



jmm Joint
2025 Mathematics
Meetings

Seattle • January 8–11

Seattle Convention Center and the
Sheraton Grand Seattle, Washington

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*Please note: The times listed herein were current as of press time.
For the most up to date JMM 2025 scheduling information, please
see: https://jointmathematicsm meetings.org/meetings/national/jmm2025/2314_timetable.html.*

Welcome to JMM 2025! Reimagined by 17 (and counting!) partners and happening in person, this largest annual mathematics gathering in the world features 3,000+ presenters and organizers. It offers you a broad range of addresses, sessions, posters, presentations, panels, exhibits, minicourses, professional enhancement programs, and social gatherings.

Expect to learn, to celebrate mathematics and mathematicians, and to build and renew relationships.

The reimagined Joint Mathematics Meetings feature new organizations, disciplines, participants, and programming to advance research, pedagogy, inclusion, career opportunities, the arts, recreation, and more. And this year, Artificial Intelligence is a theme that will infuse many of these events.

Scientific exploration and discovery remain at the heart of JMM 2025. Leaf through the robust offerings on the following pages to find how JMM partners (listed below) have poured their collective energy into this gathering. Prepare to come together to connect and collaborate. At JMM 2025, we will learn from each other. We will see old friends, and we will make new ones. Stay tuned for JMM updates via social media and jointmathematicsm meetings.org. We cannot wait to see you January 8–11 in Seattle!

Best regards,



Boris Hasselblatt, Secretary of the AMS

As of press time, these are the 17 organizations that have joined forces to organize the JMM:

- American Institute of Mathematics
- American Mathematical Society
- American Statistical Association
- Association for Symbolic Logic
- Association for Women in Mathematics
- Centre de recherches mathématiques—Pacific Institute for the Mathematical Sciences—Atlantic Association for Research in Mathematical Sciences
- Consortium for Mathematics and its Applications
- International Linear Algebra Society
- Julia Robinson Mathematics Festival
- Mathematical Association of America
- MSRI/Simons Laufer Mathematical Sciences Institute
- National Association of Mathematicians
- Pi Mu Epsilon
- Pro Matematica Arte
- Society for Industrial and Applied Mathematics
- Spectra, the Association for LGBTQ+ Mathematicians
- Transforming Post-Secondary Education in Mathematics

Seattle, Washington

Seattle Convention Center and the Sheraton Grand Seattle

January 8–11, 2025

Wednesday – Saturday

Meeting #1203

This meeting includes the annual meetings of the AMS, American Institute of Mathematics (AIM), American Statistical Association (ASA), Association for Women in Mathematics (AWM), and National Association of Mathematicians (NAM), winter meeting of Association for Symbolic Logic (ASL), and sessions/events by them and Society for Industrial and Applied Mathematics (SIAM), Consortium for Mathematics and its Applications (COMAP), Centre de recherches mathématiques—Pacific Institute for the Mathematical Sciences—Atlantic Association for Research in Mathematical Sciences (CRM-PIMS-AARMS), International Linear Algebra Society (ILAS), Julia Robinson Mathematics

Festival (JRMF), The Simons Laufer Mathematical Sciences Institute (SLMath), formerly Mathematical Sciences Research Institute (MSRI), Mathematical Association of America (MAA), Association for LGBTQ+ Mathematicians (Spectra), Transforming Post-Secondary Education in Mathematics (TPSE), Pi Mu Epsilon (PME), and Pro Matematica Arte (PMA).

Associate Secretary for the AMS Scientific Program: Brian Boe

Announcement issue of *Notices*: October 2024

Program first available on AMS website: June 2024

Deadlines

For organizers: Expired

For abstracts: September 10, 2024

The scientific information listed below may be dated. For the latest information, see https://jointmathematicsm meetings.org/meetings/national/jmm2025/2314_program.html.

Joint Invited Addresses

Neena Gupta, Indian Statistical Institute, *The Abhyankar-Sathaye Conjecture for Linear Hyperplanes* (AWM-AMS Noether Lecture).

Victor H. Moll, Tulane University, *Integral Tales: Some Unexpected Connections* (MAA-SIAM-AMS Hrabowski-Gates-Tapia- McBay Lecture).

Ravi Vakil, Stanford University, *Title to be announced* (MAA-AMS-SIAM Gerald and Judith Porter Public Lecture).

Rebecca Willett, University of Chicago, *Title to be announced* (AAAS-AMS Invited Address).

AMS Invited Addresses

Mohammed Abouzaid, Stanford University, *One Hundred Years of Morse Theory*.

Semyon Dyatlov, Massachusetts Institute of Technology, *Uncertainty Principles in Quantum Chaos*.

Pamela Estephania Harris, Williams College, *Title to be announced* (AMS Lecture on Education).

Svetlana Jitomirskaya, University of California Irvine, *Title to be announced* (AMS Colloquium Lecture III - Svetlana Jitomirskaya, University of California Irvine).

Svetlana Jitomirskaya, University of California Irvine, *Title to be announced* (AMS Colloquium Lecture II - Svetlana Jitomirskaya, University of California Irvine).

Svetlana Jitomirskaya, University of California Irvine, *Title to be announced* (AMS Colloquium Lecture I - Svetlana Jitomirskaya, University of California Irvine).

Kristin Lauter, Meta, *Title to be announced* (AMS Erdős Lecture for Students).

Yann LeCun, Meta, *Title to be announced* (AMS Josiah Willard Gibbs Lecture).

Lester Mackey, Stanford University, *Advances in Distribution Compression* (von Neumann Lecture).

Kirsten Wickelgren, Duke University, *Arithmetic Aspects of Enumerative Geometry*.

Alex Wright, University of Michigan, *Title to be announced* (AMS Maryam Mirzakhani Lecture).

Invited Addresses of Other JMM Partners

AIM Alexanderson Award Lecture, speaker and title to be announced.

Bonnie Ghosh-Dastidar, American Statistical Association and RAND Statistics Group, *Title to be Announced* (ASA Invited Address).

Maria-Florina Balcan, Carnegie Mellon University, *Machine Learning Theory: New Challenges and Connections* (ASL Invited Address).

Anton Bernshteyn, UCLA, *Some Recent Progress in Descriptive Combinatorics* (ASL Invited Address).

Alexi Block Gorman, Ohio State University, *Characterizing Expansions of R and N by k -automatic sets* (ASL Invited Address).

Theodore A. Slaman, University of California, Berkeley, *Extending Borel's Conjecture from Measure to Dimension* (ASL Invited Address).

Daniel Turetsky, Victoria University of Wellington, *True Stages for Computability and Effective Descriptive Set Theory* (ASL Invited Address).

Jinhe Ye, University of Oxford, *Lang-Weil Estimate in Finite Difference Fields* (ASL Invited Address).

Andy Zucker, University of Waterloo, *Topological Dynamics and Continuous Logic* (ASL Invited Address).

Joan Ferrini-Mundy, University of Maine, *Learning, Teaching, and Doing Mathematics in the Era of AI: New Challenges and Opportunities* (TPSE Invited Address - Joan Ferrini-Mundy, University of Maine).

Wilfrid Gangbo, UCLA, *Free Viscosity Solutions* (CRM-PIMS-AARMS Invited Address).

Anne Greenbaum, University of Washington, *Are Iterative Linear System Solvers Backward Stable?* (ILAS Invited Address).

Eric Hsu, San Francisco State University, *Title to be announced* (MAA Lecture on Teaching and Learning).

NAM Claytor-Woodard Lecture, speaker and title to be announced.

NAM Cox-Talbot Lecture, speaker and title to be announced.

Rajesh Kasturiragan, Socratus Foundation, *Title to be announced* (POMSIGMAA Guest Lecture).

Steven Lee, Department of Energy – Office of Science, *Title to be announced* (SIAM Invited Address).

Emmy Murphy, University of Toronto, Mississauga, *Title to be announced* (Spectra Lavender Lecture).

Daniela Witten, University of Washington, *Selective Inference for Real-World Problems* (PME J. Sutherland Frame Lecture).

Awards Celebration

Join the JMM 2025 Partners in celebrating the achievements of a selection of their prize and award winners at 4:30 p.m. PST on Wednesday. All participants are invited and encouraged to attend.

Special Sessions of the JMM

If you are volunteering to speak in a Special Session, you should submit your abstract as early as possible via the abstract submission form found at jointmathematicsm meetings.org/meetings/abstracts/abstract.pl?type=jmm.

American Institute for Mathematics Special Sessions

Alexanderson Award Winner Special Session (Code: AIMSS4A), **Michelle Ann Manes**, American Institute of Mathematics. *Applications and Generalizations of Zero Forcing* (Code: AIMSS3A), **Mary Flagg**, University of St. Thomas, and **Veronika Furst**, Fort Lewis College.

Little School Dynamics: Cool Research by Researchers at PUIs (Code: AIMSS1A), **Kimberly Ayers**, California State University, San Marcos, **Ami Radunskaya**, Pomona College, **David M. McClendon**, Ferris State University, **Han Li**, Wesleyan University, and **Andy Parrish**, Eastern Illinois University.

Math Circles for Makers, Creators, and Artists (Code: AIMSS2A), **Nick Rauh**, Seattle Universal Math Museum, **Tom G. Stojisavljevic**, Beloit College, **Gabriella A. Pinter**, University of Wisconsin, Milwaukee, **Jeffrey Musyt**, Slippery Rock University, **A. Gwinn Royal**, Ivy Tech Community College, and **Lauren L Rose**, Bard College.

Pedagogical Practices in Math Circles and Other Non-Traditional, Informal, and Recreational Math Spaces (Code: AIMSS5A), **Amber Verser**, Hampshire College Summer Studies in Mathematics, **Li-Mei Lim**, Boston University, and **Douglas O'Roark**, Math Circles of Chicago.

AMS Special Sessions

Some sessions are cosponsored with other organizations. These are noted within the parenthesis at the end of each listing, where applicable.

35th Anniversary of AI and Math (Code: SS 1A), **Martin Charles Golumbic**, University of Haifa, and **Frederick Hoffman**, Florida Atlantic University.

Advancements in Generative Artificial Intelligence for Data Analysis: From Creativity to Innovation (Code: SS 2A), **Yin-Tzer Shih**, National Chung Hsing University.

Advances in Function Theoretic Operator Theory (Code: SS 3A), **Christopher Felder**, Indiana University Bloomington, and **Raymond Cheng**, Old Dominion University.

Advances in Modeling and Analysis in Life Sciences (Code: SS 4A), **Xiang-Sheng Wang**, University of Louisiana at Lafayette, and **Daozhou Gao**, Cleveland State University.

Advances in Nonlinear Dispersive and Kinetic Equations (Code: SS 5A), **Svetlana Roudenko**, Florida International University, and **Justin Holmer**, Brown University.

Advances in Numerical Methods for Fluid Dynamics (Code: SS 6A), **Rebecca Durst**, University of Pittsburgh, and **Lucas Bouck**, Carnegie Mellon University.

Advances in Operator Algebras (Code: SS 7A), **Kathryn McCormick**, California State University, Long Beach, **Priyanga Ganesan**, University of California San Diego, and **Changying Ding**, University of California Los Angeles.

Advances in Statistical Modeling and Data Analysis (Code: SS 8A), **Shusen Pu**, University of West Florida.

Affine Algebraic Geometry and \mathbb{G}_a -Actions (Code: SS 9A), **Neena Gupta**, Indian Statistical Institute.

AI Applications in Health and Medicine (Code: SS 10A), **Robyn Shuttleworth** and **Chaitra Agrahar**, Altos Labs.

AI for the Working Mathematician (Code: SS 11A), **Akshay Venkatesh**, Institute for Advanced Study, **Jordan S. Ellenberg**, University of Wisconsin-Madison, and **Gunnar Carlsson**, Stanford University.

AI meets Cryptography (Code: SS 12A), **Kristin E. Lauter**, Microsoft Research, **Shi Bai**, Florida Atlantic University, and **Emily Wenger**, Meta AI.

Algebraic Methods in Machine Learning and Optimization (Code: SS 13A), **Jiayi Li**, University of California, Los Angeles, **Guido Francisco Montufar**, MPI MiS, **Yulia Alexandr**, University of California, Los Angeles, and **Julia Lindberg**, The University of Texas at Austin.

Algebraic Statistics in Our Changing World (Code: SS 14A), **Yulia Alexandr**, University of California, Los Angeles, **Elizabeth Gross**, University of Hawai'i at Mānoa, **Jose Israel Rodriguez**, University of Wisconsin-Madison, and **Teresa Yu**, University of Michigan.

Algorithmic Approaches for Promoting Fairness in ML (Code: SS 15A), **Lara Kassab**, University of California, Los Angeles, and **Anna Ma**, University of California, Irvine.

Analysis and Differential Equations at Undergraduate Institutions (Code: SS 16A), **Daniel W. Van Wyk**, Fairfield University, and **Taryn Cristina Flock**, Macalester College.

Applications of Algebraic Geometry (Code: SS 17A), **Timothy Duff**, University of Washington, **Taylor Brysiewicz**, University of Western Ontario, **Jessie Loucks-Tavitas**, University of Washington, and **Frank Sottile**, Texas A&M University.

Applied and Computational Commutative Algebra (Code: SS 18A), **Brandon Stone**, Georgia Tech Research Institute.

Applied Category Theory (Code: SS 19A), **Priyaa Varshinee** and **Evan Patterson**, Topos Institute, and **Nelson Niu**, University of Washington.

Approximate Models of Fluid Motion (Code: SS 20A), **Anastassiya Semenova**, University of Washington, and **John D. Carter**, Seattle University.

Arithmetic Dynamics of Single and Multiple Maps (Code: SS 21A), **Robert L. Benedetto**, Amherst College, **Xander Faber**, IDA / Center For Computing Sciences, and **Bella Tobin**, Agnes Scott College.

Artificial Intelligence Meets Computational Mathematics for Biological and Ecological Applications (Code: SS 22A), **Md Kamrujjaman**, University of Dhaka, **Muhammad Mohebujjaman**, University of Alabama at Birmingham, and **Taufiqar R. Khan**, University of North Carolina at Charlotte.

Bridging Theory and Practice in Ecological Modeling with Reaction Diffusion Equations (Code: SS 23A), **Jerome Goddard II**, Auburn University Montgomery, and **Ratnasingham Shivaji**, University of North Carolina Greensboro.

Business, Entrepreneurship, Government, Industry and Nonprofit (BEGIN) Career Development within Mathematics Programs (Code: SS 24A), **Anna Kinzel**, American Mathematical Society.

Categorical Generalizations of Conditionalization (Code: SS 25A), **Theodore V. Theodosopoulos**, Nueva School, **Owen Biesel**, Southern Connecticut State University, **Colin McSwiggen**, New York University, and **Michael Titelbaum**, University of Wisconsin–Madison.

Coding Theory for Modern Applications (Code: SS 26A), **Hiram H. Lopez**, Virginia Tech, **Allison Beemer**, University of Wisconsin-Eau Claire, **Eduardo Camps Moreno**, Virginia Tech, and **Rafael D’Oliveira**, Clemson University.

Cohomology of Arithmetic Groups, Mapping Class Groups, and Moduli Spaces (Code: SS 27A), **Andrew Putman**, University of Notre Dame, and **Sam Payne**, UT Austin.

Coloring Problems in Combinatorics (Code: SS 28A), **Neal Bushaw**, Virginia Commonwealth University, **Daniel P. Johnston**, Trinity College, and **Jeremy Quail** and **Puck Rombach**, University of Vermont.

Combinatorial and Probabilistic Methods in Group Theory (Code: SS 29A), **Be’eri Greenfeld**, University of Washington, **Gil Goffer**, University of California at San Diego, and **Tianyi Zheng**, University of California San Diego.

Combinatorics and Graph Theory in Honor of Dr. Peter Johnson (Code: SS 30A), **Alex Somto Arinze Alochukwu**, Department of Mathematics, Computer Science and Physics, Albany State University, **Fadekemi Janet Osaye**, Alabama State University, and **Michael Tait**, Villanova.

Computational Biomedicine: Emerging Methods and Applications (Code: SS 31A), **Nektarios A. Valous**, Center for Quantitative Analysis of Molecular and Cellular Biosystems (Bioquant), Heidelberg University, Germany, **Miranda L. Lynch**, Department of Structural Biology, Jacobs School of Medicine and Biomedical Sciences, State University of New York at Buffalo, and **Dirk Jäger**, Department of Medical Oncology, National Center for Tumor Diseases (NCT), University Hospital Heidelberg (UKHD), Germany.

Conceptual Learning in the Age of AI (Code: SS 32A), **Qiang Sun Dotzel**, University of Missouri-St. Louis.

Concordance and Cobordism in Low Dimensions (Code: SS 33A), **Ryan Stees**, University of Virginia, **Abhishek Mallick**, Rutgers University, and **Maggie Miller**, University of Texas at Austin.

Conservation Laws and Boundary Value Problems in far from Equilibrium Dynamics (Code: SS 34A), **Snezhana I. Abarzhi**, California Institute of Technology, and **James G. Glimm**, State University of New York at Stony Brook.

Control Theory and Artificial Intelligence (Code: SS 35A), **Anthony Michael Bloch**, University of Michigan, and **Mohamed Ali Belabbas**, University of Illinois.

Cryptography and Related Fields (Code: SS 36A), **Ryann Cartor**, Clemson University, **Max Cartor**, University of Louisville, and **Angela Robinson**, NIST.

Current Directions on Modular Forms: in Twenty Minutes Snippets (Code: SS 37A), **Victor H. Moll** and **Olivia Beckwith**, Tulane University, and **Kalani Thalagoda**, University of North Carolina at Greensboro.

Data Fusion Methods, Modeling, and Applications (Code: SS 38A), **Stephanie Allen**, Johns Hopkins University Applied Physics Laboratory.

Descriptive Combinatorics, Dynamics, and Measured Group Theory (Code: SS 39A), **Michael Wolman**, Caltech, **Ran Tao**, Carnegie Mellon University, and **Joshua Frisch**, University of California San Diego.

Diversity in Mathematical Biology (Code: SS 40A), **Daniel Alejandro Cruz**, University of Florida.

Dynamical Systems Modeling Approaches Across Multiple Biological Scales (Code: SS 42A), **Chris M. Heggerud**, University of California, Davis, **Daniel Brendan Cooney**, University of Illinois Urbana-Champaign, and **Chadi M. Saad-Roy**, University of California, Berkeley.

Dynamic Horizons in Mathematical Biology and Ecology: Current Insights and Future Prospects (Code: SS 41A), **Kunquan Lan**, Toronto Metropolitan University, **Gail SK Wolkowicz**, McMaster University, and **Gunog Seo**, Colgate University.

Dynamics of Continued Fractions and Related Systems (Code: SS 43A), **Anton Lukyanenko**, George Mason University, Fairfax, and **Joseph Vandehey**, University of Texas at Tyler.

Ecological and Evolutionary Models in Biology and Epidemiology (Code: SS 44A), **Yanyu Xiao**, University of Cincinnati, **Yun Kang**, Arizona State University, and **Sabrina H. Streipert**, University of Pittsburgh.

Emerging Geometric and Topological Machine Learning Methods in Mathematical and Computational Oncology (Code: SS 45A), **Smita Krishnaswamy**, Yale, **Dhananjay Bhaskar** and **Aarthi Venkat**, Yale University, **Raul Rabadan**, Columbia University, and **Shmuel Weinberger**, University of Chicago.

Epidemic Modeling: Current Status and Future Directions (Code: SS 46A), **Leigh Metcalf**, Carnegie Mellon University, **Heeralal Janwa**, University of Puerto Rico, Rio Piedras, **Will Casey**, US Naval Academy, **Shirshendu Chatterjee**, CUNY, and **Ernest Battifarano**, Retired.

Exemplar Mathematics Departments Supporting PK–12 Mathematics Teachers (Code: SS 131A), **Tyler Kloefkorn**, American Mathematical Society, **Yvonne Lai**, University of Nebraska-Lincoln, and **Lindsey Henderson**, University of Utah (AMS-MAA-SIGMAA).

Exploring Dynamics and Bifurcation Analysis of Discrete Dynamical Systems in Mathematical Biology (Code: SS 47A), **Arzu Bilgin**, Recep Tayyip Erdogan University, and **Toufik Khyat**, Rider University.

Extremal and Probabilistic Combinatorics (Code: SS 49A), **JD Nir**, Oakland University, **Lina Li**, Iowa State University, and **Ruth Luo**, University of South Carolina.

Extremal Combinatorics and Random Discrete Structures (Code: SS 48A), **Sam Spiro** and **Corrine Yap**, Rutgers University.

Financial Mathematics (Code: SS 50A), **Sixian Jin**, California State University San Marcos.

Fractal Geometry with Applications to Analysis, Number Theory and Mathematical Physics (Code: SS 51A), **Hafedh Herichi**, Organizer, **Franklin A. Mendivil**, Acadia University, **Claire David**, Co-organizer, and **Michel L. Lapidus**, University of California Riverside.

Function Spaces and Their Applications (Code: SS 52A), **Javad Mashreghi**, Laval University, and **William Verreault**, University of Toronto.

Generalized Derivatives: Analysis on Time Scales, Fractional Calculus, Difference Equations, and Others (Code: SS 53A), **Nick Wintz**, Lindenwood University, and **Tom Cuchta**, Marshall University.

Generative AI for Improving Instructional Productivity (Code: SS 54A), **Feryal Alayont**, Grand Valley State University, and **Erich McAlister**, Fort Lewis College.

Geometric and Combinatorial Methods in Deep Learning Theory (Code: SS 55A), **Kathryn Anne Lindsey**, **Julia Elisenda Grigsby**, and **Rishi Sonthalia**, Boston College.

Geometric and Topological Combinatorics (Code: SS 56A), **Bennet Goeckner**, University of San Diego, and **Gaku Liu** and **Isabella Novik**, University of Washington.

Geometric PDE and Mathematical Physics (Code: SS 57A), **Eric Bahuaud**, Seattle University, **Guofang Wei**, UC Santa Barbara, **Eric Woolgar**, University of Alberta, and **Erin Griffin**, Seattle Pacific University.

Geometry and Machine Learning (Code: SS 58A), **Tingting Tang**, San Diego State University, **Yang-Hui He**, City, University of London, **Fabian Ruehle**, Northeastern University, and **Yaim Cooper**, University of Notre Dame.

Graphs, Hypergraphs, and Extremal Combinatorics (Code: SS 59A), **Cory Palmer**, University of Montana, **Calum Buchanan**, University of Vermont, **Kimberly P. Hadaway**, Iowa State University, and **Van Magnan**, University of Montana.

Harnessing the Power of Mathematical Models to Understand Population Dynamics, Ecology, and Evolution (Code: SS 60A), **Lale Asik**, University of the Incarnate Word.

Heegaard Splittings of 3-manifolds and Trisections of 4-manifolds (Code: SS 61A), **Jeffrey Meier**, Western Washington University, and **Alexander Zupan**, University of Nebraska-Lincoln.

History of Mathematics (Code: SS 62A), **Victor J Katz**, University of Washington, **Deborah Kent**, University of St. Andrews, **E.A. Hunter**, University of Chicago, and **Sloan Evans Despeaux**, Western Carolina University.

Homological Interactions Between Commutative and Noncommutative Algebra (Code: SS 63A), **Luigi Ferraro**, University of Texas Rio Grande Valley, and **Souvik Dey**, Charles University, Prague.

Homotopy Theory (Code: SS 64A), **XiaoLin Danny Shi**, University of Washington, **Morgan Peck Opie**, UCLA, **Piotr Pstragowski**, Harvard University, and **Kirsten Wickelgren**, Duke University.

Incorporating Programming in Non-Programming Math Courses (Code: SS 65A), **Mario Javier Bencomo**, University of California Fresno, and **Pushpi Paranamana**, Saint Mary's College.

Inverse Problems and Harmonic Analysis (Code: SS 66A), **Eric Todd Quinto** and **Kasso A. Okoudjou**, Tufts University.

Knots, 3-manifolds, and Their Invariants (Code: SS 67A), **Margaret I. Doig**, Creighton University, **Kate Petersen**, University of Minnesota Duluth, **Christine Ruey Shan Lee**, Texas State University, **Shelly Harvey**, Rice University, and **Moshe Cohen**, State University of New York At New Paltz.

L-functions, Automorphic Forms, and Their Applications (Code: SS 68A), **Sheng-Chi Liu**, Washington State University, and **Riad Masri**, Texas A&M University.

Local-to-Global in Apollonian Circle Packings and Beyond (Code: SS 69A), **Elena Fuchs**, UC Davis, **Katherine E. Stange**, University of Colorado, Boulder, **Catherine Maria Hsu**, Swarthmore College, and **Summer Haag**, University of Colorado, Boulder.

Machine Learning to Accelerate Mathematical Discovery (Code: SS 70A), **Henry Kvinge**, Pacific Northwest National Laboratory, **Herman Chau**, University of Washington, **Helen Jenne**, University of Oregon, **Davis Richard Brown**, Pacific Northwest National Laboratory, and **Sara C. Billey**, University of Washington.

Mathematical Frontiers of Data Science for National Security (Code: SS 72A), **R. W. R. Darling**, **Marcus J. Bishop**, and **John A. Emanuello**, National Security Agency.

Mathematical Quantum Chaos (Code: SS 73A), **Maciej Zworski**, University of California, Berkeley, and **Semyon Dyatlov**, Massachusetts Institute of Technology.

Mathematic of Decisions, Elections, and Games (Code: SS 71A), **Jennifer M. Wilson**, Eugene Lang College, The New School, **Michael A. Jones**, Mathematical Reviews | AMS, and **David McCune**, William Jewell College.

Mathematics, AI, and the Social Context of Our Work (Code: SS 80A), **Yaim Cooper**, University of Notre Dame, and **Darren Byler**, Simon Fraser University.

Mathematics and Sports (Code: SS 74A), **Filippo Posta**, Phoenix College, **Amanda Harsy**, Lewis University, and **Paul W von Dohlen**, William Paterson University.

Mathematics at Federally Funded Research and Development Centers (FFRDC) (Code: SS 75A), **Wayne Raskind**, Center for Communications Research, Princeton, and **Carol Woodward**, Lawrence Livermore National Laboratory.

Mathematics Informed by Computing (Code: SS 76A), **David Lowry-Duda**, ICERM & Brown University, **Eran Assaf**, Dartmouth, **David Roe**, Massachusetts Institute of Technology, and **Christelle Vincent**, University of Vermont.

Mathematics of Deep Learning: A High-Dimensional Probability Perspective (Code: SS 77A), **Zhichao Wang**, University of California San Diego, **Denny Wu**, New York University, **Ioana Dumitriu**, University of California San Diego, and **Tony Chiang**, Pacific Northwest National Lab.

Mathematics of Knowledge Graphs: Theory and Application (Code: SS 78A), **Sinan G. Aksoy**, **Bill Kay**, and **Patrick Mackey**, Pacific Northwest National Laboratory.

Mathematics of Topological Insulators (Code: SS 79A), **Matthew H Faust**, Texas A&M University, and **Xiaowen Zhu** and **Alexis Drouot**, University of Washington.

Modeling and Optimization on Graph-Structured Data (Code: SS 81A), **Jing Qin**, University of Kentucky, **Weihong Guo**, Case Western Reserve University, and **Yifei Lou**, University of North Carolina at Chapel Hill.

Modeling Matters in Teaching and Learning Differential Equations (Code: SS 132A), **Brian Winkel**, SIMIODE, **Kyle T Allaire**, Worcester State University, **Lisa Naples**, Fairfield University, and **Pushpi Paranamana**, Saint Mary's College.

Modeling Natural Resources (Code: SS 82A), **Catherine A. Roberts**, College of the Holy Cross, and **Shandelle Henson**, Andrews University.

Modular Forms, Hypergeometric Functions, and Related Topics (Code: SS 83A), **Fang-Ting Tu** and **Michael Allen**, Louisiana State University, **Kalani Thalagoda**, Tulane University, and **Holly Swisher**, Oregon State University.

New Developments in Noncommutative Algebra (Code: SS 84A), **Robert Won**, George Washington University, **Ellen E. Kirkman**, Wake Forest University, and **James Jian Zhang**, University of Washington.

New Directions in Harmonic Analysis (Code: SS 85A), **Cody B. Stockdale**, Clemson University, **Andrew Walton Green**, Washington University In St. Louis, **Brandon Sweeting**, University of Alabama, and **Nathan A. Wagner**, Brown University.

New Faces in Operator Theory (Code: SS 86A), **William Thomas Ross**, University of Richmond, and **Michael R. Pilla**, Ball State University.

New Trends in Lie Theory and Mathematical Physics (Code: SS 87A), **Marco Aldi**, Virginia Commonwealth University, and **Juan Villarreal**, University of Bath.

Nonlinear Algebraic Methods in Artificial Intelligence and Machine Learning (Code: SS 88A), **Jonathan Gryak**, Queens College, City University of New York.

Non-smooth Analysis and Geometry (Code: SS 89A), **Vyron Vellis**, University of Tennessee, and **Guy C. David**, Ball State University.

Operators in Inverse Problems, Differential Equations, and Machine Learning (Code: SS 90A), **Doosung Choi**, Louisiana State University, **Hyun-Kyoung Kwon**, University at Albany, and **Mikyong Lim**, Korea Advanced Institute of Science and Technology.

Partition Theory and q -Series (Code: SS 91A), **William Jonathan Keith**, Michigan Technological University, **Dennis Eichhorn**, University of California, Irvine, and **Brandt Kronholm**, University of Texas Rio Grande Valley.

Polymath Jr REU Student Research Session (Code: SS 92A), **Zhanar Berikkyzy**, Fairfield University, and **Adam Sheffer**, Baruch College, CUNY.

Quaternions (Code: SS 93A), **Chris McCarthy**, BMCC, City University of New York, **Johannes Familton**, Borough of Manhattan Community College, CUNY, and **Terrence Richard Blackman**, Medgar Evers College CUNY.

Random Walks on Graphs and Related Parameters (Code: SS 94A), **Mark Kempton**, Brigham Young University, **Jane Breen**, Ontario Tech University, and **Sooyeong Kim**, York University.

Recent Advancement in Control Theory and Applications in Artificial Intelligence (Code: SS 95A), **Shalmali Bandyopdhay**, University of Tennessee at Martin, and **Bonny Banerjee**, University of Memphis.

Recent Advancements in Integrable Systems and Orthogonal Polynomials (Code: SS 96A), **Cade Ballew** and **Tom Trogdon**, University of Washington, and **Deniz Bilman**, University of Cincinnati.

Recent Advancements in the Numerical Analysis of Nonlinear Partial Differential Equations (Code: SS 97A), **Thomas Lee Lewis** and **Yi Zhang**, University of North Carolina at Greensboro.

Recent Advances in Potential Theory and Partial Differential Equations (Code: SS 98A), **Ugur G. Abdulla**, Okinawa Institute of Science and Technology.

Recent Developments in PDEs and Related Areas (Code: SS 99A), **Weinan Wang**, University of Oklahoma, **Zongyuan Li**, City University of Hong Kong, **Xueying Yu**, Oregon State University, and **Zhiyuan Zhang**, Northeastern University.

Recent Developments in Regularization Methods for Nonlinear Inverse Problems (Code: SS 100A), **Akhtar A. Khan**, Rochester Institute of Technology, **Otmar Scherzer**, University of Vienna, and **Bernd Hofmann**, Chemnitz University of Technology.

Research from the Graduate Research Workshop in Combinatorics (Code: SS 101A), **Puck Rombach**, University of Vermont, and **Steve Butler**, Iowa State University.

Research in Mathematics by Undergraduates and Students in Post-Baccalaureate Programs (Code: SS 130A), **Darren A. Narayan**, Rochester Institute of Technology, **Mark Daniel Ward**, Purdue University, **Patricia Cahn**, Smith College, and **Khang Duc Tran**, California State University, Fresno (AMS-MAA-SIAM).

Research Presentations by Math Alliance Scholar Doctorates (Code: SS 102A), **Theresa Martines**, University of Texas, Austin, and **David Goldberg**, Math Alliance/Purdue University.

Research Results by Mathematicians from the Enhancing Diversity in Graduate Education (EDGE) Program (Code: SS 103A), **Quiyana M. Murphy**, Virginia Tech, **Sofia Rose Rose Martinez Alberga**, Purdue University, **Kelly Buch**, Austin Peay State University, and **Alexis Hardesty**, Texas Woman's University.

Results on Curves and Surfaces Inspired by Experiments (Code: SS 104A), **Puttipong Pongtanapaisan** and **Thi Hanh VO**, Arizona State University, and **Khanh Le**, Rice University.

Rethinking Number Theory: Highlighting the Research and Discussions of the RNT Workshops (Code: SS 105A), **Shanna Dobson**, University of California, Riverside, **Sarah Arpin**, University of Colorado Boulder, **Henry Chimal-Dzul**, University of Notre Dame, and **Heidi Goodson**, Brooklyn College, City University of New York.

Several Complex Variables, Partial Differential Equations, and CR Geometry (Code: SS 106A), **Jiri Lebl** and **Sean N. Curry**, Oklahoma State University, and **Anne-Katrin Gallagher**, Gallagher Tool & Instrument, Redmond, WA.

Solutions of Probability or Applied Random Process Problems Using Linear Algebraic or Combinatorial Methods (Code: SS 107A), **Alan Krinik** and **Randall J. Swift**, California State Polytechnic University, Pomona.

SoTL: Connecting Generative AI and Scholarly Inquiry to Improve Teaching and Learning (Code: SS 108A), **Jacqueline M. Dewar**, Loyola Marymount University, **Lewis D. Ludwig**, Denison University, and **Curtis D. Bennett**, California State University, Long Beach.

Sparse Graphs: Colorings, Randomness, and Ramsey Theory (Code: SS 109A), **James Anderson** and **Abhishek Dhawan**, Georgia Institute of Technology.

Spectral Theory and Mathematical Physics (Code: SS 110A), **Jonathan Stanfill**, The Ohio State University, and **Christoph Fischbacher**, Baylor University.

Spectral Theory of Ergodic Operators and Related Models (Code: SS 111A), **Matthew Powell**, Georgia Institute of Technology, **Svetlana Jitomirskaya**, University of California Irvine, and **Netanel Levi**, UC Irvine.

Systemic Change Within and Between K–12 and Post-Secondary Mathematics Education: Improvement for Smooth Transitions and Increased Persistence in Mathematics for All Students (Code: SS 112A), **Katherine Leigh Arrington** and **Josh Recio**, Charles A. Dana Center, The University of Texas at Austin.

Take the i Road: Welcoming Complex Numbers and Viewpoints Across the Undergraduate Curriculum (Code: SS 113A), **Paul Zorn**, St Olaf College, and **Bob Sachs**, George Mason University.

The Convergence of AI, Math, and Statistics in Biomedical Research (Code: SS 114A), **Fnu Nisha** and **Keisha Cook**, Clemson University.

The Euler Water Wave Problem (Code: SS 115A), **Bernard Deconinck** and **Eleanor Devin Byrnes**, University of Washington.

The Open Neighborhood of Applied Topology (Code: SS 116A), **Evgeniya Lagoda**, Freie Universität Berlin, and **Henry Hugh Adams**, University of Florida.

Theoretical and Numerical Aspects of Fractional and Nonlocal Models (Code: SS 118A), **Nicole Buczkowski**, Worcester Polytechnic Institute, **Animesh Biswas**, University of Nebraska Lincoln, and **Qiao Zhuang**, Worcester Polytechnic Institute.

The Teaching and Learning of Undergraduate Ordinary Differential Equations (Code: SS 117A), **Johannah L. Crandall**, Spokane Falls Community College, **Viktoria Savatorova**, Central Connecticut State University, **Beverly H. West**, Cornell University, **Maila B. Hallare**, US Air Force Academy, USAFA, and **Itai Seggev**, Wolfram Research.

Tools and Methods of Compassionate Math (Code: SS 119A), **Theodore V. Theodosopoulos**, Nueva School, **Paul Dancstep** and **Priyaa Varshinee Srinivasan**, Topos Institute, and **Nathan Haydon**, University of Waterloo.

Topological, Algebraic, and Geometric Methods for Safe, Robust, and Explainable Machine Learning (Code: SS 123A), **Henry Kvinge** and **Tegan Emerson**, Pacific Northwest National Laboratory, **Tim Doster**, Pacific Northwest National Lab, **Scott Mahan**, Pacific Northwest National Laboratory, and **Sarah McGuire**, Michigan State University.

Topological and Algebraic Properties of Additive Manufacturing (Code: SS 120A), **Gregory Dreifus**, GE Vernova, **Bala Krishnamoorthy**, Washington State University, and **Justin Michael Curry**, University at Albany, SUNY.

Topological Data Analysis: Theory and Applications (Code: SS 121A), **Shaun Van Ault** and **Jose A. Velez-Marulanda**, Valdosta State University.

Topological Machine Learning (Code: SS 122A), **Stephen J. Young**, **Brett Jefferson**, and **Emilie Purvine**, Pacific Northwest National Laboratory, and **Brandon Stone**, Georgia Tech Research Institute.

Topology and Geometry Aspect of Deep Learning (Code: SS 124A), **Tse-Yu Lin**, National Taiwan University, and **Yen-lung Tsai**, National Chengchi University.

Trends in Coding Theory (Code: SS 125A), **Giuseppe Cotardo**, Virginia Tech, and **Alberto Ravagnani**, Eindhoven University of Technology.

Trustworthy AI Applications Including Machine Learning, PINN, and Inverse Problems (Code: SS 126A), **Taufiqar Khan** and **Andrew Pangia**, University of North Carolina at Charlotte.

Using 3D-Printed and Other Digitally-Fabricated Objects in the Mathematics Classroom (Code: SS 127A), **Shelby Stanhope**, U.S. Air Force Academy, and **Paul E. Seeburger**, Monroe Community College.

Variational Methods in Quantum Computing (Code: SS 128A), **Carlos Ortiz Marrero**, Pacific Northwest National Laboratory, **Michael Ragone**, University of California, Davis, and **Jason Saied**, NASA Ames Research Center.

Vector Bundles and Quantization (Code: SS 129A), **Laura P. Schaposnik**, University of Illinois at Chicago, **Steven Rayan**, University of Saskatchewan, and **Ruxandra Moraru**, University of Waterloo.

Association for Symbolic Logic Special Sessions

Combinatorial Set Theory (Code: ASLSS1A), **James Cummings**, Carnegie Mellon University, and **Spencer Unger**, University of Toronto.

Association for Women in Mathematics Special Sessions

AWM Purdue Chapter: Over a Decade of Empowering Women in Math (Code: AWMSS2A), **Sofia Rose Rose Martinez Alberga**, **Daniel Tolosa**, **Asini Anuradhika Konpola**, and **Yiran Wang**, Purdue University.

Exploring Mathematics through the Arts and Pedagogy in Creative Settings (Code: AWMSS5A), **Shanna Dobson**, University of California, Riverside, and **Claudia Maria Schmidt**, California State University.

Women in Groups, Geometry, and Dynamics (Code: AWMSS3A), **Carolyn Abbott**, Brandeis University, and **Rachel Skipper**, University of Utah.

Women in Mathematical Biology (Code: AWMSS1A), **Hwayeon Ryu**, Elon University, **Christina Edholm**, Scripps College, **Lihong Zhao**, Virginia Tech, **Robyn Shuttleworth**, Altos Labs, and **Karin Leiderman**, Colorado School of Mines.

Women in Operator Algebras (Code: AWMSS4A), **Sarah Reznikoff**, Virginia Tech, and **Maria Grazia Viola**, Lakehead University.

Consortium for Mathematics and its Applications Special Sessions

Tales of Survival and Triumph from Mathematical Modeling Contest Participants (Code: COMAPSS1A), **Kayla Blyman**, Saint Martin's University & COMAP, and **Keith Erickson**, Georgia Gwinnett College.

Centre de recherches mathématiques—Pacific Institute for the Mathematical Sciences—Atlantic Association for Research in Mathematical Sciences Special Sessions

Indigenous Voices in Mathematics (Code: CPASS1A), **Kamuella E. Yong**, University of Hawaii West Oahu.

Optimal Transport—Theory and Applications (Code: CPASS2A), **Zaid Harchaoui**, University of Washington, Seattle, **Bamdad Hosseini** and **Jingwei Hu**, University of Washington, **Yanqin Fan**, University of Washington, Seattle, **Brendan Pass**, University of Alberta, **Young-Heon Kim**, University of British Columbia, and **Soumik Pal**, University of Washington.

International Linear Algebra Society Special Sessions

05C50 Offline (Code: ILASSS5A), **Hermie Monterde** and **Stephen Kirkland**, University of Manitoba.

Innovative and Effective Ways to Teach Linear Algebra (Code: ILASSS3A), **David Strong**, Pepperdine University, **Sepideh Stewart**, University of Oklahoma, **Gil Strang**, MIT, and **Megan Wawro**, Virginia Tech.

Inverse Spectral Problems for Nonnegative Matrices (Code: ILASSS7A), **Pietro Paparella**, University of Washington Bothell.

Matrix Analysis and Applications (Code: ILASSS2A), **Tin-Yau Tam**, University of Nevada, Reno, **Mohsen Aliabadi**, University of California, San Diego, and **Luyining Gan**, University of Nevada Reno.

Preserver Problems (Code: ILASSS6A), **Edward Poon**, Embry-Riddle Aeronautical University, **Chi-Kwong Li**, College of William and Mary, **Sushil Singla**, Shiv Nadar University Delhi NCR, and **Bojan Kuzma**, University of Primorska.

Randomness in Numerical Linear Algebra (Code: ILASSS4A), **Anne Greenbaum** and **Heather Wilber**, University of Washington.

Strong Properties of Matrix Classes (Code: ILASSS1A), **Bryan L. Shader**, University of Wyoming, and **Minerva Catral**, Xavier University.

Mathematical Association of America Special Sessions

Assessment Practices that Support Equity and Inclusion (Code: MAASS1A), **Amanda Harsy Ramsay**, Lewis University, **Heather Smith Blake**, Davidson College, **Jessica Oshaughnessy**, West Chester University, **Andrew C. Lee**, United States Military Academy, **Brittney Falahola**, Stephen F. Austin State University, and **Sheila Tabanli**, Rutgers University—New Brunswick.

Fostering Creativity in Undergraduate Mathematics Courses (Code: MAASS2A), **Milos Savic**, University of Oklahoma, **Gulden Karakok**, University of Northern Colorado, **Gail Tang**, University of La Verne, **Houssein El Turkey**, University of New Haven, **Emily Cilli-Turner**, University of San Diego, and **Visala Rani Satyam**, Virginia Commonwealth University.

Mathematics and the Arts (Code: SIGMAASS2A), **Anil Venkatesh**, Adelphi University, **Doug Norton**, Villanova University, and **Karl M. Kattchee**, University of Wisconsin-La Crosse.

Philosophy of Mathematics (Code: SIGMAASS1A), **Steven M. Deckelman**, University of Wisconsin-Stout, and **Bonnie Gold**, Monmouth University.

Research in Undergraduate Mathematics Education (Code: SIGMAASS3A), **Kaitlyn Stephens Serbin**, The University of Texas Rio Grande Valley, **Brian P. Katz**, California State University, Long Beach, **Deborah Moore-Russo**, University of Oklahoma, and **Shandy Hauk**, San Francisco State University.

Undergraduate Research Activities in Mathematical and Computational Biology (Code: SIGMAASS4A), **Timothy D. Comar**, self-employed, **Anne E. Yust**, University of Pittsburgh, and **Erin N. Bodine**, Rhodes College.

Pro Mathematica Arte Special Sessions

BSM Special Session: Mathematical Research in Budapest for Students and Faculty (Code: PMASS1A), **Kristina Cole Garrett**, Budapest Semesters in Mathematics.

Society for Industrial and Applied Mathematics Minisymposia

SIAM Minisymposium on Computational Advances in Solving the Electronic Structure Problem for Complex Materials (Code: SIAMSS1), **James Chelikowsky**, University of Texas, **Vikram Gavini**, University of Michigan, and **Jin Qian**, Lawrence Berkeley Laboratory.

SIAM Minisymposium on Geometric Mechanics Formulations and Structure-Preserving Discretizations for Models of Physical Systems (Code: SIAMSS8), **Chris Eldred**, **Jonas Actor**, and **Anthony Gruber**, Sandia National Laboratories, and **Brian Tran**, Los Alamos National Laboratories.

SIAM Minisymposium on Mathematical Foundations of Climate and Earth System Modeling (Code: SIAMSS6), **Irina Tezaur** and **Chris Eldred**, Sandia National Laboratories, and **Chris Vogl**, Lawrence Livermore National Laboratory.

SIAM Minisymposium on Mathematical Perspectives on Generative Modeling (Code: SIAMSS4), **Jimmie Adriaola**, Arizona State University, and **Benjamin Zhang**, Brown University.

SIAM Minisymposium on Modern Uncertainty Quantification in Theory and in Practice (Code: SIAMSS2), **Amy Braverman**, Jet Propulsion Laboratory (Caltech).

SIAM Minisymposium on Navigating the Future of Higher Education: The Role of AI in Teaching, Research, and Extension (Code: SIAMSS7), **Alvaro Ortiz Lugo**, University of Cincinnati, and **Rafael Alberto Méndez-Romero**, Universidad del Rosario.

SIAM Minisymposium on Reduced Order Models for Convection-Dominated Flows: Modeling, Analysis, and Simulation (Code: SIAMSS5), **Jorge Reyes**, **Ping-Hsuan Tsai**, and **Traian Iliescu**, Virginia Tech.

SIAM Minisymposium on Scientific Machine Learning: Recent Advances and Future Directions (Code: SIAMSS3), **Steven Lee**, Department of Energy—Office of Science, and **Panos Stinis**, Pacific Northwest National Laboratory.

The Simons Laufer Mathematical Sciences Institute (SLMath), formerly MSRI Special Sessions

ADJOINT Mathematics Working Groups (Code: SLMSS3A), **Anisah Nabilah Nu'Man**, Spelman College, and **Edray Herbert Goins**, Pomona College.

At the Intersection of Harmonic Analysis and Fractal Geometry (Code: SLMSS4A), **Krystal Taylor**, The Ohio State University, **Scott Zimmerman**, The Ohio State University at Marion, and **Alex McDonald** and **Samantha Sandberg**, The Ohio State University.

Metric Geometry and Topology (Code: SLMSS1A), **Christine M. Escher**, Oregon State University, and **Catherine Searle**, Wichita State University.

MSRI-UP 2024 Mathematical Endocrinology (Code: SLMSS2A), **Candice Price**, Smith College, and **Erica Graham**, Bryn Mawr College.

Association for LGBTQ+ Mathematicians (Spectra)

Research by LGBTQ+ Mathematicians, **Devavrat Dabke**, Level Ventures, **Michael Hill**, UCLA, and **Joseph Hunter Kee Nakao**, Swarthmore College.

Special Sessions of Other Organizations

Exploring Funding Opportunities in the Division of Mathematical Sciences (Code: NSFSS2A), **Elizabeth L. Wilmer**, Oberlin College, and **Junping Wang**, National Science Foundation.

Outcomes and Innovations from NSF Undergraduate Education Programs in the Mathematical Sciences (Code: NSFSS1A), **Michael Ferrara**, Division of Undergraduate Education, National Science Foundation.

Contributed Paper Sessions of the JMM

AMS Sessions for Contributed Papers

There will be sessions of ten-minute contributed talks. Although an individual may present only one contributed paper at a meeting, any combination of joint authorship may be accepted, provided no individual speaks more than once on the contributed paper program. Contributed papers will be grouped together by related subject classifications into sessions.

ASL Contributed Paper Sessions

ASL Contributed Paper Session (Code: ASLCP1A), **Reed Solomon**, University of Connecticut.

COMAP Contributed Paper Sessions

COMAP Contributed Paper Session on Technology in Applied Mathematics Courses (Code: COMAPCP1A), **Kayla Blyman**, Saint Martin's University & COMAP, and **Jonathan Weisbrod**, Rowan College at Burlington County.

MAA Contributed Paper Sessions

SIGMAA Contributed Paper Session on Using AI in Mathematics Instruction (Code: SIGMAACP1A), **Shanda Renee Hood**, University of Arkansas, **Brian D. Walton**, James Madison University, **Bernd Sing**, University of the West Indies at Cave Hill, and **Joseph Fields**, Southern Connecticut State University.

NAM Contributed Paper Sessions

NAM Haynes-Granville-Browne Session of Presentations by Recent Doctoral Recipients (Code: NAMCP1A), **Aris Winger**, Georgia Gwinnett College, and **Torina D. Lewis**, National Association of Mathematicians.

PME Contributed Paper Sessions

PME Contributed Session on Research by Undergraduates (Code: PMECP1A), **Chad Awtrey**, Samford University, and **Thomas Philip Wakefield**, Youngstown State University.

TPSE Contributed Paper Sessions

TPSE Contributed Paper Session on Transformation Models for Inclusive Student Experiences (Code: TPSECP1A), **Ben Ford**, Sonoma State University, **Michael Dorff**, Brigham Young University, **Abbe Herzig**, Bard Prison Initiative, **Brigitte Lahme**, Sonoma State University, **Luis Antonio Leyva**, Vanderbilt-Peabody College, **Omayra Ortega**, Sonoma State University, and **Aris Winger**, Georgia Gwinnett College.

Submission of Abstracts for JMM Sessions

Authors must submit abstracts of talks through the JMM abstract submission site. Simply follow the step-by-step instructions through to completion, until you receive confirmation of your successful submission. No submission is complete until you receive this confirmation. Please note JMM 2025 is being planned as an in-person meeting only. No virtual options are expected to be available. The deadline for all submissions is **September 10, 2024**. Late papers cannot be accommodated. Please e-mail meet@ams.org if you have questions.

Programs of JMM Partners

Please see complete descriptions of these sessions on the JMM website.

American Mathematical Society

Please see the descriptions of the AMS Invited Addresses, Special Sessions, and Contributed Paper Sessions above. Complete descriptions of all sessions can be found on the JMM website.

AMS-PME Poster Session

AMS-PME Undergraduate Student Poster Session (Code: AMSPMEPOS1), **Chad Awtrey**, Samford University, **Molly Moran**, Colorado College, and **Denise Taunton Reid**, Valdosta State University; Friday, 12–1:30 p.m. and 3:30–5:00 p.m. These sessions provide a venue for undergraduate students to deliver poster presentations based on original research; presentations that are purely expository in nature are not appropriate for these sessions. First-year graduate students are eligible to present if their research was completed while they were still undergraduates. High school students are eligible to present if their research was conducted under the supervision of a faculty member at a post-secondary institution. Presenters need not be members of any particular mathematics or honorary society.

Participants should submit an abstract through the JMM abstract submission portal by **Tuesday, September 24**. Questions regarding this session should be directed to Chad Awtrey, cawtrey@samford.edu.

AMS Panels

Please see complete descriptions of these sessions on the JMM website.

Math Meets Policy: Advocating for Change (Code: ADVOCACY), **Karen Saxe**, American Mathematical Society, **Tyler Kloefkorn**, American Mathematical Society, and **Jerry McNerney**, Former Member, U.S. House of Representatives; Thursday, 9:30–11 a.m.

AMS BEGIN Sponsors Panel (Code: BEGINPAN), **Sarah Bryant**, American Mathematical Society; Friday, 8:30–10 a.m. The moderator and panelists are to be announced.

Teaching in the Time of Artificial Intelligence (Code: AMSCOEPAN), **Christine Berkesch**, University of Minnesota, **Henry Cohn**, MIT, **Sara Maloni**, University of Virginia, and **Roberto Rubalcaba**, San Diego Community College District; Thursday, 1:00–2:30 p.m. The moderator and panelists are to be announced. This panel is sponsored by the AMS Committee on Education.

How can Mathematics and Mathematicians Mitigate Bias and Other Equity, Diversity, and Inclusion Issues in AI (Code: COEDIPAN), **Lily Khadjavi**, Loyola Marymount University, **John M. Voight**, Dartmouth, **Jay-C Reyes**, Center for Communications Research-La Jolla, and **Darryl Yong**, Harvey Mudd College; Wednesday, 3:00–4:30 p.m. The moderator and panelists are to be announced. This panel is sponsored by the AMS Committee on Equity, Diversity and Inclusion.

Artificial Intelligence and Publishing (Code: AMSPAN2), **Kiran S. Kedlaya**, University of California San Diego, and **Robert M. Harington**, American Mathematical Society; Wednesday, 1:00–2:30 p.m. The moderator and panelists are to be announced. This panel is sponsored by the AMS Committee on Publications.

Artificial Intelligence and the Future of the Mathematical Sciences (Code: SCIPOLPAN), **Brendan Hassett**, Brown University, **Gunnar Erik Carlsson**, Stanford University (Chair), **Carla Cotwright-Williams**, US Dept of Defense, **Jerry McNerney**, U.S. House of Representatives (retired), **Cynthia Vinzant**, University of Washington, Seattle, **Michelle Bernadette Snider**, Ida/Center For Computing Sciences, and **Kevin Beanland**, Washington & Lee University; Friday, 2:30–4:00 p.m. The moderator and panelists are to be announced. This panel is sponsored by the Committee on Science Policy.

AI tools for Mathematical Reasoning: What is the Current Status, Outlook for the Future, and Impact on the Mathematics Profession? (Code: COPROPAN), **Asamoah Nkwanta**, Morgan State University, and **Christian Borgs**, University of California Berkeley; Friday, 1:00–2:30 p.m. The moderator is **Henry Kvinge**, Pacific Northwest National Laboratory. Panelists include **Jeremy Avigad**, Carnegie Mellon, **Tia Danae Bradley**, Sandbox AQ, **Jordan Ellenberg**, University of Wisconsin, **Tegan Emerson**, Pacific Northwest National Laboratory, and **Yuhuai (Tony) Wu**, xAI. This panel is sponsored by the Committee on Profession.

Challenges and Opportunities in Peer Review (Code: AMSPAN1), **Mark C. Wilson**, University of Massachusetts Amherst; Wednesday, 8:30–10:00 a.m. The moderator to be announced. Panelists include **Igor Pak** UCLA, and **Lance Fortnow**, Illinois Institute of Technology.

AMS Workshops

Please see complete descriptions of these sessions on the JMM website.

AMS Department Chairs and Leaders Workshop (Code: DEPTCHAIRS), **Kelly Lang**, American Mathematical Society. This annual one-day workshop for department chairs, leaders, and prospective leaders will be held on Tuesday, January 7, 2025, 9:00 a.m.–3:00 p.m., the day before the JMM begins.

The workshop will provide opportunities to share experiences with issues and trends that impact math department chairs, math departments, and colleges and universities. Workshop topics could include resources, handling stress (students, staff, and faculty), curriculum, and instructional delivery. The organizers expect the workshop to help build a community of leaders who can continue to exchange ideas and offer each other support and advice.

Registration for this workshop will include breakfast and lunch. More details about registration and associated fees will be available on the workshop web page. Please send questions to chairsworkshop@ams.org.

Other AMS Events

Please see complete descriptions of these sessions on the JMM website.

BEGIN Bootcamp (Code: BEGINBOOT), **Alex Howe** and **Anna Kinzel**, American Mathematical Society; Wednesday, 9:00 a.m.–3:00 p.m. The AMS BEGIN Bootcamp will prepare jobseekers, particularly early-career mathematicians, to apply for positions in business, entrepreneurship, government, industry, and nonprofit (BEGIN) sectors. Session topics will include CV to STEM resume-building, strategies for effective self-introductions, locating jobs and internships, and networking opportunities with mathematicians in BEGIN industries.

Business Meeting, Saturday, 1:00–2:00 p.m.

AMS Career Fair (Code: CAREER), **Alex Howe** and **Anna Kinzel**, American Mathematical Society; Friday, 10:00 a.m.–3:00 p.m. The AMS Career Fair is an opportunity for mathematically trained job seekers at various phases of education and experience—undergraduates, graduate students, postdocs, and others—to interact in person with employers in Business, Entrepreneurship, Government, Industry, and Nonprofit (BEGIN). This event is job seekers' chance to discover how their mathematical training makes them strong candidates for BEGIN jobs.

Recruiters can represent their companies or organizations and connect with potential employees. Recruiters will be provided with a table for print materials, where they will also be welcome to engage personally with interested BEGIN job seekers.

Information is available here: <https://www.ams.org/career-fair>.

Council, Time and location to be announced.

AMS Current Events Bulletin (Code: AMSCEBA), **David Eisenbud**, University of California, Berkeley; Friday, 2:00–6:00 p.m.

AMS DC-Based Policy & Communications Opportunities (Code: AMSDCPOL), **Karen Saxe**, American Mathematical Society; Friday, 4:30–5:30 p.m.

AMS Directors of Graduate Studies Focus Group (Code: DGS), **Sarah Bryant**, American Mathematical Society; Wednesday, 8:00–9:30 a.m. AMS Directors of Graduate Studies Focus Group, organized and moderated by **Sarah Bryant**, AMS. For directors of graduate study, chairpersons, and others leading graduate mathematical sciences programs, this event

provides a venue in which to share ideas and concerns surrounding the experience of graduate students. Those intending to participate are invited to email programs@ams.org by **December 6, 2024** (subject line: DGS Focus Group) to be placed on the contact list for this event and to send any questions or topics they would like to be discussed.

AMS Directors of Undergraduate Studies Focus Group (Code: DUG), **Sarah Bryant**, American Mathematical Society; Wednesday, 9:30–11:00 a.m. AMS Directors of Undergraduate Studies Focus Group, organized and moderated by **Sarah Bryant**, AMS. For chairpersons, directors of undergraduate studies, and other departmental leaders, this event provides a venue in which to share ideas and concerns connected with the undergraduate mathematics experience. Those intending to participate are invited to email programs@ams.org by **December 6, 2024** (subject line: DUS Focus Group) to be placed on the contact list for this event and to send any questions or topics they would like to be discussed.

AMS Fireside CEO Chat (Code: AMSCEO), **Sarah Bryant**, American Mathematical Society; Thursday, 3:00–4:30 p.m. Experience a fireside chat with CEOs and leaders at the 2025 Joint Mathematics Meetings! Engage in candid discussions as industry leaders share insights and visions for the future. Dive into topics like innovation, leadership, and the evolving tech landscape. Don't miss this exclusive opportunity to network with top-tier executives.

AMS Graduate School Fair (Code: GRADFAIR), **Rosalynde Vas Dias**, **Sarah Klyberg**, and **Lexie Ekstrom**, American Mathematical Society; Friday, 8:00–11:00 a.m. This event is undergraduate and master's students' chance for one-stop shopping in the graduate school market. January is a great time for college juniors to learn more about applying to graduate school, and seniors may still be able to refine their search. Meet representatives from mathematical sciences graduate programs from universities all over the United States. Information is available here: <https://www.ams.org/gradfair>.

AMS Information Session: An Overview of the IGEN Mathematics Initiative (Code: AMSIS1), **Alvina J. Atkinson**, American Mathematical Society; Friday, 11:00–12:00 p.m. The Inclusive Graduate Education Network (IGEN) has partnered with the American Mathematical Society (AMS) to identify and address the gaps in opportunities that keep underrepresented undergraduates from moving on to graduate school and into post-graduate work in the mathematical sciences. This talk will be an overview of this effort.

AMS Town Hall: Hearing Student Voices: A Town Hall to Discuss a Bridge to Graduate Education (Code: AMSTH), **Alvina Atkinson** and **Tyler Kloefkorn**, American Mathematical Society; Wednesday, 10:30 a.m.–12:00 p.m. This town hall invites students to share their opinions on bridge programs and resources for graduate education and in the mathematical sciences.

MAA-SIAM-AMS Hrabowski-Gates-Tapia-McBay Lecture, organized jointly by the Mathematical Association of America, Society for Industrial and Applied Mathematics, and the American Mathematical Society; Friday, 9:00–10:00 a.m.

MAA-AMS-SIAM Gerald and Judith Porter Public Lecture will be given by **Ravi Vakil**, Stanford University, Title to be announced; Saturday, 2:15–3:20 p.m.

AMS Travel Grants

Graduate Student Travel Grants. With funding from the AMS Next Generation Fund, the AMS will be accepting applications for partial travel support for graduate students attending the JMM in Seattle, WA, January 8–11, 2025. While the AMS encourages students' institutions to match the award, matching is not required.

Applications will be accepted from doctoral students in mathematics at U.S. institutions who are in their last two years of study and from recent PhD graduates in the U.S., specifically those who graduated or will graduate between June 1, 2024, and December 31, 2024. No student shall receive a JMM Graduate Student Travel Grant more than once. Information can be found here: <https://www.ams.org/emp-student-JMM>.

Undergraduate Student Travel Grants. With support from the National Science Foundation, the AMS is offering travel support to a limited number of undergraduate students who are presenting in the following JMM sessions: Pi Mu Epsilon Undergraduate Poster Sessions, AMS-SIAM Special Sessions on Research in Mathematics by Undergraduates and Students in Post-Baccalaureate Programs, Pi Mu Epsilon Contributed Sessions, and Other Special or Contributed Sessions at the JMM in Seattle, WA, January 8–11, 2025.

Awards will help undergraduate students defray travel expenses associated with JMM participation. Applications are especially encouraged from students from groups that have been underrepresented in the mathematical sciences and from those with financial need. Additional information can be found here: <https://www.ams.org/undergrad-tg>.

Please also see the section on Child Care Grants.

American Association for the Advancement of Science

AAAS-AMS Invited Address, **Rebecca Willett**, University of Chicago, *Title to be announced*; Friday, 10:50–11:55 a.m.

American Institute for Mathematics

Please see complete descriptions of these sessions on the JMM website.

AIM Alexanderson Award Lecture, Title and speaker to be announced; Thursday, 10:50–11:55 a.m.

AIM has a number of AIM Special Sessions. A full list of these sessions can be found under the heading AIM Special Sessions above.

AIM will host a reception, please see the listing in the Social Events section of the announcement.

American Statistical Association

ASA Invited Address, **Bonnie Ghosh-Dastidar**, American Statistical Association and RAND Statistics Group, Title to be announced; Thursday, 3:20–4:25 p.m.

ASA will host a reception; please see the listing in the Social Events section of the announcement.

Association for Symbolic Logic

Please see the descriptions of the ASL Invited Addresses, Special Session, and Contributed Paper session in the sections above. Complete descriptions can be found on the JMM website. The ASL Invited Address program will take place Friday and Saturday, the Special Session will take place Thursday, and the Contributed Paper Session will take place on Friday.

Association for Symbolic Logic Tutorial, Parts I & II, organized by **Solomon Reed**, ASL; Wednesday, 9:00–10:00 a.m. and 1:00–2:00 p.m. The speaker for these tutorial sessions is to be announced.

Association for Women in Mathematics

Please see complete descriptions of these sessions on the JMM website.

AWM-AMS Noether Lecture, **Neena Gupta**, Indian Statistical Institute, *The Abhyankar-Sathaye Conjecture for Linear Hyperplanes*; Thursday, 3:30–4:25 p.m.

Please see the list of the AWM Special Sessions under the heading AWM Special Sessions above.

AWM Panel: *The Intersection of AI and Women+ in the Mathematical Sciences* (Code: AWMPAN1), **Kelly McKinnie**, University of Montana, and **Kate Petersen**, University of Minnesota Duluth; Friday, 1:00–2:30 p.m.

AWM Workshop: *EvenQuads Translate-a-Thon* (Code: AWMWK1), **Oscar Vega**, California State University, Fresno, **Xavier Ramos Olive**, Smith College, and **Monica D. Morales-Hernandez**, Adelphi University; Friday, 8:30–10:00 a.m.

AWM Workshop Poster Presentations (Code: AWMPOSTER), **Matthew Krauel**, California State University, Sacramento, **Carolyn Abbott**, Brandeis University, **Sarah Reznikoff**, Virginia Tech, **Rachel Skipper**, University of Utah, **Denise A Rangel Tracy**, Francis Marion University, and **Maria Grazia Viola**, Lakehead University; Friday, 4:00–5:30 p.m.

Consortium for Mathematics and its Applications

Please see complete descriptions of these sessions on the JMM website.

COMAP has a Special Session and a Contributed Paper Session. These can be found in the sections above.

COMAP Workshop: *Become a COMAP MCM/ICM Judge: Who, What, When, Where, & Why* (Code: COMAPWK1), **Kayla Blyman**, Saint Martin's University & COMAP, and **Keith Erickson**, Georgia Gwinnett College; Friday, 4:00–5:00 p.m.

COMAP Workshop on *Modeling for Educators: Introducing All Students to Modeling* (Code: COMAPWK2), **Ben Galuzzo**, Consortium for Mathematics and Its Applications (COMAP), and **Kayla Blyman**, Saint Martin's University; Saturday, 9:00 a.m.–3:00 p.m.

Centre de recherches mathématiques – Pacific Institute for the Mathematical Sciences – Atlantic Association for Research in Mathematical Sciences

Please see complete descriptions of these sessions on the JMM website.

CRM-PIMS-AARMS Invited Address, **Wilfred Gangbo**, UCLA, *Free Viscosity Solutions*; Friday, 9:40–10:45 a.m.

CRM-PIMS-AARMS also has a number of CPA Special Sessions. A full list of these sessions can be found under the heading CRM-PIMS-AARMS Special Sessions above.

International Linear Algebra Society

ILAS Invited Address, **Anne Greenbaum**, University of Washington, *Title to be announced*; Thursday, 9:40 a.m.

ILAS also has a number of ILAS Special Sessions. A full list of these sessions can be found under the heading ILAS Special Sessions above.

Julia Robinson Mathematics Festival

Please see complete descriptions of these sessions on the JMM website.

Julia Robinson Math Festival, organized by **Daniel Kline**, Julia Robinson Mathematics Festival; Saturday, 9:00 a.m.–12:00 p.m.

Mathematical Association of America

Please see complete descriptions of these sessions on the JMM website.

MAA Lecture on Teaching and Learning, **Eric Hsu**, San Francisco State University, *Title to be announced*; Thursday, 10:50–11:55 a.m.

MAA has a number of Special Sessions and a Contributed Paper session, listed in the sections above.

MAA Panel: *AI Transformed: Navigating the New Landscape for Business, Industry, Government and Education* (Code: MAA-PAN1), **Mihhail Berezovski**, Embry-Riddle Aeronautical University, **Vinodh Kumar Chellamuthu**, Utah Tech University, **Thomas Philip Wakefield**, Youngstown State University, and **Jan Rychtar**, Virginia Commonwealth University.

MAA Panel: *Teaching and Learning Calculus in an AI World* (Code: MAAPAN2), **Gail F Burrill**, Michigan State University.

MAA Panel: *Undergraduate Research in Mathematics for Addressing the Sustainable Development Goals in the Age of AI* (Code: MAAPAN3), **Vinodh Kumar Chellamuthu**, Utah Tech University, **Haseeb Kazi**, Trine University, **Lauren L Rose**, Bard College, **Violeta Vasilevska**, Utah Valley University, **Brandy S. Wieggers**, College of Idaho, and **Cara Sulyok**, Lewis University.

MAA Workshop: *Supercharging Math Instruction: A Practical Guide to Generative AI Applications* (Code: MAAWK1), **Lewis D. Ludwig**, Denison University, and **Gizem Karaali**, Pomona College.

SIGMAA Panel: *Navigating the Frontier: Statistics, Data Science, and AI in the First Two Years of College* (Code: SIGMAA-PAN1), **Helen Elizabeth Burn**, Highline College, SIGMAA Statistic and Data Science Education.

SIGMAA Workshop: *Team-worthy Activities for Discrete Mathematics Instruction* (Code: SIGMAAWK1), **Shandy Hauk**, San Francisco State University, and **Tim Hsu**, San José State University.

The Simons Laufer Mathematical Sciences Institute (SLMath), formerly MSRI

Please see complete descriptions of these sessions on the JMM website.

MSRI/SLMath has a number of MSRI/SLMath Special Sessions. A full list of these sessions can be found under the heading The Simons Laufer Mathematical Sciences Institute (SLMath), formerly MSRI Special Sessions.

NAM/MSRI/SLMath Film Presentation: *World Premiere of George Csicsery's film "Journeys of Black Mathematicians: Part 2" and Panel Discussion*, organized by **Tatiana Toro**, Simons Laufer Mathematical Sciences Institute (SLMath) / MSRI, **Asamoah Nkwanta**, Morgan State University, **Jennifer Murawski**, Simons Laufer Mathematical Sciences Institute (SLMath) / MSRI, **Uta Lorenzen**, Simons Laufer Mathematical Sciences Institute (SLMath) / MSRI, and **George Paul Csicsery**, Zala Films; Saturday, 11:30 a.m.–1:00 p.m. Moderator and panelists to be announced.

MSRI/SLMath will host a reception; please see the listing in the Social Events section of the announcement.

National Association of Mathematicians

Please see complete descriptions of these sessions on the JMM website.

NAM *Claytor-Woodard Lecture*, speaker to be announced, Title to be announced, organized by **Aris Winger**, Georgia Gwinnett College, and **Torina Lewis**, National Association of Mathematicians; Thursday, 2:10–3:15 p.m.

The Cox-Talbot Address, speaker to be announced, organized by **Aris Winger**, Georgia Gwinnett College, and **Torina Lewis**, National Association of Mathematicians; Friday, 7:45–8:45 p.m., after the banquet. See details about the banquet on Friday in the Social Events section.

The Haynes-Granville-Browne Session of Presentations by Recent Doctoral Recipients in the Mathematical Sciences organized by **Aris Winger**, Georgia Gwinnett College, and **Torina Lewis**, National Association of Mathematicians; Thursday, 8:00 a.m.–12:00 p.m. and 1:00 p.m.–5:00 p.m.

NAM/MSRI/SLMath Film Presentation: *World Premiere of George Csicsery's film "Journeys of Black Mathematicians: Part 2" and Panel Discussion*, organized by **Tatiana Toro**, Simons Laufer Mathematical Sciences Institute (SLMath) / MSRI, **Asamoah Nkwanta**, Morgan State University, **Jennifer Murawski**, Simons Laufer Mathematical Sciences Institute (SLMath) / MSRI, **Uta Lorenzen**, Simons Laufer Mathematical Sciences Institute (SLMath) / MSRI, and **George Paul Csicsery**, Zala Films; Saturday, 11:30 a.m.–1:00 p.m. Moderator and panelists to be announced.

The NAM Business Meeting will take place on Saturday, 10:00–11:00 a.m.

Pi Mu Epsilon

Please see complete descriptions of these sessions on the JMM website.

The PME J. Sutherland Frame Lecture will be delivered on Thursday, 9:40–10:45 a.m. by **Daniela Witten**, University of Washington, *Selective Inference for Real-World Problems*.

Pi Mu Epsilon Contributed Sessions on Research by Undergraduates, organized by **Chad Awtrey**, Samford University, and **Thomas Philip Wakefield**, Youngstown State University; Thursday, 1:00–5:00 p.m. and Friday, 8:00 a.m.–12:00 p.m.

AMS-PME Undergraduate Student Poster Session (Code: AMSPMEPOS1), **Chad Awtrey**, Samford University, **Molly Moran**, Colorado College, and **Denise Taunton Reid**, Valdosta State University; Friday, 12–1:30 p.m. and 3:30–5:00 p.m. These sessions provide a venue for undergraduate students to deliver poster presentations based on original research; presentations that are purely expository in nature are not appropriate for these sessions. First-year graduate students are eligible to present if their research was completed while they were still undergraduates. High school students are eligible to present if their research was conducted under the supervision of a faculty member at a post-secondary institution. Presenters need not be members of any particular mathematics or honorary society.

Participants should submit an abstract through the JMM abstract submission portal by **Tuesday, September 24**. Questions regarding this session should be directed to **Chad Awtrey**, cawtrey@samford.edu.

PME Panel: What Every Student Should Know about the JMM, organized by **Stephanie Edwards**, Hope College; Wednesday, 1:30–2:30 p.m. and Thursday, 11:00 a.m.–12:00 p.m.

Pro Mathematica Arte

Please see complete descriptions of these sessions on the JMM website.

The PMA program includes a Budapest Semesters in Math Special Session. Information on this session can be found under the heading Pro Mathematica Arte Special Sessions above.

PMA will also host a reception for BSM Alumni. Please see the listing in the Social Events section of the announcement.

Society for Industrial and Applied Mathematics

Please see complete descriptions of these sessions on the JMM website.

The SIAM Invited Address, **Steven Lee**, Department of Energy—Office of Science, Title to be announced; Friday, 11:00 a.m.–12:05 p.m.

SIAM Minisymposia for JMM 2025 will take place Wednesday–Saturday. There are eight Minisymposia. A full list of these sessions can be found under the heading Society for Industrial and Applied Mathematics Minisymposia above.

MAA-SIAM-AMS Hrabowski-Gates-Tapia-McBay Lecture, organized jointly by the **Mathematical Association of America**, **Society for Industrial and Applied Mathematics**, and the **American Mathematical Society**; Friday, 9:00–10:00 a.m.

MAA-AMS-SIAM Gerald and Judith Porter Public Lecture will be given by **Ravi Vakil**, Stanford University, Title to be announced; Saturday, 2:15–3:20 p.m.

SIAM will also host a reception; please see the listing in the Social Events section of the announcement.

Association for LGBTQ+ Mathematicians (Spectra)

Please see complete descriptions of these sessions on the JMM website.

Spectra Lavender Lecture, **Emmy Murphy**, University of Toronto, Mississauga; Thursday, 2:10–3:15 p.m.

Spectra Business Meeting, organized by **Devavrat Dabke**, Princeton University, Thursday, 4:00–5:00 p.m.

Spectra Workshop: Accessibility & Inclusivity in a Math Classroom: Union & Intersection of LGBTQ+ and Disability (Code: SPECTWK1), **Apoorva Mate**, Pennsylvania State University–Brandywine, **Devavrat Dabke**, Level Ventures, and **Sarah Heuss**, University of South Carolina–Union; Thursday, 9:00–10:50 a.m.

Spectra Career Workshop (Code: SPECTWK2), **Devavrat Dabke**, Level Ventures, **Michael A. Hill**, UCLA, and **Joseph Hunter Kee Nakao**, Swarthmore College; Thursday, 11:10 a.m.–12:00 p.m.

Spectra will also host a reception; please see the listing in the Social Events section of the announcement.

Transforming Post-Secondary Education in Mathematics

Please see complete descriptions of these sessions on the JMM website.

TPSE Invited Address, **Joan Ferrini-Mundy**, University of Maine, Title to be announced; Friday, 10:50–11:55 a.m.

TPSE Panel: Aligning Mathematics Options with Students' Aspirations in Grades 11–14 (Code: TPSEPAN4), **David T. Kung**, Charles A. Dana Center - UT-Austin, **Ted Coe**, VP for Content Advocacy – Mathematics, Northwest Evaluation Association, **Joleigh Honey**, Past-President, Association of State Supervisors of Mathematics (ASSM), and **Scott Wolpert**, University of Maryland; Saturday, 1:00–2:30 p.m.

TPSE Panel: Practices of Effective Mathematics Departments (Code: TPSEPAN2), **Michael John Dorff**, Brigham Young University, and **Scott Andrew Wolpert**, University of Maryland and TPSE Math; Thursday, 3:00–4:30 p.m.

TPSE Panel: The Impact of AI in the Mathematics Curriculum, Teaching, and Research (Code: TPSEPAN3), **Oscar Vega**, California State University, Fresno, and **Padmanabhan Seshaiyer**, George Mason University; Friday, 3:00–4:30 p.m.

TPSE Panel: Tools for Supporting Conversations About Teaching (Code: TPSEPAN1), **Nancy J. Sattler**, Terra State Community College, and **Scott Andrew Wolpert**, University of Maryland and TPSE Math; Wednesday, 10:30 a.m.–12:00 p.m.

TPSE Workshop: Teaching and Managing Large Undergraduate Mathematics Courses in a Changing World (Code: TPSEWK1), **P. Gavin Larose**, University of Michigan, and **Bryan David Mosher**, University of Minnesota - Twin Cities; Saturday, 8:00 a.m.–12:00 p.m.

JMM Sessions and Events

Professional Enhancement Programs (PEP)

Professional Enhancement Programs (PEP) are open only to persons who register for the Joint Meetings and pay the Joint Meetings registration fee in addition to the appropriate PEP fee. The AMS reserves the right to cancel any PEP that is undersubscribed. Participants should read the descriptions of each PEP thoroughly as some require participants to bring their own laptops and special software; laptops will not be provided in any PEP. The enrollment in each PEP is limited to 40; the cost is US\$125 per program for the member rate (AIM, AMS, AWM, ASA, NAM, or SIAM) and US\$175 for the nonmember rate.

Please see complete descriptions of these JMM Professional Enhancement Programs (PEP) on the JMM website.

Professional Enhancement Program (PEP) #1: *Building Conceptual Understanding of Multivariable Calculus using 3D Visualization in CalcPlot3D and 3D-Printed Surfaces*, presented by **Paul E. Seeburger**, Monroe Community College, and **Shelby Stanhope**, U.S. Air Force Academy; Part A, Wednesday, 1:00–3:00 p.m., and Part B, Thursday, 1:00–3:00 p.m.

Professional Enhancement Program (PEP) #2: *Leveraging GitHub and AI for Mathematics Research and Teaching*, presented by **Steven Craig Clontz**, University of South Alabama, and **Oscar Levin**, University of Northern Colorado; Part A, Wednesday, 1:00–3:00 p.m., and Part B, Thursday, 1:00–3:00 p.m.

Professional Enhancement Program (PEP) #3: *Mentoring for Equity: Accounting for Identity and Culture in Our Most Important of Relationships*, presented by **Abbe Herzig**, Bard Prison Initiative, **Michael Dorff**, Brigham Young University, and **Emily Moore**, University of Oregon; Part A, Friday, 9:00–11:00 a.m., and Part B, Saturday, 9:00–11:00 a.m.

Professional Enhancement Program (PEP) #4: *Formalization in the Lean Theorem Prover*, presented by **Alex Kontorovich**, Rutgers University; Part A, Friday, 1:00–3:00 p.m., and Part B, Saturday, 1:00–3:00 p.m.

Professional Enhancement Program (PEP) #5: *Quantum-Accelerated Supercomputing for the Mathematics Classroom*, presented by **Monica VanDieren**, NVIDIA; Part A, Wednesday, 9:00–11:00 a.m. and Part B, Thursday, 9:00–11:00 a.m.

JMM Panels

Please see complete descriptions of these sessions on the JMM website.

Joint Committee on Women Panel Discussion, Thursday, 3:00–4:30 p.m., organized by **Jennifer Schultens**, University of California, Davis.

Data Science in Undergraduate Mathematics Classrooms: Why and How? (Code: JMMPAN1), **Aaron D. Wootton**, University of Portland, and **Deborah Hughes Hallett**, University of Arizona; Wednesday, 8:30–10:00 a.m. Panelists include **Adam Spiegler**, CU Denver, **Adam Forland**, Red Rocks Community College, **Alan Garfinkel**, UCLA, **Eric Kostelich**, ASU, and **Bethany Johnson**, CalPoly Humboldt.

Fields of Success: Math Alliance Scholars Tell their Stories from Undergraduate to Graduate and Beyond (Code: JMMPAN2), **Theresa Martines**, University of Texas, Austin, and **David Goldberg**, Math Alliance/Purdue University; Saturday, 2:00–3:30 p.m.

The 1988–91 AMS “Computers and Mathematics” Initiative to Promote and Support the Use of Computers in Research & Education—And What Followed (Code: JMMPAN3), **Keith Devlin**, Stanford University. Panelists include **David Bailey**, Lawrence Berkeley National Laboratory, **Tevian Dray**, Oregon State University, **Susanna Fishel**, Arizona State University, **Tamara Munzner**, University of British Columbia, and **Paul Zorn**, St Olaf College; Wednesday, 10:30 a.m.–12:00 p.m.

The Mathematics of Mass Incarceration (Code: JMMPAN4), **Abbe Herzig**, Bard Prison Initiative; Wednesday, 3:00–4:30 p.m.

The Role of Technology in Linear Algebra Education, (Code: JMMPAN5), **Sepideh Stewart**, University of Oklahoma, and **Judi McDonald**, Washington State University. Panelists include **Sheldon Axler**, San Francisco State University, **Emily Evans**, Brigham Young University, **Gabriel Martin**, Sacramento State University, **Judi McDonald**, Washington State University, **Jeffrey Meyer**, University of California, Riverside, **Mike Michailidis**, MathWorks, **David Strong**, Pepperdine University, and **Frank Uhlig**, Auburn University; Saturday, 8:30–10:00 a.m.

The Use of AI tools to Aid Mathematics Research (Code: JMMPAN6), **Ayush Khaitan**, Rutgers University, **Swarat Chaudhari**, University of Texas at Austin, and **Amitayush Thakur**, University of Texas at Austin; Wednesday, 8:30–10:00 a.m.

JMM Workshops

Please see complete descriptions of these sessions on the JMM website.

Developing Online Mathematics Courses: Strategies to Consider (Code: JMMWK6), **Sharmila Sivalingam**, Maryville University of St. Louis, and **Pamela Bryan Williams**, Chief Strategist | Learning Design and Development Maryville University | School of Adult & Online Education; Wednesday, 1:00–2:30 p.m.

High School Mathematics Reimagined (Code: JMMWK7), **Latrenda Knighten**, National Council of Teachers of Mathematics; Saturday, 3:00–4:30 p.m.

Advances in Neural Operators and Uncertainty Quantification for Scientific Modeling (Code: JMMWK1), **Panos Stinis** and **Amanda Howard**, Pacific Northwest National Laboratory; Friday, 3:00–4:30 p.m.

Artificial Intelligence and Game Theory: An Intersection of Theory and Applications (Code: JMMWK2), **Mark Lovett**, Dartmouth College; Thursday, 1:00–2:30 p.m.

Engage, Enhance, Educate: Exploring AI-Driven Teaching Strategies and Tools for Tomorrow's Math Classrooms (Code: JMMWK3), **Ruby Ellis**, North Carolina State University, **Jerome Zegaigbe Amedu**, University of New Hampshire, and **Kenya Lawrence**, North Carolina State University; Thursday, 10:30 a.m.–12:00 p.m.

Entrepreneurial Mindset in Teaching Mathematics (Code: JMMWK4), **Wojciech K Kossek**, University of Denver; Friday, 10:30 a.m.–12:00 p.m.

Reimagining Exams to Focus on Meaningful Learning and Disrupt the Dominant Grade-Focused Culture (Code: JMMWK5), **Hyman Bass** and **Deborah Loewenberg Ball**, University of Michigan; Saturday, 1:00–2:30 p.m.

Programs of Other Organizations

This section includes scientific sessions. Several organizations or special groups are having receptions or other social events. Please see the *Social Events* section of this announcement for those details.

MathHappens

Conversation about Outreach with MathHappens, Friday, 11:00 a.m.–12:00 p.m. Let's talk about math learning outside of classrooms! Come share successes, struggles, and questions. Walk away invigorated and with new ideas for spreading joyful, creative, interesting, and compelling math in a variety of contexts and spaces. This conversation will be facilitated by **Dr. Christopher Danielson**, Director of Math Play at MathHappens Foundation.

National Science Foundation (NSF)

Please see complete descriptions of these sessions on the JMM website.

Exploring Funding Opportunities in the Division of Mathematical Sciences (Code: NSFSS2A), **Elizabeth L Wilmer**, Oberlin College, and **Junping Wang**, National Science Foundation.

Outcomes and Innovations from NSF Undergraduate Education Programs in the Mathematical Sciences (Code: NSFSS1A), **Michael Ferrara**, Division of Undergraduate Education, National Science Foundation.

Panamanian Foundation for the Promotion of Mathematics (FUNDAPROMAT)

Stories of Resilience in the Mathematical Community (Code: STORY) Thursday, 8:30–10:00 a.m. Join our storytelling event in which invited guests from the mathematical community will share stories about challenges they have faced and how they dealt with these difficulties. Speakers from a wide variety of life experiences will illustrate how they built their resilience to help them thrive.

Summer Program for Women in Mathematics (SPWM)

SPWM Reunion, Thursday, 1:00–3:00 p.m. *Summer Program for Women in Mathematics (SPWM) Reunion*, organized by **Murli M. Gupta**, George Washington University; A reunion of past program participants from all 19 years (1995–2013) who are in various states of their mathematical careers. The participants will describe their experiences relating to all aspects of their careers. There will also be a discussion on increasing the participation of women in mathematics over the past two decades and the national impact of SPWM and similar programs.

Sessions for Students

Please see complete descriptions of these sessions on the JMM website.

AMS Town Hall: Hearing Student Voices: A Town Hall to Discuss a Bridge to Graduate Education (Code: AMSTH), **Alvina Atkinson** and **Tyler Kloefkorn**, American Mathematical Society; Wednesday, 10:30 a.m.–12:00 p.m. This town hall invites students to share their opinions on bridge programs and resources for graduate education and in the mathematical sciences.

AMS Graduate School Fair (Code: GRADFAIR), **Rosalynde Vas Dias**, **Sarah Klyberg**, and **Lexie Ekstrom**, American Mathematical Society; Friday, 8:00–11:00 a.m. This event is undergraduate and master's students' chance for one-stop shopping in the graduate school market. January is a great time for college juniors to learn more about applying to graduate school, and seniors may still be able to refine their search. Meet representatives from mathematical sciences graduate programs from universities all over the United States. Information is available here: <https://www.ams.org/gradfair>.

AMS - PME Undergraduate Student Poster Session (Code: AMSPMEPOS1), **Chad Awtrey**, Samford University, **Molly Moran**, Colorado College, and **Denise Taunton Reid**, Valdosta State University; Friday, 12–1:30 p.m. and 3:30–5:00 p.m. These sessions provide a venue for undergraduate students to deliver poster presentations based on original research; presentations that are purely expository in nature are not appropriate for these sessions.

First-year graduate students are eligible to present if their research was completed while they were still undergraduates. High school students are eligible to present if their research was conducted under the supervision of a faculty member at a post-secondary institution. Presenters need not be members of any particular mathematics or honorary society.

Participants should submit an abstract through the JMM abstract submission portal by **Tuesday, September 24**. Questions regarding this session should be directed to **Chad Awtrey**, cawtrey@samford.edu.

PME Panel: What Every Student Should Know about the JMM, organized by **Stephanie Edwards**, Hope College; Wednesday, 1:30–2:30 p.m. and Thursday, 11:00 a.m.–12:00 p.m.

Pi Mu Epsilon Contributed Sessions on Research by Undergraduates, organized by **Chad Awtrey**, Samford University, and **Thomas Philip Wakefield**, Youngstown State University; Thursday, 1:00–5:00 p.m. and Friday, 8:00 a.m.–12:00 p.m.

Other Events

The Mathematical Art Exhibit is organized by Robert Fathauer, Tessellations Company, and Nathan Selikoff, Digital Awakening Studios, and supported by the Bridges Organization. A popular feature at the Joint Mathematics Meetings, this exhibition provides a break in your day.

On display will be works in various media by artists who are inspired by mathematics and by mathematicians who use visual art to express their love of mathematics. Topology, fractals, polyhedra, and tiling are some of the ideas at play here. Do not miss this unique opportunity for a different perspective on mathematics. The exhibition will be located inside the Joint Mathematics Exhibits and open during exhibit hours.

Submissions will be accepted online from September 15 through October 15 at <http://gallery.bridgesmathart.org/>. For questions about the Mathematical Art Exhibition, please contact **Robert Fathauer** at tesselations@cox.net.

Exhibits

The Joint Mathematics Meetings Exhibits include the country's leading scientific publishers, professional organizations, companies that offer mathematics-enrichment products and services, computer hardware and software companies, and the Mathematical Art Exhibit. It will be open to all registered participants on Wednesday (starting with the Grand Opening Reception) 6:00–8:00 p.m., on Thursday and Friday 9:00 a.m.–5:00 p.m., and Saturday 9:00 a.m.–12:00 p.m. See more details on the JMM website.

Welcoming Environment Policy

The AMS strives to ensure that participants in the JMM enjoy a welcoming environment. In all its activities, the AMS seeks to foster an atmosphere that encourages free expression and exchange of ideas. The AMS supports equality of opportunity and treatment for all participants, regardless of gender, gender identity or expression, race, color, national or ethnic origin, religion or religious belief, age, marital status, sexual orientation, disabilities, or veteran status.

Harassment is a form of misconduct that undermines the integrity of the AMS, and its activities and missions.

The AMS will make every effort to maintain an environment that is free of harassment, even though it does not control the behavior of third parties. A commitment to a welcoming environment is expected of all participants of JMM activities, including mathematicians, students, guests, staff, contractors and exhibitors, and participants in scientific sessions and social events. To this end, the AMS will include a statement concerning its expectations towards maintaining a welcoming environment in registration materials for the JMM and has put in place a mechanism for reporting violations. Violations may be reported confidentially and anonymously to 855-282-5703 or at www.mathsociety.ethicspoint.com. The reporting mechanism ensures the respect of privacy while alerting the AMS to the situation.

Assistance may also be sought from any staff or volunteer member wearing a MathSafe badge. Learn more about the MathSafe program.

MathSafe

The AMS is proud to participate in MathSafe, a program by and for the mathematical community to support a safe and welcoming environment at meetings. The AMS strives to ensure that participants in the meeting enjoy a welcoming environment. See the Welcoming Environment Policy. A mechanism for reporting violations confidentially and anonymously is included in this policy.

MathSafe volunteers are trained to help if participants experience or witness harassment, discrimination, or other inappropriate behavior. Trained volunteers and staff will wear a badge with the MathSafe logo so they're easily identifiable. For assistance, come to the Registration Desk. To speak to an ombudsperson directly or for assistance when the desk is closed, call (401) 455-4040.

Visit MathSafe (www.mathsafe.org) to learn more or to sign up for volunteer training.

How to Reserve Hotel Rooms

See details about hotels and how to reserve a room on the JMM website.

Importance of Staying in an Official JMM Hotel

The importance of reserving a room at one of the official JMM hotels cannot be stressed enough. The AMS makes every effort to keep participants' expenses at the meeting as low as possible and a lot of work and effort goes into negotiating the most affordable hotel rates. When a participant registers for the meeting and reserves a room at an official JMM hotel, they are helping to support not only JMM 2024, but future JMMs as well.

Reserving a Room

Participants are encouraged to register for the JMM in order to reserve hotel rooms at the JMM rates. If a participant needs to reserve a hotel room before they are registered for the JMM, they should contact the Mathematics Meetings Services Bureau (MMSB) at mmsb@ams.org or 1-800-321-4267 (ext. 4094 or ext. 4144) for further instructions.

Special rates have been negotiated exclusively for this meeting at the following hotels: Sheraton Grand Seattle, Grand Hayatt, Hyatt Olive 8 Seattle, Washington Athletic Club, Hilton Garden Inn Seattle Downtown, and The Crowne Plaza Seattle Downtown. See details on these hotels and more details on the JMM website.

Reservations must be made through the MMSB. The hotels will not be able to accept reservations directly until after **December 10, 2024**. At that time, rooms and rates will be based on availability. Any rooms reserved directly with the hotels after **December 10, 2024**, will be subject to higher rates.

A link to the JMM 2025 hotel reservation portal will be included in the confirmations of registrations sent by email. If a participant needs the link sent directly to them, they should send a request to mmsb@ams.org. If any participant has difficulty reserving a hotel room, they should send email to mmsb@ams.org for assistance.

Reservations can only be guaranteed with a credit card. Anyone that wishes to guarantee a room with a check will have to book a room directly with a hotel at room rates different than JMM rates.

Miscellaneous

Please see details about audio-visual equipment; email services; information distribution; local information; the JMM Broadcasting, Photographing, and Videotaping Policy; and telephone messages on the JMM website.

Child Care Grants

Please see details about how to apply for child care grants on the JMM website.

Registration Information

Everyone is welcome at the JMM. The American Mathematical Society (AMS) encourages all participants to register for the JMM. The importance of registering for the meeting cannot be overemphasized. Paying a registration fee helps to support a wide range of activities associated with planning, organizing, and executing the meetings.

All participants who wish to attend sessions are expected to register for the JMM and should be prepared to show their badges, if requested. Badges are required to enter the Exhibits and the AMS Employment Center. The Mathematics Meetings Service Bureau (MMSB) is the official registration and housing bureau for the meeting and will be available to assist you with your registration and housing arrangements.

Cancellation Policy

100% of fees paid will be issued for cancellations of any registrations, including the PEP programs and banquet tickets, up to **November 5, 2024**. 50% refunds will be issued for any cancellations after that date up to **December 31, 2024**. No refunds can be issued for any cancellations after **December 31, 2024**. To cancel any registration, send an email to mmsb@ams.org.

Deadlines

Register by **December 23, 2024, midnight EST** to be eligible for discounted registration fees. After this date, registration will continue through the end of the meeting, but increased fees will apply. Updates and corrections received too late to be included in the program books will be included in the online program on the JMM website and in the JMM Mobile App.

Registration for Professional Enhancement Programs (PEPs): Online registration will turn off for PEPs after January 7. After that, registration for a PEP can only be done in person at a cashier station, through January 8. Registration will close after January 8 for the PEPs.

Registration for NAM Banquet: Online registration will turn off for the NAM banquet after December 31. After this date, registration for the banquet can only be done in person at a cashier station. Registration for the banquet will close after January 8.

Please see detailed information about registration fees and categories on the JMM 2025 website under Registration Fees.

Register for the Meeting

Registration can only be done online until **Tuesday, January 7**, when the registration desk opens at the meeting. After the registration desk opens on January 7, registration can be done either online or in person. Paper registration forms are no longer available for online registration. To register for the meeting online, go to the online registration form and choose "Register." You will be asked to enter your email address and to sign in with your personal AMS web account. If you do not have an AMS web account, you will need to create one. After you have signed in, proceed with completing the registration form. If you are registering someone else, please see the instructions on the JMM 2025 website.

VISA, MasterCard, Discover, and American Express are the only methods of payment accepted for registrations and charges to credit cards will be made in US funds. Registration acknowledgments will be sent to the email addresses provided. See details on how to register at https://www.jointmathematicsm meetings.org/meetings/national/jmm2025/2314_reg.

Special Registration Codes

To allow for easy tracking of registrations for participants that belong to certain groups and are attending the meeting solely to participate in those groups, a registration code will be sent to them to register. See details at https://www.jointmathematicsm meetings.org/meetings/national/jmm2025/2314_reg.

Joint Mathematics Meetings Registration Fees (all fees in US\$)

Registration Category (see definitions below)	By Dec. 23 (midnight EST)	After Dec. 23
Member of AIM, AMS, AWM, ASA, NAM, or SIAM.....	US\$430.....	US\$575
Nonmember.....	680.....	875
Graduate Student.....	95.....	115
Undergraduate Student.....	95.....	115
High School Student.....	95.....	115
Unemployed.....	95.....	115
Retired.....	95.....	115
Developing Country Participant.....	95.....	115
High School Teacher.....	95.....	115
Librarian.....	95.....	115
One-day Only—Member (AMS, AWM, ASA, MAA, NAM, or SIAM).....	N/A.....	315
One-day Only—Nonmember.....	N/A.....	485
Nonmathematician Guest.....	50.....	50

Any child 16 years and younger can attend the meeting free of charge but must be accompanied by an adult at all times.

JMM Professional Enhancement Program (PEP)—Per program: \$125 Member (AMS, AWM, ASA, MAA, NAM, or SIAM); \$175 Nonmember

These programs are open only to persons who register for the Joint Mathematics Meetings and pay the Joint Mathematics Meetings registration fee, in addition to the appropriate program fee. The AMS reserves the right to cancel any program that is undersubscribed. Note that online registration will turn off for the PEPs after 1/7. After that, registration for a PEP can only be done in person at a cashier station, through 1/8.

- #1: *Building Conceptual Understanding of Multivariable Calculus using 3D Visualization in CalcPlot3D and 3D-Printed Surfaces*
- #2: *Leveraging GitHub and AI for Mathematics Research and Teaching*
- #3: *Mentoring for Equity: Accounting for Identity and Culture in Our Most Important of Relationships*
- #4: *Formalization in the Lean Theorem Prover*
- #5: *Quantum-Accelerated Supercomputing for the Mathematics Classroom*

Graduate School Fair and Career Fair: Please see the fees for tables at the Graduate School Fair and the Career Fair on the website at https://www.jointmathematicsmeetings.org/meetings/national/jmm2025/2314_reg.

Department Chairs and Leaders Workshop: This annual one-day workshop for department chairs, leaders, and prospective leaders will be held on Tuesday, January 7, 2025, 9:00 a.m.–3:00 p.m. Please see the registration fees on the website at https://www.jointmathematicsmeetings.org/meetings/national/jmm2025/2314_reg.

Registration Category Definitions

Full-Time Students

Any person who is currently working toward a degree or diploma is eligible for this category. Students are asked to determine whether their status can be described as a graduate (working toward a degree beyond the bachelor's), an undergraduate (working toward a bachelor's degree), or high school (working toward a high school diploma) and to mark the registration form accordingly.

Retired

Any person who has been a member of the AMS for twenty years or more and who retired because of age or long-term disability from his or her latest position is eligible for this category.

Librarian

Any librarian who is not a professional mathematician is eligible for this category.

Unemployed

Any person who is currently unemployed, actively seeking employment, and is not a student is eligible for this category. This category is not intended to include any person who has voluntarily resigned or retired from his or her latest position.

Developing Country Participant

Any person who is employed in a developing country, where salary levels are radically not commensurate with those in the U.S., is eligible for this category. See the most recent list of developing countries at <https://worldpopulationreview.com/country-rankings/developing-countries>.

Nonmathematician Guest

Any family member, friend, or associate, who is not a mathematician, and who is accompanied by a participant in the meeting is eligible for this category. Guests will receive a badge and may attend any session, talk, or other event at the meeting.

Commercial Exhibitor (Exhibit Booth Staff)

Any person who is exhibiting in the Joint Mathematics Meetings Exhibits is eligible for this category. This does not include anyone participating in a poster session. Any exhibitor who is a mathematician and is participating in the scientific program and/or wants to attend sessions, talks, etc. is expected to register separately for the meeting.

Social Events

All events listed are open to all registered participants. It is strongly recommended that for any event requiring a ticket, tickets should be purchased through advance registration. Only a very limited number of tickets, if any, will be available for sale on site. If you must cancel your participation in a ticketed event, you may request a 50% refund by returning your tickets to the Mathematics Meetings Service Bureau (MMSB) by **December 31, 2024**. After that date, no refunds can be made. Special meals are available at banquets upon advance request, but this must be indicated on the Registration/Housing Form.

Please see complete descriptions of these events on the JMM website.

American Institute for Mathematics Math Circles Dessert and Games Night Reception, Thursday, 8:00–9:30 p.m. Come enjoy a fun evening of games and sweets with members of the Math Circle community. All JMM participants are welcome!

American Statistical Association Invited Address Reception, Thursday, 6:00–7:00 p.m. Join us for an open reception celebrating the vital contributions of statistics to science and society. Network with colleagues, engage in thought-provoking discussions, and enjoy refreshments. This is an opportunity to celebrate the power of data in shaping our world and the future of statistical science. All are welcome!

AMS Journal Reviewer Appreciation Reception, Thursday, 6:00–7:00 p.m. AMS Publications would like to express our gratitude to our journal editorial board members and reviewers. Please join us for drinks and hors d'oeuvres!

Association of Christians in the Mathematical Sciences (ACMS) Reception, Thursday, 6:00–7:30 p.m. The Association for Christians in the Mathematical Sciences warmly invites you to a free reception with light hors d'oeuvres and fellowship. Students are particularly encouraged to attend.

Association for Women in Mathematics Reception and Awards Presentation, Friday, 5:00–6:30 p.m. The AWM Reception which is open to all JMM participants will begin at 5:00 pm, during the AWM poster session. At 5:30, the AWM President will recognize all of the recipients of the AWM, the AWM Service Awards, the AWM Fellows, the Poster Session Award Winners, and all of the other AWM prize winners honored during the Joint Awards Ceremony.

Canada/USA Mathcamp Alumni and Friends Gathering, Thursday, 6:00–7:30 p.m.

Grand Opening Reception, Wednesday, 6:00–8:00 p.m. The JMM officially opens with a brief ribbon-cutting ceremony (at 4:30 p.m.), followed by an Awards Ceremony. Participants will then enjoy festivities to further celebrate our vibrant mathematical community. At the reception, the mathematical art display, vendor, and exhibitor booths will all be available to you, along with hors d'oeuvres, food stations, beverages, and entertainment. ALL are welcome! FREE! Meet up with friends or explore on your own, but be sure to take in all the fun, refreshments, and special offerings. Travel each aisle—many exhibitors are planning special offerings just for this evening!

ICERM Mixer, Friday, 6:00–7:30 p.m. ICERM welcomes all past and future participants of our semester programs, workshops, collaborations, and summer @ICERM undergraduate programs to come together for its annual mixer. Refreshments will be served.

Knitting Circle, Thursday, 8:15–9:45 p.m. Bring a project (knitting/crochet/tatting/beading/etc.) and chat with other mathematical crafters!

Mathematical Reviews Reception, Friday, 6:00–7:00 p.m. All friends of Mathematical Reviews (MathSciNet®) are invited to join reviewers as well as editors and staff of Mathematical Reviews (past and present) for a reception in honor of all of the efforts that go into the creation and publication of the Mathematical Reviews database. We look forward to seeing old and new friends this year. Refreshments will be served.

Mathematical Institutes Open House, Thursday, 6:00–8:00 p.m. Please join us at the Mathematical Institutes Open House reception to learn about the latest programs and workshops held by several institutes. Hope to see you there!

Mathematically Bent Theater, organized by **Colin Adams**, Williams College; Friday, 6:00–7:00 p.m. When you are trying to prove a theorem, does it help to bang your head against the wall? Why does the *Skiponacci Quarterly* only produce three issues per year? Did you mistakenly take my tote-bag at the Wisconsin reception at JMM 2023? These are just a few of the questions we will not answer in this presentation of four short humorous math pieces.

National Association of Mathematicians Banquet, Friday, 6:00–9:00 p.m. A cash bar reception will be held at 6:00 p.m., and dinner will be served at 6:30 p.m. The Cox-Talbot Invited Address will be given after the dinner, 7:45–8:45 p.m. Tickets will be available for sale once registration is open for the JMM.

MAA Reception, Friday, 8:00–10:00 p.m.

SLMath (MSRI) Reception for Current and Future Donors, Friday, 6:00–7:30 p.m. SLMath (formerly MSRI) invites current and prospective donors to an informal reception with appetizers & drinks. Directors Tatiana Toro and Hélène Barcelo will speak about upcoming events and programs, as well as the impact of private support on the Institute. SLMath thanks and acknowledges mathematicians who support the Institute's programs and workshops by joining our giving societies. For more information about the event or becoming an SLMath supporter, please contact development@slmath.org.

Society for Industrial and Applied Mathematics (SIAM) Reception on Industrial Math Modeling, Thursday, 7:00–9:00 p.m. Learn more about SIAM's commitment to training a workforce in the application of mathematical modeling, analysis, scientific computation, and machine/deep learning to real-world problems. Mingle with leaders and participants in SIAM programs and collaborations including the MathWorks Math Modeling Challenge, SIAM-Simons Undergraduate Summer Research Program, Graduate Student Mathematical Modeling Camp, Mathematical Problems in Industry Workshop, Math Modeling Hub, and BIG Math Network.

Spectra Reception for LGBTQ+ Mathematicians, Thursday, 6:00–8:00 p.m. This reception is one of Spectra's annual social events for LGBTQ+ mathematicians and their allies. It will be a great time to socialize, meet each other, and learn more about our organization and its new directions.

Texas A & M University Department of Mathematics Reception, Friday, 5:30–7:30 p.m. All alumni, current students, faculty, and current and former post-docs from the Department of Mathematics at Texas A&M University are invited to join us for this reception.

Undergraduate Student Reception, Friday, 6:00–8:00 p.m. A community-building event open to all undergraduate students and their supporters. Join us for activities, games, food, and fun. Organized by AMS and Pi Mu Epsilon, with funding from an AMS anonymous donor.

University of Tennessee, Math Alumni and Friends Reception, Thursday, 6:00–8:00 p.m.

University of Washington Math Alumni Gathering, Day and time to be announced.

University of Wisconsin-Madison Alumni and Friends Reception, Thursday, 6:00–7:30 p.m. All alumni, friends, and participants in the Department of Mathematics programs at UW-Madison are invited. There will be light appetizers and a cash bar.

W + AM Alumnae Coffee Hour, Thursday, 1:00–2:00 p.m. If you previously attended a Women+ and Mathematics program at the Institute for Advanced Study, please join us for coffee, tea, and fellowship.

Yearly Gather: Collaborative Puzzle Time!, Wednesday, 8:45–10:00 p.m., organized by **sarah-marie belcastro**, MathILy, **Corinne Yap**, MathILy, **Thomas Hull**, Franklin and Marshall College, and **Jonah Ostroff**, University of Washington.

Travel/Transportation

Please see details about travel and transportation options on the JMM website.