

# Fall 2020 Newsletter

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

Fall 2020 Newsletter in PDF Format for Printing

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# 2020 - 2021 Section Officers and Committee Members

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

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 are 1 year terms unless otherwise noted

## Section Executive Committee Officers for 2020 – 2021

<b>Chair</b> (2020-2021)	Dan Swenson Black Hills State University Spearfish, SD 57799	<a href="mailto:daniel.swenson@bhsu.edu">daniel.swenson@bhsu.edu</a> 605-642-6425
<b>Past Chair</b> (2017 - 2020)	Alexander Hulpke Colorado State University Fort Collins, CO 80523	<a href="mailto:alexander.hulpke@colostate.edu">alexander.hulpke@colostate.edu</a> 970-491-4288
<b>Vice-Chair</b> (2018-2020)	Kenneth Monks Front Range Community College Boulder County Campus	<a href="mailto:Kenneth.Monks@frontrange.edu">Kenneth.Monks@frontrange.edu</a> 303-678-3611
<b>Secretary/ Treasurer</b> (2020-2023)	Mona Mocanasu MSU Denver Denver, CO	<a href="mailto:mmocanas@msudenver.edu">mmocanas@msudenver.edu</a> 303-615-0747
<b>MAA National Rep</b> (2020-2023)	Tracii Friedman Colorado Mesa University GrandJunction, CO	<a href="mailto:tfriedma@coloradomesa.edu">tfriedma@coloradomesa.edu</a> 970.248.1667
<b>Program Co-Chairs</b>	Mona Mocanasu John Ethier Lindsay Packer Metropolitan State University of Denver	<a href="mailto:mmocanas@msudenver.edu">mmocanas@msudenver.edu</a> <a href="mailto:jethier@msudenver.edu">jethier@msudenver.edu</a> <a href="mailto:lpacker@msudenver.edu">lpacker@msudenver.edu</a>

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## Other Committee Members and Representatives

### Section Nominating Committee

Nathaniel Miller (Chair), UNC	<a href="mailto:nathaniel.miller@unco.edu">nathaniel.miller@unco.edu</a>
Kyle Riley, SDSMT	<a href="mailto:kyle.riley@sdsmt.edu">kyle.riley@sdsmt.edu</a>
Greg Oman, UCCS	<a href="mailto:goman@uccs.edu">goman@uccs.edu</a>

### DTA Awards Selection Committee

Alexander Hulpke (Chair), CSU	<a href="mailto:alexander.hulpke@colostate.edu">alexander.hulpke@colostate.edu</a>
Rob Tubbs (UCB)	<a href="mailto:Tubbs@Colorado.edu">Tubbs@Colorado.edu</a>
Travis Kowalski (SDSMT)	<a href="mailto:Travis.Kowalski@sdsmt.edu">Travis.Kowalski@sdsmt.edu</a>
Jennifer Holmes, PPCC	<a href="mailto:jennifer.holmes@ppcc.edu">jennifer.holmes@ppcc.edu</a>

### **ECTA Awards Selection Committee**

Alexander Hulpke (Chair), CSU  
Rob Tubbs (UCB)  
Molly Moran (Colorado College)  
Jennifer Holmes, PPCC

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[tubbs@Colorado.edu](mailto:tubbs@Colorado.edu)  
[mmoran@coloradocollege.edu](mailto:mmoran@coloradocollege.edu)  
[jennifer.holmes@ppcc.edu](mailto:jennifer.holmes@ppcc.edu)

### **Section Awards Coordinator**

(2017-2020) Jeremy Muskat, Western State Colorado University [jmuskat@western.edu](mailto:jmuskat@western.edu)

### **Section Student Activity Coordinator**

(2020-2023) Divya Vernerey, UC Boulder [divya.vernerey@colorado.edu](mailto:divya.vernerey@colorado.edu)

### **Higher Education Representative on CCTM Governing Board**

(2019-2021) Guilden Karakok, UNC [guilden.karakok@unco.edu](mailto:guilden.karakok@unco.edu)

### **Section Book Sales Coordinator**

(2018-2021) Janet Heine Barnett, CSU - Pueblo [janet.barnett@csupueblo.edu](mailto:janet.barnett@csupueblo.edu)

### **Section NExT Committee**

(2019-2022) Rebecca Swanson, Colorado School of Mines [swanson@mines.edu](mailto:swanson@mines.edu)  
Amanda Schaeffer-Fry, MSU Denver [aschaef6@msudenver.edu](mailto:aschaef6@msudenver.edu)

### **Public Information Officer and Section Liaison Coordinator**

(2017-2020) Mona Mocanasu, MSU Denver [mmocanas@msudenver.edu](mailto:mmocanas@msudenver.edu)

### **Website Editor**

(2019-2021) George Heine, Math and Maps [gheine@mathnmaps.com](mailto:gheine@mathnmaps.com)

### **Newsletter Editor**

(2019-2022) Pam Peters [pam.peters@ppcc.edu](mailto:pam.peters@ppcc.edu)  
Pikes Peak Community College  
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## **Chair's Corner**

Dear Friends,

What an odd and uneasy time this is.

The last 6 months have seen almost every part of our lives turned upside-down. Americans are feeling worried and on-edge. We may feel exhausted, overworked, isolated. But we are not alone! Fundamentally, I think of our Section as a place of fellowship, and this community is important now more than ever.

Indeed, among the many, many disappointments of this past spring, was the fact that our annual face-to-face Section meeting was canceled.

(This was a small sacrifice, all things considered, but then we know that small things have a way of adding up!) I have been

attending the spring meetings since 2010, and I know many of you have much longer streaks. A lot of us really look forward to that time each year as a chance to reconnect with colleagues and friends.

Understandably, everyone wants to know about the 2021 meetings, and the Executive Committee is currently working to find a way for us to hold our annual meeting safely. While we do not have all the details yet about exactly what this would look like, it may well prove necessary to hold a virtual meeting this year. If you have opinions or expertise to offer regarding the upcoming meeting, or would like to be involved in some way, please contact me! I would like to hear from you.

On a related topic, we are currently working on a plan to hold a virtual small-scale "mini-meeting,"

over Zoom or something similar, late this fall. We have in mind just a few parallel sessions, probably on a Saturday morning. I imagine that a number of you have research or classroom experiences that you'd like to present, and there have not been many presentation venues recently, so this could relieve a bit of the pressure. Also, we hope this experience can serve as a test-run and provide lessons that would apply to a larger-scale virtual meeting in April, should that prove necessary. You can contact me or Kyle Riley (SD School of Mines), if you would like to be a part of something like this.

I do have some happy and exciting news to report. First, I would like to recognize Dr. Molly Moran (Colorado College), the winner of the 2020 Early Career Teaching Award. Her application was truly a pleasure to read, and the award committee was thrilled to honor such a worthy candidate. Thank you also to Dr. Andrea Bruder for nominating Dr. Moran! I'd strongly encourage everyone to please consider nominating your colleagues for either the ECTA or the Burton W. Jones Teaching Award. It is important to recognize our colleagues for their outstanding achievements.

Also, on this topic: as discussed at our Business Meeting over Zoom from this past spring, the requirements for the Early Career Teaching Award have been changed, so a PhD is no longer required. We believe that this will allow us to recognize talented and dedicated teachers in our Section. Thank you very much to the committee members who worked on this proposal.

And of course, thank you to everyone who works on behalf of the Section. Thank you to each of our Coordinators and Committee members. And thank you and welcome to Tracii Friedman (Colorado Mesa University), who has just taken over as MAA National Representative.

Thanks very much to our Past Chair, Alexander Hulpke (Colorado State University). Your insight and thoughtfulness have been immensely helpful to me as I have moved into this role. And to all of my past and present colleagues on the Executive Committee: thank you, thank you, thank you. It is a pleasure to work with each of you, and your hard work is noticed and appreciated.

To all of you reading this, who make the Section what it is, thank you very much. I am proud to be a part of this group. I look forward to seeing you in April, in whatever form that may take, and I wish you the very best in 2021, and beyond.

Sincerely,  
Dan Swenson  
Black Hills State University  
Chair, Rocky Mountain Section

## Congressional Representative Report

The MAA Congress met July 29, 30, and 31 for two hours each day via Zoom. The focus of Day 1 was the inaugural [2019 MAA Impact Report](#). This report is intended to highlight successes of the MAA over the past year, giving both members and non-members a holistic view of the MAA. The impact of the MAA in our own lives was discussed. Some key resources that were mentioned in this discussion as being invaluable include: MAA Sections, MAA Connect, and PIC Math.

During Day 2's meeting, there were two break-out sessions devoted to identifying ways that the MAA can best support Sections and its membership. The two needs sent to me by members of our own section were support from MAA National for online registration and payment for Section Meetings and support for recruitment and programming for Section Project NEXt. Each was echoed by many other sections. Other requests for national support included:

- Providing a platform for sections holding virtual meetings.
- Support for Section websites.
- Providing "Section Meeting in a Box" modules to assist with section meeting programming (or perhaps Section NEXt). These modules could include ideas for content, layouts, and/or sessions. There would be no requirement to use such modules.

In his Presidential Update, MAA President, Michael Dorff, discussed official MAA statements made in response to current events addressing the impact of COVID-19 on promotion and tenure; the immigration policy of the White House and its impact on STEM research, and on colleges and universities; anti-racism and Black Lives Matter.

On each of Day 1 and Day 2, there was a session centered on Diversity, Equity and Inclusion (DEI). We discussed ways that each of us can be an advocate. Ideas included: being aware of and working to broaden processes for hiring, committee memberships, award selection, etc; listening to all voices in the room as well as asking “who is not in this room” and actively seeking them out; creating new spaces to connect and belong; and many more. The MAA began DEI webinars on August 17<sup>th</sup> and the Oct/Nov issue of FOCUS will be dedicated to DEI.

On Day 3, MAA Treasurer, Jim Daniel gave a budget update indicating that the MAA seems on target for what was budgeted for 2020 although the pandemic creates some uncertainty. Also noted was that there is significant financial information available in the MAA Impact Report. MAA Past-President Deanna Haunsperger promoted “Micro-Volunteering” as a way is to connect needs of short-term help (lasting from an hour to a day) with potential volunteers. Some examples include:

- Need feedback on a paper.
- Have math idea and would like to collaborate.
- Need someone to look over an online class page before it goes live.
- Want faculty to attend a virtual student poster session later in the semester.
- Give a new talk to student clubs or discuss graduate school opportunities.
- Section seeks advice.

MAA launched the Micro-Volunteering Community on MAA Connect on August 17<sup>th</sup>.

If you have any questions or input that you would like me to share with the MAA, please don't hesitate to reach out:

Tracii Friedman  
Colorado Mesa University  
Representative, Rocky Mountain  
Section  
[tfriedma@coloradomesa.edu](mailto:tfriedma@coloradomesa.edu)

## Section News

### South Dakota School of Mines and Technology

There have been a lot of changes this year and we wanted to pass along a few highlights. **Julie Dahl** retired in May and we are sad to see her leave. The university did agree to our recommendation that she be granted emerita status. We also had **Roben Rudy-Hinker** recently decide to leave our department to pursue other interests and we will miss her devotion to the classes at the precalculus level. We were granted the opportunity to search for a replacement on Julie's position and we were able to recruit **Neil Steinberg**. Neil graduated from Nebraska-Lincoln with a Mathematics doctorate and was recently finishing a visiting position teaching at Drake University. In other good news, **Tristin Lehmann** was promoted to Lecturer and will be starting with the new title this fall. We also survived our exile from our home in the McLaury Building while it had been scheduled for extensive renovations and we look forward to moving back to new offices and teaching in new classrooms.

We continue to be very active with undergraduate research and having students actively engaged in academic competitions. We had student teams that participated in the Putnam, the MCM, and two data analysis competitions in Minnesota. We also completed a large renovation of our bachelor's degree and the new program will be starting this fall. We recently learned that **Kyle Caudle** and **Karen Braman** were part of a research team that was granted an NSF grant that will start soon.

Lastly, many veterans of the profession will recognize that hiring a new President regularly



brings new branding and marketing materials for the university. Our official name according to the state remains South Dakota School of Mines and Technology, but our new branding has embarked on the use of South Dakota Mines, a copy of the new logo is included below. We look forward to seeing everyone in our future meetings in whatever form they may take.



### **NEW Postdoctoral Fellows**

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

**Hannah Director**  
**NSF Mathematical Sciences Postdoctoral Fellow, PhD University of Washington**



Hannah Director's research focuses on space and space-time data, Bayesian methods, and improving statistical methods used in climate science. Director will be working with Professor Doug Nychka.

**Kalila Sawyer**  
**Postdoctoral Teaching Fellow**  
**PhD University of Kentucky**



Kalila Sawyer is a Tropical Geometer whose focus is on using tableaux and other combinatorial objects to calculate certain bounds on invariants of certain algebraic curves. Sawyer comes to Mines from the University of Kentucky, where she completed her doctoral studies.

**Athena Sparks**  
**Postdoctoral Teaching Fellow**  
**PhD University of Colorado**



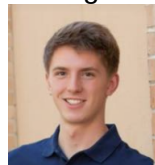
Athena Sparks completed her PhD at CU Boulder in algebra and computability theory. Her thesis was on the number of clonoids and their applications to the computational complexity of Promise Constraint Satisfaction Problems. Sparks is also interested in developing innovative uses of technology for undergraduate education.

### **STUDENT AWARDS**

**Leah Reeder (Computational & Applied Mathematics)** and **Aidan Dykstal (Statistics)** received the 2019-2020 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.



**William Schenken** received the 2019-2020 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.



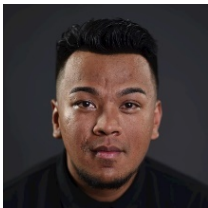
**Griffin Hampton** received the 2019-2020 Ryan Sayers Memorial Scholarship. The Ryan Sayers Memorial Award recognizes the outstanding academic achievements of a graduating student, majoring in engineering physics and/or applied mathematics and statistics, who has performed significant undergraduate research.



**Adam Stansbury** received the 2019-2020 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.



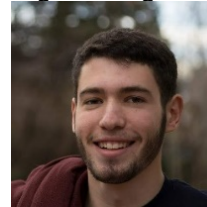
**Rathana Preap** received the 2020 AMS Honors Fund to Honor Excellence in Teaching and Learning Award. This award recognizes and honors Carol Job and Sharon McAuliffe, both of whom put a tremendous amount of effort into supporting students who struggled in their initial coursework or student life at 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.



**Haley Vinton** received the 2020 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.



**Amit Rotem** 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.



**Leah Reeder** received the Waltman Award. The William D. Waltman, 1899, Award is presented to the graduating senior whose conduct and scholarship have been most nearly perfect and who has most nearly approached the recognized characteristics of an American gentleman and/or lady during the recipient's entire collegiate career.



AMS Graduate Teaching Fellow **Dave Montgomery** is the 2020 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.





**David Kozak** was the 2020 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.



### **FACULTY AWARDS**

The Mines' AMS department is proud of their award-winning faculty and staff:



**Karin Leiderman Gregg**, Associate Professor of Applied Mathematics and Statistics, was awarded an Excellence in Research award for Junior Faculty. This award recognizes faculty with fewer than 10 years of self-directed research for their outstanding accomplishments.



**Karin Leiderman Gregg** and **Cecilia Diniz Behn** were honored for mentoring graduate students through the creation of the Mathematical Biology Research Group (MBRG), which provides a safe space in which students learn about new ideas, talk about mathematics research and hone their professional communication skills.

### **FACULTY PROMOTION**

Three members of the Mines Applied Mathematics and Statistics Department were promoted from Teaching Associate Professor to Teaching Professor this past spring:

- Terry Bridgman



- Holly Eklund



- Jennifer Strong



### **FACULTY GRANTS**

- **Soutir Bandyopadhyay**: NREL "Solar Resource Gap-filling and Forecasting."
- **Cecilia Diniz Behn**: Boston University "Pilot study to test cognitive and emotional problems associated with pediatric hypersomnia conditions."
- **Karin Leiderman**: NIH "An integrated computational and experimental approach to understanding the hemostatic response during treatment of bleeding."
- **Jennifer Ryan**: Air Force Research Lab "Multi-Scale Higher Order Methods for Underresolved Simulations Useful in Turbulence Modelling."

### **OTHER NEWS**

Recent Mines graduate, **Leah Reeder**, was awarded an NSF Graduate Research Fellowship. Reeder will be studying computational and mathematical engineering at Stanford University.



## Pikes Peak Community College

Like most academic institutions across the nation, the Mathematics Department at PPCC has spent a great deal of time and energy this year adapting to the environment created by the pandemic. When the announcement came in March that students would not be returning to campus after spring break, our faculty immediately initiated a project to transition all 253 face-to-face math sections to virtual instruction. We partnered with our Center for Excellence in Teaching and Learning (CETL) staff to develop workshops for instructors on topics ranging from online pedagogy to online instructional tools. Several of our best online teachers volunteered to serve as coaches for those less experienced with virtual instruction. These initiatives enabled PPCC to successfully convert all math sections to virtual instruction, and all 74 faculty and instructors were able to successfully finish their spring courses online.

Over the summer, our faculty began to prepare for Remote Synchronous Instruction (RSI). At PPCC, this teaching modality currently requires each math instructor to conduct at least 50% of their course via WebEx or Zoom during regularly scheduled call periods. Our faculty and instructors helped develop and conduct another round of workshops and used D2L to make a wide range of online teaching and technology resources available to our instructors. During the fall term, the Math Department has 196

sections being taught via RSI, and many are being conducted 100% synchronously.

This fall the Math Department is also supporting a PPCC initiative designed to provide additional flexibility to our students during these turbulent times. Six faculty are piloting twelve Hyflex classes—a teaching modality that enables the students to choose between in-person, remote, and online instruction throughout the course. Working in close coordination with our eLearning department, our IT experts, and our High Impact Practice leads, this team is leading the way in experimenting with and implementing this new type of course at PPCC. Initial student response is very positive, and we plan to expand our Hyflex offerings fourfold in Spring 2021. We look forward to comparing student outcomes and satisfaction with our RSI and online courses.

It has been a challenging year, but the commitment and dedication of our faculty and instructors continues to result in the realization of PPCC's vision: *Students succeed at PPCC!*  
Jeff Joles  
Assoc. Dean of Mathematics

### Is news from your school missing?

Send your news to your department liaison now with a request to forward it to the Pam Peters, Newsletter Editor for inclusion in the next issue. [pam.peters@ppcc.edu](mailto:pam.peters@ppcc.edu)

## Henry L. Alder Award for Distinguished Teaching

The **Henry L. Alder Award for Distinguished Teaching** honors beginning college or university faculty whose teaching has been extraordinarily successful and whose effectiveness in teaching undergraduate mathematics is shown to have influence beyond their own classrooms. National MAA has granted **Dr. Ken Monks** an Alder Award for 2020. Dr. Monks' citation reads:

Dr. Monks' love for mathematics is a family tradition. He shares his lifelong love of math as an inspirational teacher who will go to extraordinary lengths to help students achieve great things. Always eager to explore new ways of engaging students, he asks his students to take risks. Students in his Differential Equations/Linear Algebra course collaborate on homework using a free shared-editing cloud platform for LaTeX documents called Overleaf. He has authored open-source calculus texts and

develops group projects for his courses in which students present in mini-conference format. A particularly unique addition to his curriculum is the use of history of mathematics to add context to the material. At the invitation of the PIs of the NSF-funded TRansforming Instruction in Undergraduate Mathematics Education via Primary Historical Sources (TRIUMPHS) project, Dr. Monks has authored three “primary source projects” (PSPs) that offer students the general benefits of inquiry-based learning within this unique historical approach. These time-intensive approaches truly stretch students outside their traditional math comfort zone.

Outside the classroom, Dr. Monks adds to the overall community of FRCC and beyond. He coordinates the math lab, the Putnam club, master teacher awards, and faculty senate, as well as presenting at various academic conferences. The Putnam students have done remarkably well for freshman and sophomore level students, with a team score in the top third nationally in 2019, competing against four-year schools. Along with his family of mathematicians, they offer a summer math camp (Prove it! Math Academy) for high school students. They teach students to transition from computation-based questions to proof-based questions used in math competitions such as USA(J)MO and USAMTS. In addition, he stays busy with his research program and duties as president of the Colorado Mathematical Association of Two-Year Colleges. Having been recognized with teaching awards at his institution and in his MAA section, we believe Dr. Kenneth M Monks’ dedication to the teaching and learning of mathematics deserves full consideration for the Alder Award.

## Reminder: Section Awards Nomination Due Dates

Just a reminder that nominations for the section awards are coming due soon. Now is the time to recognize the outstanding faculty in the Rocky Mountain section.

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

And

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

Nomination forms should reach Section Awards Coordinator by **December 15** of each year. Forms are included later in this newsletter. Complete nomination materials should reach Awards Coordinator by **January 15** of each year.

Section Awards Coordinator: Jeremy Muskat, Western State Colorado University, Hurst Hall, Gunnison CO 81231

Please consult the Section webpage (<http://sections.maa.org/rockymt>) for complete guidelines.

## Early Career Teaching Award



The Rocky Mountain Section of the MAA is very pleased to announce that the 2020 recipient of the Early Career Teaching Award is Dr. Molly Moran, of Colorado College.

Dr. Moran's nomination truly demonstrates that she is an outstanding and dedicated teacher. By all accounts, she shines in the classroom, finding innovative ways to help students learn. Along with her deep subject knowledge and her thoughtful approach to the art of teaching, students and peers report that Dr. Moran displays a passion for her subject and a profound commitment to inclusivity in mathematics. Dr. Moran also has an impressive record of mentoring undergraduates in research: her students have presented at venues such as the Joint Meetings in Mathematics, and they describe this experience as "eye-opening" and "life-changing." (Some of these students have since gone on to graduate study in mathematics.) It was a pleasure for the committee to hear about the wonderful work she is doing.

We congratulate Dr. Moran on her exemplary service to her students, her institution, her section, and her discipline. We know that we will continue to see great things from her in the years to come.

This award includes a personalized plaque, and a check in the amount of 100\* dollars (rounded to the nearest cent).

## Early Career Teaching Award Change

The criteria for the ECTA has been modified to include faculty members that have completed a master's instead of restricting access for this section award to only members who hold a doctorate. The Henry Alder Award (the national award) requires a PhD so ECTA continues to be distinct from the national award in cases where our awardee does not have a PhD. The new eligibility requirements are (with the changes in red text):

To be eligible the candidate must:

- Hold a doctorate **or master's** degree
- Be college or university teachers who have held a full-time faculty appointment in a college department of mathematical sciences in the Rocky Mountain Section for at least two, but not more than seven, years since receiving **their degree** doctorate. A nominee who has just started the eighth year of teaching at the time of the application is still eligible for the award. If a nominee has held **their his or her doctorate degree** for more than seven years, then the nominator must indicate on the nomination form the times that the nominee was not teaching. Common exceptions to the **seven** 7-year limit are maternity, paternity, family, or medical leaves. Sabbaticals and postdoctoral fellowships are exceptions only if they involved no teaching and the application does not include accomplishments made during these times.
- Hold membership in the Mathematical Association of America

For any questions, contact the ECTA Awards Selection Committee:

Alexander Hulpke (Chair), CSU  
Rob Tubbs (UCB)  
Molly Moran (Colorado College)  
Jennifer Holmes, PPCC

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[mmoran@coloradocollege.edu](mailto:mmoran@coloradocollege.edu)  
[jennifer.holmes@ppcc.edu](mailto:jennifer.holmes@ppcc.edu)

## The 2020 Rocky Mountain Section Meeting April 17 - 18, 2020 - Postponed

The 2020 Rocky Mountain Section meeting was scheduled for April 17-18, 2020 on the campus of Metropolitan State University of Denver, Denver, CO. The meeting was postponed due to COVID. More information on possible conference rescheduling pending.

For more information, contact the Program Co-Chairs:

**Dr. Mona Mocanasu** ([mmocanas@msudenver.edu](mailto:mmocanas@msudenver.edu))  
**Dr. John Ethier** ([jethier@msudenver.edu](mailto:jethier@msudenver.edu))  
**Dr. Lindsay Packer** ([lpacker@msudenver.edu](mailto:lpacker@msudenver.edu))

## Virtual Contributed Session Proposal

Hello Fellow Rocky Mountain Section Members!

I know many people have learned a lot regarding what to do (and what not to do) with the big move online last spring. I would like to see if there is interest in a virtual contributed session where we get small groups from the regional mathematics community to present their tips and tricks on moving college mathematics courses online. If you share this interest (as a presenter, participant, or organizer) then please feel free to contact me. I would like to get something organized that could take place late this calendar year or early 2021. You can reach me at [Kyle.Riley@sdsmt.edu](mailto:Kyle.Riley@sdsmt.edu) Thank you!

## Section Nominating Committee Report

Our spring election was delayed until last month due to the coronavirus. Congratulations to Mona Mocanasu, who was re-elected as Secretary/Treasurer, and to Ken Monks, who was elected vice-chair. Thanks to everyone who voted!

The nominating committee is now soliciting nominations for the important position of section chair for an election to be held in late spring 2021 (two-year term, usually this office is filled by the preceding year's Chairperson-Elect). Nominations can be sent to Nathaniel Miller, nominating committee chair, at [nathaniel.miller@unco.edu](mailto:nathaniel.miller@unco.edu). Self-nominations are encouraged.

Duties of the Chair include:

1. Provide leadership for Section; much of the section business can be conducted by phone or e-mail.
2. Receive and answer mail from national MAA.
3. Contribute a Chairperson's report for each newsletter.
4. Arrange and preside at all Executive Committee Meetings. In recent years, the only in-person Executive Committee Meeting is held on the Thursday evening preceding Annual Spring meeting.
5. Preside at all section Business Meetings. Traditionally, the section business meeting has been the first event on Saturday of the annual spring section meeting.
6. Represent the Section at the Section Officers' Meeting held in conjunction with MathFest and the Joint Mathematics Meetings, or designate a replacement. The Section receives \$250 from national, if it had an official representative (other than the Section Representative of the MAA Congress) at the MathFest



Section Officers; Meeting in the previous year, to be used as partial travel reimbursement to its official representative. (See <https://www.maa.org/community/maa-sections/policies-and-forms/expensereimbursement>.)

7. Serves as ex-officio member of all standing committees
8. Coordinate with Program Chairperson to arrange for invited speaker(s) from national MAA speaker list. See Section Meeting Organization Handbook for details.
9. In each year during which the Officers of the Section include a Chairperson Elect, appoint a member for a two-year term to the Teaching Award Committee.
10. Appoint a member (each year) to the Nominating Committee.
11. Appoint Section NExT Coordinator / Committee; see Section IV of this handbook for appointment dates.

Nathaniel Miller (University of Northern Colorado) [Nathaniel.Miller@unco.edu](mailto:Nathaniel.Miller@unco.edu)

Kyle Riley (South Dakota School of Mines and Technology) [Kyle.Riley@sdsmt.edu](mailto:Kyle.Riley@sdsmt.edu)

Greg Oman, Chair (University of Colorado, Colorado Springs) [goman@uccs.edu](mailto:goman@uccs.edu)

Note: Elected officers of the section must be members of the MAA.

**Respectfully submitted,  
The Nominating Committee**

## Report on the Seventeenth Annual Pikes Peak Undergraduate Mathematics Conference

Roughly a month before the start of the COVID-19 pandemic, approximately 75 students, faculty and other mathematical enthusiasts came together on Saturday, February 22, 2020 for an exciting day of mathematics at the 17<sup>th</sup> Annual PPRUMC. Hosted by Colorado State University-Pueblo, the site of the very first-ever PPRUMC in 2004, this year's event attracted 50 undergraduate student participants with representation from 9 different schools.

Dr. Katie Morrison, University of Northern Colorado opened Saturday's program with her Keynote Address *Graphs, Neural Networks, and Emergent Dynamics in the Brain*. Her lively introduction to some of the neuroscience phenomena informing her research set the tone for the remainder of this one-day conference, which also featured 14 contributed talks presented by a total of 15 undergraduate mathematics students. A complete list of presenters and their talk titles appears below.)

The program also included a conference luncheon, followed by a panel presentation entitled *What Next? Beyond the Undergraduate Mathematics Major* was held. Panelists Graham Harper (CSU - Fort Collins), Kaitlyn Martinez (Colorado School of Mines), Cole Mcgee (Booz Allen Hamilton) and Capt. Dawn Sanderson (USAFA) shared their personal experiences working within various professional and educational settings, along with advice concerning graduate school and career opportunities in mathematics and their enthusiasm!

This year's conference was again offered at no cost to participants, thanks to generous funding from the MAA Rocky Mountain Section, CSU-Pueblo (Department of Mathematics and Physics and the Office of Admissions), Colorado College (Department of Mathematics), the University of Colorado at Colorado Springs (Department of Mathematics), and private donations. CSU-Pueblo's Dr. Paul Chacon again donated framed fractal images to the collection of door prizes awarded at the closing ceremony, with additional door prizes provided by the Rocky Mountain Section and various campus offices at CSU-Pueblo. The PPRUMC Steering Committee is also grateful to the local organizing committee (Janet Heine Barnett, Rick Kreminski and Frank Zizza), Joleen Ryan (Administrative Assistant, CSU-Pueblo

Department of Mathematics) and to all the faculty who contributed their time and expertise to preparing student presenters, recruiting student participants and moderating sessions.

## Section NExT-RM

### **What is Section NExT-RM?**

The Rocky Mountain Section of the New Experiences in Teaching program (NExT- RM) is a smaller scale version of the national Project NExT program serving the members of the Rocky Mountain Section of the Mathematical Association of America (MAA). The goals of Section NExT-RM are to support faculty in the first five years of their academic career and to establish links among faculty in the section.

### **Who is eligible?**

Section NExT-RM is open to non-tenured faculty members in the Rocky Mountain Section who are within the first five years of teaching at a university, four-year college, or two-year college within the Rocky Mountain Section of the MAA.

### **What are my expectations as a fellow?**

Section NExT-RM Fellows will remain in contact with one another via an electronic network, and are expected to attend both the Rocky Mountain MAA Section meetings. In particular, they will take part in the planning of some of the Section NExT-RM sessions.

### **Does this cost me anything?**

Section NExT-RM is a selective professional development program—an application is required. We will provide the fellows with lunch on Friday and Saturday of the work-shop, and expect fellows to obtain travel and the remaining funding (approximately \$150 for one night's hotel, registration, and banquet) from their departments or other sources.

**The 2020 Section NExT-RM cohort was postponed due to the COVID crisis. With the ongoing pandemic, we hope to instead have the new cohort in Spring 2022.**

Questions? Contact the Section NExT-RM Coordinators Mandi Schaeffer Fry, MSU Denver ([aschaef6@msudenver.edu](mailto:aschaef6@msudenver.edu)) or Rebecca Swanson, Colorado School of Mines ([swanson@mines.edu](mailto:swanson@mines.edu)).

## MAA Rocky Mountain Section Spring Virtual Business Meeting

The Spring Section Business Meeting was held Apr 18, 2020 08:48 AM. The meeting was virtual, based on the cancellation of the Spring Conference due to COVID-19.

The meeting recording is available at : [https://mines.zoom.us/rec/share/zpUvN7-gziRJE6Pg9EPfXa8\\_L9-5T6a80HdM86IOzhkfoSOWPjFm3QCh\\_bejXLnB](https://mines.zoom.us/rec/share/zpUvN7-gziRJE6Pg9EPfXa8_L9-5T6a80HdM86IOzhkfoSOWPjFm3QCh_bejXLnB)

# MAA Rocky Mountain Section

## Suggestions for Speakers

The Rocky Mountain Section would like to offer the following suggestions, especially to first-time speakers, regarding preparation of a talk at the conference.

1. The standard talk length is 20 minutes, (with longer times available upon request, subject to the limitations of the program). Thus, you should prepare your presentation to fit the time allotted. If possible, plan to leave a few minutes at the end of your presentation for questions.
2. A moderator will be assigned to facilitate each session of presentations. The moderator 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 moderator prior to the beginning of the session including your talk. Plan to bring about 35 handouts and be prepared to give attendees your e-mail 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 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.
5. All session rooms will be equipped with a projector and a laptop hook up. Accordingly, you can present your talk using Power Point slides, PDF, or similar, which will greatly enhance the pace of a presentation. However, make sure that notes on the slides or transparencies are typed in a font big enough and with spacing adequate to be seen clearly 50 to 100 feet away.

### 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 1<sup>st</sup> 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.

## Meetings Calendar

NCTM annual meeting; St. Louis, MO

October 21-24, 2020

Joint Mathematics Meetings; Washington DC

January 6-9, 2021

NCTM annual meeting; Atlanta, GA

September 22-25, 2021

MAA MathFest; Sacramento, CA;

August 4-7, 2021

Joint Mathematics Meetings; Seattle, WA

January 5-8, 2022

MAA MathFest; Washington DC;

August 3-6, 2022

Joint Mathematics Meetings; Boston, MA

January 4-7, 2023

MAA MathFest; Tampa, FL;

August 2-5, 2023



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)

Email Address \_\_\_\_\_

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)? \_\_\_\_\_

On a separate page, briefly describe the unusual or extraordinary 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 forms should reach Section Awards Coordinator by December 15 of each year.  
Complete nomination materials should reach Awards Coordinator by January 15 of each year.

Jeremy Muskat, Section Awards Coordinator,  
Western State Colorado University, Hurst Hall, Gunnison CO 81231

Please consult the Section webpage (<http://sections.maa.org/rockymt>) 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

Early Career Teaching Award Nomination Form

Name of Nominee \_\_\_\_\_  
(First name first)

Email Address \_\_\_\_\_

College or University Affiliation \_\_\_\_\_

College or University Address \_\_\_\_\_

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

Is the nominee a member of the MAA? \_\_\_\_\_

Has the nominee taught at least half time in a mathematical science  
for at least two but not more than seven years? \_\_\_\_\_

On a separate page, briefly describe the unusual or extraordinary 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 forms should reach Section Awards Coordinator by December 15 of each year.  
Complete nomination materials should reach Section Awards Coordinator by January 15 of each year.

Jeremy Muskat, Section Awards Coordinator,  
Western State Colorado University, Hurst Hall, Gunnison CO 81231

Please consult the Section webpage (<http://sections.maa.org/rockymt>) for complete guidelines.

## Early Career Teaching Award Guidelines

Part of the core mission for the Rocky Mountain Section is to provide recognition for quality mathematics teaching. The Early Career Teaching Award was established to recognize excellence in teaching in the mathematical sciences for faculty that are early in their career.

### Eligibility

Nominees must:

- Hold a doctorate or master's degree
- Be college or university teachers who have held a full-time faculty appointment in a college department of mathematical sciences in the Rocky Mountain Section for at least two, but not more than seven, years since receiving their degree. A nominee who has just started the eighth year of teaching at the time of the application is still eligible for the award. If a nominee has held their degree for more than seven years, then the nominator must indicate on the nomination form the times that the nominee was not teaching. Common exceptions to the seven year limit are maternity, paternity, family, or medical leaves. Sabbaticals and postdoctoral fellowships are exceptions only if they involved no teaching and the application does not include accomplishments made during these times.
- Hold membership in the Mathematical Association of America

### Guidelines for nomination

Nominees for the award may be made by any member of the Rocky Mountain Section of the MAA.

Nominees should:

- Be recognized as extraordinarily successful in their teaching
- Have effectiveness in teaching undergraduate mathematics that can be documented
- Have had influence in their teaching beyond their own classrooms
- Foster curiosity and generate excitement about mathematics

Nomination form is due December 15

Complete nomination packet is due January 15

### Nomination Packet

A complete nomination packet should consist of the following documentation as it is described below.

1. **Nomination Form and One-Page Summary** - Describe the unusual and personal and professional qualities of the nominee that contribute to his or her extraordinary teaching success, and attach to this completed nomination form.
2. **Narrative (Up to 2 pages)** - Describe the nominee's extraordinary success in teaching by providing a narrative of the nominee's background, experience, teaching style, special contributions, other teaching awards, and any additional evidence of the nominee's unusual achievement in teaching. Note especially effectiveness in teaching undergraduate mathematics and influence beyond the nominee's own classrooms. The narrative should not exceed two single-spaced pages.

**3. Additional Documentation (Up to 2 pages)** - Submit no more than two pages of further evidence to document the nominee's extraordinary teaching success. This documentation will vary greatly from institution to institution, but may include summaries of peer or student evaluations, comments on teaching, possible increases in numbers of majors in mathematics (with clear evidence of the nominee's substantial responsibility for them), possible student success in mathematics competitions (with clear evidence of the nominee's substantial responsibility for them), success in research in mathematics conducted by undergraduate students under the direction of the nominee, production of superior quality honors theses by undergraduate students under the direction of the nominee, development of curricular materials successfully used by colleagues, adoption of the nominee's teaching methods or techniques by experienced colleagues, service as a respected adviser for a student group, etc.

Nominators should bear in mind that the selection committee for the award might view a nomination more positively if it is accompanied not just by carefully chosen testimonials from a few selected students and faculty, but also reports comments and criticism which is representative of the whole spectrum of opinion among students and faculty on the nominee's teaching.

**4. Letters of Recommendation (Each letter is one page. Maximum of 5 letters.)**

- o Two letters from the nominee's present or former students.
  
- o One letter from the nominee's colleagues (could be the department chair).
  
- o At most two additional letters from anyone qualified to comment on the nominee's extraordinary teaching success, including additional students and/or colleagues.

## 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.

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 \_\_\_\_\_

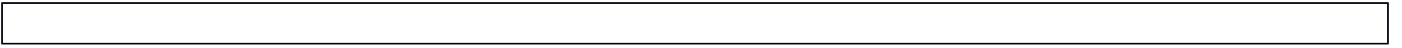
Please indicate in the space provided how you would like your dues to be used:

\_\_\_\_\_ 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:

Mona Mocanasu  
MAA Rocky Mountain Section Treasurer/Secretary  
Metropolitan State University of Denver  
Department of Mathematical and Computer Sciences  
Campus Box 38; PO Box 173362  
Denver, CO 80217





# 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  $e^{\frac{1}{i}} + 1 = 0$  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  $\frac{1}{i}$ ; 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.”