Spring 2011 Newsletter

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

Spring 2011 Newsletter in PDF Format for Printing

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2010 - 2011 Section Officers and Committee Members

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

Section Executive Committee Officers for 2010 – 2011

Chair	Daluss Siewert Black Hills State University Spearfish, SD 57799-9029	daluss.siewert@bhsu.edu 605-642-6209
Past Chair	Mike Brilleslyper USAFA Colorado Springs, CO 80840	mike.brilleslyper@usafa.edu 719-333-9514
Vice-Chair	Sarah Pauley Western Wyoming Community College Rock Springs, WY 82902	spauley@wwcc.wy.edu 307-382-1755
Chair Elect	Vacant 2010-2011	
Secretary/ Treasurer	Hortensia Soto-Johnson University of Northern Colorado Greeley, CO 80639-0001	hortensia.soto@unco.edu 970-351-2425
Governor	Kyle Riley South Dakota School of Mines & Technology Rapid City, SD 57701	kyle.riley@sdsmt.edu 605-394-2471
Program Chairs	Eric Stade Robb Tubbs University of Colorado at Boulder Department of Mathematics Boulder, CO	stade@colorado.edu tubbs@colorado.edu 303-492-4989; 303-492-8389

Other Committee Members and Representatives

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Jeremy Muskat (Chair), Western State College	jmuskat@western.edu
Michael Jacobson, UCD	michael.jacobson@ucdenver.edu
Cathy Bonan-Hamada, Mesa State College	cbonan@mesastate.edu

Awards Selection Committee

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Sarah Pauley, WWCC	spauley@wwcc.wy.edu
Eric Stade, CU-Boulder	stade@euclid.colorado.edu
Bill Cherowitzo	william.cherowitzo@ucdenver.edu

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Sarah Pauley, WWCC	spauley@wwcc.wy.edu
Michael Barrus, BHSU	michael.barrus@bhsu.edu

Section Book Sales Coordinator
Janet Heine Barnett, CSU - Pueblo janet.barnett@colostate-pueblo.edu

Section Student Activity Coordinator
Carl Lienert, Fort Lewis College lienert_c@fortlewis.edu

Higher Education Representative on CCTM Governing Board
Clark Dollard, Metro State cdollard@mscd.edu

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2012 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 lifelong 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 2011**. **Complete nomination materials** (described on the website) are due **15 January 2012**.

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

The spring semester is well underway and already it is time again to write the chair's report – where does the time go? It has been a relatively cold winter in the northern Black Hills of South Dakota so I am looking forward to the drive to Boulder in April for what is sure to be a an excellent spring meeting of the Rocky Mountain Section at CU-Boulder on April 8th and 9th. **Eric Stade** and **Robb Tubbs** have done a fabulous job of organizing the meeting and the list of keynote speakers **Eric Stade** (CU-Boulder), **Frank Ferris** (Santa Clara University), **Edward Burger** (Williams College), and **Joe Dauben** (CUNY) is impressive to say the least. I encourage you to, not only attend the meeting, but to consider contributing your expertise to the meeting as well by presenting in one of the contributed paper sessions. Hope to see you in Boulder.

As I mentioned in my report in the Fall newsletter, the RMS-MAA Executive Committee approved a few minor changes to the Section Activity Grants late last summer. One of these changes was increasing the maximum amount of the grant from $500 to $750. The Executive Committee, at the recommendation of the Awards Selection Committee, awarded two $750 Section Activity Grants to two projects in our section this past Fall. These two worthwhile projects/activities that support the Section's mission are the Pikes Peaks Regional Undergraduate Mathematics Conference (PPRUMC) and the Rocky Mountain Math Teacher's Circle. The PPRUMC provides undergraduate mathematics majors from throughout the region an opportunity to present their work, interact with other students, and attend a keynote address by a renowned mathematician. This year's speaker is **Rob Tubbs** (CU-Boulder). If you have any undergraduate students looking for a place to present their work in a professional setting, I would ask that you encourage them to present at the 8th Annual PPRUMC. The Rocky Mountain Math Teachers' Circle (RM-MTC) is a professional development program that involves mathematicians in long-term collaborations with middle-level mathematics teachers in order to increase the teachers' content knowledge, mathematical problem-solving skills, and ability to bring rich mathematics into their classrooms.

I was not able to attend the Joint Mathematics Meetings in New Orleans in January, but the Rocky Mountain Section was well-represented at the Section Officer's Meeting as **Mike Brilleslyper** (USAFA) and **Kyle Riley** (SDSM&T) filled in for me and updated me on the discussions. One of the discussion items

was the Common Core Standards that have been adopted by many states (including Colorado, Wyoming, and South Dakota). Mathematicians are encouraged to provide input on the development of the related assessments. The Common Core Standards are slated to be the discussion item at the Department Chair/Liaison lunch at the spring meeting in Boulder so I encourage all department chairs and liaisons to attend this lunch and get involved in this discussion as these standards are sure to impact those of us with teacher preparation programs and beyond.

An item of significant importance to our section is the upcoming elections of Section Governor, Secretary/Treasurer, and Chair-Elect. We have three outstanding candidates for Governor: **Mike Brilleslyper** (USAFA), **Curtis Card** (BHSU), **John Watkins** (CC). The election of governor is handled by the national office and I encourage all members to participate in this election. The nominees for Secretary/Treasurer are **Lynne Ipiña** (UW) and **Heidi Keck** (WSC) and the nominees for Chair-Elect are **Bill Cherowitzo** (CU-Denver) and **Alexander Hulpke** (CSU). I wish to thank each of these nominees for their willingness to share their talents and time with the Rocky Mountain Section of the MAA and I want to thank the nominating committee **Jeremy Muskat** (WSC), **Michael Jacobson** (CU-Denver), and **Cathy Bonan-Hamada** (Mesa State) for their hard work in obtaining these excellent nominees. As I close, I also want to say a special thank you to our current secretary treasurer **Hortensia Soto-Johnson** (UNC) and our current governor **Kyle Riley** (SDSM&T) for having done an incredible job of representing and serving our section.

Respectfully submitted,

Daluss Siewert, BHSU

Chair, Rocky Mountain Section

Governor's Report

If you had the opportunity to attend the Joint Mathematics Meeting this January then you probably enjoyed the nice weather. New Orleans gave us with some of the days topping over 60 degrees, which turns out to be a dramatic bump in temperature from the below zero weather I found upon my return to Rapid City. The Governors meeting covered several topics, but I will focus on a few key points. Our meeting was started with the bleak news that the MAA is not immune to the fortunes of the economy. Revenues were down from what was projected, but the staff members were able to adjust and make cuts to cover the shortfall. A few of the open positions will be left open and a couple of new programs have been delayed until we are certain funding is solid for such activities. One position that is undergoing an active search is for Executive Director. Tina Straley is now starting her last year with the MAA and a search committee has already been formed to recruit for her replacement. David Bressoud is also finishing his term as President, but will continue his work on the Calculus study that he is currently conducting. The new President of the MAA will be Paul Zorn of St. Olaf College.

Strategic planning continues to be a large part of the Governors meeting and this last meeting we had reports on publications. The MAA continues to evaluate the variety of publications that it offers and many of the new publications are being delivered through the website http://www.maa.org. The strategic planning group has recommended that the journals investigate ways to exploit electronic delivery. Roughly 20% of the MAA membership receives their journals electronically and this might be an opportunity to capitalize on the interests of this audience. Book publishing is another area that has been another source of pride for the Association and we have found our textbook offerings are becoming popular. Most of the textbooks developed by the MAA are directed at the upper level classes in mathematics and hopefully you can get a chance to check out the MAA catalog online. Perhaps a new book or one of the new textbooks will be an interest to you.

I would also like to insert my standard reminders. Perhaps you are interested in joining us at a few of the upcoming meetings?

Mathfest 2011, August 4-6, Lexington, KY

Joint Mathematics Meetings 2012, January 4-7, Boston, MA

Rocky Mountain Section Meeting, April 8-9, 2011, Boulder, CO

Perhaps you have a few great ideas to share through a paper that can be published in an MAA journal? I hope if you are reading this then you are a member of the MAA, or you are interested in joining the MAA. Please encourage your friends and colleagues to join our great

organization, it is truly a great community that depends on members to drive the activities and uphold the mission.

Lastly, I would really like to thank Hortensia Soto-Johnson for all her work as Secretary/ Treasurer. She has been an absolute joy to work with and I count myself lucky for getting the opportunity to work with her. Our section has definitely benefitted from her leadership and her willingness to serve. The joint meeting in New Orleans is my last national meeting as the section governor. Thank you for giving me the opportunity to serve and I really enjoyed the experience and the people I was able to work with. I look forward to seeing everyone in Boulder and I hope you enjoy 2011.

Respectfully submitted,

Kyle Riley, SDSMT

Governor, Rocky Mountain Section

Section News

Black Hills State University

Curtis Card, our current department chair will be moving up to serve as Interim Dean of the College of Arts and Science in July 2011. **Daluss Siewert** will be the new chair of the Mathematics Department. **Curtis Card** is also a Co-PI on a 3-year, $500,000 NSF grant to expand the current web-accessible BHSU Herbarium grass database to include more of the Missouri Plateau. **Richard Gayle** and **Daluss Siewert** were both promoted to full professor this past year, and **Parthasarathi Nag** was granted tenure. **Mike Barrus** has had two research papers on graph theory published this past year.

We are in our in our fourth semester of implementing a "block system" for our Basic and Intermediate Algebra courses which has had remarkable success in both the pass rates for these courses and in improving the attitude among students and the campus as a whole regarding these courses. This "block-system" splits the semester into four blocks with classes meeting five days a week and the course material into three units. Under this system, a student has to complete three units during the four-block semester; hence, a struggling student has one second chance to retake one unit of material during the same semester. Preliminary information on this system and the results we have obtained were presented at the RMS-MAA annual spring meeting at CSU last April and we plan to present additional results at the Spring meeting at CU-Boulder.

Two of our mathematics majors have had significant accomplishments. **Ashley Arp** from Newcastle, WY, was selected to participate in the Summer Undergraduate Mathematical Sciences Research Institute at Miami University (Ohio) this past summer. Ashley presented her work from this summer institute at the Joint Mathematics Meetings in New Orleans in January. **Niles Armstrong** from Gordon, NE, received a $5000 NASA Space Grant stipend for research under the direction of **Parthasarathi Nag**. Both Ashley and Niles graduated this past December and are considering pursuing advanced degrees in mathematics.

University of Colorado at Denver

We highlight some recent awards and grants by students and faculty:

Dr. Lynn Bennethum received a DARPA grant entitled "A New Approach to Modeling Laminar to Turbulent Transition", and **Dr. Julien Langou** received an NSF grant entitled "Improvement and Support of Community Based Dense Linear Algebra Software for Extreme Scale Computational Science".

Two graduate students recently won college level awards: **Shoshana Rosskamm**, advised by **Dr. Weldon Lodwick**, won the Outstanding Master of Science award, while **Timothy Vis**, advised by **Dr. Bill Cherowitzo**, won the Outstanding Doctor of Philosophy award.

Undergraduates **Manuchehr Aminian** and **Lincoln Collins** graduated Summa Cum Laude and Magma Cum Laude, respectively, in Fall 2010.

Finally, the department also welcomes **Dr. Rongjin Huang**, a mathematics educator. He will be working on the assessment portion of the department's CU-Succeed courses.

University of Northern Colorado

In faculty news, we are pleased to announce that **Gulden Karakok** has joined our department as a new tenure-track faculty member in mathematics education. Dr. Karakok received her Ph.D. from Oregon State University and most recently completed a research post-doc at Umea Mathematics Education Research Center (UMERC) at Umea University in Sweden. **Mike Oehrtman** was elected Coordinator- Elect for

the Special Interest Group of the MAA on Research in Undergraduate Mathematics Education. **Steph Fitchett** has resigned to take a position at Sandia National Laboratory.

The 19th Annual UNC Math Contest for students in grades 7-12 had approximately 2000 participants. The first round was delivered on-line in November 2010 and provided students throughout the state the opportunity to participate. The top 200 students were invited to campus for the final round on January 29, 2011. 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**.

An undergraduate UNC math major, **Ethan Twisdale**, is attending "Math in Moscow," a 15-week program at the Independent University of Moscow, a small, prestigious Russian university for future research mathematicians.

Tensia Soto-Johnson and **Cathleen Craviotto** are organizing the fourth 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 mathematical topics through problem-solving and collaborative learning. The camp will be on the UNC campus from June 12 to June 17, 2011. For more information, contact Hortensia.Soto@unco.edu.

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. sundbyel@mscd.edu

Student Activities

Students are invited to participate in the MAA Sectional meeting at the University of Colorado at Boulder, April 8 and 9, 2011. There will be student sessions in which you can give a talk, as well as a student poster session. If you would like to give a talk, please submit your proposal as described in the general announcement for the meeting. You may also present a poster, even if you're also giving a talk. 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

16th Colorado Mathematics Awards Ceremony/Reception

Plans are under way for the 16th Colorado Mathematics Awards Ceremony and Reception to be held on Tuesday, May 10 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 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. If you have any suggestions for possible sources of funding, please contact me at gibbs_d@fortlewis.edu.

Thank you,

Dick Gibbs
Emeritus Professor of Mathematics
Fort Lewis College

Mathematics Awareness Month: Unraveling Complex Systems April 2011

How do epidemics spread, birds flock, and stock markets operate?

Many of these answers fall within the realm of mathematics.

From natural entities such as living cells, insect colonies and whole ecosystems to man-made inventions like power grids, transportation networks and the World Wide Web, we see complex systems everywhere. Deciphering the mathematics behind such systems can unravel well-structured networks and discernible patterns in natural and artificial structures. That

is the idea behind Mathematics Awareness Month, April 2011. Understanding these complex systems can not only help us manage and improve the reliability of such critical infrastructures of everyday life, but can also allow us to interpret, enhance and better interact with natural systems. Mathematical models can delineate interactions among components of these systems, analyze their spontaneous and emergent behaviors, and thus help prevent undesirable developments while enhancing desirable traits during their adaptation and evolution.

In an effort to improve our understanding of such systems, the Joint Policy Board of Mathematics has chosen the theme, "*Unraveling Complex Systems*" to highlight the role of mathematics in the discipline. The 2011 Mathematics Awareness website will have articles and other resources to help explain the math behind such diverse systems as our dynamic response to HIV infections to production links that determine product trade between countries.

Math Awareness Month is held each year in Spril. 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.

For more information, visit:
http://www.mathaware.org .

8th Annual Pikes Peak Regional Undergraduate Mathematics Conference
United States Air Force Academy
Saturday, February 26, 2011

The 8th annual PPRUMC will be held Saturday, February 26, 2011 from 8:30am – 4:30pm at the United States Air Force Academy in Colorado Springs, CO.

The PPRUMC is a one day conference that provides undergraduate students in the mathematical sciences with an opportunity to speak in a professional conference setting. Student talks on original or expository work, interesting projects, and mathematical history are all highly encouraged. In addition to talks by students, there will be a keynote talk by Professor **Rob Tubbs** (University of Colorado-Boulder) and a panel presentation on the schedule.

There is no registration fee and lunch will be provided in the 4000-seat cadet dining hall. In addition, it will be possible to get a behind-the-scenes tour of some parts of the Academy not open to tourists.

Limited travel reimbursement will be available to student participants based on funding and the number of requests received. Travel reimbursement will only be available to students traveling from outside the immediate Colorado Springs area. Reimbursement forms will be available at the conference. Please bring lodging receipts with you. Receipts for mileage reimbursement are not necessary.

For those requiring lodging, there are seven motels from national motel chains located just outside the south gate of the Academy (I-25 at exit #150)

Due to security requirements, **it is necessary for all participants to pre-register for the conference**. A valid US Government-issued ID is required for access to the Air Force Academy. Participants who are not US citizens will have additional requirements and should be sure to indicate that they are not US citizens when pre-registering. Vehicles and their occupants entering the Academy are subject to search. Do not bring any weapons, drugs, or alcohol on Academy grounds.

More information including detailed maps showing parking, shuttle bus information, and an updated schedule will be posted on the MAA Rocky Mountain Website at
http://sections.maa.org/rockymt/

Specific questions or comments may be sent to the conference directors:

Dr. Mike Brilleslyper
mike.brilleslyper@usafa.edu

Funding for the PPRUMC is provided by NSF grant DMS-0846477 through the MAA Regional Undergraduate Mathematics Conference program, www.maa.org/RUMC

7th Annual SIAM Front Range Conference at the University of Colorado at Denver Saturday, March 5, 2011

The SIAM Student Chapters of the University of Colorado campuses are organizing the 7th Front Range Applied Mathematics Student Conference on Saturday, March 5th, 2011 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. Faculty are also welcome to attend.

The keynote speaker is **Dr. Edward Ott** of the University of Maryland.

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

As information becomes available, it will be posted at:
http://ucdenver.orgsync.com/org/societyofindustrialandappliedmathematics

Lynn Bennethum, UC-Denver

23rd Annual International Conference on Technology in Collegiate Mathematics March 17 – 20, 2011 Denver, Colorado

The 23rd annual ICTCM, hosted by Front Range Community College, will be held in Denver, March 17 – 20, 2011 at the Sheraton Denver Downtown. For more information, online registration, etc., visit: http://ictcm/pearsontc.net

MAA PREP Workshops 2011

Registration is now open for the MAA's 2011 series of Professional Enhancement Program (PREP) workshops. There are both online workshop and onsite workshops. For more information, visit: http://www.maa.org/prep/

MAA 2011 Study Tour - Mathematics among the Ancient and Modern Maya

Join MAA members for a tour of Copan, Tikal and the Guatemalan Highlands, May 25-June 3, 2011. Register by February 15, 2011. For more information and pricing, visit:
http://www.maa.org/studytour/
or contact Kerry Sullivan at ksullivan@maa.org .

Section Chair-Elect Candidate Bio's and Statements

Alexander Hulpke
Colorado State University

Alexander Hulpke received his Diploma in Mathematics in 1993 and his PhD in 1996 from RWTH Aachen in Germany. After Postdocs in St Andrews (UK) and Columbus (OH), he has been on the faculty of Colorado State since 2001. He holds the rank of associate professor.

Alexander's research is in Computational Group Theory, he is one of the primary authors of the system GAP and continues development and support for it. His teaching has centered on courses in Abstract Algebra and Combinatorics and he has led the development of new material for the departments Calculus II course. Alexander has been the advisor to two PhD graduates and is actively advising. He served as Program Chair for the 2010 Rocky Mountain Section Meeting.

Candidate Statement:
While the institutions in the Rocky Mountain Section have very different profiles; geography, financial challenges, and political environment give us a shared set of challenges in both education and research. The MAA section can act as a catalyst in helping us to share responses and solutions, building on existing successful collaborations and endeavors.

Bill Cherowitzo
University of Colorado at Denver

Professor Cherowitzo has been a faculty member of the University of Colorado Denver

since 1983. Graduating from Columbia University, he has also taught at Michigan State University and Allegheny College (in Pennsylvania). He has been a member of the MAA for 38 years. His research interests are centered around finite geometries and combinatorics and he has co-organized a special session on this theme at the Rocky Mountain Section Annual meeting in 2008, as well as presenting several talks over the years. This year he is a member of the section's awards committee.

Candidate Statement:
Recently I listened to Click and Clack (The Car Guys) tell an eighth grade class that they had already learned all the *useful* stuff and from now on anything new that they learned, like CALCULUS, would have to replace something useful in their heads. While they were talking tongue-in-cheek, as they often do, I found the comment jarring. This was not an isolated instance of the downplaying of learning mathematics as a useless activity made by people who should really know better. Somehow we haven't fully conveyed to the public at large the *usefulness* and the *beauty* of what we study and teach. The MAA is an organization which can help to turn this around, especially at the grass roots level through sectional activities. The Rocky Mountain Section has been successful with its programs and support of quality mathematical teaching which we are justifiably proud of, but perhaps even more can be done. We should determine how we can be proactive and get the word out through our students. Mathematics is a human endeavor, perhaps the pinnacle of intellectual activity and we should be waving its banner a bit more vigorously.

Section Secretary/Treasurer Candidate Bio's and Statements

Lynne Ipina
University of Wyoming

I am Lynne Ipiña, and I would be pleased to serve the RMS MAA as its Treasurer. I can honestly say that I am prepared for the role after having served a term as Treasurer for Women in Mathematics Education (WME), and over ten years as Treasurer of two Wyoming State Affiliates, the Wyoming Council of Teachers of Mathematics (WCTM) and the Wyoming Mathematics Association of Two-Year Colleges (WYMATYC). Three years ago the RMS MAA honored me with our highest teaching award, and that year I was a guest at the business meeting among the Sectional officers. I was so impressed, and realized just how much I had taken their work for granted. I mentioned in my talk that year that I wanted to change my ways, and do more to insure that our organization remains vibrant. I vow to work very hard should you select me for the Treasurer.

For those who don't know me, let me say that I am one of the baby boomers who will retire in the next decade. I was born in Eastern South Dakota. My parents both taught at SD State University where I also received my Bachelor's degree. Thanks to the exuberance of the times, I wanted to see the world. My first big step was winning a Fulbright to study in Argentina. The second was to move to Bolivia.

After four years in growing up in South America, I returned to New York City where I taught in Harlem as a math specialist and then entered a Ph.D. program at NYU, a place that has been "home" ever since. I completed my Ph.D. in PDEs and Fluid Dynamics under Cathleen Morawetz, a trailblazer in our profession. While there, I led a dual life as one of the few grad students who also worked at Courant Institute. That part of my life revolved around Anneli Lax, a pillar in the MAA community. I left NYC in 1986, joining the Math Department at the University of WY. In my time here I think I have left my mark on teacher outreach and the undergraduate experience of students in Wyoming.

Heidi Keck
Western State College

Heidi Keck received a B.S. from Bemidji State University in 1987, an M.S. in 1990 from the University of Utah, and a Ph.D. from the University of Montana in 1996 all in mathematics. Since 1997 she has been on the faculty at Western State College of Colorado where she holds the rank of professor. At Western she has taught nearly every course in the curriculum, from remedial algebra through supervising the undergraduate research seminar. Her particular interest and primary

focus has been on teacher preparation. She was the first director of Western's Summer Teacher Institute, has served as department chair, and was program chair for the Rocky Mountain Section meeting in 2001.

Candidate Statement:

Tasks don't get done by themselves. The Rocky Mountain Section of the MAA provides a vital connection between mathematicians who are separated by geography and involved in diverse aspects of the profession. Regional meetings allow all of us to share common experiences and learn from one another. The section has been instrumental in my development as a faculty member. Yet, this organization only runs because people are willing to do the necessary tasks. The position of secretary/treasurer is vital to keeping our section active. If elected, I will strive to be responsible for funds and reports as required, and to encourage all members to take an active role in the section.

Section Governor Candidate Bio's and Statements

Note: The elections for Section Chair-Elect and for Section Secretary/Treasurer will be held at the spring section meeting in Boulder, April 8-9, 2011. The election for Section Governor is handled through the national MAA office.

Mike Brilleslyper
United States Air Force Academy

I have been an MAA member since 1995 and was a member of the 2nd cadre of Project NExT Fellows (go green dots!). I have served as Chairman of the Rocky Mountain Section and I have been the program director for two section meetings. Currently, I chair the national committee on professional development and serve as a member of the PREP management team. I have deep roots in the MAA and it has played a vital role in my career.

As your section Governor, I will bring the unique challenges and concerns of our geographically vast section to the national office. I will work to continue the recent involvement by our regional research institutions. Historically, our section has done a tremendous job reaching out to both undergraduate and graduate students. These programs should be strengthened and continued. Finally, I would like to see the national committee structure clarified and streamlined so the MAA can better face current and future challenges. The strength of the organization lies in the diversity of its members and there is no one-size-fits-all solution. My goal is for the MAA to provide resources and opportunities that effectively serve all its members.

The MAA is a unique organization that plays a central role in the mathematics profession. As we move towards our 100th anniversary, I wish to be involved in helping the MAA remain a vibrant and relevant society that advances the profession and supports its members.

John Watkins
Colorado College

John Watkins is a professor emeritus at Colorado College. He studied mathematics as an undergraduate at Oberlin College and received his Ph. D. in 1980 from the University of Kansas, specializing in commutative algebra. Once at CC, however, and because of a chance encounter at a spring Rocky Mountain sectional meeting of the MAA, he switched his research interest to graph theory and combinatorics, and has since published many research papers in these areas, including quite a number with undergraduates as co-authors.

Watkins has also published several highly regarded books, including *Graphs: An Introductory Approach* (co-authored with Robin Wilson), *Across the Board: The Mathematics of Chessboard Problems*, and *Topics in Commutative Ring Theory*. Two more books, *Elementary Theory of Numbers* and *The History of Combinatorics* (the latter again with Robin Wilson) should be out later this year.

John also has many interests outside of mathematics. He has served as department chair at Colorado College and also as Dean of the Summer Session. He has been president of the board of directors for both the Colorado Springs Chorale and the Colorado Springs Dance Theatre. For more than ten years he directed a high school bridge program at Colorado College for students from the San Luis Valley. Having been a Peace Corps volunteer himself he returned to Africa in 1998 to direct the ACM Zimbabwe Program, a semester-long

study abroad program for college students from the U.S., and he now serves on the board of directors of Africa Networks, a brand new consortium of colleges that promotes the study of Africa in liberal arts institutions. Even though he is now officially retired, he managed to keep busy this past year teaching a course on African arts for first-year students at Colorado College, writing book reviews for *The Mathematical Intellegencer*, refereeing and reviewing journal articles, and beginning to think about his next book on graph theory.

Curtis Card
Black Hills State University

Curtis Card earned a Bachelor's Degree in Mathematics from the University of South Dakota in 1970. Since then he has earned a Master of Science in Teaching degree from the University of Nebraska-Lincoln and a PhD in Applied Mathematics from the University of Wyoming. After earning his bachelor's degree, Curtis taught mathematics and science classes in a rural western South Dakota town.

Curtis is currently an Associate Professor and Department Chair at Black Hills State University where he has been for approximately 20 years. This is Curtis' third opportunity to teach at Black Hills State University. After earning his master's degree, Curtis took a one year position at BHSU and then a few years later, he returned for a three year term position. This last opportunity convinced Curtis that he wanted to earn his PhD and resulted in his attending graduate school at the University of Wyoming.

While at BHSU, Curtis has served on numerous university and college committees and served as President of the Faculty Senate. In addition to serving as Department Chair for 5 years, Curtis has been a member of the South Dakota Board of Regents Mathematics Discipline Council, the Math/Science Education Task Force, the College of Education Advisory Board, and he has just been asked to serve on the South Dakota Board of Regents Remediation Task Force. Curtis has taught a wide range of courses from Basic Algebra (a developmental course) through all the mathematics courses required by the major.

Curtis has been a member of the National Council of Teachers of Mathematics for nearly 40 years and a member of the Mathematical Association of America for over 25 years. His current scholarly activities include working with the BHSU developmental math curriculum to improve the pass rates and student learning in these courses. Curtis presented some preliminary results of this work at last year's section meeting of the Rocky Mountain Section of the MAA. Curtis has also been working with several of the biologists to create an online database of the vascular plants of western South Dakota and eastern Wyoming. This work was supported by two National Science Foundation grants and a grant from the National Fish and Wildlife Foundation.

The University of Colorado at Boulder to Host 2011 Meeting April 8 – 9, 2011

The Department of Mathematics at the University of Colorado at Boulder is pleased to host the 2011 Rocky Mountain Section Meeting of the Mathematical Association of America to be held in Boulder on April 8 and 9, 2011.

We invite mathematics teachers at all levels – middle school, high school and college, as well as undergraduate and graduate students, industry and government mathematicians to contribute and attend. There will be a variety of invited talks and sessions catering to a variety of interests.

Conference information and registration is available on the web at:

http://math.colorado.edu/~stade/CUMAA.html

Proposals for talks may also be submitted on the web. For full consideration, proposals must be submitted by March 25, 2011.

Please check the website regularly for schedule changes.

Featured Workshop

Using Learning Assistants at Your University

Interested in transforming your course, to make it more interactive? Looking to increase the pool of talented mathematics and science students who go into teaching? The Colorado Learning Assistant Model can help. Learning Assistants (LAs) are talented undergraduate students who are hired to help transform large-enrollment courses, to make them more collaborative, student-centered, and interactive. Meanwhile, these LAs make up the pool from which K-12 teachers are recruited.

The LA model has demonstrated effectiveness in improving undergraduate education, in facilitating multi-disciplinary collaboration among faculty, and in recruiting talented mathematics and science majors into teaching careers. In this workshop, we will introduce two and four-year college faculty to the Learning Assistant Model, and will discuss issues involved in implementation in a variety of college and university contexts.

In addition to engaging in hands-on analysis of data, participants will evaluate several different approaches to implementing and funding an LA program. Materials to assist faculty to develop and initiate such a program will be provided.

Registration for this workshop is required (there is no fee).You may register for this workshop as an optional event when you complete your meeting registration. If you have already registered for the meeting, you can return at any time to that registration page to sign up for this workshop.

Speakers and Abstracts from Invited Addresses

Burton W. Jones Teaching Award Lecture
Eric Stade
University of Colorado at Boulder

FT's, DFT's, and FFT's, or: Joe Fourier and the Birth of Disco

The Fourier Transform (FT) is a mathematical device for measuring frequency content. The Discrete Fourier Transform (DFT) provides a means of analyzing frequency content numerically.

In 1965, the Fast Fourier Transform (FFT) algorithm was popularized. Its advent revolutionized numerical analysis of frequency content. Less than ten years later, civilization as we know it was radically transformed again, this time by the emergence of disco. Coincidence? Come to the talk and find out.

Friday Keynote Address
Edward Burger
Williams College and Baylor University

How Always to Win at Limbo
or
You can sum some of the series some of the time, and some of the series none of the time... but can you sum some of the series ALL of the time?

Remember in your days of first-love how you would dream about that special someone and wonder to yourself: "How close are we?" This presentation will answer that question by answering: What does it mean for two things to be close to one another? We'll take a strange look at infinite series and dare to mention a calculus student's fantasy. We'll even attempt to build a series that can be used if you ever have to flee the country in a hurry: we'll either succeed or fail... Will you be at the edge of your seats? Perhaps; but if not, then you'll probably fall asleep and either way, after the talk, you'll feel refreshed. No matter what, you'll learn a sneaky way to always win at Limbo.

Banquet Speaker
Joseph W. Dauben
Herbert H. Lehman College, CUNY, and the Graduate Center, City University of New York

Writing Biographies: Mathematicians as Historical Subjects

The author has written two biographies of well-known mathematicians, both of whom engaged the infinite in their research in very different ways. Georg Cantor created transfinite set theory that some have regarded as revolutionizing mathematics at the end of the nineteenth century, whereas some mathematicians still worry about the foundations of mathematics in the aftermath of his work. In the last century, Abraham Robinson used subtle techniques of model theory to create nonstandard analysis, rehabilitating the infinitesimal which even Cantor had thought was too contradictory to ever be permitted in rigorous mathematics. Writing the biographies of these two very different individuals in time and place posed a number of challenges that I will discuss both in terms of how Cantor and Robinson sought to promote their controversial theories, and how their personalities also affected the work they did.

MAA Keynote Speaker
Frank A. Farris
Santa Clara University

The Gini Index and Measuring Inequality

The Gini index is a summary statistic that measures how equitably a resource is distributed in a population; income is a primary example. In addition to a self-contained presentation of the Gini index, we give two equivalent ways to interpret this summary statistic: first in terms of the percentile level of the person who earns the average dollar, and second in terms of how the lower of two randomly chosen incomes compares, on average, to mean income.

Student Activities

Students are invited to participate in the MAA Sectional meeting on April 8 and 9, 2011, to be held at the University of Colorado at Boulder. 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.

Call for Papers

The **deadline** for submission of abstracts for the 2011 Spring Section Meeting is **March 25, 2011.** 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 topics mathematical are welcome, special sessions are being organized around the following themes and additional sessions will be announced. Please check the Meeting Website for updates.

Combinatorics

History of Mathematics

Mathematics Education

Graduate Student Research

Undergraduate Research

General Contributed Papers

The default talk length will be 15-20 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.** Electronic submissions are preferred. For non-electronic submissions, please use the Speaker Response Form on the web pages.

Additional Meeting Information

Department chairs and **MAA liaisons** are invited to a luncheon and an open discussion on Friday, April 8, 11:45 – 12:45pm. Please indicate on your registration form if you are interested in attending the luncheon. The discussion topic is: *The Common Core State Standards in Mathematics.*

The **Friday Evening Banquet and Awards Ceremony** will be at 8:00pm in the St. Julien Hotel, 900 Walnut St., preceded by a cash bar at 7:00pm.

Travel Information

Travel Information, including maps and hotel information will be available on the conference web pages: http://math.colorado.edu/~stade/Travel.html

Please note that hotel rooms will be available at a special rate until **March 8, 2011**.

Preliminary 2011 Meeting Schedule

Friday, April 8

9:30 - 11:30 **Workshop:** *Learning Assistants in the Mathematics Classroom*

11: 00 – 4:30 **Registration**

11:45 – 12:45 **Luncheon for Department Chairs and MAA Liaisons**

11: 00 – 5:30 **Publisher Exhibits, and MAA Book Sales**

1:00 – 1:10 **Opening Remarks and Welcome**

1:10 – 1:55 **Burton W. Jones Distinguished Teaching Award Invited Lecture**
Eric Stade, University of Colorado at Boulder
FT's, DFT's and FFT's, or: Joe Fourier and the Birth of Disco

2:00 – 3:50 **Parallel Sessions – Contributed Papers & Special Sessions**

4:00 – 5:00 **Friday Keynote Address**
Edward Burger, Williams College and Baylor University
How Always to Win at Limbo

5:00 – 5:45 **Refreshments**

5:45 – 7:00 **Break**

7:00 – 8:00 **Cash Bar** (St. Julien Hotel, 900 Walnut St.)

7:00 – 10:00 **Banquet and Awards Ceremony** (St. Julien Hotel)
Banquet Address:
Joseph Dauben, Herbert H. Lehmann College and the Graduate Center, CUNY
Writing Biographies: Mathematicians as Historical Subjects

Saturday, April 9

8: 00 – 11:30 **Registration**

8:00 – 8:50 **MAA Rocky Mountain Section Business Meeting**
Please forward agenda items to Hortensia Soto-Johnson at hortensia.soto@unco.edu by April 1.

9:00 – 11:15 **Parallel Sessions – Contributed Papers, Special Sessions**

9:30 – 2:00 **Publisher exhibits and MAA Book Sales**

11:15 – 11:30 **Coffee Break**

11:30 – 12:30 **Saturday Keynote Address**
Frank Farris, Santa Clara University
The Gini Index and Measuring Inequality

12:45 – 2:00 **Parallel Sessions – Contributed Papers, Special Sessions**

Watch for regular meeting and schedule updates at:
http://math.colorado.edu/~stade/CUMAA.html

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.

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; Denver, CO; March 17-20, 2011
NCTM annual meeting; Indianapolis, IN
April 13-16, 2011
MAA Rocky Mountain Section Meeting
University of Colorado at Boulder
April 8-9, 2011
MAA MathFest; Lexington, KY; August 4-6, 2011

Joint Mathematics Meetings; Boston, MA
January 4-7, 2012
MAA Rocky Mountain Section Meeting
Metropolitan State College of Denver
April 13-14, 2012
NCTM annual meeting; Philadelphia, PA
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
MAA MathFest; Hartford, CT; August 1-3, 2013

Joint Mathematics Meetings; Baltimore, MD
January 15-18, 2014
NCTM annual meeting; New Orleans, LA
April 9-12, 2014
MAA MathFest; Portland, OR; August 7-9, 2014

Joint Mathematics Meetings; San Antonio, TX
January 10-13, 2015
NCTM annual meeting; Boston, MA
April 15-18, 2015
MAA 100th Anniversary MathFest
Washington, DC; August 5-8, 2015

Joint Mathematics Meetings; Seattle, WA
January 6-9, 2016
NCTM annual meeting; San Francisco, CA
April 14-16, 2016

Joint Mathematics Meetings; Atlanta, GA
January 4-7, 2017

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.