MAA CONTRIBUTED PAPER SESSIONS
Call for Abstracts – MAA MathFest 2025

The Mathematical Association of America will hold its annual summer meeting at the SAFE Credit Union Convention Center, 1401 K Street, Sacramento, CA, August 6-9, 2025. The purpose of this announcement is to alert participants to the themes of contributed paper sessions. MAA MathFest participants are invited to submit abstracts of papers consistent with the themes of the sessions described below. The contributed paper sessions will be scheduled all day for Thursday, Friday, and Saturday, August 6-9. Information about scheduling will be posted online as soon as it is available. Presentations in the contributed paper sessions are normally 15 minutes in length. **Each participant may make at most one presentation in a contributed paper session but may be listed as co-authors on more than one abstract.** Each session room will be equipped with a computer projector and a screen. Speakers are encouraged to make use of the computer projector but must provide their own laptop computer or have access to one (along with, ideally, a preferred device HDMI adapter). Instructions to submit an abstract will be available on the MAA MathFest website once registration launches in February. The deadline for submission of abstracts is April 15, 2025. Early submissions are encouraged.

1. ***Advancing Data Science Education: Integrating Pedagogical Innovation with Ethical Practice***
Description:
We invite presentations on innovative teaching strategies in data science education, including course design, assessment methods, and project implementations. Share your experiences integrating AI tools, addressing data ethics, using culturally relevant datasets, and connecting statistical concepts to real-world applications. This SIGMAA-sponsored session welcomes scholarly contributions that advance pedagogical practices and support faculty development in statistics and data science education.
Organizers:
Helen Burn, *Highline College*
Mike LeVan, *Transylvania University*
Immanuel James Williams, *California Polytechnic State University San Luis Obispo*
Sponsor: SIGMAA on Statistics and Data Science Education (SIGMAA SDS-ED)

2. ***Building Community in Mathematics Departments***
Description: Has your university, college, or department implemented anything which has improved your life inside or outside the classroom? Has it taken any steps to build or foster community among your faculty? Have you had any successes and ideas for building community among undergraduates within your mathematics department? Let us come together and share these ideas, because the more fulfilled we can be in our jobs the better educators we can be for our students.
Organizers:
Molly Lynch, *Hollins University*
Michael Weselcouch, *Roanoke College*
Maggie Rahmoeller, *Roanoke College*
Abby Bishop, *University of Cincinnati*
Alex Dempsey, *University of Cincinnati*

Erin Williams, *University of Central Oklahoma*
Scott Williams, *University of Central Oklahoma*
Dale Pearson, *Dallas College*

3. *Building Undergraduate Research Programs as a New Faculty*
Description: Starting a research program as a new faculty member can be daunting but also an exciting opportunity to engage undergraduates in meaningful research. This session invites presenters to share strategies for transitioning from dissertation research to manageable undergraduate projects, adapting complex topics, and creating sustainable research agendas. Presenters will offer practical insights for developing effective undergraduate research programs.
Organizers:
Vinodh Kumar Chellamuthu, *Utah Tech University*
Violeta Vasilevska, *Utah Valley University*
Cara Sulyok, *Lewis University*
Lauren L Rose, *Bard College*
Md Istiaq Hossain, *Stephen F. Austin State University*
Sponsor: SIGMAA on Undergraduate Research (SIGMAA UR)

4. *Collaborative Partnerships for Equitable Mathematics Learning: Research and Practice*
Description: This session examines how collaborations involving researchers, practitioners, professional learning providers, and ed-tech developers contribute to the design and development of equitable mathematics instructional materials for underserved K-12 students. Presentations will showcase research findings, evidence-based practices, and how to foster effective collaboration in the creation of innovative and equitable mathematics materials.
Organizers:
Ann Edwards, *WestEd*
Phil Vahey, *Menlo Education Research*

5. *Community-Responsive Activities for Math Circles*
Description: Math Circles represent a promising approach to engage youth in authentic mathematical experiences. Weaving community-responsive activities into the curriculum can make learning more meaningful and empowering for students. Presenters will describe their intended audience and showcase engaging and enjoyable Math Circle activities that leverage their students' assets, highlighting the ways their activities are responsive to that audience.
Organizers:
Cynthia Sanchez Tapia, *California State University Dominguez Hills*
Alessandra Pantano*, University of Ccalifornia Irvine*
David Crombecque, *American Institute of Mathematics*
Tom Stojsavljevic, *Beloit College*
Sayonita Ghosh Hajra, *California State University, Sacramento*
Nick Rauh, *Seattle Universal Math Museum*
Jeffrey Musyt, *Slippery Rock University*
Lauren Rose, *Bard College*
Sponsor: SIGMAA Math Circles for Students and Teachers (SIGMAA MCST)

6. *Creating Connections in the Classroom: Mathematics Across the Disciplines*
Description: Today's careers require a blend of skills and knowledge from a variety of disciplines, yet in the classroom we often silo these areas of expertise. This session will provide educators with examples

and leverage for creating cross-curricular material for mathematics courses, bridging the gap between how we illustrate math in the classroom and how it is used in everyday life.

Organizers:
Mike May, *Saint Louis University*
Elizabeth Donovan, *Murray State University*
Daniel Ozimek, *Saint Joseph's University*
Amanda Beecher, *Ramapo College of New Jersey*

Sponsors:
Mathematics Across the Disciplines (MAD), a subcommittee of the Committee on the Undergraduate Program in Mathematics (CUPM)
Curriculum Renewal Across the First Two Years (CRAFTY), a subcommittee of CUPM

7. *Cryptology in Undergraduate Education*

Description: Cryptology, the study of making and breaking codes and ciphers, has a wide range of connections to core topics found throughout undergraduate mathematics, statistics, and computer science. This session invites presentations that share engaging activities for cryptology-related topics in such courses, class projects with a cryptology focus, cryptology specific course design, and undergraduate research projects in cryptology.

Organizers:
Christian Millichap, *Furman University*
Catie Adamo, *University of Notre Dame*
Stuart Boersma, *Central Washington University*
Jennifer Bready, *Mount Saint Mary College*
Claire Frechette, *Boston College*

Sponsor: The Crypto Educators

8. *Data Science Examples for Enriching Introductory Math Courses*

Description: Over the past decade, data science has evolved into a mainstream field. Contemporary students want to understand how their data is used, which can serve as a treasure trove of examples to motivate them to learn new mathematical concepts. We seek "new motivations for old topics:" examples, activities, projects, and modules to engage lower-division students through data science concepts.

Organizers:
Marissa Masden, *University of Puget Sound*
Julia Eaton, *University of Washington Tacoma*

9. *Environmental and Biological Research in Mathematics, in and out of the Classroom*

Description: Two SIGMAAs join to host an important shared session. Environmental and biological challenges continue to play major roles in our society and students are increasingly concerned.

Organizers:
Timothy Comar, *Self-Employed*
Rania Robeva, *Randolph-Macon College*
Anne Yust, *University of Pittsburgh*
Eric Marland Marland, *Appalachian State University*

Sponsors:
SIGMAA on Environmental Mathematics (SIGMAA EM)
SIGMAA on Mathematical and Computational Biology (SIGMAA BIO)

10. ***Equity Minded Placement Practices and Strategies in Undergraduate Mathematics***
Description: Institutions across the country are redesigning their placement processes and assessment tools. Placement in entry level mathematics courses is crucially important--it is students' first exposure to college mathematics when they matriculate at their institutions. This session showcases research reports and case studies for placing and advising students for their initial post-secondary mathematics courses and supporting student success in those courses. This session invites scholarly contributions that focus on (1) ensuring equitable placement for all students, (2) implementing placement strategies, and (3) evaluating their effectiveness.
Organizers:
Emily Gismervig, *University of Washington Bothell*
Rejoice Akapame, *University of Washington Bothell*
Nicole Hoover, *University of Washington Bothell*
Luke Tunstall, *Trinity University*
Junalyn Navarra Madsen, *Texas Woman's University*
Allan Donsig, *University of Nebraska-Lincoln*
Sponsor: MAA Committee on Articulation and Placement

11. ***From Theory to Practice – Applying Literature-Based Teaching Practices in the Real Classroom***
Description: This session celebrates new faculty who have applied evidence-based teaching practices in their classrooms. Presenters will share how research from resources such as PRIMUS, JRUME, the MAA's Instructional Practices Guide, and others have shaped their teaching. They'll discuss what worked, what needed adjustment, and future plans, offering real-world insights on translating theory into practice.
Organizers:
Emma Kathryn Groves, *United States Military Academy*
Jessica Libertini, *United States Military Academy*
Joseph Dorta, *United States Military Academy*
Russell Nelson, *United States Military Academy*
Akshat Das, *United States Military Academy*

12. ***In the Real with Applications of Differential Equations for Learning***
Description: A joint CODEE-SIMIODE session invites evidence-based approaches to teaching and learning of Differential Equations, and the applications that engage students and instructors alike. Presenters can engage in meaningful conversations, spur new ideas, and freshen our teaching and learning experiences. Presenters are encouraged to submit their work to the CODEE Journal and/or SIMIODE Qubes Hub, our open-access, peer-reviewed venues.
Organizers:
Therese Shelton, *Southwestern University*
Viktoria Savatorova, *Central Connecticut State University*
Maila Hallare, *US Air Force Academy*
Brian Winkel, *Systemic Initiative for Modeling Investigations & Opportunities with Differential Equations (SIMIODE)*
Beverly Henderson West, *Cornell University*
Sponsors:
Community of Ordinary Differential Equations Educators (CODEE)
Systemic Initiative for Modeling Investigations & Opportunities with Differential Equations (SIMIODE)

13. ***Incorporating Alternate Forms of Assessment and Alternative Grading Systems in Undergraduate Mathematics Classes***
Description: We seek presentations on alternate forms of assessment and alternative grading systems to

traditional grading that have been incorporated into an undergraduate mathematics course where all students are required to participate and that were successfully and unsuccessfully implemented. Topics for alternate forms of assessment could include projects, portfolios, or presentations. A variety of alternative grading systems could be featured, with presentations providing details on their motivations as well as the setup of their grading system, their syllabi, and how it was implemented, and a discussion of issues with the implementation, including troubleshooting. We are particularly looking for presenters who are willing to share resources that demonstrate practical ways of adding these products to a course.

Organizers:

Victoria Chebotaeva, *University of Southern California*
Britney Hopkins, *University of Central Oklahoma*
Leslie Jones, *University of Tampa*
Kayla Reardon, *University of Southern California*
Calum Rickard, *University of Southern California*
Felicia Tabing, *University of Southern California*
Paul Tokorcheck, *University of Southern California*

14. ***Innovative Pathways: A Showcase of Early Career Research in Applied Mathematics***

Description: This session highlights the research of early career applied mathematicians, covering topics such as mathematical modeling, computational methods, interdisciplinary applications, and more. Presenters will share both their research and experiences navigating early career challenges, such as forming new collaborations and involving undergraduates in research. Presentations are expected to be scholarly in nature and provide insights into establishing a research trajectory.

Organizers:

Cara Sulyok, *Lewis University*
Kelly Buch, *Austin Peay State University*

15. ***Inquiry-Based Learning***

Description: The goal of Inquiry-Based Learning (IBL) is to help students develop a deep understanding of mathematical concepts and the processes of doing mathematics by engaging students directly with mathematical phenomena, questions, and communities. This session invites scholarly presentations on the use of inquiry-based and Process-Oriented Guided Inquiry Learning methods for teaching and learning.

Organizers:

Lee Roberson, *University of Colorado-Boulder*
Joe Barrera, *Converse College*
Mel Henriksen, *Wentworth Institute of Technology*
Mami Wentworth, *Wentworth Institute of Technology*
Rebekah Jones, *University of Colorado-Boulder*
Jessie Oehrlein, *Fitchburg State University*
Chris Oehrlein, *Oklahoma City Community College*
Katie Johnson, *Florida Gulf Coast University*
Kayla Heffernan, *University of Pittsburgh at Greensburg*

Sponsor: SIGMAA on Inquiry-Based Learning (SIGMAA IBL)

16. ***Integrating Current Events into Quantitative Literacy: Adapting Curriculum to Reflect Today's World***

Description: This session invites educators to share lessons or projects that incorporate current events

into quantitative literacy courses. By integrating real-world data and timely news, instructors can engage students and enhance their critical thinking. Participants will explore strategies for updating curricula with relevant topics, fostering media literacy, and navigating the challenges of keeping coursework aligned with evolving societal issues.

Organizers:
Rachael Lund, *Michigan State University*
Luke Tunstall, *Trinity University*
Catherine Crockett, *Point Loma Nazarene University*
Katherine Appenzeller, *The University of Texas at Austin*
Sponsor: SIGMAA on Quantitative Literacy (SIGMAA QL)

17. ***Lessons Learned from Alternative Grading Implementations***

Description: Alternative grading practices aim to promote growth mindset in students by focusing on students' proficiency in clearly-defined learning objectives with multiple opportunities to demonstrate that proficiency. This session will share innovations and lessons learned from these implementations in various math courses. We are particularly interested in presentations of scholarly reflections on or evidence of the effectiveness (broadly defined) of these practices.

Organizers:
Drew Lewis, *Center for Grading Reform*
Sharona Krinsky, *Center for Grading Reform, California State University Los Angeles*
Randall Helmstutler, *University of Mary Washington*
Jennifer Moorhouse, *Hartnell College*
Lipika Deka, *California State University Monterey Bay*

18. ***MAA Section Activities – Innovative Programs and Initiatives***

Description: Alternative grading practices aim to promote growth mindset in students by focusing on students' proficiency in clearly-defined learning objectives with multiple opportunities to demonstrate that proficiency. This session will share innovations and lessons learned from these implementations in various math courses. We are particularly interested in presentations of scholarly reflections on or evidence of the effectiveness (broadly defined) of these practices.

Organizers:
Karen Clark, *The College of New Jersey*
Julie Barnes, *Western Carolina University*
Sean Droms, *Lebanon Valley College*
Kuei-Nuan Lin, *Penn State Greater Allegheny*
Sponsor: MAA Committee on Section Meetings

19. ***MAA Session on Applied Mathematical Solutions and Innovations in Business, Industry, and Government (BIG)***

Description: The growing complexity of open-ended problems in business, industry, and government can be daunting, but applied mathematicians, operations researchers, and engineers tackle these challenges daily. This session invites presenters to share real-world problem-solving examples, showcasing both successful applications and unresolved issues. Presentations will foster collaboration and inspire future solutions. BIG SIGMAA membership is not required to participate.

Organizers:
Mihhail Berezovski, *Embry-Riddle Aeronautical University*
Vinodh Kumar Chellamuthu, *Utah Tech University*

Namyong Lee, *Minnesota State University Mankato*
Sponsor: SIGMAA on Business, Industry, and Government (SIGMAA BIG)

20. *Mathematics and Sports*
Description: Availability of play-by-play statistics, video-based spatial data, and wearable technology data have led to innovative sports analytics studies. This research is impacting all aspects of sports: strategy, player evaluation, ranking methods, marketing, etc. Research presentations, expository talks, preliminary reports, and pedagogical contributions are all welcome in this session. Projects accessible to or involving undergraduate students are particularly encouraged for submission.
Organizers:
Filippo Posta, *Phoenix College*
Amanda Harsy, *Lewis University*
Sponsor: SIGMAA on Mathematics and Sports (SIGMAA Sports)

21. *Onboarding, Mentoring, and Supporting Newly Hired Mathematics Instructors*
Description: The goals of this session are to share practices for supporting and mentoring mathematics instructors, disseminate and inventory low-resource opportunities for new faculty professional development and community building, and encourage thoughtful planning for how to welcome faculty, post-doctoral fellows, and graduate students to the profession. Presentations may be based on personal or departmental experience and/or research in professional development.
Organizers:
Maria Wesslen, *University of Toronto Mississauga*
Alex Rennet, *University of Toronto Mississauga*
Jaimal Thind, *University of Toronto Mississauga*
Mindy Capaldi, *James Madison University*
Alicia Prieto-Langarica, *Youngstown State University*
Kristin A. Camenga, *Juniata College*
John Thompson, *University of Pittsburgh at Johnstown*
Cassie Williams, *University of Wisconsin – Madison*
Justin Gash, *Franklin College*
Sponsor: MAA Committee on Professional Development

22. *Peer Support in College Mathematics*
Description: Peer support includes all models of instruction using peers interacting with students to support their academic success. The aftermath of the pandemic and national trends away from remediation have reignited interest in this effective pedagogical tool. This session will introduce participants to the diversity of peer support models in use across the country, incorporating perspectives from faculty, staff, and students.
Organizers:
Corey Shanbrom, *California State University, Sacramento*
Matthew Krauel, *California State University, Sacramento*
Vincent Pigno, *California State University, Sacramento*

23. ***Redesigning Mathematics and Statistics Curricula in the Age of AI-Driven Computing***

Description: This session explores how individual instructors, departments and institutions are incorporating computational tools, particularly those facilitated by artificial intelligence or natural language models, in classroom practices and in programmatic curricular design. Speakers might present strategies and examples for integrating AI-driven computation in ways that serve as instructional and pedagogical tools to enhance student learning, or they might present how they are incorporating the use of AI-driven computation as integrated learning outcomes at the course or program level.

Organizers:

Yesim Demiroglu, *California State University, Sacramento*
Santosh Kandel, *California State University, Sacramento*
Matthew Krauel, *California State University, Sacramento*
Jasdeep Pannu, *California State University, Sacramento*
Lauren Perry, *California State University, Sacramento*
Vardayani Ratti, *California State University, Sacramento*
D Brian Walton, *James Madison University*
Shanda Hood, *University of Arkansas*
Bernd Sing, *University of the West Indies (Cave Hill campus, Barbados)*
Joe Fields, *Southern Connecticut State University*

Sponsor: SIGMAA on Mathematics Instruction Using the Web (SIGMAA WEB)

24. ***Research on Undergraduate Mathematics Education***

Description: The goals of this session are to promote quality research in undergraduate mathematics education, to disseminate educational studies to the greater mathematics community, and to facilitate the impact of research findings on mathematics pedagogy. Presentations may be based on research in any undergraduate mathematical area. Examples include studies about students' reasoning or mathematical practices, teaching practices, curriculum design, and professional development.

Organizers:

Kaitlyn Serbin, *The University of Texas Rio Grande Valley*
Deborah Moore-Russo, *The University of Oklahoma*
Shandy Hauk, *San Francisco State University*
Brian Katz, *California State University Long Beach*

Sponsor: SIGMAA on Research in Undergraduate Mathematics Education (SIGMAA RUME)

25. ***SoTL: Focus on Game-based Learning***

Description: This SoTL (scholarship of teaching and learning) session explores the use of game-based pedagogy, an increasingly popular strategy for promoting classroom engagement at the college-level. It focuses on instructional tools such as board games and puzzles used in mathematics classrooms. This is a scholarly venue for instructors to share their experience, exchange ideas, and communicate outcomes resulting from innovative instructional strategies.

Organizers:

Sungju Moon, *Nevada State University*
Kelly Pohland, *Cornell University*
Ben McLaughlin, *Asbury University*
Jackie Dewar, *Loyola Marymount University*
Celil Ekici, *Texas A&M University – Corpus Christi*
Ellen Goldstein, *Boston College*

Jordan Kostiuk, *Brown University*
Karen Stanish, *Keene State College*

26. ***Strengthening the Mathematical and Statistical Preparation of Secondary Mathematics Teachers through the Mathematical Knowledge for Teaching***

Description: We live in a time of extraordinary and accelerating change where new knowledge, new technologies, and ways of doing and communicating mathematics continue to emerge and evolve. The purpose of this session is to bring together mathematicians, statisticians, mathematics educators, statistics educators, secondary mathematics teachers, and other stakeholders invested in secondary teacher preparation to consider and learn about ways to strengthen the mathematical and statistical preparation of secondary mathematics teachers.

Organizers:
Elizabeth Arnold, *Montana State University*
Eileen Faulkenberry, *Tarleton State University*
Matthew Haines, *Augsburg University*
Jay Jahangiri, *Kent State University*
Victor Oxman, *Western Galilee College, Israel*
Catherine Paolucci, *Mathematical Association of America*

Sponsors:
Special Interest Group of the MAA on Mathematical Knowledge for Teaching (SIGMAA MKT)
MAA Committee on the Mathematical Education of Teachers (COMET)=

27. ***Teaching Flops: Learning and Adapting when Teaching Goes Astray***

Description: This session will help us learn from our teaching missteps, and from what doesn't work, to help us become better teachers. Each presentation in this session will describe a time that a pedagogical strategy was employed but did not have the expected results, with a reflection on possible causes for this dissonance. As a community, we will explore the limitations of teaching strategies and factors influencing their success.

Organizers:
Russ Goodman, *Central College*
Erin Griesenauer, *Eckerd College*