to my classroom. Our PI took up two hallways because each sheet of paper held one digit. As the number took shape, I heard the comments from the hundreds of students that passed the number in our halls:

"What IS that?"

"PI!"

"Wow! Look at that! PI goes on forever!"

As I listened, I began to realize that the irrational nature of PI was not clear to many of these students. Many thought 3.14 was as good as 3.14159 and that it just didn't matter. The fact that it was a number that would go on and on and that it was really different from a number with a finite number of digits was very unclear. For a couple of years, as I transitioned from engineering to mathematics education, I was the Executive Director of the MetroMath Center. In that administrative capacity I had the opportunity to see the work of Dr. Carolyn Maher who has successfully taught fractions to children for many years and has video-taped research results from a longitudinal study that tracks her student's progress from early elementary school through high school.

I particularly remember one videotape that was examined in a MetroMath MU Seminar at Rutgers University. The tape showed a little boy doing a problem of division where he had to divide up (something) into parts and so he was working with fractions. What I remember is that Dr. Maher asked the class to guess what math level this boy was. We not only guessed that he was advanced in math, many of us suggested that one or both of his parents were probably engineers. Dr. Maher listened respectfully and then told us that this little boy was at the bottom of his class and that the teacher expressed concerns about his ability. The fact that he was thinking clearly about fractions caused us to assume that he must be exceptionally well-prepared. So there are existence proofs. Some of us can teach any child to understand and operate with fractions.

But, as the research of Rutgers professor Eva Thanheiser demonstrates, many elementary school teachers don't understand enough about multi-digit arithmetic to be able to teach it. So if they can't really explain what is happening when we subtract 92 from 303 (how a group of ten becomes 10 ones and how a group one hundred becomes a group of 10 tens), why do we think they can help develop the much more complicated ideas involved in adding or dividing fractions.

We have a chicken-egg math-teaching problem in our nation. But we will not solve it by pretending that *fractions* are the problem. They just do a good job of revealing the problem.

Sincerely,

Joyce Leslie
(20 year telecom software engineer veteran; Graduate student in mathematics education)

Upcoming Conferences and Events:**NCSM Leadership Academies**

(1) Western Institute

July 15-18, 2008

Midway, Utah

(2) Eastern Institute

July 29 – August 1, 2008

Hunt Valley, Maryland.

More info at www.ncsmonline.org.**PCSM Annual Conference**

November 6, 2008

Split Rock Resort, Poconos

(Registration forms in August newsletter)

PCTM 57th Annual Conference

November 5-7, 2008

Split Rock Resort, Poconos

For more information visit: www.pctm.org.**NCTM Annual Conference**

Equity: All Means All

Washington, D.C.

April 22-25, 2009

www.nctm.org/meetings/**NCTM Regional Conferences**

October 12-17, 2008

Cleveland, Ohio

www.nctm.org/meetings/**ICME (International Congress on Mathematical Education) -11**

July 6-13, 2008

Monterrey Mexico

(See <http://www.icme11.org> for general information or <http://tsg.icme11.org/> for information about individual study groups that will meet at the conference.)**Algebra through Function Academy**

June 22 - 27, 2008

Duck, North Carolina

A Function Approach:

Teaching algebra from a function approach requires the use of function and function behaviors to teach concepts and skills such as factoring, equation solving, arithmetic operations on polynomials, systems of equations, inequalities, properties of inequalities, definitions, concept of asymptotic behavior, absolute value, slope, laws of exponents, etc. Using unique materials, we will reorder the algebra content and use function concepts to develop understanding of, interest in, and long-term memory of traditional algebraic ideas. We will capitalize on cognitive processes of associations, pattern building, attention, visualizations, meaning, the enriched teaching environment, distributed learning, and priming. We will model how to teach algebra through a function approach with graphing calculators, and demonstrate why they are crucial to teaching and learning. At the Algebra through Function Academy we will use the TI-84 Plus SE, CBL2, CBR2, and Vernier EasyLink, as tools of choice when teaching algebra.

Instructors will be Debbie Crocker, Appalachian State University; & Ed Laughbaum, The Ohio State University. The location of the Academy is on the Outer Banks of North Carolina near the village of Duck at the Army Field Research Facility (FRF) <http://www.frf.usace.army.mil/>. The classroom is adjacent to the beach.

For registration information, please find the form at <http://www.math.ohio-state.edu/~elaughba/> Other information regarding the function approach can be found here as well. Registrations are limited to 35 people. For further information, please email Ed Laughbaum

[<elaughba@math.ohio-state.edu>](mailto:elaughba@math.ohio-state.edu).

The Mathematics Education into the 21st Century Project and the University of Applied Sciences in Dresden 10th International Conference

"Models in Developing Mathematics Education"
September 11-17, 2009

Dresden, Saxony, Germany

http://math.unipa.it/~grim/21_project/21_project_Dresden_2009.pdf

For all further conference details and updates, please email Alan Rogerson:
arogerson@inetia.pl

Fifth Conference on CAS in Secondary Mathematics

Saturday, June 28, 2008 8:15 AM - 4:15 PM

Sunday, June 29, 2008 8:00 AM - 1:00 PM

New Trier High School (Northfield Campus)

7 Happ Road Northfield, IL 60093

(approximately 20 miles from O'Hare Airport)

Registration: \$250 (Fee includes continental breakfast, box lunch, snack, and conference shirt)

On-line registration, updates, and hotel information:

<http://meecas.org>

For more information or questions, contact: Ilene

Hamilton <ihamilton@district125.k12.il.us>

Dan Hall <dhall@elmhurst205.org>

Pat Bowler-Johnson <bowlerjp@newtrier.k12.il.us>

Computer algebra systems (CAS) have the potential to revolutionize mathematics education at the secondary level. They do for algebra & calculus what calculators do for arithmetic: simplifying expressions, solving equations, factoring, taking derivatives, and much more!



ELECTRONIC RESOURCES

The entire text of the **Final Report of the National Math Advisory Panel** is at:

<http://www.ed.gov/about/bdscomm/list/mathpanel/index.html>

Using Technology and Problem Solving to Build Algebraic Reasoning (an online workshop for 5th - 9th grade teachers)

One workshop, funded by NSF, is still available in 2007-08: Workshop 10: June 9 - July 19

Go to

http://mathforum.org/nsdl_mathtech/online/dates.html

NCTM's Web site now has a collection of NCTM-produced [Equity Resources](#) as well as [Intervention Resources](#). Included in the collections are journal articles, books, and other NCTM resources.

"[The Relation between Reform Teaching and Equity in Mathematics Education](#)" is the first of a new online feature. The research summaries will highlight an article from each issue of NCTM's *Journal for Research in Mathematics Education* (JRME). The research summaries are written for a general audience.

National Kindergarten Alliance – This is an organization "To nurture, support and encourage kindergarten teachers and children in the implementation of exemplary programs. "If you'd like to join the NKA, download the membership application at <http://www.nkateach.org/NKA/Home.html> (scroll down and click on "[indmembership.pdf](#)") or see and click on "[Forms and Downloads](#)" for your choice of membership.

Math Blogs

<http://www.blogged.com/directory/education/math>

The editors at Blogged.com recently rated mathematics blogs based on criteria such as frequency of updates, relevance of content, and writing style. The top 10 include:

- Let's Play Math
- Logic Matters
- Wild About Math
- The Unapologetic Mathematician
- Math Notations
- The Math Mojo Chronicles
- Homeschool Math Blog
- Walking Randomly
- JD2718
- Terry Tao's Math Blog

Math Forum Internet News 13.8 (22 Feb. 2008)

Learn Algebra through Gaming?

Chicago Adopts Gaming for After School Math Programs

As part of an initiative to extend math activities for its students into the "immersive learning" arena, Chicago Public Schools has rolled out videogames in four of its after school centers. The rollout includes algebra and pre-algebra gaming software from Tabula Digita, called DimensionM.

Visit:

<http://www.1105newsletters.com/t.do?id=940725:11585389>

(Shared by John C. Uccellini)

Instructional Algebra Videos

Check out these nifty short instructional videos for yourself or your students.

<http://teachingandlearningmath.blogspot.com/>

Trent Tormoehlen, Franklin Community High School, Franklin, Indiana, uses his blog to muse on the art of teaching math and to organize math educational material such as instructional

algebra videos that he has created with mimio. View his pages on Algebra I instruction, including:

- Solving Quadratic Equations
- Simplifying Square Roots
- Inequalities
- Solving Systems of Equations
- Linear Inequalities and Systems of Linear Inequalities
- Exponent Properties

(Source: Math Forum Internet News No. 13.11 (14 March 2008))

Texas Instruments Syllabus Support Offer

<http://education.ti.com/syllabus>

Texas Instruments supports educators with the opportunity to add even greater impact to their curriculum and lessons. In exchange for the syllabus from a course that you teach with their technology, TI will send you support materials to help you integrate it into your classroom. Choose materials for any of the TI-Nspire, TI-84 Family or TI-89 Family of graphing calculators.

(Source: Math Forum Internet News No. 13.11 (14 March 2008))

Teaching with Data Simulations

<http://serc.carleton.edu/sp/library/datasim/>

Danielle Dupuis and Joan Garfield, University of Minnesota - Twin Cities, compiled this material. It was originally developed through the Consortium for the Advancement of Undergraduate Statistics (CAUSE).

- What Is Teaching with Data Simulations?

- Why Teach Using Data Simulations?
- How to Teach Using Data Simulations
- Available Technologies
- Classroom Examples
- References on Teaching with Data Simulations

(Source: Math Forum Internet News No. 13.19 (9 May 08))

The Role of Technology in the Teaching and Learning of Mathematics (March 2008)

To read NCTM's new position statement, go to <http://www.nctm.org/about/content.aspx?id=14233> ; also in NCTM News Bulletin, May/June 2008, Volume 44, Issue 9, p. 6.

(You can view all NCTM *Position Statements* by going to

<http://www.nctm.org/about/content.aspx?id=6330>) (Shared by Jerry Becker, 5/20/08)

Lockhart's Lament

<http://www.maa.org/devlin/LockhartsLament.pdf>

Check out this fascinating 25-page paper where Paul Lockhart argues in favor of "bringing a mathematician's point of view to very young children."

(Source: COMET 9 (16) - 21 May 2008)

Reviewing Curricula?

The following two organizations have posted reviews of new curricula.

What Works Clearing House:

<http://ies.ed.gov/ncee/wwc>

Best Evidence Encyclopedia:

www.bestevidence.org

(Source: John C. Uccellini)

Tom Reardon's Web Page

<http://www.tomreardon.com/>

Tom Reardon, Mathematics Department Chairman, Austintown Fitch High School and Mathematics Instructor, Youngstown State University, shares these resources that he has developed to use with his students:

- SMART Board Information & Ideas
 - Tips and Tricks
 - My Gallery
 - Daily Notes
 - Podcasts
 - Videos TI-Nspire Information & Ideas
 - Activities that are ready to use
- TI-SmartView Information & Ideas
 - 17 page primer
- TI-73/83/84/89/92 Information & Ideas
 - A collection of over 100 activities to download and use

(Source: Math Forum Internet News No.13.14 (4 April 2008))

Flatland: The Movie

Just in case you somehow missed it, the famous book has been made into a 30-minute movie.

Check out: <http://www.flatlandthemovie.com/>

GeoGebra--Free Software

<http://www.geogebra.org>

Markus Hohenwarter created the mathematics software called GeoGebra in an attempt to join dynamic geometry, algebra, and calculus.

GeoGebra runs on all computer platforms and is available for free download from

http://www.geogebra.org/cms/index.php?option=com_content&task=blogcategory&id=70&Itemid=57

(Source: COMET 9(12) 13 April 2008)