

# MONTANA MATHEMATICS

A Publication of the Montana Council  
of Teachers  
of Mathematics

May, 2004

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## Presidents Message

### *Farewell and the Future*

Farewell as your president. I have had a fabulous term working with the best group of people in the world and I am not exaggerating. As I look back over the two years, I am amazed at all the work and tasks the members have accomplished. The future promises more fantastic endeavors. Here is a brief look at some accomplishments.

First, the Board of Directors dedicates their time to keep MCTM in the forefront of math education. They leave a board meeting with at least a dozen items on their To Do list with a smile on their face. They put up with a president who likes motions (reports of motion sickness are common) and requires an intense day of thought and action during the board meeting as well as after.

- CONGRATULATIONS to the future board members; Linda Horst – at large, Charles Deisher – region 5.
- Farewell to the valuable members retiring from the board – Verne Schlepp and Linda Simonsen.
- The ballot listed fantastic candidates that I hope will be future board members.

Second, communications have increased.

- The website provides a reliable source of information and a device to communicate with everyone. The future of this website is impressive.
- The Board of Directors began taking the opportunity to communicate to each member in their region through email. If you have not heard from your region's director, please email them.
- The electronic version of TMME (The Montana Math Enthusiast) found on our website communicates sound information and lessons to support

members learning and teaching. Future issues are ready and new ideas are in the works.

- The newsletter has grown with features such as; Ask Barney, Jokes, opportunities and other information people are submitting. The future issues will include more pages of information and possibly advertisements.
- The yahoo K-8 and 6-16 MathMontana chat groups are in their infancy and will hopefully have a future as a useful resource.

Third, these successful projects/programs are self-sufficient so I am confident about the future of each.

- The two day September retreat for K-16 educators, **K-16 Montana Math Network**, drafted what is being called the “K-12 Non-Negotiables”. These are the five to ten concepts crucial for each grade level to master. The second retreat will finalize these “Non-Negotiables” in a user-friendly desktop format for members.
- Although not really a project now but started out as one and fits under this section is **The Montana Learning Center at Canyon Ferry**. You can continue to read about the future in this newsletter and upcoming website that will be linked to the MCTM website.

*(Continued on page2)*

Montana Happenings	p.2
MCTM Writing Opportunities	p.4
MT Learning Center	p.5
SIMMS IM	p.6
New Officers	p.7
Jokes	p.8
Need for newsletter editors	p.9
Ask Barney	p.10

(Continued from page 1)

- Three **Big Sky STARS** assessment workshops took place this year with rave reviews. Summer workshops are now planned for Billings, Bozeman, and Kalispell with other sites setting dates for the fall. The future remains bright.
- The **Big Sky STARS II**, which is in draft form right now, will be finalized this summer and provide a follow-up program. MCTM is indeed providing successful professional development to teachers across the state.
- **MEA/MFT** conference took on a new look this last year with a poster session and a fabulous lunch for every member to find out about MCTM happenings. Be sure to look at the traditional events along with what is new October 21-22 in Helena.
- The **MCTM Math Contest** involves more educator and students in mathematics than any single event. I can't imagine a future without the program or all the people who help to make it such a success.
- Of course there is the **Leadership Conference** keeps getting better and better. The future will continue to be dazzling.
- This ends my list of self-sufficient programs. I don't know if I forgot to list any but I do know there will be more in the future.

As new leaders work their magic, I am extremely confident MCTM will continue down the path of providing support to Montana educators, getting involved in high quality endeavors, communicating, being proactive, and reaching worthwhile goals.

I appreciate what all of the members do for Montana mathematics education and look forward to working with each of you in the future. Thank You! I loved being president!

Enjoy a splendid summer and remember to relax, reflect and renew!!

*Jean Kelly Howard*

## To Whom Do We Tell What Happened in Montana?

A quote from Czeslaw Milosz in “Annalena” that appears in Azar Nafisi’s book *Reading Lolita in Teheran* is “To whom do we tell what happened on the Earth, for whom do we place everywhere huge mirrors in the hope that they will be filled up and will stay so?” As I read this quotation this week, the irony and beauty of it as applied to Montana was striking—so much so that I felt the need to write an essay for the *MCTM Newsletter*. Consider if you will: To whom do we tell what happened in Montana, for whom do we place everywhere huge mirrors in the hope that they will be filled up and will stay so?

The beginning of this story is more than a decade old, but the end of the story is yet to come. Think about a small mathematics education community in a sparsely populated state with a large land mass; think about a small group of individuals with a vision for what could be done to revolutionize the mathematics education of students; and think about the almost insurmountable obstacles to that revolution. Now think about another sparsely populated state with a small mathematics education community with a tiny land mass; think about a small group of individuals with a vision for what could be done to revolutionize the education of students in the state for years to come; and again think about the almost insurmountable obstacles to that revolution. Further add to the thoughts state systemic initiatives providing a relative large amount of money to the communities in both states. Two stories emerge and while both probably need telling, one takes precedence over the other in this essay.

What happened in Montana in the Systemic Initiative for Montana Mathematics and Science (SIMMS) and to whom should the story be told? If you will, continue reading. Imagine the Montana Council of Teachers of Mathematics (MCTM) as a small independent organization with a remarkable capacity for recognizing that its members could revolutionize the world of mathematics education in a way that no other organization could do. MCTM thought that its members could ask for and receive a large amount of money over a long period of time to develop, from simple sheets of plain white paper and much creativity, a complete high school integrated mathematics curriculum for all grades and accessible to all students in an intellectually honest way. This is a Horatio Alger story that needs to be told, and it does need to be heard both inside and outside

(continued next page)

the state. To make the story even more of a fairy tale, consider that at exactly the same time, another small band of Montana people could develop a complete integrated mathematics curriculum for grades 6-8, and you have passed fairy tales and gone completely into potentially unrealistic science fiction. However, many of us know that this tale is true, and it truly needs to be heard both inside and outside the state.

To concentrate on the secondary school mathematics story, individuals researched learning theories, worldwide exemplars of mathematics modeling, and fringe technologies that were not quite developed that had potential for use in teaching mathematics; the individuals sought teachers of every ilk to write while others sought Montana teachers to receive professional development for immediate implementation of the still unknown curriculum; and both groups of individuals sought both national and local advisors to inform the process. In this story, the selected small band of mathematical brothers and sisters began the impossible. However, over the next eight years, curriculum unfolded; teachers piloted, reviewed, suggested revisions, tested, and thoroughly tried out not one, or two, or three, or four years of curriculum but six years of a high school mathematics curriculum that provided options for all students from those who met only minimal state graduation requirements to those who would become another generation of mathematicians and scientists. In reality, this story should not have happened, but in reality it did happen and it happened in your yard with your neighbors and friends making it happen. AND it is still happening but now on a national scale. With Kendall Hunt Publishing Company producing a revision of the original curriculum, this particular unrealistic science fiction tale continues.

To whom should this story be told? It needs to be told anew to the current generation of in-state mathematics teachers; it needs to be re-told to an older generation who helped make it happen but were leery that it would produce the desired future results in students.

Why should it be told to these groups other than as an artifact of MCTM history? One answer lies in a dissertation at The University of Montana that examined one high school and its students over a four-year period in a traditional program, in the Montana SIMMS-written integrated mathematics program, and in a mixed program with students using both curricula at different times. And it needs to be told because this research is precisely what is called for in the *No Child Left Behind Act* when choosing a

curriculum that has real research with real results describing what worked in this state.

Once the story is told, then it is time to set up the huge mirrors. For whom should the mirrors be set up and filled with the hope that they stay so? That answer should be obvious to the mathematics teachers of Montana and to the Montana Council of Teachers of Mathematics. Look in the mirrors. For those for whom the story is re-told, you either wrote or sponsored the SIMMS integrated mathematics program, or you may have chosen not to do either, but this is a curriculum that was developed locally and has been proven to be effective when taught in an intellectually honest way to all students with teachers who are highly qualified and using the appropriate tools required for good instruction in any secondary mathematics class. For other teachers in Montana without this experience and for those teachers in the other small state that used its systemic funds in different ways, this story is for you and the huge mirrors could reflect what did happen in Montana as an example for you. If you are in the state and look in the mirror, it should be with an incredible pride if you participated and continue to do so. If you are in the state and look in the mirror and did not participate, you cannot resurrect the past and start over, but you can seriously consider what your students really need to be mathematically literate adults. There is still an opportunity that is not found with most commercial series of mathematics books.

This unrealistic science fiction, or fairy tale, now has other support that did not exist over a decade ago, and a part of that support comes from no less renowned place than the Mathematical Association of America in its 2004 publication of the Committee on the Undergraduate Preparation in Mathematics (see [www.maa.org](http://www.maa.org) under publications). This document describes collegiate classes that are very nearly perfectly aligned with a high school program using the SIMMS integrated mathematics curriculum. Maybe yet the state mirrors of both Montana and Delaware can be filled and stay so to complete the vision of a small band of mathematical brothers and sisters in this state. It might not be as improbable as either reading *Lolita* in Teheran or thinking that it could happen in 1991.

Thank you again to the Council for letting some of us dream. I for one still believe in that dream. Do you?

*Johnny W. Lott*  
Department of Mathematical Sciences  
The University of Montana

**MCTM MATH CONTEST**  
**TEST WRITING**  
 GRADUATE CREDIT  
 OPPORTUNITY

Once again it is time to ask for your help! We need people to write tests for the 2005 MCTM Math Contest. We also need people to proofread tests after they are written. Writing will take place at the Montana Science Institute at Canyon Ferry Lake. Dates of the writing course are June 27-29, 2004. We will start on Sunday evening and finish in the early afternoon on Tuesday. Cost for one Graduate Credit through U of M- Missoula is \$115.00. MCTM will pay for mileage (up to \$200). Food and lodging accommodations at Canyon Ferry will be made for participants. For more information or to enroll send the enclosed registration form to:

Satinee Lightbourne  
 MCTM State Math Contest Director  
 Great Falls High School  
 1900 2nd Avenue S.  
 Great Falls, MT 59405  
 (406)268-6399

**MCTM Math Contest Writing Course**

Montana Learning Center at Canyon Ferry Lake  
 June 27-29, 2004  
 Registration  
 Deadline: May 27, 2004

YES, I want to help write the 2005 Math Contest Tests!  
 NO, I cannot come to the test writing, but would be willing to proofread 2 or 3 tests after they are written.  
 I prefer to read  7-9  10-12 tests. Tests are to be returned by August 15, 2004.

Name \_\_\_\_\_

Address(After June 1) \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Phone number(s) \_\_\_\_\_ e-mail \_\_\_\_\_

Current Teaching Assignment (2003-2004):

Class \_\_\_\_\_ Grade levels \_\_\_\_\_

Lodging and food will be paid directly by MCTM. Mileage (up to \$200) will be reimbursed at current rates by MCTM. Please carpool if possible. The course runs from 6-9 pm on Sunday, 8 am - 5 pm on Monday and 8 am to noon on Tuesday. Sign-up for graduate (U of M - Missoula) or OPI credit will be Sunday evening.

Yes, I would like to stay at Canyon Ferry on Sunday and Monday night at no charge to me.

No, I will make other accommodations with the understanding that any charges other than mileage (at current rates) will be my responsibility.

THANK YOU FOR YOUR INTEREST IN HELPING!

Return forms by May 27, 2004 to:

Satinee Lightbourne  
 Great Falls High School  
 1900 2nd Avenue South  
 Great Falls, MT 59405  
 (406) 452-1027 - H or (406) 268-6399 - W

## The Montana Learning Center at Canyon Ferry Lake



### May News

Canyon Ferry has been the location of some fun and exciting conferences over the last 6 months. Don't miss the chance to share in the fun. Here are some special institutes coming this **summer** and the next school year!

- A Middle School Geometry Conference – Check it out at <http://www.montanamath.org/>
- A MCTM and MSTA Board Meeting! Contact you Jim Hamling or Todd Morstein

For the next school year stay tuned for the following workshops.

#### **21-23 October 2004 – Mathematics & Science Leadership Conference For New Teachers**

Teachers with under 5 years of experience will be given the chance to attend a leadership conference that will piggy back with MEA and give them an inexpensive resort vacation meeting leaders in Math =& Science. Details are being worked out as you are reading this!

#### **20<sup>th</sup> October 2004 – The first International Science and Mathematics Lake Reception**

Meet speakers, friends and leaders in mathematics and science while enjoying one of the most spectacular view in the world. Moonrise over Canyon Ferry Lake.

#### **Other Workshops in the Planning**

- STARS Assessment
- STARS Assessment Part 2
- TI-Interactive for Mathematics Teachers
- The Geometry Sketchpad Comes of Age
- The Montana Mountain Person's Guide to Innovations in Mathematics, Science, Technology and Voodoo for the Classroom
- NCLB and how to improve AYP for All Schools
- The Montana Elementary Mathematics Specialist Institute
- The Montana Middle School Mathematics Specialist Institute
- The Montana High School Mathematics Specialist Institute
- The Montana Science Teachers Chemistry & Technology Institute
- The Mathematics & Science Rendezvous & Powwow

#### **And Next Summer!**

**Kids Programs, Student Programs and more Kids & Student Programs.**

For more information contact [msi@mt-science.org](mailto:msi@mt-science.org), [rseitz@metnet.state.mt.us](mailto:rseitz@metnet.state.mt.us), or [j.k.howard@bresnan.net](mailto:j.k.howard@bresnan.net) or [morsteint@sd5.k12.mt.us](mailto:morsteint@sd5.k12.mt.us)

## SIMMS Integrated Mathematics Dissemination Project

As the current school year winds down, it can only mean that state and national assessments of what students have learned are a central topic of discussion in many schools and communities. As the merits of such plans are debated across the country, I would like to utilize this space to provide some constructive prospective to what is happening nationally.

Most states have some kind of state assessment in place. Those assessments vary considerably but there is a growing trend in these tests as well as on the SAT and ACT examinations. All the tests contain some emphasis on computational skills with some variation in the portions of the assessment in which a student can use a calculator. What is happening at an increasing pace is the inclusion of significant efforts to assess student understanding of mathematical concepts and their ability to solve something beyond calculation problems. That emphasis on 'problem solving' has been a hallmark of the NCTM and MCTM philosophy for a number of years.

I see this trend to focus greater attention on problem solving as a positive change in assessment. Certainly proficiency with basic computational skills and knowledge of the building blocks of mathematics are important. However, the ability to reason and to solve problems when the method is perhaps not initially obvious, is something all of us have professed as important for some time.

I see this as an opportunity to reexamine our mathematics curricula at every grade level, K-16. Certainly 'curricula' is much more than simply selecting a new textbook. This is an ideal opportunity for teachers,

administrators, and parents to work together to determine how they can best meet the educational needs of ALL their students. It is a challenging task but an absolutely essential one. Yes, the classroom teacher is critical to the process but so are the support of the parents and the effort of the students. Good teachers bring so much more to the classroom learning experience than just what is in a textbook. That notwithstanding, a textbook that provides a coherent plan for helping meet the range of student needs is not to be underestimated.

As teachers consider their options, I encourage them to look for curricula that provide rich learning opportunities for students. Seek out curricula that engage students, pique their interest, and assist them in understanding those connections within mathematics as well as between mathematics and other disciplines. Demand curricula that meet the outline presented by the PSSM from NCTM (Principles and Standards for School Mathematics, NCTM 2000). I encourage educators, administrators, and parents to consider what students will need in a rapidly changing world. The effort will be worth it and the result will be a richer classroom environment in which teachers find greater fulfillment and students achieve the knowledge they need to succeed in their future.

If there is anything I can do to help in your adoption or implementation plans, please contact me at [gbauer@montana.edu](mailto:gbauer@montana.edu) or 1-800-693-4060.

*Gary Bauer, Director  
SIMMS IM Dissemination*

Deadline for September Newsletter is  
**September 10, 2004**

e-mail articles to  
terri\_dahl@gfps.k12.mt.us



### **Congratulations!!**

I want to congratulate our newest board members. Linda Horst will be a Region 4 director and Charles Deisher will be the Region 5 director.

Linda is an 8<sup>th</sup> grade Math and Algebra teacher at Will James Middle School in Billings. Charles teaches Algebra through Calculus at Terry High School in Terry, MT.

I am looking forward to working with Linda and Terry. I know they will bring many new and exciting ideas to our math council. Welcome a board!! Lisa Scott

## Quotes and Jokes from the Classroom Teacher!

If you have a quote or joke to share with our membership, please Email them to [scottl@billings.k12.mt.us](mailto:scottl@billings.k12.mt.us).

### “Lessons” at Dinner (from Ed Buckner)

The dinner guests were sitting around the table discussing life. One man, a CEO, decided to explain the problem with education. He argued, “What’s a kid going to learn from someone who decided his best option in life was to become a teacher?” He reminded the other dinner guests that it’s true what they say about teachers: “Those who can: do. Those who can’t: teach.” To corroborate, he said to another guest: “You’re a teacher, Susan,” he said. “Be honest. What do you make?” Susan, who had a reputation of honesty and frankness, replied, “You want to know what I make?” “I make kids work harder than they ever thought they could. I can make a C+ feel like the Congressional Medal of Honor and an A- feel like a slap in the face if the student did not do his or her very best.” “I can make kids sit through 40 minutes of study hall in absolute silence.” “I can make parents tremble in fear when I call home.” “You want to know what I make?” “I make kids wonder.” “I make them question.” “I make them criticize.” “I make them apologize and mean it.” “I make them write.” “I make them read, read, read.” “I make them spell “definitely & beautiful” over and over again, until they will never misspell either one of those words again.” “I make them show all their work in math and hide it all on their final drafts in English.” “I elevate them to experience music and art and the joy in performance, so their lives are rich, full of kindness and culture, and they take pride in themselves and their accomplishments.” “I make them understand that if you have the brains, then follow your heart...and if someone ever tries to judge you by what you make, you pay them no attention.” “You want to know what I make?” “I make a difference.” “What do you make?”

Here is a good one for the newsletter from Mark Flaherty.

A teacher is about ready to start a lesson on graphing - In his call to attention he mentions graphs and asks is anyone familiar with graphs.

One student raises her hand and says yes that she is familiar with graphs.

The teacher then asks where she has seen graphs before -

the student responds — at the zoo.....

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## Education Opportunity

Minot (ND) State University offers professional development courses which are mathematics content rich but also practical for teachers. These courses are highly acclaimed by previous participants who indicate another valuable component of the experience is networking with other teachers. This summer, MSU offers Foundations of Advanced Mathematics, Geometry for Teachers, and Calculus for Teachers, plus one week workshops in using graphing calculators, spreadsheets, and the Geometer’s Sketchpad in teaching mathematics. These courses can be applied to a Master of Arts in Teaching Mathematics degree which is aligned with the NCTM Standards. For program information including current course offerings, see [www.minotstateu.edu/matmath](http://www.minotstateu.edu/matmath).

## MCTM Tidbits

It is in May of the even numbered years that a new president assumes the leadership role in MCTM. By reading the names of those who have served MCTM, you will see that it is definitely not a position after which one retires.

### Past Presidents

1966-68 Adrien Hess	1986-88 Dick Seitz
1968-70 Willian Stannard	1988-90 Larry Kaber
1970-72 Loy Robinson	1990-92 Gary Bauer
1972-74 Larry Newell	1992-94 Kimberley Girard
1974-76 Raymond Shackelford	1994-96 Mary Buck
1976-78 Dan Dolan	1996-98 Karen Longhart
1978-79 Otis Thompson	1998-99 Terri Goyins
1979-80 John Trangmoe	1999-2000 Fred Longhart
1980-82 Glenda Tinsley	2000-02 Cliff Bara
1982-84 James Williamson	2002-04 Jean Howard
1984-86 Glenn Allinger	2004-2006 Jim Hamling

Information taken from the Histories of the Montana Council of Teachers of Mathematics compiled by Adrien Hess (1966-81) and Kimberley Girard (1981-2003).

### Looking For New Newsletter Editors

Marcia Anderson, Joyce Miller and Terri Dahl from C M Russell High School have been publishing the newsletter for the past 7 years and it is time for them to pass on the job to someone new. Our last newsletter will either be this May edition or the September edition. We will help train the new people though there is not a lot to learn. It works great to have a group of three people - the different aspects of publishing work well divided up that way and it is a very doable task when sharing the work load. If you are interested be sure to contact Jean Howard and let her know. If you have questions about the different aspects of the job contact Terri Dahl.

**ASK BARNEY****1. I remember you saying a while ago that there was an MCTM website. Would you go over that again for me?**

Absolutely!. Our head web guru, Tony Reihl, has done a wonderful job putting together some great information about happenings in Montana mathematics. From workshops to history, from the names and emails of our dedicated officers to the newsletter and journal. I could go on and on, but you should see for yourself. Go to [www.montanamath.org](http://www.montanamath.org) and read all of the wonderful MT math news on the web.

**2. I know that there will be an MEA/MFT fall conference, but where is it?**

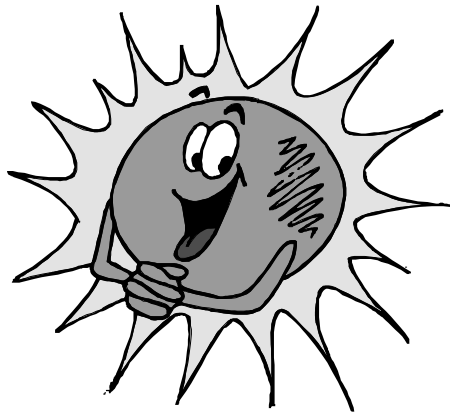
The fall conference is in Helena this next year. The MCTM sectionals are promising to be exceptional this year. Pam Koterba and Jenny Combs are in charge of the program and have done a superb job. There should be several sectionals at each grade level band each hour. Just a thought – I know that there are many wonderful, quality teachers out there in reader land that could give sectionals. I would like to encourage all of you to fill out a speaker form for next year and be part of the show!

**3. Is the MCTM planning anything special for the fall conference?**

What are you talking about? Just getting to hang around with the neat math teachers from our state is pretty special. The MCTM has booked some rooms at the Fairfield Inn. Their number is 406-449-9944. The cost is \$65 for double beds and \$70 for queen size. Also, don't forget the free lunch for all members at the annual meeting on Thursday. This is not just for the officers or people on special committees, it is for all paid up members. Come to the meeting and learn what is happening in your organization.

**4. Did you go to the NCTM national conference in Philly this year?**

Yes I did! It was great. I ran into some great people (I hope they weren't too mad that I wasn't looking where I was going). I always enjoy being around Jim Rubillo, the executive director of NCTM. Over the course of the years he compiled a list of names and matching occupations. He allowed me to print a couple. Did you know that Barb Dwyer (chicken protector) will be marrying Henry Mover (chicken thief)? The ceremony will be performed by Henry Turner (reformed chicken thief). The cab driver, from Russia, will be I.B. Droppenov. The wedding reception bartender is Phillip DeGlass. Ida Thought (a second guesser) is not sure if the wedding should take place.



### MCTM Membership Form

PLEASE FILL IN THIS INFORMATION AND MAIL WITH  
CORRECT AMOUNT OF MONEY TO:  
Deb Wickum, Box 78, Chester, MT 59522 DebWickum@hotmail.com

ANNUAL DUES PERIOD IS:  
September 1 through August 31

Name \_\_\_\_\_

Address change

Address \_\_\_\_\_

New membership

\_\_\_\_\_

Renewal

Phone No. \_\_\_\_\_ e-mail \_\_\_\_\_

Contribution to MCTM Endowment (Scholarships & Professional Development Academy): \$5  \$10  \$25

- Regular \$15
- 2 years \$25
- Student \$8
- Retired (no charge)
- MCTM/MSTA \$26
- Institutional \$30
- 10 years \$100
- Life \$150

- College
- High School
- Middle School/Jr. High
- Elementary
- Other \_\_\_\_\_

**MCTM NEWSLETTER**  
**Great Falls Public Schools**  
CM Russell High School  
228 17<sup>th</sup> Ave NW  
Great Falls, Montana 59404

Non-Profit Organization

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**Editors:**  
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**Terri Dahl**  
**Joyce Miller**

Montana Mathematics is a newsletter published for all members of the Montana Council of teachers of Mathematics. The publication comes out 5 times/year and is free to all members of the MCTM. Any information pertaining to MCTM can be sent to Terri Dahl at CM Russell High School, 228 17<sup>th</sup> NW, Great Falls, Montana 59404. All entries will be reviewed.