



SPRING 2006 NEWSLETTER

Section Website <http://www-math.cudenver.edu/~maa-rm>

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Spring 2006 Newsletter in HTML Format

Click on the following link for web based document:

<http://clem.mscd.edu/~sundbyel/maanews/spring2006news.html>

2005 - 2006 Section Officers and Committee Members

Section Website <http://www-math.cudenver.edu/~maa-rm>

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2007 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 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) by **1 December 2006**. **Complete nomination materials** (described on the website) are due **29 January 2007**.

Governor's Report

1992 The MAA Board of Governors met in San Antonio on Wednesday, January 11, 2006, prior to the Joint Mathematics Meeting there. Some of the many items discussed include the following, which I thought might be of interest.

- Whistle Blower Protection Policy. This is a new policy for MAA staff, and for members engaging in business with the MAA. It was approved by the board in November 2005.
- Restructuring dues gradually from 2007 to 2010. This is an attempt to make the dues more closely reflect the costs of running the MAA. There will be a four year gradual increase in dues to achieve this goal. Membership dues will increase by at most \$4 in 2007 up to at most \$22 in 2010 (the increase will vary depending upon the number of journals included in the

membership). This was approved by the board in San Antonio, January 2006.

- The 2007 Joint Meeting. This meeting will be held in New Orleans, Wednesday, January 5 to Monday, January 8. Notice that this is a change from the previous schedule of Jan. 4 – 7. (The change was made because the Sugar Bowl football game will be in New Orleans on January 4.) If you are going, get reservations (hotel and air) early. There was discussion about the MAA and AMS showing their support of New Orleans by not moving the meeting.
- MathFest focus: The board discussed that the MathFest should have more mathematical content, and we are all asked to consider creating such sessions.
- Digital resources. The MAA website provides access to a number of interesting digital resources, including, but definitely not limited to, those I mention here. There are an amazing number of fascinating sites to investigate, and I strongly encourage you to make use of these great resources. See <http://maa.org/> to browse.
 - JSTOR (Journal Storage, see <http://www.jstor.org/about/desc.html>) now has the past three years of the Mathematical Monthly, College Mathematics Journal, and Mathematics Magazine digitally available.
 - FOL (Focus online, see <http://maa.org/pubs/focus.html>) has current issues of Focus as PDF files, although I encountered some errors on the web site. It is a work in progress.
 - Math DL (Mathematical Sciences Digital Library; some links are members-only; see <http://mathdl.maa.org/>) has most Classroom Capsules Online – recommended for undergraduate libraries, and many other resources. MAA Reviews is expected to be online at this site by January 2006.
- Increasing MAA membership. Please remember to tell any new Ph.D. recipients that membership in the MAA is free for one year.
- China Study Tour. The MAA summer study tour this year will be from June 6 to June 21, in China. As of the January meeting, there were still a few openings. Past study tours include those to England, to Greece and to

Mayan Mexico, and the summer of 2007 will be an Euler tour. See <http://maa.org/china/> for more information.

- **AMC trials.** In 2006 the MAA will conduct trials offering AMC B contests at colleges, as an open competition rather than only those from a certain high school. Any college/university interested in hosting such an event should contact Steve Dunbar, Director of AMC, at the MAA.

Please contact me if you would like more information about the above items, or about anything else. If you are curious about getting involved at the national level with MAA, I can help!

Jane Arledge, Governor, Rocky Mountain Section of the MAA

Section Officer's Meeting Report

The following are items that were reported at the Section Officer's Meeting at the Joint Meeting in San Antonio, Texas.

1. Planning continues for the MAA's Centennial in 2015. The main event will be the Mathfest, August 5-8, 2015 in Washington, D.C. The section has been asked to designate a Centennial Section Planner to gather ideas and to plan a Centennial Section Meeting. The national office would like each section to generate both written and oral section histories to be linked to MAA Online. Anyone interested in this position should contact a Section Officer.
2. Sections are being asked to provide more nominations for The Haimo Awards for Distinguished College or University Teaching of Mathematics. The eligibility for these awards has changed to include candidates with more than seven years of experience. Sections are encouraged to renominate previous section winners and nominees. There is a deadline of March 1st for nominations. The cover sheet can be found in pdf form on the website <http://www.maa.org/awards/haimo.html>.
3. Gavin Larose, Associate Director of NExT, discussed NExT in the sections and Project ACCESS (see related article by **Lourdes Pajo**, Pikes Peak Community College). Approximately 18 to 20 sections have Section NExT programs. There is money

available to start up Section NExT programs and to invite speakers to Section NExT.

4. Eldon Johnson of the American Mathematics Competitions is looking for problem posers, problem evaluators, draft readers/critiquers, and galley proof readers. He can be contacted through <http://www.unl.edu/amc/>.
5. Tina Straley, Executive Director of the MAA, discussed Strategic Planning. The current areas under review are Professional Development, American Mathematics Competitions, and Revenue. This spring, the three areas under review will be Governance, Students, and Membership. Each area is assigned a working group which has 18 months to complete their review.
6. During the open discussion, each section present reported on their section newsletters. The majority of sections have online newsletters. Many of these sections also send the newsletter through the mail or send out a postcard with information on how members can receive a hard copy of the newsletter. The main concern with the online format is that sections would lose non-computer-savvy members. A few sections noted that the members who requested hard copies after the postcards were sent out often did not receive their newsletters until right before the spring meeting.

Karen Walters, Vice-Chair for the RMS of the MAA

Section News

Fort Lewis College

FLC has two new faculty members in the last two years. **Vesta Coufal** joined us in the Fall of 2004. She is a topologist and earned her degree at Notre Dame. **Erich McAlister** has joined us this year from CU Boulder where he earned his degree last spring. His research area is C* algebras and K-theory.

While Computer Science is no longer part of the math department, they too have two new faculty members. **Aaron Gordon** joins us from Metro and **Brian Hanks** from UC Santa Cruz.

Quite a few members of the department have retired in the last several years: **Bill Ramaley**, **Annette Cooper**, **Dick Walker**, **Laszlo Szucks**, **Jim Wixom**, and **Greg Bell**.

We've started an undergraduate colloquium in the last couple years. From outside the department Bill, Aaron, and **Kathy Merrill** (emerita from CC) have greatly supported the colloquium. I'd like to offer an open invitation to anyone who'd like to give a talk here. We can't offer much but we'll buy your dinner (and beer).

Mesa State College

The mathematics department at MSC is participating in an NSF funded MAA grant to investigate a modeling-based approach to teaching College Algebra. There are eleven colleges and universities across the country that are participating in the study. At MSC, **Cathy Bonan-Hamada**, **Tracii Friedman** and **Nancy Angle** are each teaching one pilot (modeling-based) section and one control (traditionally taught) section of College Algebra in both the Spring 2006 and Fall 2006 semesters.

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.

Project ACCESS Report

On the American Mathematical Association of Two-Year Colleges and the Mathematical Association of America websites (www.amatyc.org/ProjectACCESS, www.maa.org/ProjectACCESS respectively), Project ACCESS (Advancing Community College Careers: Education, Scholarship and Service) is described as:

“a mentoring and professional development initiative for two-year college mathematics faculty funded through a grant from the ExxonMobil Foundation. Jointly developed by AMATYC and MAA, Project ACCESS has as its goal the development of a cadre of new two-year college mathematics faculty who are effective members of their profession. Participating Fellows will gain knowledge of the culture and mission of the two-year College and its students, acquire familiarity with the scholarship of teaching, commit to continued growth in mathematics,

and participate actively in professional communities.”

Sarah Stanley of Western Wyoming Community College and I have been selected from the Rocky Mountain region, along with 30 other faculty members in the nation, to form the Project ACCESS 2005-2006 second cohort group. We are required to attend and participate in the regular conference activities at the National AMATYC Conferences in San Diego, CA and Cincinnati, OH, as well as Project ACCESS developed workshops. Additionally in the intervening year, we will attend our local Rocky Mountain section meeting in Grand Junction, CO in April.

As a part of our professional development during our Fellowship year, we are expected to develop, implement and evaluate a fellowship group project of our choosing at our respective institutions. Sarah and I have formed a group with two other Fellows (Rob Eby from Blinn College, College Station, TX and Jeff Downs from Western Nevada Community College, Fallon, NV) to create a project assessing linear equation knowledge in our classes. To guide us in our endeavor, we network electronically with other Project ACCESS Fellows and a group of distinguished mathematics educators.

So far, I have attended my first Project ACCESS cohort meeting at the AMATYC Conference in San Diego, CA. Specially developed workshops were presented to ACCESS fellows from both cohorts, individually and jointly. It was an overwhelming and motivating experience. According to the first cohort, we would have minimal time to actually attend the AMATYC Conference since time would be dedicated to our Fellowship activities.

Finding myself in San Diego for the first time, I was looking forward to sightseeing but that was not part of the agenda. We were housed on a “resort” that contained its own convention hall, bars, restaurants, numerous housing facilities, etc. Most of our fellowship activities were on the penthouse floor of our hotel, and I was paired with another Fellow as a roommate. I found myself following a very strict schedule of activities that were very motivating but strenuous.

A typical day consisted of:

- | | |
|-------------|--|
| 7:00 – 8:00 | ACCESS Continental Breakfast for all Fellows |
| 8:10 – 8:40 | Introductions, agenda review, announcements |

- 8:50 – 11:50 Keynote: *Mindsets and Miracles: What Research Tells Us About Learning (and Teaching) Math*
- 12:00 – 12:50 ACCESS Box Lunch for all Fellows
- 1:00 – 2:50 Workshop: *Pedagogies of Engagement and Equity*
- 3:00 – 4:15 AMATYC Opening Session: *The Mathematics of Juggling*
- 4:30 – 5:30 Discussion: *Everything I want to know about community college teaching, but don't have anyone to ask*
- 5:30 – 6:30 Free Time
- 6:30 Dinner for 2005 ACCESS Fellows only
- After dinner Discussion: *An insider's look at AMATYC and MAA*

We were required to arrive Wednesday morning and leave Sunday afternoon. Hence, we started Wednesday evening through Sunday morning. It was very rigorous but offered extremely valuable information on teaching mathematics. In my opinion, the best part of the conference was forming relationships with my other Fellows, sharing our best practices, and discovering the varied aspects of college life from across the nation.

Project ACCESS is a wonderful opportunity, and I am honored to have been selected to share my teaching experiences and learning about those of my talented peers. Given this, I hope to continue to network with my peers and draw on the wisdom of our mentoring mathematics faculty leaders throughout my involvement in Project ACCESS. As for San Diego, I hope to visit and sightsee it sometime in the future.

Lourdes Pajo, Pikes Peak Community College

Student Activities

The MAA website that provides information for undergraduate students can be found at <http://www.maa.org/students/undergrad/>. Here you can find a vast amount of information on MAA student chapters and other activities concerning undergraduates.

The SIAM Visiting Lecturer Program is a great resource for those of us that face the prospect of recruiting speakers for a regional

conference, or for our department seminars. You can find more information regarding this program at <http://www.siam.org/visiting/>

Below is some information on conferences that might be of interest to those students looking to present their research results this spring:

CONFERENCES THIS SPRING

Pikes Peak Regional Undergraduate Mathematics Conference will be held February 25, 2006 on the campus of Colorado State-Pueblo, Pueblo, CO. For additional information, see p. 10 or contact janet.barnett@colostate-pueblo.edu.

Second Annual SIAM Student Research Conference (graduate and undergraduate). March 11, 2006 will take place at the University of Colorado at Denver.

Mathematics on the Northern Plains is an undergraduate mathematics conference that is scheduled for April 29, 2006 on the campus of Sioux Falls University, Sioux Falls, SD.

MAA Rocky Mountain Section Meeting, April 7-8, 2006 on the Campus of Mesa State College, Grand Junction, CO. See the Mathematics Awareness Month Undergraduate Poster Session information on p. 16 of this newsletter.

MAA Mathfest; Knoxville, TN. August 10-12, 2006.

Have a great spring and I hope to see you at the MAA Section meeting in Grand Junction this April.

Kyle Riley, MAA Rocky Mountain Section Student Activity Coordinator

**2nd SIAM Front Range Applied Mathematics Student Conference at the University of Colorado at Denver
Saturday, March 11, 2006**

The SIAM Student Chapters of the University of Colorado campuses are organizing the 2nd Front Range Applied Mathematics Student Conference on Saturday, March 11th, 2006 at the University of Colorado at Denver campus (downtown Denver on the Auraria campus).

The conference is open to BOTH undergraduate and graduate students and

will focus on student research projects and presentations in Applied Mathematics.

This will be a great opportunity for learning about current student research in the Front Range area and meeting fellow students.

Further information about this conference can be found at:

<http://amath.colorado.edu/siam/conference/>

**2006 T³ International Conference
Denver, CO
February 24 - 26, 2006**

Texas Instruments is sponsoring a three day conference at the Colorado Convention Center in Denver from February 24 – 26, 2006. The conference is on integrating technology in the classroom. For more information, visit their website at: <http://education.ti.com/t3denver>

Nominees Sought

Nominees for Section Chair

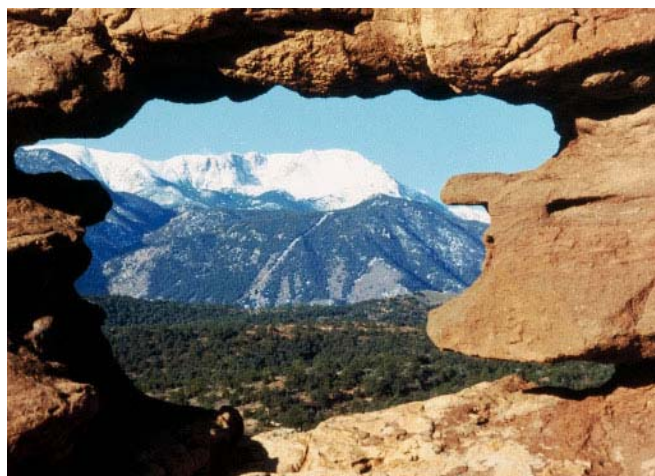
Nominees are now being sought for the position of 2007-2009 Section Chair. This individual will serve a one-year term as Chair-elect beginning April 2006, a two-year term as Chair ending April 2009, and a one-year term as past Chair in 2009-2010. In addition to providing leadership for the section, the Section Chair serves on the Section Executive and Program Committees, handles all correspondence between the national MAA and the section, and oversees appointments for the Awards Selection and Nominating Committees. The election will take place at the 2006 Spring Section Meeting at Mesa State. If you would like more information about the responsibilities of the position, please contact the Section Secretary. **To make a nomination, please contact the Nominating Committee Chair Carl Lienert, Fort Lewis College, 970- 247-7169, lienert_c@fortlewis.edu.**

The deadline for nominations is February 25, 2006.

**MAA's 4th Annual Mathematical
Study tour – Land of Cathay and
Explore its Ancient and Modern
Culture,
JUNE 6 – 21, 2006**

For pricing information, itinerary and registration, visit <http://maa.org/china> or contact Lisa Kolbe at lkolbe@maa.org. The tour is limited to 30 participants.

**Third Annual
Pikes Peak Regional
Undergraduate Mathematics
Conference
Saturday, 25 February 2006
Colorado State University – Pueblo**



The focus of this annual conference is to give undergraduate mathematics students an opportunity to present their research and expository projects in a professional setting.

Students throughout the Pikes Peak region and beyond are strongly encouraged to present in the areas of mathematics, mathematics education and the history of mathematics.

Students who do not present are also encouraged to attend, and learn more about graduate school, career, and research opportunities in mathematics.

Registration is free for all participants, and includes lunch. Travel funds are available for students residing within the Rocky Mountain Section of the Mathematical Association of America. Pending availability of funds, conference T-shirts will be provided free to speakers and at-cost to other conference participants.

Funding from the Mathematical Association of America's Undergraduate Mathematics Conferences Funding (NSF Grant DMS 0241090) will help support the conference.

For information about travel funds or the conference, contact janet.barnett@colostate-pueblo.edu.

Preliminary Conference Schedule

9:00 - 9:15	Registration
9:15 - 9:30	Welcome & Opening Remarks
9:30 - 10:30	Keynote Address <i>Quantitative Literacy: What Is It and Why Should We Care??</i> Professor Bill Briggs, University of Colorado at Denver
10:40 -11:55	Student Presentations in Parallel Sessions (15 minutes each, with 5 minutes between talks)
12:00 -1:00	Lunch (free for all registered participants)
1:00 - 2:00	Panel Discussion <i>Finishing Touches to Increase Your (Math) Appeal: Research Opportunities, Internships and More</i>
2:00 - 4:30	Student Presentations in Parallel Sessions (15 minutes each, with 5 minutes between talks)
4:30	Closing Remarks and Door Prizes
5:30	Optional pizza party (free for all student participants, pending availability of funds)

	Third Annual Pikes Peak Regional Undergraduate Mathematics Conference Registration Form	
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Registration Deadline: 14 February 2006

Student Name _____

Affiliation _____

Mailing Address _____

E-Mail Address _____

Phone _____

Are you requesting support for travel costs? Yes No
(If so, you will be contacted by conference organizers for further information.)

Do you plan to attend the optional pizza & ice cream party? Yes No
(Note: Free for all student participants, pending availability of funding.)

Additional Information Needed from Speakers

Faculty Sponsor _____

Sponsor's E-Mail _____

Project Title _____

Abstract (100 words or less)

Schedule Preference Request? _____

Shirt Size (pending funding availability) _____

PLEASE RETURN THIS FORM OR AN E-MAIL EQUIVALENT TO:

Janet Heine Barnett
Department of Mathematics & Physics
Colorado State University-Pueblo
Pueblo, CO 81001 - 4901

janet.barnett@colostate-pueblo.edu

Note: e-mail submissions are strongly preferred.

Mesa State College to Host Joint 2006 Meeting

The Department of Computer Science, Mathematics and Statistics at Mesa State College is pleased to announce the results of its planning for a joint meeting of the Rocky Mountain and Intermountain Sections of the MAA. The meeting will be held at Mesa State College in Grand Junction, Colorado on April 7-8, 2006. A special theme of the meeting will be undergraduate research. To launch this theme, a workshop entitled **Supervising Undergraduate Research** will take place on Friday morning from 9:30 to 11:30 am. Topics to be covered in the workshop include techniques for recruiting students, preliminary preparation of students and supervision of undergraduate research. Registration is limited to 20 participants and the registration fee is \$5.00 per person.

In keeping with tradition, the meeting will officially open Friday afternoon with a special address by our most recent Burton W. Jones Distinguished Teaching Award Recipient, **Bryan Shader** of University of Wyoming. In his talk, *Some Favorite Mathematical Hors D'oeuvres*, Dr. Shader will present a sampler of savory mathematical appetizers that are served to mathematics majors at University of Wyoming before their full course of upper division mathematics courses. The appeal and effect of each appetizer will be discussed. In addition to being an outstanding teacher, Dr. Shader is involved with the Middle School Mathematics Initiative Project for the state of Wyoming and is a co-organizer of the Rocky Mountain Mathematics Consortium Summer School. Professor Shader's research interests include combinatorics, discrete mathematics, graph theory, linear and multilinear algebra, and matrix theory.

In 1991 the George Pólya Lectureship was created by the MAA to encourage and acknowledge high quality exposition. Each Section is entitled to a Pólya Lecture approximately once every five years. We are fortunate this year to have been approved for a Pólya Lecture and are pleased to announce that **Dr. Steven Rudich** will be speaking at our meeting. Dr. Rudich has been a Professor of Computer Science at Carnegie Mellon University since 1990. He received his PhD in Computer Science from the University of California at Berkeley under the advisorship of Manuel Blum. His research interests include computational complexity theory, the mathematical foundations of cryptography and the often surprising interplay between the two areas. Professor Rudich's talk, *A Bird's Eye View of the P vs NP Problem*, will be a survey of the history, meaning and significance of the P vs NP question. Professor Rudich has received both departmental and university-wide awards for teaching excellence. He is also a gourmet cook and a professional close-up magician.

The Saturday morning Keynote Address will be given by **Dr. Allen Schwenk** from Western Michigan University. Professor Schwenk presently serves as Mathematics Magazine Editor. In his talk, *Beware of Geeks Bearing Gripts*, Dr. Schwenk will present nontransitive dice that have a further paradoxical property that he has dubbed "perverse reversal". This will be a fun talk that illustrates that you cannot rely on intuition to select the best choice.

Another exciting feature planned for this year will be a Mathematics Awareness Month Undergraduate Poster Session. Organized by **Kyle Riley** of the South Dakota School of Mines and Technology, the theme of the session is **To Infinity and Beyond**. Prizes will be offered for Best in Show, Best Use of Mathematics and Most Creative. More information about the session can be found on p. 16. Please encourage your students to take part in this opportunity.

Rounding out the scientific program will be talks contributed by intelligent, involved and inspirational people like you! Information on submission guidelines can be found in the Second Call for Papers and Speaker Response Form located at the end of this announcement.

Finally, MAA books will again be on display at the meeting, with the opportunity to purchase books at a discount below membership prices! Not only does this save you money, but also the section receives a 10% "rebate" on all orders placed at the meeting. We also hope to have textbook publishers and other vendors available on-site

Second Call for Papers

The deadline for submission of abstracts for the 2006 Spring Section Meeting is **February 24, 2006**. Proposals received from students and MAA members after this date will be scheduled on a first-come, first-scheduled, space-available basis. Proposals from non-members sponsored by MAA members must be received by the deadline.

Although talks on all mathematical topics are welcome, in addition to a general session, the following special sessions are being organized:

Mathematics, Society and Culture: Past and Present

Organized by Janet Barnett (janet.barnett@colostate-pueblo.edu)

Like all persons, mathematicians live in human society and respond in some way to important social and cultural events of their times. This session invites talks on any aspect of the relationship (historical and contemporary) between mathematics, society and culture. Possible topics include: responses (personal and professional) of mathematicians to important events of their day; the influence of larger social/cultural issues on mathematics, and vice versa; the role of mathematics in helping individuals to critically analyze public discourse concerning social/cultural issues; and the responsibility of the mathematics community to promote public understanding of the discipline, its limitations and its potential uses in addressing social/cultural issues.

Interesting Ideas in Number Theory

Organized by Jane Arledge (arledge@mesastate.edu) and Rob Tubbs (robert.tubbs@colorado.edu)

In this session, we will share interesting tidbits of knowledge and explore connections in the broad areas of number theory and geometry. Talks should be addressed to general mathematics faculty.

Mathematics Education

Organized by Cathy Barkley (cbarkley@mesastate.edu)

Topics related to teacher preparation and improvement at all levels are welcome.

Student Papers

Organized by MSC Math Club. The Math Club President is Brian Rogers (brogers@mesastate.edu)

Students are encouraged to present their research project results at the meeting! Registration is free for all students, and student speakers receive a complimentary one-year membership in the MAA, including the journal of their choice.

The default talk length will be 20 minutes, with every effort made (within the constraints of the schedule) to accommodate requests for longer talks and other scheduling preferences. Please submit special requests early.

For non-electronic submissions, please use the Speaker Response Form located in this announcement. E-mail equivalents of this form are encouraged! Please be sure to include all requested information if using e-mail.

Please direct questions about the program to **Program Chair Cathy Bonan-Hamada** at cbonan@mesastate.edu.

Other Meeting Information

Dr. Timothy Novotny, Department Head of Computer Science, Mathematics and Statistics at Mesa State College cordially invites department chairs to join him in an open discussion of common concerns, curricular or otherwise, at a special **Luncheon for Mathematics Department Chairs**. The luncheon will be held on Friday, April 7, 11:40 – 12:50, in the Bacon Room of the College Center on the Mesa State College campus. Please RSVP to Program Chair Cathy Bonan-Hamada at cbonan@mesastate.edu

The Program Committee cordially invites all meeting participants to attend the Friday Evening Reception to be held in Liff Auditorium in the College Center on the Mesa State College campus. The Friday Evening Banquet and Awards Ceremony will follow the reception at the same location. Please note that banquet reservations must be received by March 31 to guarantee availability.

Preliminary 2006 Meeting Schedule

Friday, April 7

- 9:30 - 11:30 **Workshop on Supervising Undergraduate Research**
Dr. Tracii Friedman, limited to 20 participants, \$5 per person fee
- 11:40 - 12:50 **Luncheon and Open Discussion for Department Chairs**,
Bacon Room, College Center, MSC Campus
Host: Dr. Timothy Novotny
All department chairs in both Rocky Mountain and Intermountain Sections are encouraged to attend. The luncheon will be paid for by the Department of Computer Science, Mathematics and Statistics at Mesa State College
- 12:30 - 4:00 **Registration, Publisher Exhibits and MAA Book Sales**
- 1:00 - 1:10 **Opening Remarks and Welcome**
- 1:15 - 2:00 **Burton W. Jones Distinguished Teaching Award Invited Lecture**
Some Favorite Mathematical Hors D'oeuvres
Dr. Bryan Shader, University of Wyoming
- Abstract** In this talk I will present a sampler of savory mathematical appetizers that my colleagues and I serve our mathematics majors before their full course of upper division mathematics courses. The appeal and effect of each appetizer will be discussed.
- 2:10 - 4:20 **Parallel Sessions** - Contributed Papers, Special Sessions & Panels
- 5:45 - 6:15 **MAA Rocky Mountain Section Departmental Liaison Meeting**
Please forward agenda items to Janet Barnett by March 31
MAA Intermountain Section Departmental Liaison Meeting
- 6:15 - 7:00 **Reception and Mathematics Awareness Month Undergraduate Poster Contest**
Liff Auditorium, MSC Campus
Poster Contest Organizer: Dr. Kyle Riley,
South Dakota School of Mines and Technology

7:00 - 9:30 **Banquet and Awards Ceremony** Liff Auditorium, MSC Campus
Banquet Address: *A Bird's Eye View of The P vs NP Problem*
Polya Lecture by Dr. Steven Rudich, Carnegie Mellon University

Abstract This talk will survey the history, meaning and significance of the P vs NP question. Could there be a miracle machine to efficiently perform all the problem solving work of mathematics? To zip through problems of engineering design and discovery? The existence of such a miracle machine is exactly the question of P vs NP. If $P=NP$, there would be a miracle machine that could take in any mathematical statement S and output a proof of the statement in time polynomially bounded by the length of the shortest proof of S. In other words, our miracle machine could solve problems in time polynomially related to the length of the answer. Our faith in the "genius" of our own creativity leads us to conjecture that no such magic bullet problem solver exists. Is the conjecture that $P \neq NP$ common sense or of our failure of imagination? P vs NP stands as one of the unsolved Clay Millenium Challenges to mathematics. In this talk, we will survey the role of P vs NP in a much broader theory of computational complexity. We will touch on the major approaches and why they fall short.

Saturday, April 8

MAA Book Sales

8:00 - 8:50 **MAA Rocky Mountain Section Business Meeting**
Please forward agenda items to Hortensia Soto-Johnson at hortensia.soto@unco.edu by March 31.

MAA Intermountain Section Business Meeting
Please forward agenda items to Lee Badger at lbadger@weber.edu by March 31.

9:00 – 10:00 **Saturday Keynote Address:**
Beware of Geeks Bearing Gifts
Dr. Allen Schwenk, Mathematics Magazine Editor, Western Michigan University

Abstract This presents nontransitive dice that have a further paradoxical property that I have dubbed "perverse reversal". It is a fun talk that illustrates that you cannot rely on intuition to select the best choice. No great mathematical consequences, but amusing games and puzzles.

10:10 – 1:00 **Parallel Sessions** - Contributed Papers, Special Sessions & Panels

Watch for regular meeting updates at
<http://www-math.cudenver.edu/~maa-rm/rmnewslett.html>

Mathematics Awareness Month

Undergraduate Poster Session Contest

Rocky Mountain Section Meeting, April 7-8, 2006

Sponsored by the Rocky Mountain Section of the MAA
Held during Intermountain-Rocky Mountain Joint Section Meeting
Mesa State College, Grand Junction, CO, April 7-8, 2006

Schedule and Location: During the general reception on Friday night.

Entries in the contest will try to meet the goal of creating awareness of mathematics to a general audience. The poster contest will also have a theme so the posters generally tie together.

Theme: To Infinity and Beyond – Poster entries should give applications and/ or illustrations of how infinity plays a role in daily lives. Applications of Fourier Series, Improper Integrals, and Fractals are just a few topics that could address this theme.

Prizes: Prizes will be evaluated by a team of judges (each entry can win at most one prize)

- **Best in Show** (\$50) – The entry that best adheres to the theme and is the best example for creating awareness of mathematics in a general audience.
- **Best Use of Mathematics** (\$25)
- **Most Creative** (\$25)

Rules:

- At most one entry from each institution.
- Entries must be the sole production of students.
- Presentation format is a poster session.
 - All entries must be self-contained (internet connections and possibly power outlets will not be available and space will be limited)
- The scores from any judge directly affiliated with an entry will automatically be one of the scores dropped.
- Awards will be announced during the banquet.

Register: Space may be limited so be sure to register (**registration is absolutely free!**). To register, or to volunteer as a judge, send an email to Kyle.Riley@sdsmt.edu with the following information:

- To register please send the name of your institution and the name of a faculty member that will act as advisor.
- Registration deadline is March 31, 2006.
- Teams are encouraged to bring a poster stand to the session to display your poster.

If you would like additional information then please consult the following website

<http://www.mcs.sdsmt.edu/~kriley/pubinfo/maa/poster.html>

Attention Math Students!!!

**You are invited to attend the
2006 Annual Spring Meeting of the
Rocky Mountain and Intermountain Sections of
the Mathematical Association of America
Mesa State College
Friday, April 7 and Saturday, April 8**

PROGRAM HIGHLIGHTS INCLUDE:

Undergraduate student paper sessions

Interested in presenting the results of your research project at a professional conference? This is a great opportunity to share ideas and meet other math students! All student speakers receive a complimentary one-year MAA membership, including a subscription to a journal of your choice.

Reception and Mathematics Awareness Month Undergraduate Poster Session

Poster Contest Theme: **Infinity and Beyond**

Cash Prizes for *Best in Show*, *Best Use of Mathematics* and *Most Creative*

Poster Contest Organizer: Dr. Kyle Riley; e-mail Kyle.Riley@sdsmt.edu

Plenary Talks by Nationally Recognized Teachers and Scholars

Bird's Eye View of The P vs NP Problem

Dr. Steven Rudich, Carnegie Mellon University
2004-2006 Polya Lecturer

Some Favorite Mathematical Hors D'oeuvres

Dr. Bryan Shader, University of Wyoming
2005 Burton W. Jones Distinguished Teaching Award Recipient

Beware of Geeks Bearing Gifts

Dr. Allen Schwenk, Western Michigan University
Mathematics Magazine Editor

**MEETING REGISTRATION FOR STUDENTS IS FREE!!!
Friday evening banquet fees are \$22 per person.**

To register, complete the Student Registration and Speaker Form and return it to the indicated address.

**DON'T FORGET TO SEND IN YOUR
PRESENTATION ABSTRACT WITH YOUR REGISTRATION
TO BE INCLUDED IN THE STUDENT PAPER SESSIONS!!!**

Questions? Talk with one of the mathematics faculty at your school,
or contact Program Chair, Dr. Cathy Bonan-Hamada at cbonan@mesastate.edu

For more details and highlights of the meeting, including local hotel information,
visit the Rocky Mountain Section web site at www-math.cudenver.edu/~maa-rm.

Student Registration and Speaker Form

THE MATHEMATICAL ASSOCIATION OF AMERICA JOINT ROCKY MOUNTAIN AND
INTERMOUNTAIN SECTIONS ANNUAL MEETING
April 7 - 8, 2006, Mesa State College, Grand Junction, Colorado

REGISTRATION INFORMATION

Last Name	First Name	
Institution		
Address		
City	State	ZIP
Email Address		
FAX	Phone:	
Are you an: Undergraduate student? _____ Graduate student? _____		

Friday Banquet Fees (\$22.00 per person. Spouses and friends are welcome)

We will enjoy the Monument Buffet which includes Chicago salad (romaine, hearts of palm, artichoke hearts, strawberries, and red onions with a cracked peppercorn dressing), marinated roasted vegetables, saffron couscous salad with lavosh crackers, pan-seared Moroccan chicken breast with jasmine rice, blackened tilapia with a roast tomato sauce, rolls, dessert, coffee or ice tea.

_____ Number of dinners

_____ Total Enclosed

PRESENTATIONS: Deadline for Submission: February 24, 2006

The following can be e-mailed to Professor Cathy Bonan-Hamada cbonan@mesastate.edu

Name of Faculty Sponsor:
Special Equipment Needs: (Overhead projectors will be available in all presentation rooms)
Schedule Preference: FRIDAY AFTERNOON _____ SATURDAY MORNING _____ NO PREFERENCE _____
PLEASE TYPE YOUR TALK TITLE AND ABSTRACT BELOW, OR ATTACH AN EXTRA PAGE. (Abstracts must be limited to 100 words or less)

Please make banquet checks payable to: Mesa State College (indicate MAA on item line)

Return form with payment to:

Dr. Cathy Bonan-Hamada, Mathematics
Mesa State College
1100 North Avenue
Grand Junction, CO 81501-3122

Speaker Response Form – Due February 24, 2006

Speaker Name _____

Affiliation _____

Mailing Address (Please include affiliation if needed for U.S. mail)

Email Address _____ Phone Number _____

Faculty Sponsor* _____

MAA Member Sponsor** _____

Title: _____

Abstract (100 words or less):

Is this talk intended for any of the following special sessions?

Mathematics, Society and Culture: Past and Present _____

Interesting Ideas in Number Theory _____

Mathematics Education _____

Student Paper Session _____

Students: Are you a graduate or undergraduate? _____

Special Equipment Needs: _____

Schedule Preference Request: _____

Special Talk Length Request: _____

What material from your talk (please indicate format) do you anticipate providing for posting on the section website? Electronic materials must be received by **April 10, 2006** to ensure posting.

PLEASE E-MAIL ELECTRONIC MATERIALS AND RETURN THIS FORM OR AN E-MAIL EQUIVALENT TO:

Cathy Bonan-Hamada

Department of Computer Science, Mathematics and Statistics

Mesa State College

1100 North Ave.

Grand Junction, CO 81501-3122

cbonan@mesastate.edu

* For student speakers only

** For non-MAA members/non-students only

**MAA ROCKY MOUNTAIN and INTERMOUNTAIN
JOINT SECTION MEETING REGISTRATION FORM**

April 7 - 8, 2006, Mesa State College

MEETING REGISTRATION FORM		
NOTE: For pre-registration discount, form must be received by March 31.		
Last Name	First Name	
Affiliation (for badge)		
Address		
City	State	Zip
E-mail address:		
Phone:	FAX:	
Please check all that apply:		
Memberships: <input type="checkbox"/> MAA <input type="checkbox"/> AMS <input type="checkbox"/> AMATYC <input type="checkbox"/> NCTM <input type="checkbox"/> CCTM <input type="checkbox"/> Other: _____		
Affiliation: <input type="checkbox"/> 2-year college faculty <input type="checkbox"/> 4-year college faculty <input type="checkbox"/> University faculty		
<input type="checkbox"/> High school teacher <input type="checkbox"/> Post-doctoral Fellow <input type="checkbox"/> Business/Industry/Government		
<input type="checkbox"/> Undergraduate student <input type="checkbox"/> Graduate Student		
Fees:		
_____ Student Registration (\$0)		
_____ Non-Student Registration (\$12 before 3/31, \$20 after)		
_____ Supervising Undergraduate Research Workshop (\$5 per person)		
_____ Friday Banquet (\$22 per person, spouses and friends welcome)		
Banquet reservations must be received by 3/31 to be guaranteed. A limited number of tickets will be available onsite. We will enjoy the Monument Buffet which includes Chicago salad (romaine, hearts of palm, artichoke hearts, strawberries, and red onions with a cracked peppercorn dressing), marinated roasted vegetables, saffron couscous salad with lavosh crackers, pan-seared Moroccan chicken breast with jasmine rice, blackened tilapia with a roast tomato sauce, rolls, dessert, coffee or ice tea.		
_____ Voluntary Section Dues Contribution (\$10 suggested)		
Voluntary section dues contributions are used to support special initiatives such as the Student Recognition and Section Activity Grant Programs. Contributors will receive a letter for their financial records.		
_____ Total Enclosed		
Please make checks* payable to: Mesa State College (indicate MAA on item line).		
Return form with payment to: Cathy Bonan-Hamada Department of CSMS Mesa State College 1100 North Ave. Grand Junction, CO 81501-3122		
* Please note that there will be a \$17.00 charge for returned checks.		

Meeting Accommodations, Directions and Maps

The following motels have established a special rate for the conference. These rates are subject to availability, and are guaranteed only through March 21st, so please make your reservations as soon as possible by calling the motel directly. Make sure to state that you are with the **MAA Conference** to obtain the lower rate.

DoubleTree Hotel

743 Horizon Drive
Grand Junction, CO 81506
(970) 241-8888
\$65 (single or double)

Holiday Inn

755 Horizon Drive
Grand Junction
(970) 243-6790
\$65 (single or double)

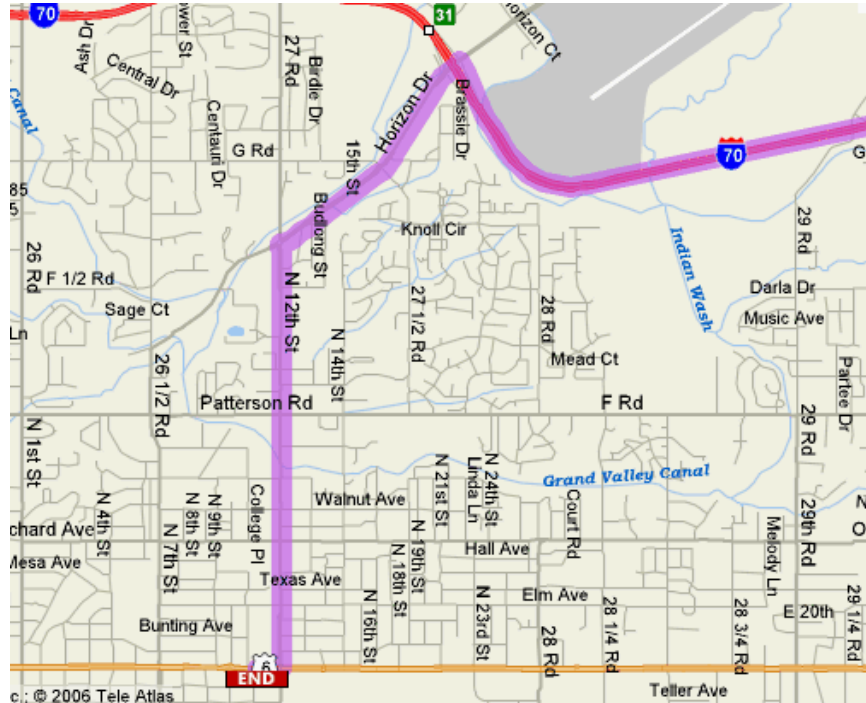
La Quinta Inn

2761 Crossroads Blvd
Grand Junction
(970) 241-2929
\$62 (single or double)

Motel 6

776 Horizon Drive
Grand Junction
(970) 243-2628
\$37.99 (single or double)

Directions: Horizon Drive is off I-70 at exit 31. To drive to Mesa State College go west on Horizon Drive and follow it to the traffic circle. Exit the traffic circle on 12th Street. Continue on 12th Street to Orchard Avenue. Just past Orchard Ave on the right is a large parking lot (G1), which will be available for free parking on Friday and Saturday.



The college center is located on the corner of 12th Street and Elm Avenue – 3 blocks south of the parking.



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

ICTCM, Orlando, FL; March 16-19,2006
NCTM National Meeting, St. Louis, MO; April 26-29, 2006

MAA Rocky Mountain and Intermountain Section Meeting; Mesa State College; Grand Junction; April 7-8, 2006

MAA Mathfest; Knoxville, TN; August 10-12, 2006

Joint Mathematics Meetings, New Orleans, LA; January 4-7, 2007

MAA Rocky Mountain Section Meeting Colorado State University - Pueblo; April 13-14, 2007

MAA Mathfest; San Jose, CA; August 3-5, 2007

Joint Mathematics Meetings, San Diego, CA; January 6-9, 2008

MAA Mathfest; Madison, WI; July 31 – August 2, 2008

Joint Mathematics Meetings; Washington, DC; January 7-10, 2009

Joint Mathematics Meetings; San Francisco, CA; January 6-9, 2010

Joint Mathematics Meetings; New Orleans, LA; January 5-8, 2011

**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 30.
Please consult section webpage (<http://www-math.cudenver.edu/~maa-rm/>) for complete guidelines and address of Section Secretary.

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: UNC School of Mathematical Sciences, Campus Box 122, 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.