



Mathbits

2003 Fall Conference Highlights

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The 2003 MCTM Fall Conference was held at Andover High School on Friday, October 17. The theme for the conference was “Mathematics Teachers: Positive Leadership in a State of Change.”



Barb Stoflet and her ill-fitting fashion item

The day began with an entertaining and motivating address entitled “Will One Size Ever Fit All?” by elementary teacher and Minnesota Teacher of the Year 01-02, Barb Stoflet. Barb’s story about her one and only experience with fashion modeling had the audience in stitches from laughter. The frustrations Barb experienced in the story served to strikingly illustrate the difficulties children may experience in learning when the education they receive is not a good “fit” with regard to learning style, support, and curriculum. She emphasized, “I hope never to do to a kid what had been done to me.” Barb went on to share the moving story of her big brother Dave—how he did not find a good “fit” in the traditional school system for his learning style, and how he had always been the true inspiration behind her teaching. One of the pre-service teacher education students commented, “Her speech required me to consider

how I need to be careful not to think that everyone learns in the same way I do.” Yes indeed, teachers have the incredible challenge of trying to fit education to every child when “one size does not fit all.”

For more on the fall conference turn to page 16.

Upcoming Events:

- Future Teacher’s Conference
- Registration for student exhibits at NCTM Regional
- Spring Conference Registration Form

NCTM election results—Minnesota victory

The following individuals have been elected to serve a three-year term on the NCTM Board of Directors. Their term of service (2004 -2007) will begin at the end of the Annual Meeting in April 2004.

Bonnie J. Hagelberger, Plymouth, Minnesota

Jennie M. Bennett, Houston, Texas

David DeCoste, Antigonish, Nova Scotia

Richard T. (Dick) Seitz, Helena, Montana

Congratulations Bonnie!

**Pondering by
the President**

As I write this

- Homecoming has come and gone at Hopkins.
- Midterms and our first parent conferences have come and gone.
- The leaves are dropping; in fact, I came home one evening and there were big piles under some of the trees. They must have just dropped!
- Harvest is well under way.
- The Fall MCTM meeting at Andover is over. Barb Stoflet gave a keynote appropriately named "Will One Size Ever Fit All?" It gave all of us things to reflect upon.

Where has the time gone? Just a few days ago, school started. Didn't it?

I am an avid reader of the newspaper, primarily the Minneapolis Star Tribune. At our September MCTM Board meeting, we discussed the article "Minnesota's schools face an alarming racial gap", by James Walsh, published on 08/14/03. One of the things that I enjoy about being part of the Board of Directors is the broad cross-section of teaching experiences ... rural, urban, suburban, elementary, middle school/junior high, secondary, junior college and university. As always, we could have talked much longer than the hour allotted. Another article I came across lately was published in the Milwaukee Journal Sentinel, "Bottom line for math students: Good teaching is what counts," by Alan J. Borsuk, 10/06/03. This article was one part of a four part series, all available by doing a search on the www.jsonline.com web site.

If you would like to receive these articles when I forward them to the Board, please email me at skwesteg@ties.k12.mn.us. I would be very glad to include you in the mailing.

**My dad always said,
"If you don't vote,
you can't complain."**

You are now holding the MCTM election issue of the newsletter ... please be sure to vote. I am very proud to say that I have never missed voting in an election ... state, county, federal, NCTM, MCTM, etc. My dad always said, "If you don't vote, you can't complain." Of course, he used a different word instead of complain. Since I like to voice my opinion, I vote!

My last thought for this issue is that each of us should take a few minutes and write a thank you note to a former teacher. I am not sure about you, but I can work a long time on one thank you. I have a box where I keep notes, emails from parents, and, yes, even that heart shaped box (it used to contain chocolates) that one of my special ed kids gave me last year. We all need those to pull out on those days when nothing seemed to have gone well.

Have a great finish to this fall ... winter here we come.

Sue Westegaard
MCTM President

HIGH QUALITY TEACHERS DOING HIGH QUALITY TEACHING IT IS INSTRUCTION THAT MAKES THE DIFFERENCE

The concept of “teacher quality” is a major component of the “No Child Left Behind” legislation. In Minnesota, we are fortunate to have a very high percentage of highly qualified teachers in mathematics. But if we are to help ALL students be proficient in mathematics, highly qualified teachers must be engaged in “high quality teaching.”

What does quality teaching look like? The May 2003 report *Looking Inside the Classroom – A Study of K-12 Mathematics and Science Education in the United States* which was prepared by Horizon Research, Inc. provides some insight. Researchers observed a total of 364 mathematics and science lessons and rated their quality. Instruction judged to be low in quality is unlikely to enhance students’ understanding of important content or the ability to successfully engage in mathematics processes. On the other end of the spectrum, high quality instruction engages students with important concepts; is very likely to enhance student understanding of these concepts and to develop their capacity to do mathematics successfully.

For some of the classrooms where the students were fully and purposefully engaged in deepening their understanding of important concepts the instruction was “traditional” in nature, including lectures and worksheets. Others were “reform” in nature, involving students in structured inquiry. The same can be said for those classrooms where the instruction was of low quality. The factors that seem to distinguish effective instruction from ineffective instruction are those practices that:

- **Engage Students with the Mathematics Content**
(done well in 20% of the lessons, completely lacking in 55%);
- **Create an Environment Conducive to Learning**
(done well in 13% of the lessons, completely lacking in 26%);
- **Ensure Access for all Students**
(done in 47% of the lessons, completely lacking in 29%);
- **Use Questioning to Monitor and Promote Understanding**
(done in 16% of the lessons, completely lacking in 66%); and
- **Help Students Make Sense of the Mathematics Content**
(done in 16% of the lessons, completely lacking in 66%).

The full report can be found at www.horizon-research.com but to briefly expand on each point:

- **Engage Students with the Mathematics Content.** One of the most important aspects of quality instruction is that the mathematics content is both significant and worthwhile. However, that is not enough; high quality instruction invites students to interact purposefully with the content, and represent mathematics as a dynamic body of knowledge generated and enriched by investigation.
- **Create an Environment Conducive to Learning.** A classroom that is both respectful and rigorous is essential in order for students to have an opportunity to learn. Where the quality of instruction is high, a climate of respect for students’ ideas, questions, and contributions prevails as well as a climate that encourages constructive criticism and the challenging of ideas.
- **Ensure Access for all Students.** Quality instruction ensures that all students are in fact accessing the mathematics. It encourages the active participation of all students.
- **Use Questioning to Monitor and Promote Understanding.** The kinds of questions asked are key in determining the extent to which instruction helps students learn important mathematics concepts. Questioning can be used to monitor student understanding of new ideas and to encourage students to think more deeply about the mathematics.
- **Help Students Make Sense of the Mathematics Content.** Quality instruction helps students see the connections among ideas. It engages the students in doing the intellectual work, with the teacher helping to ensure that they all are, in fact, making sense of the key concepts being addressed.

Finally, on his first birthday Isaiah Benjamin received a lesson in mathematical reasoning. He was so

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MDE Mathematics Specialist Report

**Factors that distinguish
effective instruction
from ineffective
instruction**

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looking forward to being allowed to face forward in his car seat when he reached one year of age. By asking questions that probed for understanding, his mother was able to determine that his understanding was that if you are one year old or weigh 20 pounds you will be allowed to face forward. However, the legislation referred to as "No Child Left Facing Backwards in Their Car Seat" requires that in order for a child to be facing forward they must be one year old and weigh 20 pounds. Since Isaiah weighs only 18 pounds you can imagine his disappointment when the difference between the word "and" and the word "or" was explained to him.

Tom Muchlinski
State Mathematics Specialist

MINNESOTA CAREER AND TECHNICAL EDUCATION - MATHEMATICS PROFESSIONAL DEVELOPMENT PILOT PROJECT

The mission of this project is to verify that student achievement is enhanced through an integrated approach to teaching mathematics in Career and Technical Education. The purpose is to train career and technical education and mathematics teachers to work collaboratively on the design and integration of mathematics concepts to enhance student achievement.

Pilot Project Team Responsibilities

Each of the ten pilot school districts selected to participate in the Mathematics Professional Development Project agrees to:

Integrated teaching of mathematics in Career and Technical Education

1. Involve one to two Career and Technical Educators from approved Career and Technical Education programs including Agricultural Education, Business Education, Health Occupations Education, Trades and Industry Education, and one math educator from grades 7-12 with preference to teachers whose responsibilities include algebra and/or geometry;
2. Select teachers who are willing to collaborate on the project who will complete on-line assignments and:
 - attend six days of training throughout the project as outlined below;
 - training seminar the week of January 5, 2004 (2 days);
 - mid-term seminar (2 days);
 - capstone seminar and post-experience evaluation (2 days); and
 - costs for travel, lodging, and substitute teachers will be encumbered through state and local basic Carl Perkins funds. Assistance will be provided to set up budget structure;
3. Participate in academic skill testing of students enrolled in Career and Technical Education programs in schools to measure the effectiveness; and
4. Participate in a pilot project evaluation.

Cohort I began this project in the fall of 2003 and will complete their work in November. We plan to offer two more cohorts in school year 2003-2004. Cohorts II and III will start in January 2004. The initial meetings for both cohorts will be held at the Minnesota Department of Education Conference Center in Roseville. Cohort II will meet January 6 and 7 and Cohort III will meet January 8 and 9. Additional dates and locations for the seminars and evaluations will be arranged at the first meeting of each cohort.

Applications must be received by 4:00 PM on November 28, 2003. More information and application forms are available at www.mctm.org. Questions can be directed to Jean Kyle at the Minnesota Department of Education, 651-582-8514 or jean.kyle@state.mn.us

Board of Directors Election

Five offices on the Board of Directors of MCTM will be filled in this current election. The members of the Nominations and Elections Committee have nominated candidates for each office. Please read the descriptions of the nominated candidates on the attached pages and complete the enclosed ballot. All ballots must be postmarked no later than December 19, 2003.

Typically fewer than 10% of the membership return their election ballots. **YOUR VOTE IS IMPORTANT.** Complete your ballot and drop it in the mail today.

Office Qualifications and Responsibilities:

I. President-Elect

The president-elect shall serve for one year and then be installed as president, serving for two years. The nominee must have been a member of the Council continuously during the preceding five years and have participated in the activities of the Council. In the absence of the president or in the event that the president is unable to serve, the president-elect or past president shall assume the responsibilities of the president.

II. Vice President of Mathematics Education

The vice-president of mathematics education shall be a person from a Minnesota college or university whose primary professional duties include teacher education in mathematics. A nominee for vice-president must have been a member of the Council continuously during the preceding three years and have participated in the activities of the Council. The vice-president serves a three year term. The vice-presidents plan all conferences sponsored by the Council.

III. Vice President of Middle School / Junior High

The vice-president of middle school/junior high represents middle school and junior high school teachers from across the state. (Additional for vice-presidents, see above.)

IV. District Directors (districts 3 and 6)

District directors represent the members in their district. It is the responsibility of directors to promote membership in MCTM, to serve as representatives of their district's members in the Delegate Assembly, and to identify and work to solve problems that may be specific to mathematics teaching in their district. Nominees for district directors must have been a member of the Council continuously during the preceding three years and must work in the district that the director is to represent. The directors shall serve a term of three years.

Note: The above information is taken from *Bylaws of the Minnesota Council of Teachers of Mathematics, effective May 1, 2003*.

Candidate Information

Enclosed ballot must be returned by December 19, 2003

Candidates for President-Elect



Karen Coblentz

Current Position:

Elementary Principal (K-4),
Dassel Elementary,
Dassel-Cokato School District

Previous Teaching Experience:

Gr 6 – Windom, MN
Gr 2,3, & 6 – Misawa, Japan
Gr 3 – Valdosta, GA
Gr 2 – Mankato, MN
Gr 5 – Appleton, MN

Education:

B.S., Minnesota State University, Mankato
M.S., Southwest State University, Marshall
Specialist Degree for K-12 Administration/Supt. License,
Minnesota State University, Mankato

Professional Affiliations:

MCTM, NCTM
National Council of Supervisors of Mathematics
Minnesota Elementary School Principals Association
National Elementary School Principals Association
Association of Curriculum and Development
Minnesota Association of Curriculum and Development

Previous Involvement with MCTM and Mathematics Education:

MCTM Vice-President of Elementary 2000-2003
MCTM Executive Board 2000-Present
MCTM Spring Conference Co-chair 2000-2003
MCTM Spring Conference Program Chair – 2002-2003
MCTM Spring Conference Committee Member 1998-2003
NCTM Regional Program Co-Chair, Minneapolis, 2004
Speaker at several State, Regional, and National Conferences
Best Practice Member
President, Southwest Minnesota Math Council – 1998-1999

Goals as an MCTM Officer:

This is an exciting time to be involved in mathematics education. It is also a very challenging time. As we move into an era governed by “No Child Left Behind” and the new Minnesota Academic Standards for Mathematics, we have an opportunity to move closer to realizing NCTM’s and MCTM’s vision of a quality mathematics education for all students. However, challenges lie ahead before we can reach that vision.

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William K. “Bill” Tomhave

Current Position:

Professor of Mathematics;
Chair, Mathematics and Computer Science Department,
Concordia College, Moorhead,
Minnesota

Education:

BA Luther College, Decorah, Iowa
MS and PhD, Iowa State University, Ames, Iowa

Professional Affiliations:

MCTM, NCTM, Association of Mathematics Teacher Educators, Minnesota School Board Association, National Council of Supervisors of Mathematics, National School Board Association, Phi Delta Kappa

Previous Involvement with MCTM and Mathematics Education:

MCTM’s NCTM Representative 1983 - 1990
MCTM Vice President - Mathematics Education 1990 - 1992
Frequent speaker at NCTM, NCSM and MCTM meetings
Frequent participant in MCTM delegate assembly
Member of MCTM Nomination Committee – 2002, 2003
Member MCTM +1, -1 Task Force 2002-2003
Active participant in SciMathMn’s Transforming Teacher Education (TTE) program; Long time participant in a wide variety of mathematics education reform activities; Developer and director of mathematics in-service programs; Mathematics education consultant to schools in MN and IA; Former high school mathematics teacher; Long term involvement in K-12 mathematics teacher prep

Goals as an MCTM Officer:

MCTM is well known for its leadership in mathematics education. I believe that MCTM will continue to provide a range of professional services to its membership. As president I would like to focus my energies on a series of “building” projects:

- Let’s build a professional dialogue across K-16 that addresses the full range of issues impacting mathematics classrooms in our state.
- Let’s build our profession by developing a sustainable process for encouraging and supporting pre-service and early

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Candidate Information

Enclosed ballot must be returned by December 19, 2003

Candidates for Vice President for Mathematics Education



Kay A. Wohlhuter

Current Position:
Associate Professor of
Mathematics Education,
Univ. of Minnesota, Duluth

Education:

BA, Mathematics Education - Augustana College, Sioux Falls, SD; MS, Mathematics, Montana State University, Bozeman, MT; PhD. Mathematics Education - Oregon State University, Corvallis, OR

Professional Affiliations:

MCTM, NCTM, Research Council on Mathematics Learning, Mathematical Association of America

Previous Involvement with MCTM and Mathematics

Education:

Have presented, presided, and worked as a delegate at MCTM conferences.

Member of Minnesota Teacher Research Network examining the teaching and learning of mathematics.

Have made National conference presentations and reviewed professional journals.

Goals as an MCTM Officer:

As an MCTM officer, I look forward to meeting teachers from across the state, learning from them, and facilitating dialogue between them as we continue to address important issues such as determining how best to help children and students learn mathematics, examining curriculum and assessment issues, and supporting teachers' professional growth.



Terry Wyberg

Current Position:
Lecturer,
University of Minnesota,
College of Education

Education:

B.S. (Mathematics) - University of Minnesota
B.S. (Mathematics Education) - University of Minnesota
M.S. (Mathematics) – University of Minnesota
Ph.D. (Mathematics Education) – University of Minnesota

Professional Affiliations:

MCTM, NCTM

Previous Involvement with MCTM and Mathematics

Education:

Have given numerous presentations at fall and spring MCTM conferences.

Have been teaching mathematics education courses for pre-service and in-service mathematics teachers at the University of Minnesota for the past six years.

Teach mathematics methods courses for elementary, middle, and high school pre-service teachers.

Developed relationships with area schools to strengthen in-service and pre-service teacher education.

Have authored or co-authored several articles and book chapters in a variety of mathematics teaching publications.

Goals as an MCTM Officer:

I am interested increasing membership and participation in MCTM. I would like to further the work of the +1, -1 Task Force to encourage pre-service and beginning teachers to become actively involved in MCTM. This is an important goal for all levels of K-12 teaching but is especially important at the elementary grades. It is important to encourage teachers to share teaching ideas and I would like to increase the number of presentations given at fall and spring conferences so teachers of all levels have interesting choices when they attend. I would also like to strengthen the linkages among the various colleges and universities that serve mathematics teachers.

Candidate Information

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Candidates for Vice President for Middle School / Junior High



Greg Gearey

Current Position:
Eighth grade math instructor:
Algebra and Geometry,
Franklin Jr. High School,
Brainerd

Education:
Bachelor Degree - St. Olaf College, Northfield
Masters in Education - Southwest State University, Marshall

Professional Affiliations:
MCTM, NCTM,
Minnesota State High School League Coaches Association

Previous Involvement with MCTM and Mathematics Education:
Member of MCTM since 1991
MCTM Equipment and Technology Committee at the spring conference for 4 years

Goals as an MCTM Officer:
I will work toward providing the best technology possible at the spring conference in an effort to attract more presenters displaying the latest technological advances related in mathematics education.



Jeannine Salzer

Current Position:
Eighth grade mathematics teacher,
Hopkins North Junior High

Education:
BS, St. Cloud State University in Elementary Education and Middle School Mathematics
MA, University of St. Thomas in Curriculum and Instruction

Professional Affiliations:
MCTM, NCTM, Minnesota Best Practice Network

Previous Involvement with MCTM and Mathematics Education:
Attended, presided and presented at fall and spring MCTM conferences.
Presented at the spring leadership symposiums.
Trained teachers from across the state in implementing the Connected Mathematics Project curriculum for the past 4 years.
Worked with the Department of Children Families and Learning on various projects.

Goals as an MCTM Officer:
If elected to this position within MCTM, it is my goal to continue to communicate the message of the organization to other educators and non-educators alike. Through my involvement within the organization, I hope to lead both through participation and example that mathematics is for all.

Other information:
I have received National Board Certification in Mathematics for Adolescence.
It is my hope that by being elected to this position I can give back to an organization that has given me many opportunities to grow as a professional.

Candidate Information

Enclosed ballot must be returned by December 19, 2003

Candidates for District 6 Director



Carlton Urdahl

Current Position:
Math Teacher and Department
Chairperson
Buffalo High School,
Buffalo, Minnesota

Education:

BA, Concordia College, Moorhead, MN
MA, Stanford University
NSF Teacher Renewal Project, U of M
Woodrow Wilson Summer Workshop, Macalester College
Advanced Placement Workshops, Carleton College

Professional Affiliations:

MCTM, NCTM, MEA – EDUCATION MN,
NEA

Previous Involvement with MCTM and Mathematics

Education:

MCTM and NCTM member for many years; have attended numerous conventions and workshops.
Served on MN Dept of Education committees on MCAs and Benchmark writing.

Goals as an MCTM Officer:

As a MCTM District Director I would hope to be an advocate for math education through communication with members in my district. I have always enjoyed teaching math and hope to be able to share this enthusiasm with others. I would also carry out my responsibilities as a director to the best of my abilities.



Margaret Williams

Current Position:
Curriculum Integrator for
Riverview Specialty School for
Math and Environmental Sci-
ence, Anoka-Hennepin School
District

Education:

BA, English and Theatre, University of Minnesota
BS, Elementary Education, University of Minnesota
MA, Mathematics Education, University of Minnesota

Professional Affiliations:

MCTM, NCTM
Association of Supervision and Curriculum Development
National Science Teachers Association
Minnesota Best Practice Network
Council of Presidential Awardees in Mathematics

Previous Involvement with MCTM and Mathematics

Education:

Frequent presenter at MCTM conferences
Trainer for Investigations in Number, Data, and Space
Adjunct Instructor for Hamline University's Project for Ele-
mentary Math
Christa McAuliffe Fellow for 1999-2000

Goals as an MCTM Officer:

My most important goal as an MCTM officer would be to facilitate ongoing communication between teachers of all levels of mathematics. I would promote opportunities for teachers to expand their own content knowledge of math and I would support the continued use of Best Practice instructional strategies.

Other Information:

Recipient of the Teacher Outstanding Performance Award in Anoka-Hennepin School District, 2003
Recipient of the Presidential Award for Excellence in Elementary Mathematics Teaching, 1997
I have a passion for working with students who experience difficulty in learning mathematics.

Candidate Information

Candidate for District 3 Director



Rose Gundacker

Current Position:
Mathematics Teacher, Rosemount High School

Education:

BA , Mathematics and Education,
College of St. Teresa, Winona, MN
MA, Mathematics, Arizona State University
NSF Program, U. of M.

Professional Affiliations:

MCTM, NCTM, NEA, Education MN

Previous Involvement with MCTM and Mathematics

Education:

Member, Mathematics Best Practice Network.
Frequent presenter and presider at MCTM conferences.
Presenter for Summer Chance and Data academies.
Reader for A.P. Calculus exam.
Consultant for College Board Calculus workshops.
Teacher at A.P. summer institutes for teachers.
Member of district curriculum committee.
Member of SciMathMN teacher academy team.
Worked on MCA test with data review and item analysis.

Goals as an MCTM Officer:

My goal is to encourage more teachers to become actively involved with MCTM, attending and volunteering at the conferences. The best staff development is often the collaboration among teachers that takes place at conferences and workshops. I will support communication and sharing of our best ideas about mathematics education

Other Information:

I have been on the MCTM Board for the last year filling out a vacant position. It has been a wonderful opportunity to get involved in the organization and I would like to continue as district director, involved in promoting mathematics education for all students in Minnesota.

Enclosed ballot must be returned by December 19, 2003

Candidate Information (Continued)

Coblentz *(Continued from page 6)*

To help meet those challenges, as the president of MCTM, I will work with the Board of Directors and the membership to:

1. Promote professional development for teachers that will help them implement instructional strategies that will help all students learn mathematics.
2. Work to ensure that instruction helps students develop a deep conceptual understanding of mathematics and an ability to use mathematics throughout their lives and is not solely focused on preparing students for passing legislatively mandated assessments.
3. Provide resources for all teachers that will help them meet the needs of all their students.
4. Retain quality teachers in the classroom by providing beginning teachers with the mentorship and support they need to be successful.
5. Engage in discussions with legislators, parents, educators, community members, and other stakeholders around what is the important mathematics our students should learn and

Tomhave *(Continued from page 6)*

career teachers.

- Let's build MCTM by recruiting liaisons in every school, K-12, in Minnesota.
- Let's build upon initiatives like TTE to continue opportunities for college mathematics and mathematics education professors to talk about both content and pedagogy issues as they impact both mathematics instruction and mathematics teacher preparation.
- Let's build the MCTM team by having each member work to recruit one new colleague.
- Let's build strong connections between MCTM and NCTM by promoting the November 2004 NCTM regional meeting in Minneapolis as a superb professional development opportunity.

Other Information:

I have enjoyed serving the MCTM in a variety of roles during the last 25 years. I have demonstrated my personal commitment to the students in my community by serving as an elected member of my local school board. I believe that my life's work has been a call to service. I have made it a hallmark of my professional efforts to be a team builder and I will bring that spirit to the office of MCTM president. Our council has a tremendous resource— you, its membership. The council is your council and we need your ideas, your energy and your support. Whether you teach young children or teens, whether you work with students who struggle to learn or with those who challenge you to simply keep up with them, whether you teach in a small school or a large one - whatever your role, understand this – we are all in this together and we need each other!

Let's make MCTM a lighthouse that shows the dramatic impact a profession organization committed to what is best for all students can have on education throughout Minnesota.

Note: The following piece was written by Sara Van Der Werf, mathematics teacher at Patrick Henry High School in Minneapolis, to school board members and district leaders. Copies have been requested by numerous people and is thought-provoking for all to consider.

Reflections from a “Super Teacher” Why I think paying me \$100,000 misses the point.

I am a “super teacher”. Although I have not been bestowed with this title under Governor Pawlenty’s newly proposed initiative for education, I am confident I would qualify for this title no matter what type of rubric or set of qualifications were developed. I believe that there is no one out there that can do my job better than me. I have the privilege of teaching high school mathematics in Minneapolis. I believe you could find a better teacher of mathematics than me, but you would be hard pressed to find one who is willing to do my job day in and day out, year after year. I, myself, am on the verge of leaving the profession. If you think paying me up to \$100,000 a year is what is necessary to keep me or my peers working in this profession than I say you don’t get what the real problem is.

Of course I would love to be paid \$100,000 a year. Unfortunately, earning the salary I deserve would not solve the problems that are driving me away from this profession. Studies show that 1 out of 3 new teachers leave the profession before the end of their 3rd year and half leave after 5 years. As a twelfth year teacher in my school only eleven of the approximately 170 people on staff in my building have been at my school longer than me. Seventy-five percent of the teachers in my district have been hired after me. I am an “old-timer”. I have outlasted the statistics. The problem as I see it in my school and district is not attracting new teachers (we hire lots of great new teachers every year), it is keeping the good ones we have.

The teacher retention studies have also suggested that those who are leaving the profession are among the best and brightest. As a mentor to new teachers for the last several years, I have seen the same. I have witnessed some of our most talented teachers leave our school for other professions or jobs in “easier” districts. Those of us who stay wonder how long we can last. Common topics around the water-cooler include sustainability and handling stress.

This profession eats at your soul. My definition of a “super teacher” is one who believes that ALL children can learn and in addition believe it is their job to make this happen. These “super teachers” look around their classrooms and don’t accept failure. They don’t make excuses for why students are failing and work hard to find solutions to the problems in their classroom. As a result, they feel woefully unqualified and unprepared to accomplish all that is before them because everywhere they look there is another needy student. They feel a huge sense of failure. They are overwhelmed with the task before them and working themselves to the bone. There are not enough hours in the day to do everything necessary to help each and every student succeed. Recent budget cuts have made this situation worse. We have more students and less time. The works seems unending.

How does one balance an awareness of the vast needs of their students with the knowledge that they will never have enough time or energy to fill all of these needs? I have not figured this one out. I don’t want to shut off the part of me that sees the needs of my students because this is what makes me a great teacher. It drives me to improve my curriculum. It allows me to get to know my students and their families. It allows me to have the greatest joys and highs in this profession. I see students grow and blossom. But for

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**Do you want me for
the rest of the year or
for the rest of my
career?**

(Continued from page 11)

every student I have success with there is always another one I see in need of help and support. The work is never done.

Instead of feeling good about the students I have helped, I am haunted by the ones I have not. Even though I have developed methods of dealing with this stress, it still smacks me right in my face when I watch the news, read a newspaper or talk to new acquaintances at a dinner party. Everyone is talking about how bad it is in education and in my district in particular. It seems like everyone has another idea of how to improve things. It seems like everyone is implying that we and I am not doing enough. At the end of an emotionally exhausting week I want to throw up my hands and give up. What more do you want me to do?

I, and my peers, realize this is a pressure we put on ourselves. We know we should not take what the media says personally. We know that no one knows our students and their needs better than us. We know intellectually that most of the people out there admire us for what we do accomplish. Unfortunately, even though we know all of this, we still feel under appreciated and are leaving the profession in droves. This job is not survival of the best, but survival of the callous. Those who survive are the ones who can shut off that part of them that sees all the challenges that surround them.

**“Spend a day in my
classroom, or better
yet a week”**

You need me and my peers in the public classrooms of this state. You need to find ways of retaining us in the profession for the long term. Paying us what we deserve does not address the real things we want fixed. We want better working conditions. We want to see less students per day. We want an additional hour each day to call parents, talk to social workers, improve curriculum. We want teacher residency programs for all new teachers. We want two-ply toilet paper in our bathrooms. We want to be able to not have to spend over \$1000 of our own money each year for classroom supplies. We want to occasionally run copies on colored paper. We want to go out for a 45-minute lunch twice a year with our peers to take away from the isolation in our jobs (the real thing that I believe that is slowly killing our spirits). We want to be valued. We want to be appreciated. We want to have someone understand our students as something more than a test score. We want you to love public education and the value we see it has for our society as much as we do. We want to have the time to go to the bathroom at least one time during an 8-hour day. We want to feel like we can call in sick if we are sick instead of coming in sick and teaching our students. We want people to stop giving us a hard time about our supposed 3 months off in the summer. We want greater career opportunities. We want quality leaders in our buildings and districts to lead us. We want you to keep the public libraries and parks open longer so our students have a place to go. We want to be heard. We want... We want... We want... I want all of these things more than I want the \$100,000 a year. Please hear what I am saying before I am gone.

I invite anyone who is interested to spend a day in my classroom, or better yet a week. I promise what you see and learn will change your life. I love my students and am passionate about their success. I look forward to the day when I can go to a dinner party and not have people tell me what is wrong with education and instead volunteer their time to help. Thank you for listening to me.

Sincerely,

Sara Van Der Werf
Mathematics Teacher
Patrick Henry High School
SaraVDW@aol.com

Symbolic manipulation skill in algebra— what do Minnesota college professors say?

The newer high school mathematics curricula tend to de-emphasize by-hand symbolic algebraic manipulation skill. In its place they include additional topics such as discrete mathematics and statistics, and more emphasis on problem solving. The question I placed to Minnesota post-secondary mathematics departments was, *is this okay?*

Some of the responses were an emphatic "no." Many of the college professors surveyed gave a response similar to the following.

- "I believe that de-emphasizing algebraic manipulation skills is a big mistake. Algebraic manipulation is an absolute must for preparing students for maximum success in college."
- "It is our feeling that it is extremely unlikely that a student will be very successful in higher levels of math if they have to use a calculator to solve basic algebraic equations."

Other college instructors even questioned the idea that students could become good problem solvers without having the symbolic manipulation ability.

- "The idea that students can become good math problem-solvers without understanding how to carry out algebraic operations is wrong, at least as far as our courses are concerned."

Still others agreed that students need both.

- "I agree with the idea that manipulation and understanding need to both occur for one to truly know mathematics. It has been my experience that I see more students able to do the manipulations and not understand them than students who understand what needs to happen but are unable to get it to work symbolically."

Some tempered their responses by implying that algebra is most important for math majors. Consider this quote.

- "For non-calculus track students in our Liberal Arts course, the algebra skills are not important. Better to spend time learning fun applications of math and use of a calculator."

Others stated that algebra is important, but some aspects of algebra are less important than others.

- "Getting the students to have some basic skills is important. For example if a student doesn't know how to multiply or divide by 10, that's a problem. Students should have some basic algebra under their belt. But simplifying complex fractions? Even factoring quadratics? These skills are helpful, but once they get to college, they should be able to pick those up if they know how to think and study. It is more important that students study math continually and keep thinking mathematically."

As in the above quote, college instructors listed what they believe is truly essential to success in college. The following quotes illustrate what those perceived essentials include.

- "A certain amount of [algebra manipulation] is essential. In fact, a lack of understanding of how to simplify a sum of rational functions or to simplify an expression involving exponents is usually a sign that the student does not understand the essential concepts that lie beneath these manipulations. Skill in basic algebraic manipulation is necessary but far from sufficient. Many students who can do the manipulation still do not understand the concepts. The concepts and related problem-solving abilities are what are important for me, but I assume a basic facility in algebraic symbolic manipulation."
- "We want students to be able to think mathematically: to look for, recognize and articulate patterns; to model situations mathematically, to understand and articulate the why's behind the mathematical procedures that they use, to judge themselves whether the answer they get to a text exercise is correct, to use multiple representations to solve problems. We believe that these understandings are more important than any specific algebraic manipulation skills."
- "I agree with the idea that manipulation and understanding need to both occur for one to truly "know" mathematics. It has been my experience that I see more students able to do the manipulations and not understand them than students who understand what needs to happen but are unable to get it to work symbolically. Symbolic manipulation skills are valued in that they are used to explore topics in greater depth and breadth than a without using symbols would allow."
- "In general, students who can (and are willing to) think and compute are successful in our math program. Students with a strong math background in any curricula - and with good study skills

(Continued on page 14)

College Corner

Carmen M. Latterell
University of MN Duluth

The purpose of the College Corner column is to help build a closer connection between the secondary schools and the colleges in Minnesota in order to help bridge the gap that students often encounter in their transition from secondary to college mathematics classes.

(Continued from page 13)

(essential), will most likely be successful in our math program.”

Many of the college instructors commented that skill and knowledge in the area of statistics and discrete math is not necessary. However, there is not universal agreement about this.

- “The students who are algebraically strong, but have not been exposed to stats and discrete, typically have many of the skills to successfully complete the program because our program is designed to raise their mathematical thinking throughout.”
- “If I had my way, I'd concentrate on the algebra, geometry and math analysis in high school and forget about discrete math and stats altogether.”
- “As far as discrete math and statistics, it should not be an either-or proposition. The days when the pinnacle of high school math is calculus should be gone - the sooner the better. Many more high school students would benefit from an exposure to the ideas of statistics.”

I personally have always believed that algebra is essential. I believe that much of the discipline, what teaches one to think part of mathematics, is found in the algebra. But, consider this final quote:

- “My institution gets a pretty high "cut" of 18 year olds in terms of SAT scores, but we are still seeing more and more students unable to handle calculus because they lack algebra skills. The flip side is that they are less intimidated by word problems, and generally better thinkers.”

So, this would seem to be evidence against what I have always thought. I suppose it is similar to most situations in education—that a middle ground is needed. Certainly one has to admit that college professors value students' ability to apply algebraic skills. However, emphasis of algebraic manipulation to the exclusion of teaching so that students develop an understanding of concepts is something to be very cautious of.

Carmen M. Latterell

clattere@d.umn.edu

University of Minnesota Duluth

MCTM Foundation

Emily Larsen, Chair

The MCTM Foundation continues to increase the fund balance and the brick wall continues to grow. There were almost \$400 in donations made at the MCTM Fall Conference. Thank you to all who visited the Foundation exhibit.

The Governing Board is pleased to announce that the first monetary award from the MCTM Foundation will be given this spring. The focus of the first award is to support teachers new to the teaching profession (within their first five years of teaching). There will be multiple awards given this year with a total value of at least \$500. These first awards are designed to support professional development through attendance at the MCTM Spring Conference. More details of the award and applications will be available within the next few weeks. Watch the MCTM website and the next Math Bits issue for more details.

Please visit the MCTM Website (www.mctm.org) for more information about the Foundation or contact Emily Larsen (current Governing Board Chair) at elarsen1@msn.com.

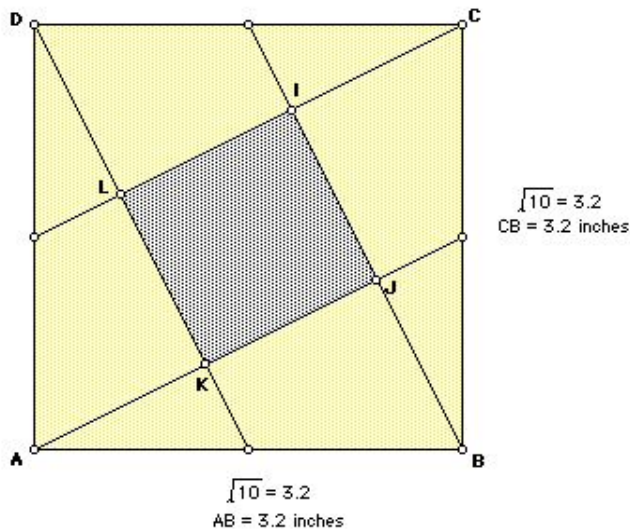
April 2004 Mathematics Symposium

The Sixth Symposium on Mathematics Education will be held Thursday, April 29, 2004 at the DECC in Duluth, Minnesota. It will precede the Spring Mathematics Conference which will be held on April 30 and May 1. The title of the symposium is “Principles and Standards for School Mathematics: Resources for Translating Concepts to Action.” The focus will be on Data Analysis and Probability in grades PreK through 12. The keynote speaker will be Dr. Ken Vos from the College of St. Catherine. More information and registration forms are available at www.mctm.org. Questions can be directed to Marlys Otis at 651-604-3739 or marlys.otis@isd623.org

Stan Goldade, from Breckenridge, submitted his students responses to the question posed in the September issue of MathBits. Here is a copy of one student's solution:

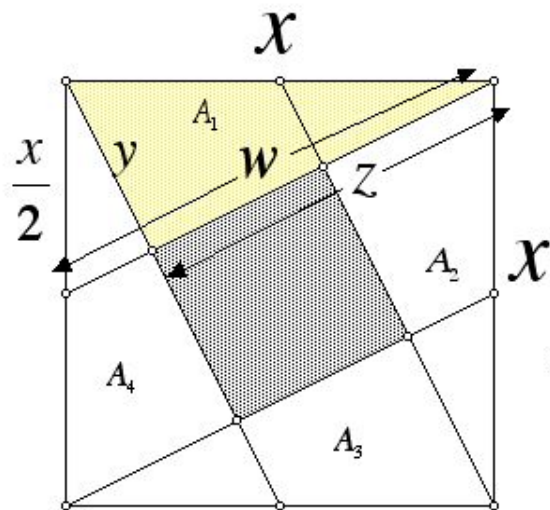
Breckenridge
Senior High

Area DCBA = 10.0 inches²
 $\left(\frac{1}{5}\right) \cdot (\text{Area DCBA}) = 2.0 \text{ inches}^2$
 Area LIJK = 2.0 inches²



Problem Spot

Michelle Bacon



Use Pythagorean Thm $x^2 + \left(\frac{x}{2}\right)^2 = w^2$
 $x^2 + \frac{x^2}{4} = w^2$
 $\frac{5x^2}{4} = w^2$
 $w = \frac{\sqrt{5}}{2}x$

Use proportions of similar triangles $\frac{y}{x} = \frac{\frac{x}{2}}{\sqrt{5}x}$
 $y = \frac{x^2}{2} \cdot \frac{2}{\sqrt{5}x}$
 $y = \frac{\sqrt{5}}{5}x$

Use Pythagorean Thm $x^2 - \left(\frac{\sqrt{5}}{5}x\right)^2 = z^2$
 $x^2 - \frac{x^2}{5} = z^2$
 $\frac{4x^2}{5} = z^2$
 $z = \frac{2\sqrt{5}}{5}x$

Find the area of a triangle

$A_1 = \frac{1}{2} \cdot \left(\frac{\sqrt{5}}{5}x\right) \cdot \left(\frac{2\sqrt{5}}{5}x\right)$
 $A_1 = \frac{x^2}{5}$

Find the sum of the triangles

$A_1 + A_2 + A_3 + A_4 = 4 \cdot \left(\frac{x^2}{5}\right)$
 $A_{\text{Triangle}} = \frac{4}{5}x^2$

$A_{\text{Small Square}} = A_{\text{Square}} - A_{\text{Triangle}}$

$A_{\text{Small Square}} = x^2 - \frac{4}{5}x^2$

$\therefore A_{\text{Small Square}} = \frac{1}{5}x^2$

The Problem Spot Thought Provoker for this month:

Arrange a 4 x 4 square with grid lines at every inch.
 How many squares are in the total figure? How many rectangles?

Extensions:

- Draw both diagonals on the largest square. How many quadrilaterals? Of different types?
- What happens in a 5 x 5 square? 6 x 6? n x n?

Michelle is looking for problems to include in MathBits.

Send both your student solutions and any thought provoking questions to mibacon@rochester.k12.mn.us or to Michelle Bacon 2425 11th Ave SE Rochester, MN 55904



Fall conference highlights continued...



With 60 sessions to choose from, conference participants had the opportunity to learn about using language and visualization to teach mathematics, explorations with Geometer's Sketchpad, practicing skills through inquiry, linking mathematics and literature, home building and remodeling as a source of interesting problems, reaching students with culturally responsive curriculum, the ten things all future mathematicians should know, number sense with calculators, math games, Minnesota's new Academic Standards for Mathematics, and much

more. Many of the sessions provided an opportunity for pre-service student teachers to interact with experienced teachers, giving the students a chance to be welcomed into the profession by their future colleagues.



Lucky winners at the Fall Conference door prize drawing!

Mary Moreira, Mary Caspers, Owen Holzbauer,
Carole Reesink, Brandon Puck, Leah Prom, Jerry Jensen,
Jennifer Graef, Marty Medley, Erin Arneson, Connie Ludwig,
Jesse Birnstihl, Ann Johnson, Harold White, Carrie Brinkman



Coach your students to victory in the 2004 MATHCOUNTS competitions. The *2003-2004 MATHCOUNTS School Handbook* and other materials from the MATHCOUNTS Foundation can help you get started. The handbook contains 300 problems and solutions and is available free of charge at mathcounts.org/Problems/handbook.html.

Sixth, seventh, and eighth graders are eligible to participate in the year-long MATHCOUNTS program. Individual mathletes and teams (up to 8 students per school) take part in school and local competitions and may advance to statewide competitions and national finals. (Last year's national gold medal winner was awarded an \$8,000 college scholarship, a notebook computer, a color printer, and a trip to a U.S. Space Camp.)

Registrations for MATHCOUNTS competitions are now being accepted. For more information or to obtain a registration form for your school, visit www.mathcounts.org or call (301) 498-6141. Completed registration forms must be postmarked by December 12.

In Minnesota, MATHCOUNTS is coordinated by members of the Minnesota Society of Professional Engineers who work closely with teachers.

Students compete in local meets in February, as members of a four-student team or as individuals. Winners then progress to the state contest in March. The top four scorers in the state competition earn an all-expense-paid trip to Washington, D.C. to represent Minnesota in the national finals in mid-May.

According to outreach director Steve Strauss, Mathcounts in Minnesota enjoys a good cooperative working relationship with the Minnesota Junior High School Math League which is directed by Marlys Henke, teacher at St. Paul Central High School. The combination of Junior High Math League and Mathcounts allows teachers and coaches to involve students in mathematics competitions for most of the school year and many teachers participate in both programs. The Math League competitive season runs from October to January while Mathcounts chapter competitions are held in February and the state competition in March. This provides an continuum for the students and an opportunity for them to prepare for the higher-stakes state competition. Minnesota's state Mathcounts competition is unique in being a two-day event. This special event is paid for by fundraising and is made possible by many sponsors and volunteers. Some of the volunteers have been working with Mathcounts for more than 15 years and some were Mathcounts participants themselves as students.

For more information about Minnesota MATHCOUNTS see www.mnspe.org/mathcounts
For information about Junior High School Math League see members.aol.com/mathleague/

The Page Education Foundation was established in 1988 to encourage Minnesota's youth of color to continue education beyond high school. It achieves this by offering a unique blend of partial scholarships, mentoring and service-to-children projects. While attending post-secondary school, recipients complete a community service project that brings them into contact with K-8 students. The Foundation offers adult mentors to Page Scholars, to encourage them in fulfilling this requirement. Volunteer mentors from all career fields are needed. See www.page-ed.org or call (612) 332-0406 to help a young person! Pass this opportunity on to adults you know who may be interested in being a mentor.

**MCTM Encourages
MathCounts and
Math League**

**The uniqueness of
MathCounts and
Math League in MN**

**Adult mentors needed
by the Page Education
Foundation**

**Minnesota's First
Future Teachers
Conference:
Exciting Bits From
the MinnMATYC
Mentoring Program**

Becky Groseth

This fall marks the beginning of the fifth year since the inception of the MinnMATYC mentoring program. We had sixteen mentees in the program this past year, with eight of the sixteen new to the program. After the spring conference in Duluth, Diana Hestwood, who proposed and implemented the mentoring program over four years ago, stepped down from her role as coordinator of the program, and Tara Evenson-Daas and myself became the new coordinators. We are both very excited and motivated, and have already put our first new project for the program into action.

The new project involves working on a Future Teachers Conference for pre-service math and science education teachers. The conference will take place on Saturday, March 6, 2004 at Minneapolis Community & Technical College, whose math department is co-sponsoring the event. Sessions will include information geared towards educating those who are close entering the teaching career about many of the details that are often left as a mystery until one gets to the classroom for the first time. Featured sessions include a principal's panel, new teachers panel, advice on classroom management, use of technology, and much more. We presently have many of our mentors and mentees working on the project with us as well as some representatives from MCTM. We are enjoying the challenge of organizing this new event and hope to make Minnesota's first ever "Future Teachers Conference" a great success!!!

Further details concerning this event can be found at:

www.minneapolis.edu/math

www.mctm.org

www.minnmatyc.org

**NCTM Regional Conference
November 11-13, 2004**

In just one year from now Minnesota will host the NCTM Regional Conference. Mark your calendar now with these important dates. Plan to be involved in this special event.

**Showcase Your
Mathematics
Students**

MCTM invites you and your students to participate in Minnesota's Largest Exhibit of Student Work in Mathematics! This event will be held November 11-13, 2004 during the NCTM Regional Conference at the Minneapolis Convention Center.

The Student Exhibits Committee is excited about this opportunity. However, we need your help if this event is to be successful. Please start thinking about how you might get involved. We are looking for student work completed either during the 2003-04 school year or the fall of 2004. See *Student Exhibit Rules and Guidelines for more information.*

Sandy Jernberg, Co-chair
Student Exhibits Committee
jernberg@mpls.k12.mn.us

Jane Kostik, Co-chair
Student Exhibits Committee
jkostik@mpls.k12.mn.us

NCTM Student Exhibit Registration Form
November 11-13, 2004

PLEASE TYPE OR PRINT

NAME OF STUDENT _____ HOME PHONE _____

email address _____

HOME ADDRESS _____

IF THIS IS A GROUP PROJECT, WRITE THE NAMES AND ADDRESSES OF TEAM MEMBERS IN THE SPACES BELOW
(note: Maximum of 3 members per team.)

NAME _____

ADDRESS _____

NAME _____

ADDRESS _____

SPONSORING TEACHER _____

SCHOOL PHONE _____ FAX _____

NAME OF SCHOOL _____

SCHOOL ADDRESS _____

TITLE OF EXHIBIT _____

GRADE LEVEL OF EXHIBIT (circle one): K 1 2 3 4 5 6 7 8 9 10 11 12

IF YOU PLAN TO ATTEND THE EVENT, PLEASE WRITE THE NAME OF THE ACCOMPANYING ADULT

Forward questions to: jkostik@mpls.k12.mn.us or jernberg@mpls.k12.mn.us

PLEASE RETURN THE REGISTRATION FORM BY OCTOBER 1, 2004 TO:

NCTM Student Exhibits
c/o Jane Kostik
5020 Oliver Ave. So.
Minneapolis, MN 55419-1031

**Student Exhibits
NCTM Regional Conference
Minneapolis Convention Center
November 11-13, 2004
Rules and Guidelines**

1. ELIGIBILITY:

The NCTM Student Exhibits event is open to all students in Grades K-12 at private, parochial and public schools in the state of Minnesota.

2. APPLICATION FOR ENTRY INTO THE EXHIBITS:

Students wishing to apply for entry into the Student Exhibits must have the support of their teacher. Students can apply individually, or in groups (with a maximum of three members). The attached entry application forms can be duplicated as needed.

Additional copies can be obtained by contacting

Jane Kostik jkostik@mpls.k12.mn.us
612-668-1945 (w) or 612-929-6437 (h) or 612-668-1993 (fax)

Sandy Jernberg jernberg@mpls.k12.mn.us
612-823-3102 (h)

A printable application form is also available on the MCTM website at www.mctm.org

Completed applications should be sent to the address listed below, and must be received no later than October 1, 2004. **Space is limited to the first 250 entrants. Do not delay in registering!**

NCTM Student Exhibits
c/o Jane Kostik
5020 Oliver Ave. So.
Minneapolis, MN 55419-1031

Students will receive confirmation of their participation no later than October 8, 2004. If confirmation is not received by October 8, please inquire via email to the addresses above.

3. AWARDS:

Prizes will be awarded for exemplary displays in each of the following divisions:

Primary	Grades K-2	First Prize	(in each division)	\$150
Intermediate	Grades 3-5	Second Prize	(in each division)	\$100
Middle School	Grades 6-8	Third Prize	(in each division)	\$50
High School	Grades 9-12			

4. NATURE OF THE EXHIBITS:

The exhibit should be the work of the student. Projects should be completed during the 2003-04 or 2004-05 school year. It can be part of the regular mathematics curriculum, not necessarily a special project. It could consist of a display board, a poster, or anything that represents the exhibit such as models, items studied, surveys, etc.

5. DISPLAY RULES:

- Tables will be available for the displays. No wall displays or floor displays are allowed. Display boards that are 36" high and 60" wide will be provided, courtesy of MCTM.
- Electricity will not be available.
- MCTM can not be responsible for security of displays at all times.
- Perishable items should not be part of any displays.

6. SETTING UP EXHIBITS:

To be determined.

7. REMOVAL OF EXHIBITS:

To be determined.

8. STANDARDS FOR JUDGING:

To be determined

Insert the Minnesota's Future Teachers Conference Flyer (Word document) - no header on this page
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Insert 2004 Minnesota Spring Mathematics Conference flyer—Word doc—no page header
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Insert 2004 MCTM Minnesota Spring Mathematics Conference Registration Form—pdf file—no page header
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www.mctm.org

Susanne Westegaard, President
skwesteg@ties.k12.mn.us

Arnie Cutler, Executive Director
612-626-8326—W
651-631-2136—H
cutler@tc.umn.edu

Teresa Gonske, Editor
6510631-5228—W
tlgonske@nwc.edu



Mark Your Calendar for 2004

3/6	Minnesota Future Teacher's Conference
4/22 – 4/24	NCTM Annual Meeting, Philadelphia, Pennsylvania
4/29	MCTM Symposium on Math Education, Duluth
4/30-5/1	MCTM Spring Conference, Duluth
11/11 – 11/13	NCTM Regional Conference, Minneapolis Convention Center

Do we have your correct address?

MCTM strives to provide membership with current information regarding mathematics education in the state of Minnesota. To accomplish this goal, we need an accurate, permanent address for each member. Is your correct address printed on the label of this issue of *Mathbits*? If not, please contact Executive Director Arnie Cutler at 612-626-8326 or cutler@tc.umn.edu or visit MCTM's web site (www.mctm.org) and go to the membership page to make your change. Student MCTM members and members in transition are especially encouraged to provide us with a permanent address. Thank you for helping us stay in touch!

Please submit items for the next issue of *Mathbits* to tlgonske@nwc.edu by January 5, 2004.
Thank You. You may also call 651-631-5228 if you have questions. - Teresa Gonske, editor

Minnesota's Future Teachers



Hold the Key to Tomorrow!

Coming This Spring!

**The MinnMATYC Mentoring Program
and
Minneapolis Community and Technical College's
Math Department
Proudly Present:**

Minnesota's First Future Teachers Conference

**Saturday, March 6, 2004
Minneapolis Community and Technical College
9am-4pm**

All potential teachers and new teachers are invited!

Selection of Events to Include:

- Information sessions and workshops for new and potential K-14 teachers
- Exhibits featuring educational resources for new and potential teachers
 - Hands-on Math and Science
 - And more!

Further conference information can be found on the following websites coming soon!!!

www.mctc.mnscu.edu/math/

www.minnmatyc.org

www.mctm.org

2004 Minnesota Spring Mathematics Conference

Mathematics: The More the Merrier

Equity Principle Assessment Principle Standards Algebra
Number and Operation Connections Representation

Join hundreds of Minnesota educators

April 30 – May 1, 2004

DECC • Duluth Entertainment Convention Center
Duluth, MN

Jointly sponsored by:

MCTM • *Minnesota Council of Teachers of Mathematics*

MinnMATYC • *MN Mathematical Association of Two Year Colleges*

Get rejuvenated with

- ideas to improve the teaching and understanding of mathematics
- effective ways to help students achieve state and national standards for mathematics
- information and ideas about what works in other schools to share with colleagues back home
- an opportunity to enjoy a great area of Minnesota and learn in the company of great educators



Register Early!



*For registration, further
conference information and
program updates access*
www.mctm.org

*For information about Duluth
call 1.800.438.5884
or access*
www.visitduluth.com

Still have questions? Contact one of the following: Arnie Cutler, 612.626.8326, cutler@tc.umn.edu;
Genni Steele, 651.407.7500 x7652, glstee@wbl.whitebear.k12.mn.us; Don Karlgaard, 218.764.2767,
tdkarlgaard@brainerd.k12.mn.us; Denise Anderson 952-930-1154 daanderso@stfrancis.k12.mn.us.

2004 MCTM Minnesota Spring Mathematics Conference Registration Form

Mathematics: The More the Merrier

**Equity Principle Assessment Principle Standards Algebra
Number and Operations Connections Representation**

DECC, Duluth, MN • Friday, April 30 & Saturday, May 1, 2004

Name _____

Mailing Address _____

City _____ State _____ Zip _____

If you are a new member OR if any of the following has changed, fill in the information requested below.

Home phone (include area code) (_____) _____ Work Phone (_____) _____

Fax (_____) _____ E-mail _____

School District Name _____ School Building _____

Circle one: teacher supervisor student retired other _____

Circle one: elementary jr. high/middle high school post secondary other _____

Spring Conference Registration Fees

Regular Friday & Saturday registration fee includes 3 meals. Regular Saturday only registration fee includes 1 meal.

NOTE: Registrations on-site or those postmarked or sent after April 9, 2004 will be charged a \$15 late fee.

	Fri.&Sat.	Sat. only	
MCTM Member	_____ \$140.00	_____ \$ 90.00	Special Meal Requests _____ vegetarian meals required Meal Tickets for Speakers or Non-registered Guests: _____ tickets for Friday lunch @\$16.50 = _____ _____ tickets for Friday banquet @\$27.00 = _____ _____ tickets for Saturday lunch @\$16.50 = _____
Non-member	_____ \$165.00	_____ \$ 115.00	
Student Member	_____ \$ 70.00	_____ \$ 45.00	
Student non-member	_____ \$ 82.50	_____ \$ 57.50	
Speaker	Registration fee waived – select and pay for meals using the table at the right		

Individuals should make their own lodging arrangements.

MCTM Dues

Circle one: new renewal do not need to renew

Indicate membership category:

_____ One year regular \$25.00
_____ Two year regular \$40.00
_____ Student \$12.50
_____ Retired \$12.50

I do not wish to have directory info published

NCTM Dues (optional)

Circle one: new renewal do not need to renew

Indicate membership category:

_____ Membership with one teaching journal (choose below) \$72
_____ Additional teaching journal(s) (choose below) @ \$30
_____ Journal for Research in Mathematics Education \$52
(Full time students may join NCTM at half the cost of memberships above)

Circle choice of teaching journal(s):

Teaching Children Mathematics (K-6) Mathematics Teacher (8-14)
Mathematics Teaching in the Middle School (5-9)

Amount Due & Method of Payment: ___ credit card ___ check ___ p.o. # _____ (copy attached)

Conference Registration/Meal Fee _____

Credit card number _____

Membership MCTM _____

expiration date _____

Membership NCTM _____

type of card ___ Master Card ___ Visa

Additional NCTM journals _____

Signature _____

Total Due _____

Mail to: MCTM, P.O. Box 120418, New Brighton, MN 55112 or register online at www.mctm.org

For information about lodging and events in Duluth call 1.800.438.5884 or visit www.visitduluth.com