



Fall 2023 Newsletter

Section Website: <https://www.rockymountain.maa.org/>

**Note: The 2024 Rocky Mountain Section Meeting
April 19–20, 2024
Host: Colorado College**

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2022 – 2023 Section Officers and Committee Members

Section Website <https://www.rockymountain.maa.org/governance/officers>

Current term of service in parentheses; The Chair serves for 4 years – one as Chair Elect, two as Chair, one as Past Chair; all other positions have 3-year terms unless otherwise noted.

Section Executive Committee Officers for 2022 – 2023

Chair (2022–2024)	Gulden Karakok University of Northern Colorado Greeley, CO 80639	gulden.karakok@unco.edu 970-351-2215
Chair Elect (2023–2024)	Beth Burroughs Montana State University	bburroughs@montana.edu 406-994-3604
Vice-Chair (2022–2024)	Carol Kuper Morgan Community College	carol.kuper@morgancc.edu 970-542-3202
Secretary/ Treasurer (2023–2026)	Rebecca Swanson Colorado School of Mines	swanson@mines.edu 303-273-3813
MAA National Rep (2023–2026)	Anne Dougherty CU Boulder	anne.dougherty@colorado.edu 303-492-4011
Program Co-Chairs (2023–2024)	Luis David Garcia Puente Molly Moran Colorado College Colorado Springs, CO	lgarciapuate@coloradocollege.edu mmoran@coloradocollege.edu

Other Committee Members and Representatives

Section Nominating Committee

(2022–2025)	Michael Jacobson (Chair), UC Denver	Michael.jacobson@ucdenver.edu 970-351-2297
(2021–2024)	Janet Heine Barnett, CSU - Pueblo	janet.barnett@csupueblo.edu 719-549-2433
(2023–2026)	Martha Garlick, SDSMT	Martha.Garlick@sdsmt.edu

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(2023–2024)	Beth Burroughs, Montana State University	burroughs@montana.edu 406-994-3604
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(2022–2024)	Brittini Lorton, CCD	Brittini.lorton@ccd.edu

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Chair's Corner

Greetings to all of you in the Rocky Mountain Section of the MAA!

I hope that your fall term started well. It was great to see some of you at our 2023 section meeting at Black Hills State University (BHSU) in April. I know you'll join me in thanking our colleagues at BHSU for their work in organizing this year's program. In particular, I want to thank the program co-chairs, Daluss Siewert and Daniel Swenson, for getting us together in person and providing a welcoming environment at their institution. We had many great talks and additional activities at the meeting. As part of the MAA Section Visitors program, Edray Goins gave two talks. Sarah Greenwald delivered a MAA Pólya Lecture, part of the MAA Section Lecturer program. Special thanks to BHSU Math Club students, they were very helpful throughout the conference. At the meeting, we had our very first silent auction to raise money for the section. My special thanks to Janet Barnett, our section book sales coordinator for proposing and organizing this event. We also had books on sale throughout the conference. We will continue with these events at the next meeting. I hope you will help us to raise money for our section. And, we had more than 100 participants at the section meeting! I hope we can double this number at the 2024 section meeting.

Our 2024 section meeting was originally planned to be at Pikes Peak State College (PPSC) with program chair Pam Peters and co-organizers Jennifer Holmes and Ryan Sandee. They were able to arrange for speakers and were making progress toward providing another great meeting for us. Unfortunately, PPSC informed us that they can't host the section meeting due to many organizational changes at the institution. However, we have been very fortunate to have Colorado College colleagues who graciously agreed to continue the work that

Pam, Jennifer, and Ryan started for the 2024 section meeting. I am excited to announce that our 2024 section meeting will be hosted by Colorado College in April 19-20, 2024 with program co-chairs Luis David Garcia Puente and Molly Moran. Thank you, Luis and Molly, for taking on this role and we are excited to be in Colorado College in April. And, thank you Pam, Jennifer, and Ryan for all the hard work you put into getting us started with the section meeting. We will have more programming announcements on the section website.

I want to welcome three new members to the executive board: Anne Dougherty (section representative to the MAA Congress), Beth Burroughs (chair-elect), and Rebecca Swanson (secretary/treasurer). Thanks to Anne, Beth, and Rebecca for agreeing to serve in these important section officer roles. As you all know, serving in such roles is both an opportunity to provide service to the section and our profession as well as for personal and professional growth. I invite you to volunteer to serve in one of the many available positions in the Rocky Mountain Section. We will have an election for one officer this year: Vice-chair. Please see the report from the Section Nominating Committee part in this newsletter for details. If you have suggestions – or are willing to serve in this capacity yourself – please contact [Michael Jacobson](#), the chair of the nominating committee.

I also want to thank Kyle Riley, who will continue to serve as the Section awards organizer. Please see Kyle's section in the newsletter about upcoming nominations for the section teaching awards. I congratulate 2023's teaching award winners. Mike Siddoway (Colorado College) and Shelby Stanhope (US Air Force Academy). Mike is the 30th recipient of the Burton W. Jones Distinguished Award for Distinguished College or University Teaching of Mathematics. Shelby is the 7th recipient of

the RMS Early Career Teaching Award. I'm looking forward to their talks at the 2024 section meeting at Colorado College.

Please do not forget to cast your vote on the MAA 2023 officer election, which will close on October 8. You should have a ballot in your email. On this ballot, you will notice an item related to the updates of the MAA bylaws. You can find more information about the updates on <https://maa.org/about-maa/governance/maa-bylaws-and-articles-of-incorporation>

In closing, I invite you to read the MAA's 2022 Impact Report (<https://2022report.maa.org/>), in which you will see that the MAA had 12% increase in membership. I am excited to see this growth and hope we can bring more members to our section community.

Gulden Karakok, UNC
Chair, Rocky Mountain
Section

Congressional Representative Report, September 2023

The MAA Congress held a full-day, in-person meeting on August 2, 2023, during Mathfest in Tampa. The day began with a welcome from the President, Hortensia Soto, to provide an overview and context for the rest of the meeting. This was followed by a round-robin event where we were introduced to each of the six Council chairs. We heard a short synopsis on each of them. There were previously five Councils (Communities, Prizes and Awards, Profession, Publications, and Teaching and Learning). The sixth, Council on Sections, was previously a Committee on Sections, but it was too much work for one committee. The Council on Sections was created to provide additional focus and support to the 29 sections of the MAA. It is chaired by Lisa Marano, West Chester University, and will have several committees to include

Committee on Needs and Concerns, Committee on Section Meetings, Committee on Section Lectures, and Committee to review section bylaws. Mona Mocanasi, representing the Rocky Mountain Section, serves on the Committee to review section bylaws. Our bylaws will be reviewed in 2024-2025.

Deirdre Smeltzer, the Senior Director for Programs gave a broad overview of the many program activities of the MAA. The MAA 2022 Impact Report highlights many of these. Of note are the MAA Program Review materials, which should be available later in 2023.

The remainder of the meeting centered around three discussions:

- (1) Re-thinking the strategic plan.
- (2) Discussion of the Marginalized Representative position to the Congress.
- (3) Changes to the MAA Bylaws.

I'll report on each of these below.

Strategic Plan

Michael Pearson, MAA Executive Director, gave an update on the Strategic Plan. The strategic plan was last updated in 2017. The goal is to have an updated 5-year plan for 2023-2028.

We were divided into groups to discuss one of the primary goals and possible implementation strategies. There are 4 primary goals:

- (1) Strengthen the community in an inclusive and welcoming manner.
- (2) Develop leadership and talent for the professional community and for the staff.

(3) Increase membership in a thoughtful and strategic manner.

(4) Allocate resources and develop a sustainable portfolio.

We discussed each of these and made some suggestions to the leadership.

Task Force on the MAA Minority/Marginalized Representatives

The Task Force on the MAA Minority/Marginalized Representatives to the Congress led an honest and in-depth discussion. There are supposed to be three representatives, but there are currently only two (Alejandra Alvarado and Aris Winger). Elections for this position have been

suspended while the Task Force evaluates the goals and purpose of this position. The Congress discussed two questions:

(1) Which marginalized communities should be represented? Should the position address (i) race/ethnicity, (ii) institution (HBCU, community colleges, etc.), (iii) social identity, (iv) profession (visiting professors, teaching postdocs, lecturers, etc.), (v) geography. This is too much for three representatives. It is also undecided what the representatives advocate for.

(2) We also discussed the more fundamental question: Do we really need a Minority/Marginalized Representative? Is it too much of a token position? Is one position sufficient to represent the various communities? What about serving as an “ambassador” to hear and learn the needs of various communities instead of being a “representative” for a group?

It was a very interesting discussion with several personal views expressed. No consensus was reached. The Task Force took the input from the Congress and will continue to study the position.

Changes to the MAA Bylaws

Finally, there was an extensive discussion on the MAA Bylaws. The last revision of the bylaws occurred over five years ago, and the Board of Directors felt that there was a need to update them in several areas. There were a number of minor corrections/additions and three substantive changes. There will be an opportunity to vote on the proposed changes sometime in fall 2023. The major changes include: (1) The term for members of Congress will become four years. (2) Moving the Chair of the Committee on Sections to Chair of the Council on Sections. This change acknowledges the substantial amount of work that this Chair takes on and allows for additional support of the sections. (3) The change that had the most discussion was the one that allows the Board of Directors to appoint up to two “Board Members at Large” to bring different expertise and voices to its deliberations. Overall, the Congress supported these changes but wanted to see some additional guidelines on how the Board Members at Large would be appointed.

If you have any questions or input on these topics, please don’t hesitate to contact me.

Anne Dougherty
University of Colorado Boulder
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Section News

University of Northern Colorado

The Department of Mathematical Sciences welcomes Dr. Kristin Kang. Dr. Kang received her PhD in Statistics from Northern Illinois University. Her research focuses on applications of Statistics in nanotechnology, such as reliability analysis of nanosensors. Her research interests also include statistics education, ethics, and social justice. Dr.

Kang comes to UNC from Grand View University, a small private school in Des Moines, IA, where she was an Associate Professor of Mathematics and the Chair of the Math and Computer Science Department. In her spare time, Kristin enjoys growing orchids, making pottery, rock climbing, and hiking with her dog and husband.



We are also excited about our two new BS degrees: [Computer Science](#) and [Statistics](#), in addition to our existing BS degree in mathematics in five different concentrations: Pure & Applied Mathematical Sciences, Secondary Teaching, Middle School Teaching, Computer Science and Statistics & Data Science Concentrations. The new B.S. in Computer Science program focuses on the design of computers, computational processes for problem-solving, and information transfer and transformation, with an emphasis on improving software and system quality, security, performance, and usability. The program supports the evolution of the computing and informatics disciplines, and the integration of computer and information sciences with other disciplines in the sciences. The BS Statistics major provides students with instruction in the basic techniques, applications, and theories of statistics, including the design and analysis of statistical models, in a wide variety of settings such as biology, business, criminal justice, earth sciences, geography, medicine, law, psychology and other social, natural and health sciences. Expanded computational, scientific, and statistical knowledge, combined with growing needs in technology, have created increased demands for individuals trained in statistics.

In addition to these two new undergraduate programs, we revised our PhD program and now accepting graduate students for the Fall 2024 semester. The Mathematics Education Ph.D. program combines graduate mathematics preparation with advanced coursework and research in mathematics education. This program is designed for graduate students interested in specializing in mathematics teaching and learning in grades 6–14. Our innovative approach to mathematical pedagogy assumes that a deep understanding of mathematics is fundamental to teaching mathematics, for engaging in mathematics education research, and for supporting reform in mathematics education. The program has three major strands: mathematics, mathematics education, and preparing grades 6–14 mathematics teachers. This program is suited to secondary mathematics teachers who want to continue their education and move into mathematics leadership jobs in K–12 education or a faculty position in higher education, as well as to those with graduate work in mathematics who want to focus on research in mathematics education. For more information, visit our [website](#): <https://www.unco.edu/nhs/mathematical-sciences/programs/graduate/phd-educational-mathematics.aspx>. We will have a virtual open house to provide information to prospective graduate students on October 14, Saturday. To register for the open house, visit: <https://forms.gle/8i65BW3BGLuX2bpw6>

We have three faculty members promoted to full professor: Drs. Gulden Karakok, Oscar Levin, and Katie Morrison. Congratulations! Dr. Lindsay Reiten was recognized as the excellence in teaching 2022–2023 awardee and Dr. Oscar Levin was recognized as the Ellen Meyer Gregg excellence in leadership 2022–2023 awardee of the College of Natural and Health Sciences. Congratulations to Lindsay and Oscar.

Dr. Anton Dzhamay came back from his research leave. In Spring 2023, he was a visiting Research Fellow at BIMSA (Beijing Institute of Mathematics and Applications). This is a new world-class research institute in Huairou (north Beijing) under the leadership of Professor Shing-Tung Yau and is affiliated with Tsinghua University in Beijing. During his research leave, Dr. Dzhamay also co-organized of a mini-symposium on "Painlevé equations and Applications" at the ICIAM-2023 International Congress of Industrial and Applied Mathematics at Waseda University, Tokyo, Japan.

Dr. Katie Morrison is on research leave this fall semester. She is one of the co-organizers of the ICERM semester program: Math +Neuroscience: Strengthening the Interplay Between Theory and Mathematics (<https://icerm.brown.edu/programs/sp-f23/>). This semester program brings together a variety of mathematicians with researchers working in theoretical and computational neuroscience as well as some theory-friendly experimentalists.

The UNC Math contest will have the first round (remotely) from October 25th to November 1st, 2023. The final round will be on UNC campus on Saturday, March 2, 2024. For more information, please reach out to director of the contest program, [Angela Steele](#) or check out [the website: https://uncmathcontest.wordpress.com/](https://uncmathcontest.wordpress.com/).

As our programs are growing, we are looking for new faculty members to join our department. We are approved to conduct two faculty searches this year. One position is for Mathematics Education assistant professor (tenure-track) and the second search is for Computer Science assistant professor (tenure-track). Information about these positions will soon be listed on UNC's career opportunities website: <https://careers.unco.edu/>



Gulden Karakok
UNC

Colorado School of Mines

NEW Faculty Members

The Mines' Applied Mathematics and Statistics department is happy to introduce and welcome our new colleagues.

Lucas Quintero
Teaching Post Doc
PhD University of Delaware



Lucas Quintero joins Mines as a Teaching Post Doc this year.

Ebru Bozdog
Associate Professor
PhD Utrecht University



Ebru Bozdog joined the department as a joint appointment with the department of Geophysics. Her research interests lie in computational seismology. She uses 3d numerical seismic wave simulations to

improve understanding of Earth's interior by linking observed data to advances in theory and numerical methods in wave propagation and optimization techniques.

STUDENT AWARDS

We want to extend our congratulations to the winners of the following student awards from the spring semester.

Azlan Tubbs received the Outstanding Graduating Senior Award. Mines' AMS department presented Outstanding Graduating Senior Awards to two students in recognition of their academic excellence and their service to the department, university and community.



Amandin Rabeendran received the Ryan Sayers Memorial Award. The Ryan Sayers Memorial Award recognizes the outstanding academic achievements of a graduating student, majoring in engineering physics and/or applied mathematics and statistics, who has performed significant undergraduate research.



Paul Varosy received the Ryan Sayers Memorial Scholarship. The Ryan Sayers Memorial Award recognizes the outstanding academic achievements of a graduating student, majoring in engineering physics and/or applied mathematics and statistics,

who has performed significant undergraduate research.



Gracey Henoch received the E-days Engineer Award. This award is given to one senior from each department who truly exemplified what it means to be a committed student, an outstanding Oredigger, and a valuable member of the Mines community.



Anastasia Baltes and Haley Vinton received the AMS Honors Fund to Honor Excellence in Teaching and Learning Award. This award recognizes and honors Carol Job and Sharon McAuliffe, both of whom put a tremendous amount of effort into supporting students who struggled in their initial coursework or student life at Mines and ultimately became successful students due to the effort and attention of caring faculty. Recipients of this award are recognized for their ability to persevere through personal and/or academic adversity and ultimately succeed at the Colorado School of Mines.



Justin Garrish received the Professor Willy Hereman Endowed Scholarship. This scholarship is presented to a student studying Applied Mathematics and Statistics who strives for excellence in scholarship, research and/or departmental involvement. The Scholarship was established by Dr. Douglas E. Baldwin, Mines BS '03, MS '04, in appreciation of Dr. Hereman's mentorship and inspiration.



Levi Grenier was the recipient of the 2020 Professor Everett Award in Mathematics. The Award is given to a senior who demonstrates scholarship, leadership, community service and potential for the innovative application of mathematics to mineral engineering.



Allison Comer was awarded the FAST Enterprises Scholarship. This scholarship is provided by Fast Enterprises and recognizes a member of our AWM chapter, the Society for Women in Mathematics for their academic performance and involvement.

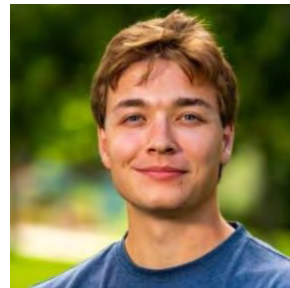


Grace Mattingly, Gracey Henoch, Michael Ivanitsky, Bella Chase, and Amandin Rabeedran received DI&A Student Appreciation Awards. These awards recognize their voluntary work and commitment to improve the climate on campus and beyond, by actively contributing to diversity, inclusion, and access efforts in the Department of Applied Mathematics and Statistics,



Not pictured: Michael Ivanitsky

AMS Graduate Teaching Fellow Matt Picklo is the recipient of the Graduate Teaching Award that is given annually to the graduate student who has shown the greatest effectiveness as a teacher of undergraduate mathematics or statistics courses.



Laura Albrecht was the recipient of the Graduate Research Award that is presented annually to a graduate student for excellence in research prior to the completion of their PhD thesis, recognizing the research's original contribution to knowledge in the field and/or the student's

exceptional collaboration with a research team.



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FACULTY AWARDS

The Mines' AMS department is proud of their award-winning faculty and staff: Deb Carney, Teaching Professor of Applied Mathematics and Statistics was recognized in the inaugural class of University Distinguished Teaching Professors.



Holly Eklund, Teaching Professor of Applied Mathematics and Statistics, was recognized as the Outstanding Faculty Member by the Mines Society of Asian Scientists and Engineers.



Eileen Martin, Assistant Professor of Applied Mathematics and Statistics, was awarded the Society for Industrial and Applied Mathematics Early Career Prize in the activity group on geosciences.



Mike Mikucki, Teaching Professor of Applied Mathematics and Statistics, was selected by the graduating seniors as Outstanding Faculty in Applied Mathematics and Statistics.



Mike Nicholas was awarded the Jenni Fellowship for Institution-Wide Contributions in Teaching Effectiveness and Educational Scholarship.



Other News:

The Applied Mathematics and Statistics Department is searching for a new Department Head. See the ad here: https://mines.wd1.myworkdayjobs.com/Mines_Careers/job/Colorado/Department-Head-and-Proffesor---Department-of-Applied-Mathematics-and-Statistics_JR10203

Rebecca Swanson
Colorado School of Mines

South Dakota School of Mines and Technology

The sad news to report is that Don Teets retired last year, but apparently no one told him this news since he remains a frequent resident in the halls of McLaury this fall semester and did retain the use of an office. We did successfully hire a new faculty recruit and proudly welcome Paul May to our department. We also had two faculty members that earned promotion with Marti

Garlick rising to the rank of Professor and Michelle Richard-Greer reaching the rank of Senior Lecturer. The campus is busy with several construction projects this year with the largest one being a brand new Mineral Industries Building going up just outside the side door of McLaury. This new building was possible through generous funding from Nucor, alumni, and the state of South Dakota.



Michelle Richard-Greer



Marti Garlick

Kyle Riley
SDSMT

Montana State University

The Department of Mathematical Sciences at Montana State University is proud to introduce three new faculty members.

Dr. Breschine (Bree) Cummins graduated with an undergraduate degree in Biology and Mathematics from Boise State University in 2005. In 2009, she received her PhD in Mathematics from Montana State University, where her thesis focused on modeling the interaction between air flow and the cricket sensory system that enables fast escape response. She then worked as a postdoc at Tulane University in New Orleans on a project modeling mosquito motion in response to wind-blown plumes of carbon dioxide. Returning to Montana to be

near her husband's family, she became a postdoc at Montana State University, and later an Assistant Research Professor in 2017. She has broad interests in the field of mathematical and computational biology, and her current research interests include modeling the genetic control of cellular processes, modeling social processes related to disease spread, and most recently, using artificial intelligence to understand complex biological systems. When she's not doing math, she's dancing, sailing, or gardening.

Allechar Serrano López is an Assistant Professor of Mathematics in the department. Her research interests are number theory and arithmetic geometry; in particular, she works in arithmetic statistics and is interested in number field asymptotics. Allechar's service work centers around supporting communities that have been historically and systemically excluded in STEM by creating and supporting programs. Before coming to MSU, Allechar was a preceptor in mathematics at Harvard University. She obtained her Ph.D. at the University of Utah, supervised by Stefan Patrikis. Allechar used to be an economist and worked for the Central Bank of Costa Rica. She organizes a workshop called Rethinking Number Theory and is a co-founder of the Association for Women+ in Mathematics at Universidad de Costa Rica. Outside of math, Allechar enjoys baking, making ice cream, thrifting, watching YouTube videos about fashion history, and reading.

Dr. Samidha Shetty is an assistant professor of Statistics. She graduated with a Bachelor's and Master's in Statistics from the University of Mumbai in 2017 and received her Ph.D. in Statistics in 2023 from Pennsylvania State University. Her main research interest is semi-parametric methodology for missing data settings. More broadly, she applies semi-parametric methods to different statistical domains. She is also extremely passionate about

collaborative applied and methodological research in diverse scientific areas. Some recent collaborations explored the impacts of restless leg syndrome and genetics on fetal growth and the relationship between sleep patterns and head impacts in football players.

Beth Burroughs
Montana State University

CSU Pueblo

It is with great sadness that we say farewell to Professor Janet Nichols who passed away from

pancreatic cancer on September 14, 2023. An active participant in the Rocky Mountain Section, Janet gave her last talk at a section meeting in April 2023; at the



time, she fully intended to continue teaching for several more years. Janet began her 46 years as a faculty member in our department in 1977. An extremely successful teacher, she consistently attracted large numbers of students to her classes despite — or perhaps because of — her high expectations; she then worked tirelessly both in and out of the classroom to ensure that they succeeded in attaining those goals. In addition to caring deeply about her own teaching and students, Janet gave freely of her time, energy and experience to help her colleagues resolve their own classroom dilemmas, as well as in support of departmental, college and university initiatives to improve instruction.

Among her many contributions over the years, Janet's enthusiasm for mathematics led to the creation of the department's highly successful Math Day, an annual one-day event for high school students from across southeastern Colorado that she personally organized for more than four decades. Many of the sponsoring teachers who attended Math Day had completed classes under Janet's instruction in their own student days and credited her for making a difference not only to their mathematical development, but also in their own future teaching. Janet's commitment to promoting high-quality mathematics learning opportunities for all also led to her involvement in numerous outreach programs in the greater Pueblo region for K–12 teachers of mathematics and their students. Her achievements over the years were recognized with several awards, including the 2011 University Faculty Excellence in Teaching Award and the 2012 RMS Burton W. Jones Distinguished Teaching Award. She will be deeply missed by many.

Janet Heine Barnett
CSU Pueblo

Is news from your school missing?
Send your news to your department liaison now with a request to forward it to Melissa Erdmann, Newsletter Editor, for inclusion in the next issue:
merdmann@mines.edu.

Mark Your Calendars!

Submissions to the SP24 Newsletter are due 19 January 2024. Spring usually has a lot going on, starting in early semester. Plan ahead! Contact Melissa Erdmann, merdmann@mines.edu if questions.

Rocky Mountain Section Teaching Awards, 2023

Burton Jones Award for Distinguished College/University Teaching of Mathematics

Recipient: Mike Siddoway from Colorado College

Nominated by Molly Moran

The Rocky Mountain Section recognizes Dr. Siddoway for his excellence in teaching, his commitment to ethics and social justice, and his influence in spreading the joy and beauty of mathematics in the Rocky Mountain region and beyond. We especially highlight Mike's work in launching and shaping the Colorado College Liberal Arts in Correctional Facilities (LACF) project, which serves incarcerated people between the ages of 19 and 25. Mike's passion for sharing his love of mathematics, along with his patient and inclusive attitude, make him a favorite of students even as he holds them to a high standard of learning. As one student wrote: "Prof. Siddoway is singular in his devotion to student success and the fundamentals of problem solving." Thank you, Dr. Siddoway, for all your work, and thank you to Dr. Moran for taking the time to prepare the nomination packet!



Mike Siddoway (left) and Shelby Stanhope (right), 2023 Section Meeting.

Early Career Teaching Award for Excellence in Teaching in the Mathematical Sciences

Recipient: Shelby Stanhope from the U.S. Air Force Academy

Nominated by Col. Scott Williams

The Rocky Mountain Section recognizes Dr. Stanhope for her excellent use of innovative teaching methods, her commitment to students and learning, and her record of service to the mathematical community in the Rocky Mountain region and beyond. We especially highlight Shelby's work with Dr. Paul Seeburger on the excellent CalcPlot3D software, which mathematicians across the world have come to rely on. Shelby shows her commitment to students both inside and outside the classroom. As one student wrote: "I was inspired by Dr. Stanhope's open mind for many any possible interpretation of the math...so that her students could learn the best way that they could rather than only get good grades." Thank you, Dr. Stanhope, for all your work, and thank you to Dr. Williams for taking the time to prepare the nomination packet!

Call for 2024 Teaching Award Nominations

One component of the mission for the Rocky Mountain Section is to recognize outstanding contributions in teaching. Please consider nominating a colleague for one of our teaching awards.

- The **Burton W. Jones Distinguished Teaching Award** was started in 1992 and we have multiple award winners that have gone on to earn the national Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics award from the MAA.
- The **Early Career Teaching Award** was founded in 2016 and we have already had one of our section award winners earn the Henry L. Alder Award for Distinguished Teaching by a Beginning College or University Mathematics Faculty Member, which is the analogous national Haimo award from the MAA.

Both section teaching award programs are open to any section member that meets the eligibility criteria, and both awards are open to members from two-year and four-year colleges.

Please consult the website <https://www.rockymountain.maa.org/awards> for full details on eligibility and the application process.

The two dates to keep in mind:

- December 15, 2023: one-page nomination form is due; and
- January 15, 2024: full nomination packet is due.

Please consider taking the first step and completing a nomination form today. Please contact me if you have any questions.

Kyle Riley
Section Award Coordinator
Kyle.Riley@sdsmt.edu

The 2022 Rocky Mountain Section Meeting
April 19-20, 2024
Colorado College



Due to extenuating circumstances, Pikes Peak State College will no longer be able to host the 2024 Section Meeting, but **Colorado College** stepped up to the challenge and will be hosting this Spring. **Program Co-Chairs:** Luis David Garcia Puente, lgarciapuate@coloradocollege.edu and Molly Moran, mmoran@coloradocollege.edu.

Many thanks, and more complete information to follow. A brief preview:



MAA AWM Speaker:

Marissa Loving
University of Wisconsin - Madison
Email: mloving2@wisc.edu

Bio: Marissa Kawehi Loving is an NSF Postdoctoral Research Fellow and Visiting Assistant Professor in the School of Math at Georgia Tech. She graduated with her PhD in mathematics in August 2019 from the University of Illinois at Urbana-Champaign where she was supported by an NSF Graduate Research Fellowship and an Illinois Graduate College Distinguished Fellowship. Marissa was born and raised in Hawai'i where she completed her B.S. in Computer Science and B.A. in Mathematics at the University of Hawai'i at Hilo. She is the first Native Hawaiian woman to earn a PhD in mathematics. Her research interests are in geometry/topology, especially mapping class groups of surfaces (of both finite and infinite type). Marissa is also deeply invested in making the mathematics community a more equitable place. Some of her work includes mentoring undergraduate research (through programs such as Summer@ICERM, MSRI-UP, and the Georgia Tech School of Math's REU) and co-organizing initiatives like SUBgroups and paraDIGMS.

Topic: **Symmetries of Surfaces**

I will give a gentle introduction to surfaces (of both finite and infinite-type) and their associated mapping class groups. I will then discuss some of the different areas of mathematics that naturally arise in the study of surfaces and the mapping class group, from geometry and dynamics to algebra, combinatorics and number theory. Along the way we will see how these different perspectives often come together in beautiful ways.

Section Visitor:

Adriana Salerno, Vice President
Bates College

Bio: Adriana Salerno is originally from Caracas, Venezuela, where she received her undergraduate degree in mathematics from the Universidad Simon Bolivar in 2001. She then went on to earn her PhD at the University of Texas. While completing her doctorate in mathematics, Salerno was also selected as the AMS-AAAS Mass Media Fellow in the summer of 2007; as such, she wrote articles for the Voice of America. Salerno’s main research area is Number Theory, in particular the intersections of number theory with geometry, physics, and cryptography. She is also very interested in the communication and teaching of mathematics to create a more inclusive and equitable STEM workforce. She is an alum of the Linton-Poodry SACNAS Summer Leadership Institute, and the SACNAS-HHMI Advanced Leadership Institute, and is committed to increasing the representation of minorities and women in the mathematical sciences. She is a proud member of AWM, SACNAS, MAA, and AMS. Salerno was visiting mathematician at the Mathematical Association of America’s headquarters in Washington, D.C., from September to November 2016.

Topic: **Arithmetic Geometry: From Circles to Circular Counting**

In this talk, I will show you a glimpse of one of the most exciting facets of research in modern number theory: arithmetic geometry. We will start with a (gentle) introduction to this area of research through some familiar examples. Then we will move on to a not so familiar example where we count solutions of equations mod p . I will end by answering two of the oldest and most mystifying questions in mathematics: how does this work fit into the bigger picture, and who cares?

Guest Speaker:

Jason Rosenhouse
James Madison University
Distinguished Visiting Professor, United States Air Force Academy

Topic: TBD



2023 Burton Jones Award for Distinguished College/University Teaching of Mathematics

Mike Siddoway
Colorado College

Topic: TBD



21st Annual
Pikes Peak Regional Undergraduate Mathematics Conference
United States Air Force Academy
Saturday, March 2, 2024

The **Pikes Peak Regional Undergraduate Mathematics Conference** (PPRUMC) Steering Committee is pleased to announce that our **21st Annual Conference** will take place tentatively **on Saturday March 2, 2024**. Many thanks to **United States Air Force Academy (USAFA)** for serving as our host institution, and to USAFA staff and faculty Ms. Rayne Mendez and Dr. Maila Hallare **for organizing the event**.

The focus of this one-day conference is to give undergraduate mathematics students an opportunity to present their work in a professional, supportive 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. Presentation topics could include the results of classroom or independent study, as well as REU or other research projects. Both research and expository topics are welcome.

PPRUMC is also an occasion for students to become acquainted with other students from the region, and to learn more about the mathematics profession, including graduate school and career opportunities. Based on past attendance, we expect a full day of student presentations and attendees from Colorado, Wyoming and other neighboring states. The program will also feature a Keynote Speaker and a panel on graduate school and career opportunities.

Pending the success of our funding efforts, there will even be a free lunch! No registration or lunch fees are anticipated for the conference, and partial financial reimbursement for student travel expenses may also be available.

So, **please spread the word among your fellow faculty and students**, especially those who are currently working on a project that will be ready for presentation by the end of February. The deadline for submitting an abstract will be approximately February 12, 2024. The conference website will be ready to go soon and contain updated information as it becomes available. In the meantime, **general questions about this year's conference can be directed to Rayne at rayne.mendez@afacademy.af.edu**.

Rayne Mendez
Maila Hallare
United States Air Force Academy

2023 MAA Rocky Mountain Section Meeting Report Black Hills State University

The first in-person Rocky Mountain Section meeting since 2019 was held at Black Hills State University in Spearfish, SD on April 21, 22, 2023. There were 106 attendees including 27 undergraduate students. In addition to engaging and insightful plenary and contributed talks, the Student Jeopardy session was entertaining and competitive. New for this year were a MAA Book silent auction and clearance sale organized by Janet Heine Barnett. These fundraisers generated \$790 for the section! Thanks to Janet for organizing this fundraiser! The book inventory also provided a nice selection of door prizes for the banquet. One door prize was a private donation and we wish to thank John Watkins for donating the book *Graph Theory in America: The First Hundred Year*, by Robin Wilson, John J. Watkins, and David J. Parks. Princeton, 2023.



Student Jeopardy Winners – U.S. Air Force Academy

We also wish to thank our plenary speakers and all of those who presented at this meeting or organized a session.

Burton W. Jones Distinguished Teaching Award Invited Lecture

It's Good to Have a Good Problem

Bob Cohen, Western Colorado University

MAA Pólya Lecture

Mathematical Morsels from The Simpsons and Futurama

Sarah Greenwald, Appalachian State University

MAA Section Visitor Invited Presentations

Pomona Research in Mathematics Experience (PRiME): Reflections on a Research Learning Community,

Clocks, Parking Garages, and the Solvability of the Quintic: A Friendly Introduction to Monodromy

Edray Goins, Pomona College

Special Teaching Presentation - 2022 Early Career Teaching Award Recipient

Beyond Equations: The Power of Writing in Mathematics

Mike Mikucki, Colorado School of Mines

Workshop: Building Community Engagement into Active Learning in the Gen Ed Math Classroom

Nick Van Kley, Black Hills State University

Special Sessions and Contributed Talks

History of Math and What It Can Teach Us

- *Exploring the Connections Between the History of Mathematics and Mathematical Cognition*, Ed Bonan-Hamada, Colorado Mesa University
- *Mathematical Treasure: Taylor's Theorem*, Kyle Riley, SDSM&T
- *The Evolution of Mathematical Ideas: Honoring the Past, Inspiring the Future*, John Carter, MSU Denver
- *Einstein's First Proof*, William Weber, University of Wyoming
- *Lagrange Points and the James Webb Space Telescope (Part 2)*, Don Teets, SDSM&T
- *The Burials of Euclid and Calculus: The Strange History of Mathematical Book Burning*, Travis Kowalski, SDSM&T
- *Otto Blumenthal and the Crisis of Early 20th-Century European Mathematics*, Mike Siddoway, Colorado College
- *Gauss in Antarctica? A Magnetic Tale*, Janet Heine Barnett, CSU Pueblo
- *Primary Source Project for Calculus II: Newton's Theorem of Extractions*, Shawna L Mahan, USAFA

Combinatorics & Matrix Theory

- *Kemeny's Constant for an Undirected Graph: How Much Can Adding One Edge Change Things*, Stephen Kirkland, Univ. of Manitoba
- *Using Matrices to Count Orthogonal Hypercubes*, John Ethier, MSU Denver
- *An Algebraic Test of Sappiness*, Colin Garnett, BHSU
- *Strong Nullity Interlacing Property*, Bryan Curtis, Iowa State University
- *On the Minimum Number of Distinct Eigenvalues Allowed by a Matrix Sign Pattern*, Kevin Vander Meulen, Redeemer Univ.
- *Skew-Adjacency Matrices of Tournaments*, Bryan Shader, University of Wyoming
- *Sandpile Groups for Series and Parallel Combinations of Graphs*, Jim Seibert, Regis University

Co-Req. Instruction in RMS-MAA

- *The Evolution of Supplemental Instruction at UCCS*, Katherine Cliff, CU Colorado Springs
- *Student Sentiment Towards Group Learning in Algebra Courses*, Jacob Buchholz, CSU Pueblo
- *Corequisite Instruction: How I'm Doing It (Wrong?)*, Ashley Clayton, Adams State University
- *Alphabet Soup-SAI, SI, GLP, CoReq, SuPer...What Does It Mean?*, Janet Nichols & Tammy Watkins, CSU Pueblo
- *Piloting Our Way to Success: A Journey Through Support Courses*, Lisa Driskell, Colorado Mesa University
- *Planning for New Successes*, Erik Kjosness, Western Colorado University

Undergraduate Research

- *Modeling the Interaction of Vegetation and Erosion in Watersheds Using Differential Equations*, Evan Cowden, USAFA
- *Analysis of the Game of Pop*, Riley Nupen, SDSM&T
- *Projective Planes and Exploring Their Application in Physics*, Noah Evertt, SDSM&T

Teaching (General)

- *Getting Started with Mastery Grading*, Aram Bingham & Rebecca Swanson, Colorado Mines
- *Academic Rigor in Data-Driven Calc.*, Beth Schaubroeck, USAFA (Co-authors Maila Hallare and Ryan McGuire)
- *Using Physical Simulations to Engage Students in Modeling the Spread of Infectious Disease*, Elizabeth Arnold, CSU Fort Collins & Elizabeth Burroughs, MSU Bozeman
- *Designing Interactive OER Curriculum for Mathematical Experimentalists*, Adam Spiegler, CU Denver

General Session

- *Modeling how the Green Algae Chlamydomonas Maintains its Breaststoke*, Forest Mannan, Western. Colorado University
- *Solving a Hot Dog vs. Bun Dilemma with Frobenius Number Algorithms*, Neil Steinburg, SDSM&T
- *Insights into the Riemann-Hilbert Correspondence via Topological Quantum Field Theory*, Parthasarathi Nag, BHSU
- *Computations on Chains of Prime Ideals*, Travis Trentham, Northern State University
- *Some Insight on the Multiple Choice Paradox*, Shahar Boneh, MSU Denver
- *Diffusion Approximation of Directed Dispersal in Periodic Heterogeneous Environments*, Martha Garlick, SDSM&T
- *In-Class Activities using 3D Printed Surfaces and 3D Visualization with Calcplot3D*, Shelby Stanhope, USAFA
- *The Harmonic Mean Is...Different*, Dan Swenson, BHSU

Finally, thank you to the Black Hills State faculty, staff, and students, and to everyone who helped make this meeting a success. Looking forward to seeing you next year at Colorado College!

Daluss Siewert
Dan Swenson
Program Co-organizers

20th Annual Pikes Peak Regional Undergraduate Mathematics Conference (PPRUMC)

Conference Report

The 20th Anniversary PPRUMC was hosted by University of Colorado - Colorado Springs on Saturday, March 18, 2023. This year's event attracted 55 participants, including representatives from 11 different schools, for a day of mathematical presentations and fun.

Dr. Hortensia Soto opened Saturday's program with her Keynote Address The "E" in REU. A professor in the Department of Mathematics at Colorado State University (Fort Collins) and current President of the national MAA, Dr. Soto is also one of the co-founders of PPRUMC (along with Dr. Mike Brilleslyer, then at the USAFA). Her highly interactive talk inspired participants by painting a vivid picture the different landscapes for REUs and the affordances that they each provide.

The program also included a panel on careers and graduate school opportunities in mathematics, featuring panelists Carl Cassidy (UCCS Graduate Student), Joseph Noernberg (UCCS Graduate Student) and Bruce Wallin (Spire Global). Greg Oman (UCCS) moderated the panel and also contributed comments from the perspective of a faculty advisor.

The remainder of this one-day conference featured the following 9 contributed talks presented by a total of 10 undergraduate mathematics students:

- Bjorn Cattell-Ravdal (MSU Denver), Playing Billiards on the Sphere and other Surfaces of Revolution
- Orin Crouse (University of Colorado at Denver), Survey Economic Impacts of Political Risk Insurance
- Dans Uriel Ferrer & Muhammad Maulana (USAFA), Plotting Airfoils Using the Joukowski and Karman-Trefftz Maps
- Chase Giglio (Western Colorado University), Modeling the Coordinated Beating of Chlamydomonas
- Kenneth Huynh (UCD), Measuring and handling the impact of missing data on a longitudinal cohort study using the Pulmonary Hypertension Association Registry
- Brennan Romanoff (USAFA), Mathematical Analysis of Quantum Mechanics and General Relativity
- Joseph Skene (MSU Denver), Consecutive Integer Partitions and Their Identities
- Nicole Venner (MSU Denver), Geometry of Transcendental Curves
- Emerson Worrell (Colorado College), On Characterizing Cuboctahedral Fully Augmented Links

This year's conference was again offered at no cost to participants, offset in part by financial donations from the UCCS Department of Mathematics and the UCCS College of Letters, Arts and Sciences. Door prize donations were also received from the MAA Rocky Mountain Section. The PPRUMC Steering Committee is further grateful to the local organizer Greg Oman (UCCS) and UCCS administrative assistants Emanuelita Martinez and Ashley Beushausen, as well as all the faculty who contributed their time and expertise to preparing student presenters, recruiting student participants and moderating sessions.

Janet Heine Barnett
Colorado State University Pueblo

Colorado Council of Teachers of Mathematics (CCTM)

The Colorado Council of Teachers of Mathematics (CCTM), is a professional organization that provides networking, advocacy, and support for teachers across the state of Colorado. Through its newsletter, you can learn more about CCTM activities, upcoming events, hear teachers' voices, learn about practical practices, and spotlight Colorado mathematics educators and teams, and more. Upcoming events include a webinar for CCTM members to learn about Zearn Math, an in-person learning experience about leveraging the TI-84 calculator on the digital PSAT and SAT, and a virtual book study on Teaching for Thinking (Kelemanik & Lucenta, 2022).

Consider submitting an article to the Colorado Mathematics Teacher Journal (CCTM's peer-reviewed, open access journal). It has been hosted by the University of Northern Colorado Libraries.

Dr. Liz Arnold, assistant professor of mathematics in the Department of Mathematics at Colorado State University, was appointed as the new higher education representative to the CCTM board. She earned her Ph.D. in mathematics, specializing in secondary mathematics and statistics education, at Montana State University. She primarily teaches mathematics content and methods of teaching courses for pre-service secondary mathematics teachers and has provided professional development opportunities for K-16 mathematics and statistics teachers. Her research centers on the preparation and development of pre-service and in-service K-12 mathematics teachers, with a focus on mathematical knowledge for teaching secondary mathematics, mathematical modeling, and teaching and learning statistics.

Liz Arnold, CSU Fort Collins
Higher Education Representative
CCTM Board of Directors

Convergence: Offering Historical Materials for a Variety of Classrooms

Now in its 20th year, MAA Convergence (where mathematics, history, and teaching meet!) is both an online journal on the history of mathematics and its use in teaching and an ever-expanding collection of online resources to help readers teach mathematics using its history. Founded in 2004 by Victor Katz and Frank Swetz, Convergence brings you a variety of interesting articles and teaching tools. We highlight here some of our newest articles and features for use in your classroom. Interested readers can access all of these materials and more from our homepage: <http://www.maa.org/press/periodicals/convergence>

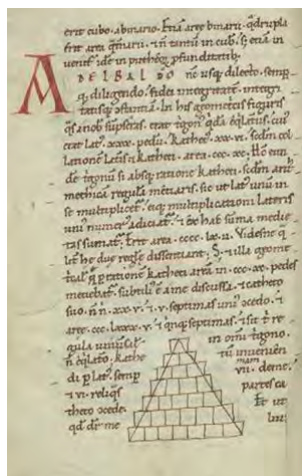
Two recent articles explore perspectives on famous mathematicians that are not widely known. In "[Things Certain and Uncertain](#)," by Michael P. Saclolo and Erik R. Tou, the authors examine Leonhard Euler's deathbed contributions to the mathematics of balloon flight and provide suggestions for using this work in a contemporary differential equations or physics course. Associate editor Adrian Rice unspools the story of "[A Mysterious Copy of Lacroix's *Traité Élémentaire de Calcul Différentiel et de Calcul Intégral*](#)," which encompasses J. J. Sylvester and Augustus De Morgan as well. Sylvester is also one of six well-known mathematicians and

figures from the history of science or United States history who have been added to Mike Molinsky's series of "[Quotations in Context](#)." Readers will also discover the original meanings of sayings about mathematics by John Adams, Nicolaus Copernicus, Charles Darwin, Albert Einstein, Oliver Wendell Holmes, Jr., Napoleon, Voltaire, and Alfred North Whitehead.



The Aérostat Réveillon lifts off from the grounds of the Palace of Versailles on 19 September 1783, the day after Euler's death. [Wellcome Collection](#).

Associate editor Ximena Catepillán has continued to increase the reach of our offerings by translating into Spanish (with the help of Samuel Navarro), the 2015 article by founding editor Frank Swetz, "[Pantas' Cabinet of Mathematical Wonders: Images and the History of Mathematics](#)." En "[El Gabinete de Maravillas Matemáticas de Pantas: Imágenes e Historia de las Matemáticas](#)," Swetz discute cómo motivar e involucrar a sus estudiantes mediante el uso de imágenes, especialmente las de objetos históricos, manuscritos y textos, en la enseñanza de las matemáticas. Another of our associate editors, Betty Mayfield, designed "[Need the Area of a Triangle? The Pope Can Help!](#)" specifically for secondary students and pre-service teachers to engage in active reading and thinking about how to determine and derive theorems in geometry.



A 12th-century manuscript copy of the letter by Gerbert d'Aurillac that is discussed in Mayfield's article.

Convergence's article series also continue to expand, with additions to existing series as well as newly-created series. Recent entries added to the TRIUMPHS team's "[A Series of Mini-projects from TRansforming Instruction in Undergraduate Mathematics via Primary Historical Sources](#)" include:

- "[Beyond Riemann Sums: Fermat's Method of Integration – A Mini-Primary Source Project for First-Year Calculus Students](#)," by Dominic Klyve;
- "[Fermat's Method for Finding Maxima and Minima: A Mini-Primary Source Project for Calculus 1 Students](#)," by Kenneth M Monks;

- [“Solving Linear Higher Order Differential Equations with Euler and Johann Bernoulli: A Mini-Primary Source Project for Differential Equations Students,”](#) by Convergence associate editor Adam E. Parker; and
- [“The Closure Operation as the Foundation of Topology: A Mini-Primary Source Project for Topology Students,”](#) by Nicholas A. Scoville.

In our new series [“Historical Notes for the Calculus Classroom,”](#) V. Frederick Rickey shares his expertise in using history to teach mathematics via short articles on episodes in the history of calculus; his first installment features [“Fermat’s Integration of Powers.”](#) Our series offering examples of how online databases of mathematical objects can be mined to unlock the collections that they preserve for use in research and teaching, [“Keys to Mathematical Treasure Chests,”](#) has a new installment from Manny Medrano on [“Andean Khipus.”](#) And, for students and instructors who want to know more about what is involved in researching and writing the history of mathematics, Convergence editor Amy Ackerberg-Hastings provides an overview in [“HoM Toolbox, or Historiography and Methodology for Mathematicians.”](#)



The introduction for “Historical Notes for the Calculus Classroom” includes a brief video in which Fred Rickey describes how these tidbits for teaching came about.

Convergence also continues to offer other features useful for teaching mathematics with its history:

- [“Mathematical Treasures,”](#) images and descriptions of texts and objects significant to the history of mathematics;
- [“On This Day,”](#) a listing of three or four historic mathematical events that happened on any given date;
- [“Today’s Quotation,”](#) a quotation about mathematics from a historical figure selected from a catalogue of quotations alphabetized by author;
- [“Problems from Another Time,”](#) highlighting historical problems;
- [“Conference Calendar”](#) (edited by associate editor Bud Boman), an up-to-date guide to conferences and events online and around the world that feature or include the history of mathematics and its use in teaching.

Interested in contributing as an author or referee? We’d love to hear from you at convergence@maa.org! Convergence publishes expository articles on the history of topics in the grades 8–16 mathematics curriculum; translations of primary sources; classroom activities, projects, or modules for using history to teach mathematics; and classroom testimonials after applications of such activities, projects, or modules. For more details about Convergence’s submission and refereeing process, please see our [Guidelines for Authors](#).

Janet Heine Barnett
Amy Ackerberg-Hastings
Editors, *MAA Convergence*

Nominating Committee Report

The nominating committee is soliciting nominations for the position of 2024–2026 Section Vice Chair. This position on the Executive Committee is reserved for a faculty member, associated with a two-year school, within the Rocky Mountain Section. In addition to acting as a contact between the Executive Committee and the two-year colleges within the section, duties of the Vice Chair include serving as a member on the Program Committee. This individual also appoints individuals to serve on the Teaching Awards Selection Committee and as the Section Student Activities Coordinator. Details of the duties for this position are described in the [Section Procedures Handbook](#). Only members of the MAA are eligible to serve, but self-nomination is permitted and encouraged. Voting will be held electronically following the 2024 Section Business Meeting in April.

For more information or to make a nomination, contact any member of the Nominating Committee.

Michael Jacobson (committee chair), michael.jacobson@ucdenver.edu
Janet Heine Barnett, janet.barnett@csupueblo.edu
Martha Garlick, martha.garlick@sdsmt.edu

Meetings Calendar

NCTM Annual Meeting, Washington DC
October 25–28, 2023

AMATYC Annual Conference, Omaha, NE
November 9–12, 2023

Joint Mathematics Meetings, San Francisco, CA,
January 3–6, 2024

Pikes Peak Regional Undergraduate Mathematics Conference, USAFA, CO
March 2, 2024

MAA Rocky Mountain Section Meeting, Colorado College
April 19–20, 2024

MAA MathFest; Indianapolis, IN,
August 7–10, 2024

AMATYC Annual Conference, Atlanta, GA
November 14–17, 2024

NCTM Annual Meeting, Chicago, IL
September 25–28, 2024

Joint Mathematics Meetings, Seattle, WA
January 8–11, 2025

MAA Rocky Mountain Section Guidance for Speakers

The Rocky Mountain Section would like to offer the following suggestions regarding preparation of a talk at the conference.

Presentation Length

All contributed talks will be placed in 20-minute time slots, ideally, approximately 15 minutes for the presentation with a few minutes at the end available for questions. Please prepare your presentation to fit the time allotted.

A moderator will be assigned to facilitate each session of presentations. The moderator will introduce the speaker, act as “host” for the session, signal the end of the presentation, and ask for questions from the audience

You can present your talk using Power Point slides, PDF, or similar, which will greatly enhance the pace of a presentation.

Presentation Tips

Do not include too much detailed technical material in your presentation. Focus on providing the audience with insight into your topic and its key notions. Remember that most members of the audience will not be experts in the field you are discussing, and that the audience is likely to include students.

Please make sure that the slide content is typed in a font big enough and with spacing adequate to be seen clearly. We recommend including only a small amount of text on each slide.

Grants Available

Section Activity Grants Available

The purpose of the Section Activity Grants program is to assist Section members in funding projects in support of Section Mission. These projects must be clearly tied to one or more of the Rocky Mountain Section Mission Goals and the project director must be a member of MAA. Grants will not exceed \$750 per project. Matching funds from host institution are preferred, but not required. To apply for a Section Activity Grant, submit the following to the Section Secretary/Treasurer:

- (a) Description of project (no more than one page)
- (b) Statement of how project supports Mission Goals (no more than one page)
- (c) Estimated budget
- (d) Description of matching funds available, if any
- (e) Vitae of project director(s).

If funded, a report on the project will be filed by the Project Director upon completion (no more than one page) and a report will be made at the next meeting of the Section. Complete details on the selection process and application guidelines are posted on the section website. Grants will be reviewed once a year. All application materials are due November 1st of each year.

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.

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

For information on the Burton W. Jones Award for Distinguished College or University Teaching of Mathematics, check out: https://www.rockymountain.maa.org/s/BWJones_nomination_form-2dgc.docx

Nomination forms should reach Section Awards Coordinator, Kyle Riley, Kyle.Riley@sdsmt.edu, by December 15 of each year. Complete nomination materials should reach Awards Coordinator by January 15 of each year.

Please consult the Section webpage (<http://www.rockymountain.maa.org/awards>) for complete guidelines.

**The Rocky Mountain Section of
The Mathematical Association of America
Early Career Teaching Award
for Excellence in Teaching in the Mathematical Sciences**

For information on the Early Career Teaching Award, check out:
https://www.rockymountain.maa.org/s/EarlyCareer_nomination_form-tz6b.docx

Nomination forms should reach Section Awards Coordinator, Kyle Riley, Kyle.Riley@sdsmt.edu, by December 15 of each year. Complete nomination materials should reach Awards Coordinator by January 15 of each year.

Please consult the Section webpage (<http://www.rockymountain.maa.org/awards>) for complete guidelines.

Voluntary Section Dues

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.

Contributions may also be made in support of the Pikes Peak Regional Undergraduate Mathematics Conference; simply choose "Other" on the coupon below and specify "PPRUMC" in the space provided.

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
- _____ Teaching Award Fund (Burton W. Jones DTA and ECTA)
- _____ 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:
Rebecca Swanson
MAA Rocky Mountain Section Treasurer/Secretary
Applied Mathematics and Statistics
Colorado School of Mines
1500 Illinois St
Golden, CO 80401

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.

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.”

