SPRING 2009 NEWSLETTER

Section Website http://sections.maa.org/rockymt

Spring 2009 Newsletter in PDF Format for Printing

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2008 - 2009 Section Officers and Committee Members

Section Website http://sections.maa.org/rockymt

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2010 Distinguished Teaching Award Call for Nominations

Each year, the section recognizes one outstanding teacher of collegiate mathematics with an award named in honor of Burton W. Jones, a life long advocate of excellence in teaching at all levels. In addition to an honorarium, a certificate and an invitation to deliver the opening lecture at the next Section Meeting, the recipient becomes the section's nominee for the Deborah and Franklin Haimo Awards for Distinguished College or University Teaching of Mathematics. These national awardees (at most three) are honored at the MAA winter meeting with a certificate and $1000 check. All nominators also receive a certificate of in recognition of their efforts to support the section mission of promoting excellence in teaching; nominators and nominees both receive free meeting registration at the next section meeting. To begin the nomination process for an outstanding teacher that you know, simply submit the **one-page nomination form** (available at our website: http://www-math.cudenver.edu/~maa-rm and in this newsletter) by **1 December 2009**. **Complete nomination materials** (described on the website) are due **15 January 2010**.

Section Students Recognized for Mathematics Excellence

Plans are under way for the 14th Colorado Mathematics Awards Ceremony and Reception to be held on Tuesday, May 12 at the Grant - Humphreys Mansion in Denver. At the school level we'll be recognizing the top ten participants on MATHCOUNTS, the AMC 8, 10, and 12 contests, and outstanding members of the Colorado American Regions Mathematics League team. At the collegiate level we'll be recognizing the top Putnam Exam team, the top three Putnam scorers, and the top team(s) on the Mathematical Contest in Modeling.

We are always looking for sponsors, and are appreciative of the support that the Rocky Mountain Section has provided over the years for this event. This year, finding funding has become even more difficult. The CCTM, one of our main sponsors, has decided on a one-year moratorium for granting requests. If you have any suggestions for possible sources of funding, please contact me at gibbs_d@fortlewis.edu.

Dick Gibbs, Fort Lewis College

Attention Putnam Coordinators

Putnam coordinators at the participating schools please send Dick Gibbs at gibbs_d@fortlewis.edu the top three scores and their team score. No names are requested at this time. When we know the top three scores and the top team score we will contact the schools for the names.

Chair's Report

I knew it would happen…the dreaded email telling me that the article for the RMS spring newsletter was due. It's sort of like getting a letter from the IRS—you just would rather not open it. But there it was the innocent looking email from Linda in my inbox. Writing the article had been on my "to-do" list since early January. I just thought if I kept ignoring it, then maybe some cosmic event would occur so that I wouldn't be sitting here typing this at the 11th hour. It didn't turn out that way, but at least I have one paragraph done.

The problem with the Chair's article is there is little guidance about what should be in it. I could tell you about the spring meeting, but the newsletter is already filled with information about it. I must say that I can't wait. Barb Moskal has done an amazing job with the program and it looks to be a fantastic event. I can't encourage you to submit an abstract since the deadline has passed. However, there will be an outstanding array of contributed and keynote talks. I am looking forward to the announcement of the Burton W. Jones Teaching Award and the keynote address by last year's winner **Steven Janke** (Colorado College). In addition, keynote addresses by **Gilbert Strang** (MIT) and MAA First Vice President, **Elizabeth Mayfield** (Hood

College) promise to be exciting and thought-provoking. I expect the meeting in Golden to be one of the largest in recent years and I am very excited by the anticipated increase in participation by the K-12 community due to financial support from Exxon-Mobil. Please look over the meeting website and plan to attend as much as possible. I would particularly like to encourage you to attend the banquet and the business meeting. I'm looking forward to seeing everyone April 17 – 18.

Another feature of the Chair's letter is to inform the section membership of happenings from the joint meetings and important news from the MAA. Fortunately, our section Governor, **Kyle Riley**, was also in DC for the joint meetings. He attended both the Governor's meeting and he joined me at the section officer's meeting. His article appears in this newsletter and his account is much more informative than mine. However, I can comment on the new council/committee structure of the MAA. There has been a major re-shuffling and consolidation of committees and sub-committees of the MAA. At the JMM, I took over as chair of the MAA Committee on Professional Development. At some point in the near future I will be asking section members for suggestions on how the MAA can better serve its members through MAA professional development opportunities. Chairing this committee is an exciting opportunity and the committee membership is a diverse group of mathematicians that represent a wide array of institutions.

There should be a transition sentence here, but I am at a loss. Anyway, I was thinking about quantitative literacy because I am involved with assessing it at the Air Force Academy. I figured I could write about quantitative literacy (QL) in a mathematics organization's newsletter and nobody would mind. I'm not exactly sure what QL is. Alas, saying "I know it when I see it" does not form a good basis for assessing it. Still, I am certain that QL for a college graduate is somewhat different than QL for an average citizen. It is even more interesting that a school that awards every graduate a Bachelor of Science degree feels the need to assess QL. It is certainly one of the focal points for post secondary education in the 21st century. Of the many attributes that can be used to describe QL, one central tenant seems to be a meaningful appreciation for scale. As we all know, numbers come in all shapes and sizes (OK, just sizes) and getting a handle on the number of atoms that fit on the head of a pin versus the diameter of an atom is not so easy. A good example currently dominating the news is the size of the proposed economic stimulus package.

As I write this, Congress just approved a plan with a $787 billion price tag. From a QL stand point this is a number that deserves some attention. The media has reported this number on the range from the right size to fix the economy to an astronomically large number that can scarcely be imagined. *Astronomical* is a good term since it is about twice the estimated number of stars in the Milky Way. One can only hope that 1/10 of one percent is earmarked for the mathematical sciences (I'll let you do the math). However, I think the best way to appreciate the size of this number has been overlooked by the news media. Simply take your favorite 15 math books from your shelf. Now, 787 billion is a little more than half of the number of distinct ways to arrange those books. Now put them back on the shelf any way you like.

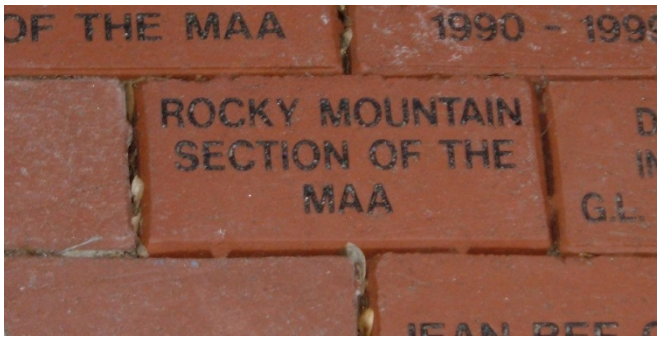
Respectfully submitted,

Mike Brilleslyper, USAFA

Chair, Rocky Mountain Section

Governor's Report

I was able to attend the Board of Governors Meeting on January 4, 2009 in Washington DC.



The first thing I would like to mention is that I was able to visit our section brick! As you may recall, the MAA had recently finished renovating the Carriage House at the MAA Headquarters so it could be used as a meeting location for workshops and a variety of gatherings for members of the MAA. To sustain the Carriage House, the MAA initiated an endowment that is dedicated to this facility and this type of professional development. Our section was one

of many sections that contributed to this cause and our brick is proudly displayed among the other generous donors. I did see a few other familiar names from the section and this facility is a wonderful building that is in an ideal location.

The MAA Board of Governors Meeting was very informative, but I will try to boil things down to just a few items. The MAA is hard at work trying to provide resources that will be of use to the mathematics community. The MAA website, http://www.maa.org/, has a wealth of information: links to other sections, the combined membership list, professional development, student chapter newsletter, Mathematical Digital Library (MathDL), publications, book reviews, and so much more! The MAA is not immune to the economic crunch that has impacted everyone and the national office has implemented a comprehensive plan to keep the MAA a lean professional association that can still deliver valuable services to the members. One change I should mention is that the national office is discontinuing the practice of offering free memberships to undergraduates that speak at a section meeting. There were several reasons for this move: across all sections for all section meetings this did represent a significant amount of money, the MAA has been aggressive in providing more opportunities for students to speak by generating support for undergraduate conferences in mathematics, and the data they have gathered suggested that free MAA membership was not a significant factor to a student speaking at a section meeting. I was disappointed to learn of this news, but it is also evident that the MAA is working to move more services to online delivery and this should make it possible for undergraduate students to have access to very affordable version of online membership. Student membership is currently $30 and it is very difficult to beat a deal like that. Another cost saving move is that the MAA newsletter (*MAA Focus*) will be moving to six issues per year. However, this will also translate into issues that are larger, packed with even better articles, and more color.

It so happens that I also have good news to offer from the Board meeting. MAA membership is up for the first time in a couple of years and one area of growth is international membership. The national meetings have also enjoyed a great deal of success with the last Mathfest in Madison having a record attendance, plus the Joint Mathematics Meeting in DC was on track for record attendance with over 6,000 people attending the conference. Future national meetings:

Mathfest, Portland, OR, August 6-8, 2009

Joint Mathematics Meeting, San Francisco, CA, January 13-16, 2010

Mathfest, Pittsburg, PA, August 5-7, 2010

This summer, the MAA is going to continue with their professional Enhancement Programs (PREP) and you can find a complete calendar at http://www.maa.org/prep/ . I am really looking forward to our section meeting at the Colorado School of Mines and hope to see you there.

Respectfully submitted,

Kyle Riley, SDSMT

Governor, Rocky Mountain Section

Section News

Colorado State University - Pueblo

With two faculty members on sabbatical leave (**Jim Louisell** for AY08-09 and **Janet Barnett** for CY09), the department is hosting **Wojciech Kosek** and **Hashim Saber** as visiting associate professors of mathematics this academic year. Wojciech is well-known in the section through his previous visiting position at Colorado College, where he served as MAA liaison; he is also the author of *Calculus for the Forgetful: How to Understand More and Memorize Less,* a concise book on single variable calculus. Hashim is helping department members **Bruce Lundberg** and **Darren Funk** to reinvigorate our Math-Physics Club by meeting with students on a regular basis for games, puzzles, magic tricks, movies and food.

The department is also currently in the midst of an external search for a new department chair, and gratefully thanks **Paul Chacon** for his many years of service in this role.

Our Math Learning Center (MLC) is back under “old” management, with **Tammy Watkins** stepping into the supervisory role after director **Mary Middleton** accepted a teaching post in South Korea. Despite unexpected financial difficulties, the MLC continues to provide drop-in assistance for all entry level math classes and select physics courses, in addition to housing our Group Learning Program for College

Algebra. We have also launched a *Student Success in Mathematics Task Force* chaired by **Jonathan Poritz** to study issues related to student success and retention in mathematics, with an initial focus on remedial and lower division mathematics course. Information from all schools in the region about their learning assistance centers or other initiatives related to these issues is heartedly invited by the Task Force.

In student news, thirteen of our senior math majors took the MFAT in December 2008, resulting in an average score above the 90th percentile as compared with the 260 institutional scores from 2004-2008. Among these thirteen was prize-winning author **Cole McGee**, who placed second in the 2008 National History of Mathematics Paper Competition sponsored by HOM-SIGMAA for his paper *Jean le Rond D'Alembert: Mathematician, Philosophe, and Man of Letters* (posted at www.homsigmaa.org/news08.pdf). Cole also participated in the Summer 2008 Hong Kong REU co-sponsored by Colorado School in Mines; he follows graduate **Michael Gilbert** as the second CSU-Pueblo student to complete that program.

South Dakota School of Mines and Technology

We are pleased with the news that both **Travis Kowalski** and **Karen Braman** have been approved by the campus for the promotion to Associate Professor. In addition, Travis was selected as an organizer for one of the undergraduate activity session at the next MAA Mathfest in Portland, Oregon.

University of Northern Colorado

Jodie Novak has been awarded a five-year, $5 million grant from the National Science Foundation for the Math Teacher Leadership Center (TLC), a center for mathematics teaching and mathematics teacher professional development. The Math TLC works to create a collaborative master's degree program with the University of Wyoming that provides financial support for current secondary math teachers to work towards an advanced degree in Mathematics with an emphasis in teaching. It also creates a Mathematics Teacher Leadership Program that financially supports upper elementary, middle and high school teachers to develop expertise in teaching teachers. The center will conduct research to assess the impact of these programs on teachers' mathematical understanding, pedagogical content knowledge, and cultural competencies for teaching the diverse students in Colorado and Wyoming. Dr. Novak was assisted by Mathematical Sciences faculty **Shandy Hauk**, Co-Principal Investigator **Robert Powers,** and **Bill Blubaugh**.

We are pleased to report that **Shandy Hauk** received the college-wide Excellence in Scholarship Award from the College of Natural and Health Sciences at UNC.

An undergraduate UNC math major, **Bryan Shourd**, is attending "Math in Moscow," a 15-week program at the Independent University of Moscow, a small, prestigious Russian university for future research mathematicians. Brian is one of only nine students from around the world selected for the highly coveted program's spring semester. He'll be joined by undergraduate and graduate students from Harvard, Stanford, the Polytechnic Institute of New York, Smith College, the University of British Columbia and Luther College. Brian was also awarded a $7500 American Mathematical Society Scholarship to help with the travel and living expenses.

The 17th Annual UNC Math Contest for students in grades 7-12 had over 1900 participants. The first round was delivered on-line this year in November and provided students throughout the state the opportunity to participate. The top 179 students were invited to campus for the final round on January 31, 2009. The top 25 winners will be honored, along with their parents, at a banquet in early April that is hosted by the director of the Math Contest, **Richard Grassl**.

Hortensia Soto-Johnson, Cathleen Craviotto, and **Ricardo Diaz** are organizing the second annual Las Chicas de Matematicas, a Summer Math Camp for young women. The free one-week residential camp will introduce mathematically talented high school girls to the topics of geometry, abstract algebra, and combinatorics through problem-solving and collaborative learning. The camp will be on the UNC campus from June 14 to June 19, 2009. For more information, contact: Hortensia.Soto@unco.edu.

University of Wyoming

This summer's Rocky Mountain Mathematics Consortium Summer School at UW is entitled Recent Developments in Dynamic Equations on Time Scales. The main speakers will be Martin Bohner from Missouri University of Science and Technology, and Allan Person from the University of Nebraska, Lincoln.

The RMMC summer school gives graduate students and faculty a chance to learn about a new area mathematics in a two-week workshop setting. Money is available to help with expenses for both faculty and graduate students, and you can also receive graduate course credit. The dates are June 8-19, 2009. More information is available at:

http://www.uwyo.edu/rmmc/rmmc2009.asp.

Is news from your school missing?

Send your news to your department liaison now with a request to forward it to the Linda Sundbye, Newsletter Editor for inclusion in the next issue.

Student Activities

Students are invited to participate in the MAA Sectional meeting at the Colorado School of Mines in Golden, CO, April 17-18, 2009. There will be student sessions in which you can attend, as well as a student poster session.

You may also present a poster. Bring a poster relating to your independent study, senior seminar, modeling contest, etc. Anything with mathematical content will be appropriate. Prizes will be awarded in categories to be determined.

Ask a faculty member at your institution about the meeting and/or contact me at lienert_c@fortlewis.edu.

Carl Lienert
Section Student Activity Coordinator

Mathematics Awareness Month Theme: Mathematics and Climate April 2009

Math Awareness Month is only a few months away. Initiated in 1986 to increase public understanding of, and appreciation for, mathematics, this annual event highlights the relevance of mathematics to a particular area of scientific endeavor.

This year, the MAA, American Mathematical Society (AMS), Society for Industrial and Applied Mathematics (SIAM), and American Statistical Association (ASA) have jointly proclaimed that the theme of Mathematics Awareness Month - April 2009 - shall be "Mathematics and Climate."

The event puts the spotlight on mathematical aspects of various climate-related issues: How long will the summer Arctic sea ice pack survive? Are hurricanes and other severe weather events getting stronger? How much will sea levels rise as ice sheets melt? How do human activities affect climate change? How is global climate monitored? Calculus, differential equations, numerical analysis, probability, statistics, and other areas of mathematics play key roles in answers to these questions and in helping scientists better understand oceans, the atmosphere, and polar ice caps, as well as their complex interrelationships and interactions.

6th Annual Pikes Peak Regional Undergraduate Mathematics Conference
University of Colorado Colorado Springs
Saturday, February 28, 2009

The focus of this annual conference is to give undergraduate mathematics students an opportunity to present their work in a professional, supportive setting. It is also an occasion for students to become acquainted with other students from the region, and to learn more about the mathematics profession,

including graduate school and career opportunities.

Undergraduates from throughout the Rocky Mountain region are encouraged to attend, and especially encouraged to make a presentation. Presentation topics could include the results of classroom, independent study, REU or other research projects. Both research and expository topics are welcome. Undergraduates will discuss their research topics during 15-minute presentations. The conference also features a keynote speaker and a panel discussion, giving participants the opportunity to learn more about the mathematics profession, including graduate school and career opportunities.

Registration is free for all participants, and includes a buffet lunch. Participants traveling from outside the Colorado Springs region may be partially reimbursed for travel expenses, depending on availability of funds. It would be a tremendous help to provide your own travel and lodging if at all possible.

For more information, contact **Greg Morrow** at gmorrow@uccs.edu or **Stefan Erickson** at stefan.erickson@coloradocollege.edu.

Seeking Site Testers: Teaching Discrete Mathematics via Primary Historical Source, or Straight from the Source's Mouth

As mathematics instructors, it is natural for us to try to provide students with clear and precise presentations, both in our teaching and in the textbooks we select. But just as water filtration, intended to remove impurities, can remove healthy minerals and interesting tastes, efforts to remove potential impediments to learning can strip a subject of its context, motivation and direction.

One means of restoring these ingredients is to go back to the source from which the subject originally sprang, which is precisely what the curriculum development project *Learning Discrete Mathematics and Computer Science via Primary Historical Sources* aims to do. With funding from the NSF Division of Undergraduate Education, the interdisciplinary project team of seven mathematicians and computer scientists at Colorado State University–Pueblo and New Mexico State University is creating and testing a set of student projects – based entirely on original source readings – for a variety of topics in discrete mathematics, broadly defined to include courses such as mathematical logic and abstract algebra.

Designed to capture the spark of discovery and motivate subsequent lines of inquiry, each student project is built around excerpts from primary sources close to or representing the discovery of a key concept. Through guided reading and activities, students explore the mathematics of the original discovery and develop their own understanding of the subject. To place the source in context, a student project also provides biographical information about its author, and historical background about the problem with which the author was concerned. Original source authors represented in these projects include Archimedes, Boole, Cantor, Euler, Leibniz, Pascal, Turing, Veblen, and von Neumann, writing on topics such as mathematical induction, logic, finite sums of powers, graph theory, transfinite arithmetic, binary arithmetic, Boolean algebra, combinatorics, algorithm design, computability, and decidability. All projects are available at http://www.math.nmsu.edu/hist_projects/discrete-projects.pdf, along with further detail about our pedagogical approach.

Mathematics and computer science instructors who are teaching courses that involve discrete mathematics topics are cordially invited to collaborate with our team by site-testing projects we have developed in your own classrooms, or by working with a grant team member to develop a project of your own. Travel funds for consulting fees and for visits to CSU-Pueblo and/or to NMSU, or to have a grant team member visit your home institution, are available now through the end of the grant in December 2011. For more information, please contact **Janet Barnett** at: janet.barnett@colostate-pueblo.edu .

Section Chair Candidate Bio's and Statements

Daluss Siewert
Black Hills State University

Daluss Siewert received his B.S in Mathematics from the University of Alaska Anchorage in 1994, his M.S. in mathematics from the University of Colorado at Boulder in 1996, and his Ph.D. in applied mathematics from the University of Colorado at Denver in 2000. Since then he has been on the faculty at Black Hills State University where he holds the rank of associate professor. During his nine years as a faculty member, his primary role has been teaching remedial through senior undergraduate level mathematics courses. However, during this time he has also had several research papers in combinatorial matrix theory published in a peer-reviewed journal and this research has been presented at six national and regional meetings. During this time he has also taken the lead in the department on assessment and accreditation of the mathematics teacher preparation program.

Daluss is actively involved in the MAA. He served as the program chair of the regional meeting at Black Hills State University in 2008 and he was invited by the MAA President, Joe Gallian, to serve a three-year term on the national MAA Committee on Undergraduate Student Activities and Chapters (CUSAC). As a part of his service on this committee, he will be serving as a co-organizer of the undergraduate student paper sessions at MathFest in Portland in 2009 and in Pittsburgh in 2010. Also, through his work on this committee, he was instrumental in getting a member of our section invited to conduct an invited student activity session at MathFest in Portland in 2009. Daluss has been the advisor of the active BHSU Math Club/Student Chapter of the MAA for the past 8 years and has brought several students to the regional meeting nearly every year.

Candidate Statement:

I became involved in the Rocky Mountain Section of the MAA as a graduate student when a faculty member at CU-Denver asked me to present the results of a class project at the regional meeting in 1998. I quickly saw the value of participating in MAA and, in particular, getting students involved in the regional meeting. I would like to continue to foster both undergraduate and graduate student involvement in the MAA. Specifically, I would like to see our section continue travel support for graduate students who present at our section meetings. If one becomes involved in the MAA as a graduate student, active involvement in the MAA during their career will likely follow. My experience is a case in point. The MAA regional meetings are not only a great place to present your ideas and research results, they are invaluable in helping one expand and grow ones perspective on teaching and learning. I would also like to encourage all members of the Rocky Mountain Section to not only be active in regional meetings, but in national meetings and activities as well. I would like to make the Rocky Mountain Section even more visible on the national level than it already is. This visibility may lead to expanded professional opportunities and recognition for the members of our section. If elected, I will support the activities of our section in any way I can and will strive to continue the strong leadership of our past chairs.

Stan Payne,
University of Colorado at Denver

Ph.D. 1966 from Florida State University; I was a faculty member at Miami University (Ohio) from 1966 to 1986 (reaching full professor with tenure by 1974). After visiting CU - Denver during 1984 - 1986, I accepted the position of full professor with tenure there in fall of 1986. I served as Department Chair for three years in middle 1990's and Associate Chair off and on over several different semesters. I have had three Ph.D. students graduate (by spring of 2009) with two more currently working on degree. Over the years in Colorado I have been only mildly involved with the Rocky Mountain Section, but would like to increase my involvement.

MAA PREP Workshops 2009

Registration is now open for the MAA's 2009 series of Professional Enhancement Program (PREP) workshops. There are online workshops, onsite workshops and workshops offered at the summer MathFest in Portland, OR in August. For more information, visit:

http://www.maa.org/prep/

MAA's 7th Annual Mathematical Study Tour - Egypt Awaits You

Join MAA members for a tour of Egypt, May 20 – June 1, 2009. For more information and pricing, visit: http://www.maa.org/egypt_trip/ or contact Lisa Kolbe at lkolbe@maa.org (202-293-1170.

Colorado School of Mines to Host 2009 Meeting

Planning for the 2009 Rocky Mountain Section Spring Meeting, sponsored by the **ExxonMobil Corporation** and held at the **Colorado School of Mines** on **April 17 and 18, 2009,** is well underway. The overriding theme of this conference is "Increasing Diversity in the Mathematics Pipeline." Consistent with this theme, we are inviting mathematics teachers at all levels to contribute and attend, middle school, high school and college. Special sessions are being held in the following areas: 1) History of Mathematics, 2) Programs for Middle School and High School Students and Preservice and Inservice Teachers, 3) K-16+ Challenges and Connections, 4) Mathematics Education Research, 5) Graduate and Undergraduate Student Research, and 6) Pure, Applied Mathematics, Number Theory and Geometry.

This meeting will officially open at 12:45 pm. on April 17, 2009, with an address by our most recent Burton W. Jones Distinguished Teaching Award Recipient, **Dr. Steven Janke,** Professor of Mathematics and Computer Science at Colorado College. Dr. Janke was appointed as Verner Z. Reed Professor of Natural Science from 1997 – 2000 and he coauthored the text "Introduction to Linear Models and Statistical Inference" (published by Wiley) with his colleague, Fred Tinsley, in 2005. Currently, he is interested in complex system behaviors as applied to environmental problems. Dr. Janke's talk, "The Traveling Salesperson Problem: A cross-disciplinary example within the mathematical sciences," will outline the Traveling Salesperson Problem including history, graph theory, computer science, and recent progress.

This year's MAA National Invited Banquet and Keynote Speaker will be **Dr. Elizabeth Mayfield**, Hood College, Frederick, Maryland. Dr. Mayfield is the First Vice President of the MAA and a professor of Mathematics at Hood College. Her research areas include underwater acoustics, mathematics pedagogy, and the history of mathematics. She has received numerous awards for both teaching and research. The title of Dr. Mayfield's talk at the Friday night banquet is, "A Locally Compact REU: Involving students in research in the history of mathematics." Her keynote address on Saturday is "Women and Mathematics in the Time of Euler." Both of these talks will address the important historical role that women have played in mathematics with an emphasis on the time of Euler.

An ExxonMobil Sponsored featured address on Friday afternoon will be presented by **Dr. Gil Strang**, Massachusetts Institute of Technology (MIT). Dr. Strang is a professor of mathematics at MIT and an Honorary Fellow of Balliol College. He has received numerous awards for both teaching and scholarship and is widely published with authorship on seven textbooks. The title of his talk is "The Beauty of Linear Algebra." This talk will address the importance of matrices in teaching and research, including the "graph Laplacian matrix" and circulants.

The featured workshop, "An Investigation into the Use of Case Studies in the Training of In-service and Pre-service Middle School Math Teachers," which will precede this meeting on Friday, April 17, 2009, at 8:45 am, will be presented by National Science Foundation (NSF) funded West Texas Middle School Math Partnership (WTMSMP). Workshop presenters include **Drs. Gary Harris**, **Jerry Dwyer**, **Zenaida Aguirre-Munoz**, **Tara Stevens**, **Juli D'Ann Ratheal** and **Warren Koepp**. Participants in this workshop will experience first-hand the use of case studies (realistic in-class scenarios) as tools to provide teachers with strategies for enhancing their students' mathematical self-efficacy; while at the same time, increasing their own cultural sensitivity and strengthening their own conceptual understanding of the basic mathematics taught in middle school. This workshop should be of interest to school mathematics teachers as well as university instructors and researchers who are involved with the mathematics preparation of future teachers. The cost for this workshop is $5.00.

The Colorado School of Mines Mathematical and Computer Sciences Department is pleased to host the section meeting in the Spring of 2009. Many of you have not yet visited our beautiful campus, which

is nestled in the foothills of the Rocky Mountains, Golden, Colorado. We invite you and your students to attend the 2009 Rocky Mountain Section Meeting at the Colorado School of Mines.

Registration for this meeting is available at: http://mcs.mines.edu/About_Us/Registration.html. The deadline for abstract submission has passed and was very successful. Only a few sessions remain open. If you missed the submission deadline and wish to participate as a speaker, you may contact bmoskal@mines.edu. Additional submissions will be considered based on space available within a session, and on first come first serve requests within an open session. For more information, please visit the conference website at: http://www.mines.edu/Academic/macs/About_Us/MAAMeeting.htmlPage.html. Graduate and undergraduate students are welcome to submit additionally abstracts for our student poster session (send to bmoskal@mines.edu with MAA-POSTER in heading). We conclude by thanking the **ExxonMobil Corporation** for sponsoring the session breaks, reception, and the registration of pre-college mathematics teachers and for sponsoring the ExxonMobil Corporation sponsored address by Dr. Strang.

About Our Featured Speakers

2008 Burton W. Jones Distinguished Teaching Award Recipient

Steven Janke earned his Ph.D. from the University of California at Berkeley in 1982 after spending his undergraduate years at University of California at Santa Barbara and at the University of Sussex in England. He currently is a professor at Colorado College, a liberal arts institution, where he teaches a range of courses from probability and statistics (his graduate work) to computer science and environmental science. He was appointed as Verner Z. Reed Professor of Natural Science from 1997 – 2000 and has served as chair of the Mathematics and Computer Science Department for two terms during his time at Colorado College. In 2005, he coauthored the text “Introduction to Linear Models and Statistical Inference” (published by Wiley) with his colleague, Fred Tinsley. Currently, he is interested in complex system behaviors as applied to environmental problems.

MAA National Featured Speaker

Elizabeth Mayfield (Betty) is the current First Vice President of the MAA. She earned a B.A. in mathematics from the University of North Carolina at Greensboro and an M.S. and Ph.D. from the University of Rhode Island. Between undergraduate and graduate school, she taught high school mathematics. Since 1979, Dr. Mayfield has served on the faculty of Hood College in Frederick, Maryland, where she has chaired the mathematics department since 1999. She has been awarded the College's Mortar Board Excellence in Teaching Award and its Laughlin Award for Professional Achievement, and was inducted into the campus Ionic Society in recognition of outstanding service. She has enjoyed doing research, often with students or colleagues in other disciplines, in underwater acoustics, mathematics pedagogy, and the history of mathematics. She became involved in the MAA first in the Maryland-DC-Virginia Section, where she served as newsletter editor, chair, and governor, and was the 2001 recipient of its Award for Distinguished College or University Teaching of Mathematics. She has served on the Committee on Sections, the Centennial Planning Committee, and as chair of the Committee on Undergraduate Student Activities and Chapters and of the Search Committee for Associate Secretary. She is also proud to be a consultant for Project NExT.

ExxonMobil Sponsored Speaker

Gilbert Strang (Gil) was an undergraduate at Massachusetts Institute of Technology (MIT) and a Rhodes Scholar at Balliol College, Oxford. His Ph.D. was from the University of California, Los Angeles (UCLA) and since then he has taught at MIT. He has been a Sloan Fellow and a Fairchild Scholar and is a Fellow of the American Academy of Arts and Sciences. He is a Professor of Mathematics at MIT and an Honorary Fellow of Balliol College. Professor Strang has published a monograph with George Fix, "An Analysis of the Finite Element Method", and 7 textbooks: 1) Introduction to Linear Algebra (1993, 1998, 2003), 2) Linear Algebra and Its Applications (1976, 1980, 1988, 2005), 3) Introduction to Applied Mathematics (1986), 4) Calculus (1991), 5) Wavelets and Filter Banks, with Truong Nguyen (1996), 6) Linear Algebra, Geodesy, and GPS, with Kai Borre (1997) and 7) Computational Science and Engineering (2007). He was the President of the Society for Industrial and Applied Mathematics (SIAM) during 1999 and 2000, and Chair of the Joint Policy Board for Mathematics. He received the von Neumann Medal of the US Association for Computational Mechanics, and the Henrici Prize for applied analysis. The first Su Buchin Prize from the International Congress of Industrial and Applied Mathematics, and the Haimo Prize from the Mathematical Association of America were awarded for his contributions to teaching around the world. His home page is math.mit.edu/~gs/ and his linear algebra lectures are available at ocw.mit.edu (mathematics/18.06).

Abstracts from Selected Invited Addresses

The Traveling Salesperson Problem:
A Cross-Disciplinary Example within the Mathematical Sciences
2008 Burton W. Jones Distinguished Teaching Award Recipient
Friday 1:00-1:45 pm
Student Center, Ballroom A

Steven Janke, Colorado College

The Traveling Salesperson Problem (TSP) is a well-known, simply stated problem which asks for the shortest “tour” through all the vertices of a graph. Its relevance in many undergraduate courses highlights the need in many problems for perspectives from several areas of the mathematical sciences. This talk will outline the TSP including some history, some graph theory, some computer science, and some glimpses of recent progress with the problem. Apart from being an interesting and enduring problem, it perhaps argues for the blurring of lines between the mathematical disciplines.

The Beauty of Linear Algebra
ExxonMobil Sponsored Speaker
Friday 5:00-6:00 pm
Student Center, Ballroom A

Gilbert Strang, MIT

Linear algebra is full of interesting problems. Where calculus is all about one operator and its inverse (the derivative and the integral), linear algebra offers a great variety of matrices: symmetric, orthogonal, triangular, Markov, positive definite, Hadamard, and (very important) tridiagonal. All of us could add to that list. I will speak about particular matrices in teaching and research — including the "graph Laplacian matrix" and circulants.

A Locally Compact REU: Involving Students in Research in the History of Mathematics
Friday Banquet Featured Speaker

Elizabeth Mayfield, Hood College

In the Summer of 2007 (the Year of Euler), a colleague and I spent eight weeks working with four of our undergraduate students, exploring the topic of women and mathematics in the time of Euler. Our summer included field trips and invited speakers as well as trips to the library and working math problems together. It culminated with a trip to MathFest, where all of the students gave talks in the undergraduate paper sessions. I hope to convince you that involving students in this kind of research is fun, exciting, and absolutely doable.

Women and Mathematics in the Time of Euler
MAA National Speaker
Saturday 9:00- 9:45 am
Student Center, Ballroom A

Elizabeth Mayfield, Hood College

We will examine some female contemporaries of Leonhard Euler (1707 - 1783) —some famous, some not so famous. We will also look at mathematics that was written both by and for women in the time of Euler.

Featured Workshop

An Investigation into the Use of Case Studies in the Training of In-service and Pre-service Middle School Math Teachers.
Friday 8:45-10:45 am
Student Center, Room 236

Gary Harris, Jerry Dwyer, Zenaida Aguirre-Munoz, Tara Stevens, Warren Koepp,
Juli D'Ann Ratheal, Texas Tech

The **West Texas Middle School Math Partnership** (WTMSMP) was developed to enhance middle level mathematics teachers' knowledge of conceptual mathematics, student mathematics self-efficacy, and cultural sensitivity to positively impact student math achievement in West Texas. WTMSMP is funded by the National Science Foundation's Mathematics and Science Partnerships program. Our workshop presenters will include, **Gary Harris, Jerry Dwyer, Zenaida Aguirre-Munoz, Tara Stevens**, and **Warren Koepp**, who are the investigators for WTMSMP. Participants in this workshop will experience first-hand the use of such case studies (realistic in-class scenarios) as tools to provide teachers with strategies for enhancing their students' mathematics self-efficacy; while at the same time, increasing their own cultural sensitivity and strengthening their own conceptual understanding of the basic mathematics taught in middle school. This workshop is of interest to middle and high school mathematics teachers as well as university instructors and researchers who are involved with the mathematics preparation of future teachers.

AAUP Statement of Academic Freedom and MAA-RMS

Has tenure ever been threatened on your campus? Have you ever been given a curriculum developed without discipline expertise and told to implement that curriculum in the next semester? Have you ever developed effective student support systems and had those systems reassigned or taken over by another department on campus? Have you ever felt that shared governance is window dressing for a hierarchical decision making process at your institution? Has trust between faculty and administration deteriorated to a point that interaction is destructive? Do you know of faculty members who have left your institution because of the current political environment? If any or all of these questions describes situations you have faced on your campus, then please register for and come to the Department Chairs and MAA Liaisons luncheon from 11:00am-12:30pm on Friday April 17, 2009 at the Golden Hotel prior to the MAA-RMS spring conference at the Colorado School of Mines. If you are unable to come, please ensure your institution has a representative present.

On April 14, 2007, the Rocky Mountain Section of the Mathematical Association of America voted to endorse the AAUP Statement of Academic Freedom . As an agenda item at the Department Chairs and Liaisons luncheon, Janet Barnett and Jeff Berg will guide discussion to identify the magnitude of issues and environments that infringe upon our collective academic freedom. The intent of the agenda item is to move past identification to current and potential solutions. If warranted, the discussion will continue at an informal lunch on Saturday April 18, 2007 after the conference.

Student Activities

Students are invited to participate in the MAA Sectional meeting on April17 and 18, 2009, to be held at the Colorado School of Mines, Golden, CO. There are student sessions in which students will give talks and there will be a poster session as well. Abstract submissions for the poster session are still underway and should be sent to lienert_c@fortlewis.edu. Bring a poster related to your independent study, senior seminar, modeling contest, etc. Anything with mathematical content is appropriate. Prizes will be awarded in categories to be determined. All student registrations are free. To register, see: http://mcs.mines.edu/About_Us/Registration.html

Middle School and High School Teachers

We would like to invite middle school and high school teachers to fully participate in the MAA Sectional meeting on April 17 and 18, 2009. Thirty teacher registrations will be paid by the ExxonMobil Corporation. To register, see: http://mcs.mines.edu/About_Us/Registration.html

Meeting Information

Please visit the conference homepage at: http://mcs.mines.edu/About_Us/MAAMeeting.html for information about lodging, registration, meeting updates and campus map.

Registration for the meeting is now open. Register at: http://mcs.mines.edu/About_Us/Registration.html

Online registration will close 14 days prior to the meeting.

Preliminary 2009 Meeting Schedule

Friday, April 17

8:45 – 10:45 **Workshop:** *An Investigation into the Use of Case Studies in the Training of In-Service and Pre-Service Middle School Math Teacher.* (Student Center, Room 236)
Gary Harris, Jerry Dwyer, Zenaida Aguirre-Munoz, Tara Stevens, Warren Koepp, Juli D'Ann Ratheal

11:00 – 12:30 **Luncheon for Department Chairs and MAA Liaisons** (Golden Hotel)

12: 00 – 5:00 **Registration, Publisher Exhibits, and MAA Book Sales** (Student Center, Room 234)

12:45 – 1:00 **Opening Remarks and Welcome** (Student Center, Ballroom A)

1:00 – 1:45 **Burton W. Jones Distinguished Teaching Award Invited Lecture**
The Traveling Salesperson Problem: A Cross-Disciplinary Example within the Mathematical Sciences
Dr. Steven Janke, Colorado College, (Student Center, Ballroom A)

1:45 – 2:00 **Exxon Mobile sponsored break**

2:00 – 5:00 **Parallel Sessions** – Contributed Papers, Special Sessions & Panels
(Student Center, Ballrooms A, B, C, D, E)

5:05 – 5:55 **Friday Keynote Address – Exxon Mobile sponsored** (Student Center, Ballroom A)
The Beauty of Linear Algebra
Dr. Gil Strang, MIT

6:00 – 6:45 **Exxon Mobile sponsored Reception and Undergraduate Poster Contest** (Golden Hotel)
Poster Contest Organizer: Dr. Carl Lienert, Fort Lewis College

7:00 – 9:00 **Banquet and Awards Ceremony** (Golden Hotel)
Banquet Address*: A Locally Compact REU: Involving Students in Research in the History of Mathematics*
Dr. Elizabeth Mayfield, Hood College

Saturday, April 18

8:00 – 8:50 **MAA Rocky Mountain Section Business Meeting** (Student Center, Ballroom A)
Please forward agenda items to Hortensia Soto-Johnson at hortensia.soto@unco.edu by March 31.

9:00 – 9:45 **Saturday Keynote Address** (Student Center, Ballroom A)
Women and Mathematics in the Time of Euler
Dr. Elizabeth Mayfield, Hood College

9:45 – 10:00 **Exxon Mobile sponsored break**

10:00 – 1:00 **MAA Book Sales and Publisher Exhibits** (Student Center, Room 234)

10:00 – 12:55 **Parallel Sessions** – Contributed Papers, Special Sessions & Panels
(Student Center, Ballrooms A, B, C, D, E)

1:00 – 3:00 **Open Forum** – Academic Freedom (Student Center, Ballroom E)

Watch for regular meeting updates at http://mcs.mines.edu/About_Us/MAAMeeting.html
Or contact the Program Chair, Barbara Moskal at bmoskal@mines.edu

Colorado Mathematical Olympiad

Colorado Mathematical Olympiad celebrates A QUARTER CENTURY

Colorado Mathematical Olympiad has reached an historic landmark: A Quarter Century! The XXV Annual Colorado Mathematical Olympiad (CMO-2008) took place on April 18, 2008. It brought together some **400** middle and high school students from all over Colorado: Aspen, Aurora, Bailey, Boulder, Branson, Calhan, Canon City, Colorado Springs, Dacono, Denver, Ellicott, Englewood, Falcon, Fort Collins, Fort Lupton, Littleton, Longmont, Loveland, Monument, Parker, Pueblo, Rangely, Security, U.S. Air Force Academy, Woodland Park. We hosted participants from Hudson, Ohio, and Los Altos, California. We also had guest participants from the Alabama School of Mathematics and Science, Mobile, Alabama, who earned their trip to our Olympiad by winning their local mathematics competition.

The Olympians were offered five problems and four hours to solve them and present complete essay-type solutions.

The judges have awarded First prize to **Marshall Carpenter**, a senior from Fairview High School of Boulder. He will receive a gold medal of the Olympiad, a $1,000 scholarship to be used at any certified American university or four-year college, a $1,000 UCCS Chancellor's Scholarship for CMO Medalists, CASIO or Texas Instruments Graphing Calculator, CASIO Watch, Wolfram Research's *Mathematica* 5.2 (hard copy) and the new, not yet released *Mathematica* for Students 6.0 (download) software, Wolfram Research's Crystal Star Necklace, and A. Soifer's books Colorado Mathematical Olympiad: The First Ten Years and Further Explorations and Geometric Etudes in Combinatorial Mathematics (the latter is a joint book with V. G. Boltyanski).

Second prize will be awarded to **Daniel Pascua**, a senior from Liberty High School. He will receive a silver medal of the Olympiad, a $1000 scholarship to be used at any certified American university or four-year college, a $1,000 UCCS Chancellor's Scholarship for CMO Medalists, CASIO or Texas Instruments Graphing Calculator, CASIO Watch, Wolfram Research's *Mathematica* 5.2 (hard copy) and the new, not yet released *Mathematica* for Students 6.0 (download) software, Wolfram Research's Crystal Star Necklace, and the books Colorado Mathematical Olympiad: The First Ten Years and Further Explorations and Geometric Etudes in Combinatorial Mathematics.

Third prize will be presented to **Ben Alpert**, a Freshman from Fairview High School and Ryan **Beethe**, a Sophomore from Poudre High School. They will each receive a bronze medal of the Olympiad, a $250 scholarship to be used at any certified American university or four-year college, a $1,000 UCCS Chancellor's Scholarship for CMO Medalists, CASIO or Texas Instruments Graphing Calculator, CASIO Watch, Wolfram Research's *Mathematica* 5.2 (hard copy) and the new, not yet released *Mathematica* for Students 6.0 (download) software, Wolfram Research's Crystal Star Necklace, and the books Colorado Mathematical Olympiad: The First Ten Years and Further Explorations and Geometric Etudes in Combinatorial Mathematics.

Fourth prize will be presented to: **Samuel Meyer**, a Senior from Cheyenne Mt. High School; **Alexander Black**, an eighth grader from Summit Middle Charter School; **Amber Verser**, a Junior from Thompson Valley High School; **Minh Ly**, a Senior from Doherty High School; and **Chris Pak**, a Senior from Air Academy High School. They will each receive a Casio Watch, Casio or Texas Instruments Graphing Calculator, Wolfram Crystal Star Keyholder, A. Soifer's Colorado Mathematical Olympiad book, and Wolfram Research's *Mathematica* for Students 6.0 (download) software.

First Honorable Mentions will be awarded to the following 17 contestants:

Mutian Yao, 11, Fairview High School; **Charles Xu**, 9, Fairview High School; **Norris Xu**, 12, Fairview High School; **Michael Morton**, 11, Rangely High School; **Allan Gardner**, 9, St. Mary's High School; **Margaret Koehler**, 10, Lewis-Palmer High School; **Kathleen Monahan**, 11, St. Mary's High School; **Shuli Song**, 10, The Classical Academy; **Vicky Li**, 12, Fairview High School; **Victor Li**, 11, Fairview High School; **Eric James**, 10, Mitchell High School; **Eric Eisenberg**, 9, Fairview High School; **Sean Lehouillier**, 12, Cheyenne Mountain High School; **Peter Jaron**, 10, Coronado High School; **Andrew Brunner**, 11, Pine Creek High School; and **Chris Guthrie**, 9, Fairview High School.

Our guest, **Tian Tan**, 11, Murphy High School, Mobile, Alabama will also be awarded First Honorable Mention.

They will each receive a Casio Watch, Wolfram Crystal Star Keyholder, A. Soifer's Colorado Mathematical Olympiad book, and Wolfram Research's software six-month *Mathematica* for Students 6.0 (website logon).

Second Honorable Mentions will be awarded to the following 87 contestants:

John Thilenius, 10	Cheyenne Mt. High School
Christian Pitera, 10	Mesa Ridge High School
Geoffrey Iyer, 12	Fort Collins High School
Nicki Bacovan, 12	Ponderosa High School
Lucy Lu, 12	Pine Creek High School
Ryan Carson, 8	Altona Middle School
Arielle Steers, 11	Sand Creek High School
Emma Brague, 8	Altona Middle School
Scott Gneiting, 11	Ponderosa High School
Chris Coviello, 11	Ponderosa High School
Daniel Nash, 11	Fort Collins High School
Hunter Sceats, 11	Cheyenne Mt. High School
Laura Hopkins, 12	St. Mary's High School
Joseph Mortensen, 11	Fort Collins High School
Zachary Peterson, 10	St. Mary's High School
William Palma, 8	Corpus Christi Catholic School
Adam Armstrong, 10	St. Mary's High School
Shawn Smith, 12	St. Mary's High School
Eli Lovelace, 10	Ponderosa High School
Jeremy Johnson, 12	Mesa Ridge High School
Ty Traver, 10	Ponderosa High School
Scott Ritz, 12	Pine Creek High School
Jade Slayter, 10	Falcon High School
Brandon Barkey, 11	Falcon High School
Taylor Herbert, 10	Falcon High School
Ellie Daw, 8	Altona Middle School
John Slavens, 11	Coronado High School
Dillon Manzanares, 8	Altona Middle School
Sydney Doxtator, 7	Fitzsimmons Middle School
Trevor Arrasmith, 8	Altona Middle School
Michael Collard, 12	Sand Creek High School
Kira Combs, 10	Sand Creek High School
Brian Nakayama, 12	Doherty High School
Christopher Del Valle, 9	Mitchell High School
Joshua Olson, 9	Sand Creek High School
Joshua Reding, 12	Doherty High School
Ayla Williams, 11	Sand Creek High School
Ryan Sandel, 10	Sand Creek High School
Catherine Pond, 8	Altona Middle School

Claud Martin, 11	Branson School Online
Matt Quereau, 11	Sand Creek High School
Maggie Lusk, 11	Sand Creek High School
Kristen Gilmore, 9	Platte Canyon Schools
Ashlee Gee, 10	Mitchell High School
Adam Figueroa, 12	Fort Lupton High School
David Jimenez, 7	Quest Academy
Bryson Keith, 10	Ponderosa High School
Hayley Martin, 10	Ponderosa High School
Alex Petterson, 11	Fort Collins High School
Matthew Thilenius, 11	Cheyenne Mt. High School
Donald Dodge, 11	Ponderosa High School
Alec Loudenback, 11	Ponderosa High School
Cameron King, 9	Ponderosa High School
Darren Kirk, 10	Ponderosa High School
Kit Pfeiffer, 10	Ponderosa High School
Veronica Meadows, 10	Ponderosa High School
Peter Ducey, 10	Ponderosa High School
Vicki Shin, 12	Ponderosa High School
Isabel Kirk, 10	Ellicot High School
Hanna Scovill, 12	Ponderosa High School
Troy Wagoner, 10	Falcon High School
Andrew Hadfield, 11	St. Mary's High School
Melissa Kean, 12	Pine Creek High School
Luke Pedersen, 8	Irving Middle School
Natalie Gonzalez, 9	Platte Canyon Schools
Morgan McCadden, 9	Falcon High School
Johnny Hill, 9	Falcon High School
KJ Norlander, 9	Falcon High School
Kelly Haase, 11	Platte Canyon Schools
Roget Mo, 7	Altona Middle School
Albert Soh, 6	Summit Middle Charter School
Alejandro Garcia, 8	Altona Middle School
Iana Stoytcheva, 8	Altona Middle School
Annina McMillan, 10	Falcon High School
Garrett Seeman, 10	Coronado High School
Ben Pusey, 10	Platte Canyon Schools
Allison Pinterpe, 11	Falcon High School
Matt McNichols, 8	Altona Middle School
Jill DeBiase, 8	Fitzsimmons Middle School
Lauren Wilfong, 6	Irving Middle School
Benji Pacot, 11	Ellicot High School
Jordan Mathis, 10	Mitchell High School
Jin Beak, 6	Summit Middle Charter School
Daniel Yedidovich, 6	Aurora Hills Middle School
Brenden Lynch, 9	Sand Creek High School
Jena Dillon, 12	Sand Creek High School
Josh Lamson, 11	Sand Creek High School

The Second Honorable Mention winners will receive Wolfram Research's Crystal Star Keyholder, and Wolfram Research's six-month *Mathematica* for Students 6.0 (website logon).

Literary Awards will be presented to Isabelle Soifer, 11, Los Altos High School, Los Altos, California and Chelsea Gardner, 11, Ponderosa High School.

Those who wish to understand the spirit of the Olympiad are invited to solve at least one of the Olympiad's five problems. Here, for example, is a problem Old Glory Returns:

A 2008×2008 flag was shot in battle 2008 times. Prove that we can cut out of it two 250×250 squares that have an equal number of bullet holes.

THIS YEAR'S PRIZE FUND OF THE OLYMPIAD has been generously donated by Intermap Technologies, Inc., CASIO, Inc., Wolfram Research, Texas Instruments, City of Colorado Springs, UCCS Bookstore, Air Academy Dist. 20, School Dist. 11, Harrison School Dist. 2, Rangely High School, Fort Collins High School, Falcon Dist. 49, Chancellor, UCCS, Vice Chancellor for Academic Affairs, UCCS, Vice Chancellor for Student Success, UCCS, Vice Chancellor for Administration & Finance, UCCS, College of Letters, Arts, and Sciences, UCCS, Office of Campus Activities, UCCS.; and Alexander Soifer.

THE AWARD PRESENTATION PROGRAM will feature a lecture *Creators of Mathematical Coloring,* and *Review of Solutions of the 25th Colorado Mathematical Olympiad Problems* by Alexander Soifer.

The following guests of honor, hosts and sponsors will address the winners and present the awards: Pamela Shockley, Chancellor, and Thomas Christensen, Dean of the College of Letters, Arts, and Sciences – both from UCCS; Greg Hoffman, Director of Human Recourses, Intermap Technologies Inc., Maggie Lopez, Assistant Superintendent, Colorado Springs School District 20; Mary Thurman, Deputy Superintendent, School District 11; and Alexander Soifer, Chair, Colorado Mathematical Olympiad.

In the 25 years of Colorado Mathematical Olympiad, some 16,500 students have participated during 1984-2008. They have written some 84,000 essays, and were awarded some $250,000 in prizes. The Olympiad is a unique joint effort of school districts, schools, institutions of higher education, business community and local and State governments.

MARK YOUR CALENDARS:
The Twenty-Fifth Annual Colorado Mathematical Olympiad will take place on April 17, 2009 with Award Presentation following on April 24, 2009.

For details please consult http://www.uccs.edu/~asoifer/olympiad.html .
Alexander Soifer

Colorado Mathematical Olympiad

University of Colorado at Colorado Springs
Dr Alexander Soifer, Chair
1420 Austin Bluffs Parkway
P.O. Box 7150
Colorado Springs, CO 80918
Phone: (719) 262-3496 or (719)255-3496 After Jan. 1, 2009
e-mail: asoifer@uccs.edu
Internet: http://www.uccs.edu/~olympiad/index.htm

February 23, 2014

The Colorado Mathematical Olympiad (CMO) is the nation's largest annual essay-type competition in the field of Mathematics. Over the past twenty-six years, thousands of middle and high school students from throughout Colorado have taken part in this exciting event. This year's competition will take place on Friday, April 17, 2009 and will be held at University of Colorado at Colorado Springs (UCCS). The Awards Ceremony will take place on Friday, April 24, 2009. The ceremony will include a lecture to review the problems and solutions, presentation of awards and certificates, and a reception.

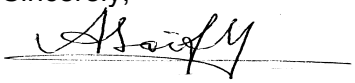
As Chair of CMO, I have stayed involved in this event since its inception in 1983-1984. In the past 25 years, we have discovered remarkably talented middle and high school students, who went on to become math and computer science professors, founders of software companies, and Ph.D.'s in mathematics, computer science and philosophy.

The Olympiad is a unique, joint effort of local institutions of higher education; public and private schools of Colorado; nation-wide businesses; and city and state governments. Thanks to your contributions, we award scholarships for any accredited U.S. universities or colleges, computers, calculators, books, memorabilia. In addition, in 2001 under the initiative of Chancellor Pam Shockley-Zalabak, Chancellor's Scholarships were created for CMO winners. All first, second, and third place winners are now offered scholarships upon application and acceptance to UCCS as new freshmen. This is a major contribution to the education of the gifted mathematicians of Colorado.

I sincerely hope you will join the list of CMO supporters. Your sponsorship would help show our students that we are committed to recognizing outstanding educational achievement and invest in the future of Colorado by improving educational s opportunities. These youths will undoubtedly become tomorrow's leaders of our Country.

I look forward to working with you. If you would like to make a **donation**, please make checks payable to **CU-Foundation**, on behalf of CMO; to make a **Gift-In-Kind donation**, please contact Margie Teals-Davis, CMO Support Staff for information on how to do so, no later than **January 15, 2009**. Do not hesitate to contact her at (719) 262-4552 or via email mtealsda@uccs.edu.

Sincerely,



Alexander Soifer
Chair, Colorado Mathematical Olympiad
Professor of Mathematics, UCCS

MAA Rocky Mountain Section
Suggestions for Speakers

The Section offers the following suggestions which might be of assistance, *especially to first-timers*, during preparation of a talk for a Section Meeting.

1. The default talk length is 20 minutes, but longer times can be requested. Program organizers will attempt to provide the amount of time requested for your presentation, within the limitations of the program. Once you have been notified of the amount of time allotted, carefully prepare your presentation accordingly. If possible, plan to leave a few minutes at the end of your presentation for questions.

2. A presider will be assigned to facilitate each session of presentations. The presider will introduce the speaker, assist in distribution of any handouts, signal the end of the presentation, and ask for questions from the audience.

3. If handouts are to be provided, give them to the presider prior to the beginning of the session including your talk. Plan to bring about 30 handouts and be prepared to give attendees your address in case the supply runs out. It may also be possible to arrange for posting of electronic materials from your talk on the section website; check with program organizers concerning this possibility.

4. Do not plan to present so much detailed material that your presentation becomes rushed. Focus on providing the audience with insight into your topic and its key notion during the presentation. Remember that very few members of the audience will be experts in the field you are discussing and that the audience will include some students.

5. The use of transparencies on an overhead projector greatly enhances the pace of a presentation. But make sure that notes on transparencies are written or typed in a font big enough and with spacing adequate to be seen clearly 50 to 100 feet away. Simply copying ordinary typewritten pages will not produce readable transparencies. Power Point or PDF presentations can serve a similar purpose in providing pacing for a talk, but be sure to check with program organizers concerning available technology and means of transferring data.

Grants Available

Section Activity Grants Available

Applications for Section Activities Grants are again being accepted to assist Section members with projects in support of the Section Mission. Proposals may request up to $500; matching funds are preferred, but not required.

The project director(s) must be a current member(s) of MAA, and the proposal must be clearly tied to one or more of the Rocky Mountain Section Mission Goals. A copy of these goals appears on the inside back cover of this newsletter. All applications must include the following:

(a) Description of project (no more than one page);

(b) Statement of how project supports Section Goals (no more than one page);

(c) Estimated budget, including description of matching funds available, if any;

(d) Vitae of project director(s).

Upon completion of the project, the director(s) of the funded projects are required to file a brief report (no more than one page), and to present a project report at the next meeting of the Section.

Two non-officer members of the Section will review applications; the Executive Committee on the basis of the reviewers' reports will make final funding decisions. Although applications are accepted at any time, please note that notification of funding decisions may take up to two months following receipt of the application by the section secretary.

Student Recognition Grants Available

The establishment of a Student Recognition Grant Program was approved by the section membership at the 2003 Annual Business Meeting. In support of this program, the Section will set aside $500 every calendar year. From these monies, the Section will make grants for the purpose of recognizing superior achievement in mathematics on the part of (1) students enrolled in post-secondary institutions within the geographic region served by the Section and (2) high school students whose school districts, or other appropriate political subdivisions, substantially intersect the geographic region served by the Section.

Proposals for such grants must

1. Originate from a member of the Rocky Mountain Section of the Mathematical Association of America on behalf of an agency, institution, or organization whose stated purposes are consistent with recognizing or encouraging superior academic achievement at the high school level;
2. Be in the hands of the Chair of the Rocky Mountain Section no later than March 15 of the year in which the proposed recognition is to be made;
3. Include the criteria under which superior achievement in mathematics is to be recognized, together with the time and the manner of such recognition;
4. Report, insofar as possible at the time of the proposal, other potential sources of support together with proposals or requests made or intended; and
5. Be limited to a maximum amount of $250.

The Executive Committee will review all proposals for grants under this policy and will make such grants as, in its sole judgment, it deems proper. In keeping with the section mission, funding priority will be given to grants that include recognition of undergraduate students. Funding decisions will be announced no later than the Annual Business Meeting of the Section. Monies not expended during any particular year shall revert to the Section's general fund.

Section Logo Shirts Available

First unveiled at the 2002 Spring Section Meeting in Laramie, Rocky Mountain Section Logo shirts are now available in two styles: a **long-sleeved button-front denim shirt** and a **short-sleeved white polo shirt**. Both styles are 100% cotton and feature the section logo in high-quality color embroidery on the front left.

In order to promote awareness of the MAA and the Rocky Mountain Section, prices have been set in order to recover production costs, just **$35 for denim** and **$30 for polo**. Proceeds, if any, will be used to support section activities.

If you are interested in obtaining one of these special shirts, please contact **Janet Barnett,** janet.barnett@colostate-pueblo.edu, with information on desired quantities and sizes.

About Our Logo

The logo for the Rocky Mountain Section of the Mathematical Association of America was created in by Mark Petersen in 2001. A graduate student in the Applied Mathematics Department at the University of Colorado at Boulder at that time, Mark says of his design:

"The mountain symbols were chosen because analysis is the foundation for all of mathematics. The equation $e^{i\pi} + 1 = 0$ must rank among the most beautiful formulas in mathematics. It connects the five most important constants of mathematics with the three most important operations - addition, multiplication, and exponentiation. These five constants symbolize the four major branches of classical mathematics: arithmetic, represented by 0 and 1; algebra, by *i*; geometry, by π; and analysis, by *e*. (Quoted from Eli Maor's *e, The Story of a Number*). I chose to portray this equation as a train because rail has historically been the life blood of the American West, and trains are complementary to any mountain scene."

Meetings Calendar

NCTM annual meeting; Washington, DC; April 22-25, 2009

MAA Rocky Mountain Section Meeting
Colorado School of Mines
Golden, CO
April 17-18, 2009

MAA MathFest; Portland, OR; August 6-8, 2009

Joint Mathematics Meetings; San Francisco, CA; January 13-16, 2010
NCTM annual meeting; San Diego, CA; April 21-24, 2010
MAA MathFest; Pittsburgh, PA; August 5-7, 2010

Joint Mathematics Meetings; New Orleans, LA; January 5-8, 2011
NCTM annual meeting; Indianapolis, IN; April 13-16, 2011
MAA MathFest; Lexington, KY; August 4-6, 2011

Joint Mathematics Meetings; Boston, MA; January 4-7, 2012
NCTM annual meeting; Miami, FL; April 25-28, 2012
MAA MathFest; Madison, WI; August 2-4, 2012

Joint Mathematics Meetings; San Diego, CA; January 9-12, 2013
NCTM annual meeting; Denver, CO; April 17-20, 2013

Joint Mathematics Meetings; Baltimore, MD; January 15-18, 2014
NCTM annual meeting; New Orleans, LA; April 9-12, 2014

Joint Mathematics Meetings; San Antonio, TX; January 9-12, 2015
NCTM annual meeting; Boston, MA; April 15-18, 2015
MAA 100th Anniversary MathFest, Washington, DC; August 5-8, 2015

NCTM annual meeting; San Francisco, CA; April 14-16, 2016

The Rocky Mountain Section of
The Mathematical Association of America

Burton W. Jones Award
for Distinguished College or University Teaching of Mathematics

Burton W. Jones Award Nomination Form

Name of Nominee _____
(First name first)

College or University Affiliation _____

College or University Address _____

City _____ State _____ Zip: _____

Is the nominee a member of the MAA? _____

Number of years of teaching experience in a mathematical science _____

Has the nominee taught at least half time in a mathematical science
for the past three years (not counting a sabbatical period)? _____

In the space below, please briefly describe the unusual personal and professional qualities of the nominee that contribute to her or his extraordinary teaching success.

Name of Nominator) _____
(first name first)
Address of Nominator _____

_____

Email Address _____

Telephone: Work _____ Home _____ Fax _____

Nominator's Signature _____

Nomination form should reach Section Secretary by December 1.
Complete nomination materials should reach Section Secretary by January 15.
Please consult section webpage (http://www-math.cudenver.edu/~maa-rm/) for complete guidelines.
Section Secretary - Hortensia Soto-Johnson, UNC Dept of Mathematical Sciences, Ross 2240 A, Greeley, CO 80639.

Voluntary Section Dues

Many thanks to those members who have made a voluntary dues contribution to the section along with their Spring Meeting Registration!

Although the section has found itself in good financial health in recent years, additional funds are always needed in order to pursue special initiatives suggested by the membership. The successful John Fauvel Memorial Conference and William Dunham Special Lecture, both supported in part by the Section Activity Grant program, provide excellent examples of what can be done with even a small amount of funding to support our section mission and goals.

A voluntary section dues contribution from you now can help build up funds in support of similar initiatives!

To submit your dues, simply return the coupon below with a check for any amount you wish - every little bit will help, and all contributors will receive a letter acknowledging the contribution for their financial records.

MAA Rocky Mountain Section Voluntary Dues Contribution Form

Name _____

Address _____

_____ **ZIP** _____

Please indicate in the space provided how you would like your dues to be used:

_____ Undergraduate Student Initiatives
_____ Graduate Student Initiatives
_____ Burton W. Jones DTA Fund
_____ Section Activity Grant Program
_____ Wherever needed most
_____ Other: _____
_____ **TOTAL DUES PAID ($10 recommended)**

Please make check payable to: **MAA Rocky Mountain Section** and return to: Hortensia Soto-Johnson, MAA Rocky Mountain Section Treasurer/Secretary: UNC Dept of Mathematical Sciences, Ross 2240 A, Greeley, CO 80639

MAA Rocky Mountain Section
Mission Statement

**To promote excellence in mathematics education,
especially at the collegiate level.**

Mission Related Goals

1. To foster scholarship, professional development, and professional cooperation among the various constituencies of the mathematical community within the region.

2. To foster the implementation and study of recent research recommendations for the teaching, learning and assessment of collegiate mathematics.

3. To support the implementation of effective mathematics preparation programs of prospective teachers at all levels.

4. To enhance the interests, talents and achievements of all individuals in mathematics, especially of members of underrepresented groups.

5. To provide recognition of the importance of mathematics, mathematical research and quality mathematics teaching, and promote public understanding of the same.

6. To provide regional leadership in the promotion of systemic change in mathematics education, and in the enhancement of public understanding about the needs and importance of mathematical research and education.