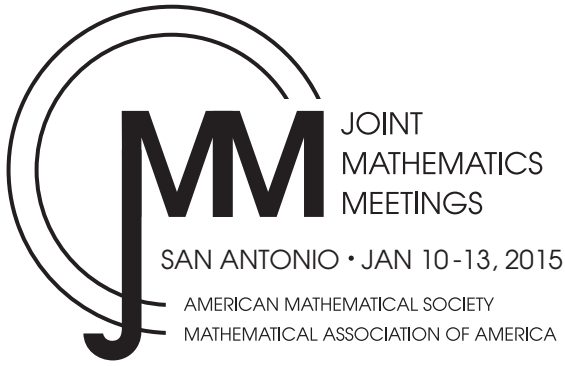
Program at a Glance

This document provides a thumbnail sketch of all scientific and social events so you can easily see which events may overlap and better plan your time.



Thursday, January 08

8:00 a.m.–5:00 p.m.	**AMS SHORT COURSE ON FINITE FRAME THEORY: A COMPLETE INTRODUCTION TO OVERCOMPLETENESS, PART I**
3:00 p.m.–6:00 p.m.	**NSF-EHR GRANT PROPOSAL WRITING WORKSHOP**

Friday, January 09

8:00 a.m.–5:00 p.m.	**AMS SHORT COURSE ON FINITE FRAME THEORY: A COMPLETE INTRODUCTION TO OVERCOMPLETENESS, PART II**
8:00 a.m.–6:30 p.m.	**AMS DEPARTMENT CHAIRS WORKSHOP**
9:00 a.m.–11:00 a.m.	**MAA MINICOURSE #1: PART A** *Introductory proposal writing for grant applications to the NSF EHR Division of Undergraduate Education.*
9:00 a.m.–4:30 p.m.	**MAA ANCILLARY WORKSHOP** *National research experiences for undergraduates.*
9:00 a.m.–4:00 p.m.	**MAA ANCILLARY WORKSHOP** *Embedding undergraduate research into a living-learning community.*
9:00 a.m.–5:00 p.m.	**MAA BOARD OF GOVERNORS**
2:00 p.m.–4:00 p.m.	**MAA MINICOURSE #1: PART B** *Introductory proposal writing for grant applications to the NSF EHR Division of Undergraduate Education.*
2:30 p.m.–10:00 p.m.	**AMS COUNCIL**
3:00 p.m.–8:00 p.m.	**JOINT MEETINGS REGISTRATION**, East Registration, Convention Center
3:00 p.m.–8:00 p.m.	**EMAIL CENTER**

Saturday, January 10

7:30 a.m.–6:00 p.m.	**JOINT MEETINGS REGISTRATION**, East Registration, Convention Center
7:30 a.m.–9:30 p.m.	**EMAIL CENTER**
	AMS SPECIAL SESSIONS
8:00 a.m.–10:50 a.m.	*Research in Mathematics by Undergraduates and Students in Post-Baccalaureate Programs, I (AMS-MAA-SIAM)*
8:00 a.m.–10:50 a.m.	*History of Mathematics, I (AMS-MAA)*
8:00 a.m.–10:50 a.m.	*Beyond First-Order Model Theory, I (AMS-ASL)*
8:00 a.m.–10:50 a.m.	*Factorization Theory and Its Applications, I*
8:00 a.m.–10:50 a.m.	*Applications of Dynamical Systems to Biological Models, I*
8:00 a.m.–10:50 a.m.	*Advances in Coding Theory, I*
8:00 a.m.–10:50 a.m.	*Set-Valued Optimization and Variational Problems with Applications, I*
8:00 a.m.–10:50 a.m.	*Recent Advances in Discrete and Intuitive Geometry, I*

8:00 a.m.–10:50 a.m. *Ergodic Theory and Dynamical Systems, I*
8:00 a.m.–10:50 a.m. *Frames and Their Applications, I*
8:00 a.m.–10:50 a.m. *Algebraic Combinatorics and Representation Theory, I*
8:00 a.m.–10:50 a.m. *Difference Equations and Applications, I*
8:00 a.m.–10:50 a.m. *Operator Algebras and Their Applications: A Tribute to Richard V. Kadison, I*
8:00 a.m.–10:50 a.m. *Model Theory and Applications, I*
8:00 a.m.–10:50 a.m. *Holomorphic Dynamics in One and Several Variables, I*
8:00 a.m.–10:50 a.m. *Ricci Curvature for Homogeneous Spaces and Related Topics, I*

8:00 a.m.–10:55 a.m. **AMS CONTRIBUTED PAPER SESSIONS**

MAA INVITED PAPER SESSIONS
8:00 a.m.–10:55 a.m. *Recent Advances in Mathematical Modeling of the Environment and Infectious Diseases*
8:00 a.m.–11:00 a.m. *Fractal Geometry and Dynamics*

MAA CONTRIBUTED PAPER SESSIONS
8:00 a.m.–11:00 a.m. *The Scholarship of Teaching and Learning in Collegiate Mathematics, I*
8:00 a.m.–11:00 a.m. *Humor and Teaching Mathematics*
8:00 a.m.–11:00 a.m. *Cryptology for Undergraduates*
8:00 a.m.–11:00 a.m. *Perspectives and Experiences on Mentoring Undergraduate Students in Research*
8:00 a.m.–11:00 a.m. *Mathematics and the Arts, I*
8:00 a.m.–10:55 a.m. **MAA GENERAL CONTRIBUTED PAPER SESSIONS**

8:00 a.m.–9:20 a.m. **MAA COMMITTEE ON PROFESSIONAL DEVELOPMENT WORKSHOPS: NSF FUNDING OPPORTUNITIES FOR THE LEARNING AND TEACHING OF THE MATHEMATICAL SCIENCES, PART I.** *Undergraduate/graduate education programs; workforce; and broadening participation (DUE, DGE, DMS, HRD).*

8:30 a.m.–5:30 p.m. **EMPLOYMENT CENTER**

9:00 a.m.–11:00 a.m. **MAA MINICOURSE #14: PART A** *Teaching statistics using R and RStudio.*

9:00 a.m.–11:00 a.m. **MAA MINICOURSE #3: PART A** *Introduction to process-oriented, guided-inquiry learning (POGIL) in mathematics courses.*

9:00 a.m.–11:00 a.m. **MAA MINICOURSE #5: PART A** *Two visual topics using undergraduate complex analysis.*

9:30 a.m.–11:00 a.m. **MAA-AMS-SIAM FREEMAN A. HRABOWSKI, SYLVESTER JAMES GATES, AND RICHARD A. TAPIA LECTURE SERIES**

9:30 a.m.–11:00 a.m. **MAA DEPARTMENT LIAISONS MEETING**

9:35 a.m.–10:55 a.m. **MAA COMMITTEE ON TECHNOLOGIES IN MATHEMATICS EDUCATION AND SIGMAA ON MATHEMATICS INSTRUCTION USING THE WEB PANEL DISCUSSION** *MOOCs and me: Massive online materials for my students.*

9:35 a.m.–10:55 a.m. **MAA COMMITTEE ON PROFESSIONAL DEVELOPMENT WORKSHOPS: NSF FUNDING OPPORTUNITIES FOR THE LEARNING AND TEACHING OF THE MATHEMATICAL SCIENCES, PART II.** *The K–12 continuum: Learning science and research and pre- and in-service teachers (DUE/DRL).*

10:05 a.m.–10:55 a.m. **AMS INVITED ADDRESS** *Random orderings and unique ergodicity of automorphism groups.* **Russell Lyons**

11:10 a.m.–12:00 p.m. **AMS-MAA INVITED ADDRESS** *Title to be announced.* **Jordan Ellenberg**

12:15 p.m.–5:30 p.m. **EXHIBITS AND BOOK SALES**

1:00 p.m.–1:50 p.m. **AMS COLLOQUIUM LECTURES, LECTURE I** *Title to be announced.* **Michael Hopkins**

2:15 p.m.–3:05 p.m. **MAA INVITED ADDRESS** *Dispelling obesity myths through mathematical modeling.* **Diana L. Thomas**

AMS SPECIAL SESSIONS
2:15 p.m.–6:05 p.m. *History of Mathematics, II (AMS-MAA)*
2:15 p.m.–6:05 p.m. *Factorization Theory and Its Applications, II*
2:15 p.m.–6:05 p.m. *Theory and Application of Reaction Diffusion Models, I*

2:15 p.m.–6:05 p.m. *Applications of Dynamical Systems to Biological Models, II*
2:15 p.m.–6:05 p.m. *Inequalities and Quantitative Approximation, I*
2:15 p.m.–6:05 p.m. *Current Trends in Classical Dynamical Systems, I*
2:15 p.m.–6:05 p.m. *Groups, Algorithms, and Cryptography, I*
2:15 p.m.–6:05 p.m. *Enumerative Combinatorics, I*
2:15 p.m.–6:05 p.m. *Recent Advances in Discrete and Intuitive Geometry, II*
2:15 p.m.–6:05 p.m. *Frames and Their Applications, II*
2:15 p.m.–6:05 p.m. *Probability and Applications, I*
2:15 p.m.–6:05 p.m. *Partitions, q-Series, and Modular Forms, I*
2:15 p.m.–6:05 p.m. *Difference Equations and Applications, II*
2:15 p.m.–6:05 p.m. *Operator Algebras and Their Applications: A Tribute to Richard V. Kadison, II*
2:15 p.m.–6:05 p.m. *Model Theory and Applications, II*
2:15 p.m.–6:05 p.m. *Accelerated Advances in Multiobjective Optimal Control Problems and Mathematical Programming Based on Generalized Invexity Frameworks, I*
2:15 p.m.–5:55 p.m. **AMS SESSIONS FOR CONTRIBUTED PAPERS**

MAA INVITED PAPER SESSIONS
2:15 p.m.–6:00 p.m. *Mathematical Techniques for Signature Discovery*
2:15 p.m.–6:00 p.m. *Fractal Geometry and Dynamics*
2:15 p.m.–4:15 p.m. **MAA MINICOURSE #10: PART A** *Humanistic mathematics.*
2:15 p.m.–4:15 p.m. **MAA MINICOURSE #15: PART A** *How to run a successful math circle.*
2:15 p.m.–4:15 p.m. **MAA MINICOURSE #9: PART A** *Teaching college mathematics (for instructors new to teaching at the collegiate level and for instructors who prepare GTAs for their first teaching experience).*

MAA CONTRIBUTED PAPER SESSIONS
2:15 p.m.–6:00 p.m. *Technology, the Next Generation: Integrating Tablets into the Mathematics Classroom*
2:15 p.m.–6:00 p.m. *The Scholarship of Teaching and Learning in Collegiate Mathematics, II*
2:15 p.m.–6:00 p.m. *Revitalizing Complex Analysis at the Undergraduate Level*
2:15 p.m.–6:00 p.m. *Mathematics and the Arts, II*
2:15 p.m.–6:00 p.m. *Mathematics and Sports*
2:15 p.m.–6:00 p.m. *Best Practices for Teaching the Introductory Statistics Course*
2:15 p.m.–5:55 p.m. **MAA GENERAL CONTRIBUTED PAPER SESSIONS**
2:15 p.m.–3:35 p.m. **MAA COMMITTEE FOR UNDERGRADUATE STUDENT ACTIVITIES AND CHAPTERS PANEL DISCUSSION** *What every student should know about the JMM.*
2:15 p.m.–3:35 p.m. **MAA COMMITTEE ON THE UNDERGRADUATE PROGRAM IN MATHEMATICS-MAA COMMITTEE ON THE MATHEMATICAL EDUCATION OF TEACHERS PANEL DISCUSSION** *Recommendations for the 21st century mathematical sciences major.*
2:15 p.m.–4:15 p.m. **YOUNG MATHEMATICIANS' NETWORK-PROJECT NEXT POSTER SESSION**
2:15 p.m.–3:40 p.m. **ASSOCIATION FOR WOMEN IN MATHEMATICS PANEL DISCUSSION** *Breaking the glass ceiling permanently.*
3:30 p.m.–4:30 p.m. **MAA-AMS-SIAM GERALD AND JUDITH PORTER PUBLIC LECTURE** *From Voting Paradoxes to the Search for "Dark Matter".* **Donald G. Saari**
3:45 p.m.–4:15 p.m. **AWM BUSINESS MEETING**
3:50 p.m.–5:10 p.m. **MAA PANEL DISCUSSION** *Recruiting, retaining, mentoring, and evaluating "contract faculty"*
3:50 p.m.–5:10 p.m. **MAA-YMN PANEL DISCUSSION** *Graduate school: Choosing one, getting in, staying in.*
4:00 p.m.–5:00 p.m. **MAA SECTION OFFICERS**
4:00 p.m.–5:00 p.m. **RECEPTION FOR UNDERGRADUATE STUDENTS**
4:40 p.m.–6:00 p.m. **AMS COMMITTEE ON THE PROFESSION PANEL DISCUSSION** *Title to be announced.*
4:45 p.m.–6:45 p.m. **MAA MINICOURSE #12: PART A** *Introducing matroids to undergraduates.*
4:45 p.m.–6:45 p.m. **MAA MINICOURSE #13: PART A** *WeBWorK: An open source alternative for generating and delivering online homework problems.*

4:45 p.m.–6:45 p.m.	**MAA MINICOURSE #4: PART A** *A dynamical systems approach to the differential equations course.*
5:00 p.m.–6:00 p.m.	**MAA-YOUNG MATHEMATICIANS' NETWORK PANEL DISCUSSION** *Managing your own course.*
5:30 p.m.–6:30 p.m.	**RECEPTION FOR GRADUATE STUDENTS AND FIRST-TIME PARTICIPANTS**
5:30 p.m.–8:00 p.m.	**MATHEMATICAL INSTITUTES OPEN HOUSE**
6:20 p.m.–7:40 p.m.	**AMS-MAA SPECIAL FILM PRESENTATION** *Counting from Infinity: Yitang Zhang and the Twin Primes Conjecture.*
8:30 p.m.–9:30 p.m.	**AMS JOSIAH WILLARD GIBBS LECTURE** *Graphs,vectors,and matrices.* **Daniel A. Spielman**
9:30 p.m.–11:00 p.m.	**ASSOCIATION FOR WOMEN IN MATHEMATICS RECEPTION AND AWARDS PRESENTATION**

Sunday, January 11

7:00 a.m.–7:50 a.m.	**ASSOCIATION FOR CHRISTIANS IN THE MATHEMATICAL SCIENCES NONDENOMINATIONAL WORSHIP SERVICE** *All are welcome.*
7:30 a.m.–4:00 p.m.	**JOINT MEETINGS REGISTRATION**, East Registration, Convention Center
7:30 a.m.–8:00 p.m.	**EMAIL CENTER**
	AMS SPECIAL SESSIONS
8:00 a.m.–11:50 a.m.	*History of Mathematics, III (AMS-MAA)*
8:00 a.m.–11:50 a.m.	*Beyond First-Order Model Theory, II (AMS-ASL)*
8:00 a.m.–11:50 a.m.	*Recent Advances in the Analysis and Applications of Modern Splitting Methods, I*
8:00 a.m.–11:50 a.m.	*Current Trends in Classical Dynamical Systems, II*
8:00 a.m.–11:50 a.m.	*Computing Intensive Modeling in Mathematical and Computational Biology, I*
8:00 a.m.–11:50 a.m.	*Groups, Algorithms, and Cryptography, II*
8:00 a.m.–11:50 a.m.	*Enumerative Combinatorics, II*
8:00 a.m.–11:50 a.m.	*Probability and Applications, II*
8:00 a.m.–11:50 a.m.	*Partitions, q-Series, and Modular Forms, II*
8:00 a.m.–11:50 a.m.	*Classification Problems in Operator Algebras, I*
8:00 a.m.–11:50 a.m.	*Inverse Problems, I*
8:00 a.m.–11:50 a.m.	*Accelerated Advances in Multiobjective Optimal Control Problems and Mathematical Programming Based on Generalized Invexity Frameworks, II*
8:00 a.m.–11:50 a.m.	*Cluster Algebras (a Mathematics Research Communities Session), I*
8:00 a.m.–11:50 a.m.	*Algebraic and Geometric Methods in Applied Discrete Mathematics(a Mathematics Research Communities Session), I*
8:00 a.m.–11:50 a.m.	*Quantum Information and Fusion Categories (a Mathematics Research Communities Session), I*
8:00 a.m.–11:50 a.m.	*Network Science (a Mathematics Research Communities Session), I*
8:00 a.m.–11:55 a.m.	**AMS SESSIONS FOR CONTRIBUTED PAPERS**
	MAA INVITED PAPER SESSIONS
8:00 a.m.–11:50 a.m.	*The Mathematics of Planet Earth, I*
	MAA CONTRIBUTED PAPER SESSIONS
8:00 a.m.–12:00 p.m.	*Inquiry-Based Learning in First-Year and Second-Year Courses*
8:00 a.m.–12:00 p.m.	*Research on the Teaching and Learning of Undergraduate Mathematics, I*
8:00 a.m.–12:00 p.m.	*Incorporating Formal Symbolic Reasoning into Mathematics Courses*
8:00 a.m.–12:00 p.m.	*Innovative and Effective Ways to Teach Linear Algebra*
8:00 a.m.–12:00 p.m.	*What Makes a Successful Math Circle: Organization and Problems*
8:00 a.m.–11:55 a.m.	**MAA GENERAL CONTRIBUTED PAPER SESSIONS**
8:00 a.m.–9:20 a.m.	**MAA SESSION FOR CHAIRS** *Program assessment: Making it easier and better.*
8:00 a.m.–11:20 a.m.	**MAA COMMITTEE ON PROFESSIONAL DEVELOPMENT PANEL DISCUSSIONS** *Presenters from the NSF describe experiences with the general NSF grant proposal process; see the full description in detail in MAA Panels, etc.*

8:00 a.m.–11:00 a.m. **SIAM MINISYMPOSIUM ON MODELING ACROSS THE CURRICULUM**

8:30 a.m.–5:30 p.m. **EMPLOYMENT CENTER**

9:00 a.m.–9:50 a.m. **MAA INVITED ADDRESS** *Golden numbers and identities: The legacy of Rogers and Ramanujan.* **Ken Ono**

9:00 a.m.–11:00 a.m. **MAA MINICOURSE #16: PART A** *Using games in an introductory statistics course.*

9:00 a.m.–11:00 a.m. **MAA MINICOURSE #7: PART A** *Teaching introductory statistics (for instructors new to teaching statistics).*

9:00 a.m.–11:00 a.m. **MAA MINICOURSE #8A: PART A** *Doing the scholarship of teaching and learning in mathematics.*

9:00 a.m.–11:00 a.m. **MAA POSTER SESSION** *Mathematical outreach programs.*

9:30 a.m.–5:30 p.m. **EXHIBITS AND BOOK SALES**

10:30 a.m.–12:00 p.m. **AMS SPECIAL PRESENTATION** *A conversation on nonacademic employment.*

10:30 a.m.–12:00 p.m. **SIGMAA OFFICERS MEETING**

10:35 a.m.–11:55 a.m. **MAA SUBCOMMITTEE ON RESEARCH BY UNDERGRADUATES PANEL DISCUSSION** *Undergraduate research: Viewpoints from the student side.*

1:00 p.m.–1:50 p.m. **AMS COLLOQUIUM LECTURES, LECTURE II** *Title to be announced.* **Michael Hopkins**

AMS SPECIAL SESSIONS

1:00 p.m.–3:50 p.m. *Research in Mathematics by Undergraduates and Students in Post-Baccalaureate Programs, II (AMS-MAA-SIAM)*

1:00 p.m.–3:50 p.m. *History of Mathematics, IV (AMS-MAA)*

1:00 p.m.–3:50 p.m. *Beyond First-Order Model Theory, III (AMS-ASL)*

1:00 p.m.–3:50 p.m. *Advances in Coding Theory, II*

1:00 p.m.–3:50 p.m. *Set-Valued Optimization and Variational Problems with Applications, II*

1:00 p.m.–3:50 p.m. *Ergodic Theory and Dynamical Systems, II*

1:00 p.m.–3:50 p.m. *Frames and Their Applications, III*

1:00 p.m.–3:50 p.m. *Algebraic Combinatorics and Representation Theory, II*

1:00 p.m.–3:50 p.m. *Operator Algebras and Their Applications: A Tribute to Richard V. Kadison, III*

1:00 p.m.–3:50 p.m. *Creating Coherence in K–12 Mathematics, I*

1:00 p.m.–3:50 p.m. *Holomorphic Dynamics in One and Several Variables, II*

1:00 p.m.–3:50 p.m. *Cluster Algebras (a Mathematics Research Communities Session), II*

1:00 p.m.–3:50 p.m. *Algebraic and Geometric Methods in Applied Discrete Mathematics (a Mathematics Research Communities Session), II*

1:00 p.m.–3:50 p.m. *Quantum Information and Fusion Categories (a Mathematics Research Communities Session), II*

1:00 p.m.–3:50 p.m. *Network Science (a Mathematics Research Communities Session), II*

1:00 p.m.–3:50 p.m. *Ricci Curvature for Homogeneous Spaces and Related Topics, II*

MAA INVITED PAPER SESSIONS

1:00 p.m.–4:10 p.m. *The Mathematics of Planet Earth, II*

1:00 p.m.–3:00 p.m. **MAA MINICOURSE #11: PART A** *Healthcare applications and projects for introductory college mathematics courses.*

1:00 p.m.–3:00 p.m. **MAA MINICOURSE #2: PART A** *Developing departmental self-studies.*

1:00 p.m.–3:00 p.m. **MAA MINICOURSE #6: PART A** *Public- and private-key cryptography.*

MAA CONTRIBUTED PAPER SESSIONS

1:00 p.m.–4:15 p.m. *Helping Students See Beyond Calculus*

1:00 p.m.–4:15 p.m. *Research on the Teaching and Learning of Undergraduate Mathematics, II*

1:00 p.m.–4:15 p.m. *Activities, Demonstrations, and Projects that Enhance the Study of Undergraduate Geometry*

1:00 p.m.–4:15 p.m. *Mathematics Experiences in Business, Industry, and Government*

1:00 p.m.–4:15 p.m. *Statistics Education beyond the Introductory Statistics Course*

1:00 p.m.–2:30 p.m. **AMS COMMITTEE ON EDUCATION PANEL DISCUSSION** *Active learning strategies for mathematics.*

1:00 p.m.–4:10 p.m. **AMS SESSIONS FOR CONTRIBUTED PAPERS**

1:00 p.m.–2:30 p.m. **AMS COMMITTEE ON EDUCATION PANEL DISCUSSION** *Active learning strategies for mathematics.*

1:00 p.m.–4:10 p.m. **MAA GENERAL CONTRIBUTED PAPER SESSIONS**

1:00 p.m.–2:20 p.m. **MAA COMMITTEE ON THE PARTICIPATION OF WOMEN IN MATHEMATICS PANEL DISCUSSION** *Writing competitive grant applications.*

1:00 p.m.–2:20 p.m. **MAA-YOUNG MATHEMATICIANS' NETWORK PANEL DISCUSSION** *On-campus interview survival guide.*

1:00 p.m.–2:15 p.m. **MAA SPECIAL PRESENTATION** *Speed interviewing marathon for students.*

1:00 p.m.–2:30 p.m. **JOINT COMMITTEE ON WOMEN IN THE MATHEMATICAL SCIENCES PANEL DISCUSSION** *Effective self-promotion to advance your career in mathematics.*

1:00 p.m.–3:00 p.m. **SUMMER PROGRAM FOR WOMEN IN MATHEMATICS (SPWM) REUNION**

2:00 p.m.–4:00 p.m. **MAA POSTER SESSION ON PROJECTS SUPPORTED BY THE NSF DIVISION OF UNDERGRADUATE EDUCATION**

2:00 p.m.–4:00 p.m. **POSTERS ON EXPEDITIONS IN TRAINING, RESEARCH, AND EDUCATION FOR MATHEMATICS AND STATISTICS THROUGH QUANTITATIVE EXPLORATIONS OF DATA (EXTREEMS-QED)**

2:15 p.m.–3:05 p.m. **AMS INVITED ADDRESS** *Elliptic curves and explicit class field theory.* **Henri Darmon**

2:35 p.m.–3:55 p.m. **MAA PANEL DISCUSSION** *Mathematicians write: Publishing options and outlets beyond the standard research journal.*

3:20 p.m.–4:10 p.m. **AMS INVITED ADDRESS** *Statistically relevant metrics for complex data.* **Susan Holmes**

4:25 p.m.–5:25 p.m. **JOINT PRIZE SESSION**

5:30 p.m.–6:20 p.m. **SIGMAA ON BUSINESS, INDUSTRY, AND GOVERNMENT GUEST LECTURE, RECEPTION, AND BUSINESS MEETING**

5:30 p.m.–6:30 p.m. **MAA-YOUNG MATHEMATICIANS' NETWORK PANEL DISCUSSION** *Find a research collaborator.*

5:30 p.m.–7:00 p.m. **MAA-*JOURNAL OF HUMANISTIC MATHEMATICS* POETRY READING**

5:30 p.m.–5:50 p.m. **SIGMAA ON STATISTICS EDUCATION RECEPTION, BUSINESS MEETING, AND GUEST LECTURE**

5:30 p.m.–7:30 p.m. **ASSOCIATION OF CHRISTIANS IN THE MATHEMATICAL SCIENCES ANNUAL RECEPTION AND LECTURE** *All are welcome.*

5:30 p.m.–7:00 p.m. **BUDAPEST SEMESTERS IN MATHEMATICS REUNION**

5:30 p.m.–7:30 p.m. **PENNSYLVANIA STATE UNIVERSITY MATHEMATICS ALUMNI RECEPTION**

5:30 p.m.–7:00 p.m. **UNIVERSITY OF TENNESSEE MATH ALUMNI AND FRIENDS RECEPTION**

6:00 p.m.–7:20 p.m. **AMS-MAA DRAMATIC PRESENTATION** The *Mathematics of Being Human.*

6:00 p.m.–6:20 p.m. **SIGMAA ON MATHEMATICAL AND COMPUTATIONAL BIOLOGY RECEPTION, BUSINESS MEETING, AND GUEST LECTURE**

6:00 p.m.–8:00 p.m. **NSA'S WOMEN IN MATHEMATICS SOCIETY NETWORKING SESSION**

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

Monday, January 12

7:30 a.m.–4:00 p.m. **JOINT MEETINGS REGISTRATION**, East Registration, Convention Center

7:30 a.m.–7:00 p.m. **EMAIL CENTER**

AMS SPECIAL SESSIONS

8:00 a.m.–10:50 a.m. *Fixed Point Theory and Applications, I*

8:00 a.m.–10:50 a.m. *Noncommutative Function Theory, I*

8:00 a.m.–10:50 a.m. *Advances in Coding Theory, III*

8:00 a.m.–10:50 a.m. *Limits of Discrete Structures, I*
8:00 a.m.–10:50 a.m. *Computing Intensive Modeling in Mathematical and Computational Biology, II*
8:00 a.m.–10:50 a.m. *Algebraic Combinatorics and Representation Theory, III*
8:00 a.m.–10:50 a.m. *Mathematics in Poland: Interbellum, World War II, and Immediate Post-War Developments, I*
8:00 a.m.–10:50 a.m. *Continued Fractions, I*
8:00 a.m.–10:50 a.m. *Mathematics in Natural Resource Modeling, I*
8:00 a.m.–10:50 a.m. *Differential Geometry and Statistics, I*
8:00 a.m.–10:50 a.m. *Classification Problems in Operator Algebras, II*
8:00 a.m.–10:50 a.m. *Creating Coherence in K–12 Mathematics, II*
8:00 a.m.–10:50 a.m. *Holomorphic Dynamics in One and Several Variables, III*
8:00 a.m.–10:50 a.m. *Selmer Groups, I*
8:00 a.m.–10:50 a.m. *Fractional, Stochastic, and Hybrid Dynamic Systems with Applications, I*
8:00 a.m.–10:50 a.m. *Ricci Curvature for Homogeneous Spaces and Related Topics, III*

MAA INVITED PAPER SESSIONS

8:00 a.m.–10:55 a.m. *Making the Case for Faculty Relevance: Case Studies in Best Practices for Classroom Teaching*
8:00 a.m.–10:55 a.m. *The Mathematics of Rogers and Ramanujan*

MAA CONTRIBUTED PAPER SESSIONS

8:00 a.m.–11:00 a.m. *Ethnomathematics: A Tribute to Marcia Ascher*
8:00 a.m.–11:00 a.m. *The Times They Are a Changin': Successful Innovations in Developmental Mathematics Curricula and Pedagogy*
8:00 a.m.–11:00 a.m. *Cartography and Mathematics: Imaging the World Around Us*
8:00 a.m.–11:00 a.m. *Collaborations between Two-Year and Four-Year Institutions that Create Pathways to a Math Major*
8:00 a.m.–10:55 a.m. **AMS SESSIONS FOR CONTRIBUTED PAPERS**
8:00 a.m.–10:55 a.m. **MAA GENERAL CONTRIBUTED PAPER SESSIONS**
8:00 a.m.–11:00 a.m. **PME COUNCIL MEETING**
8:30 a.m.–10:30 a.m. **AMS-MAA GRAD SCHOOL FAIR** *Undergrads! Take this opportunity to meet representatives from mathematical science graduate programs.*
8:30 a.m.–5:30 p.m. **EMPLOYMENT CENTER**
9:00 a.m.–9:50 a.m. **MAA INVITED ADDRESS** *Divergent series and differential equations: Past, present, future...* **Christiane Rousseau**
9:00 a.m.–11:00 a.m. **MINICOURSE #14: PART B** *Teaching statistics using R and RStudio.*
9:00 a.m.–11:00 a.m. **MAA MINICOURSE #3: PART B** *Introduction to process-oriented, guided-inquiry learning (POGIL) in mathematics courses.*
9:00 a.m.–11:00 a.m. **MAA MINICOURSE #5: PART B** *Two visual topics using undergraduate complex analysis.*
9:30 a.m.–11:00 a.m. **AMS SPECIAL PRESENTATION** *Who wants to be a mathematician—National contest.*
9:30 a.m.–5:30 p.m. **EXHIBITS AND BOOK SALES**
9:35 a.m.–10:55 a.m. **MAA PANEL DISCUSSION** *Benefits and challenges of introducing multivariate topics earlier in the calculus sequence.*
10:05 a.m.–10:55 a.m. **AMS INVITED ADDRESS** *Matrix factorizations and complete intersection rings.* **Irena Peeva**
11:10 a.m.–12:00 p.m. **AMS-MAA INVITED ADDRESS** *Title to be announced.* **Richard Tapia**
1:00 p.m.–1:50 p.m. **AMS COLLOQUIUM LECTURES, LECTURE III** *Title to be announced.* **Michael Hopkins**
1:00 p.m.–1:50 p.m. **MAA LECTURE FOR STUDENTS** *Math is Cool!* **George Hart**
1:00 p.m.–4:45 p.m. **CURRENT EVENTS BULLETIN**

AMS SPECIAL SESSIONS

1:00 p.m.–5:50 p.m. *Knot Theory, I*
1:00 p.m.–5:50 p.m. *Theory and Application of Reaction Diffusion Models, II*
1:00 p.m.–5:50 p.m. *Recent Advances in the Analysis and Applications of Modern Splitting Methods, II*
1:00 p.m.–5:50 p.m. *Noncommutative Function Theory, II*

1:00 p.m.–5:50 p.m. *Inequalities and Quantitative Approximation, II*
1:00 p.m.–5:50 p.m. *Limits of Discrete Structures, II*
1:00 p.m.–5:50 p.m. *Geometries Defined by Differential Forms, I*
1:00 p.m.–5:50 p.m. *Math Teachers Circles and the K–20 Continuum*
1:00 p.m.–5:50 p.m. *Mathematics in Poland: Interbellum, World War II, and Immediate Post-War Developments, II*
1:00 p.m.–5:50 p.m. *Continued Fractions, II*
1:00 p.m.–5:50 p.m. *Mathematics in Natural Resource Modeling, II*
1:00 p.m.–5:50 p.m. *Differential Geometry and Statistics, II*
1:00 p.m.–5:50 p.m. *Inverse Problems, II*
1:00 p.m.–5:50 p.m. *Selmer Groups, II*
1:00 p.m.–5:50 p.m. *Fractional, Stochastic, and Hybrid Dynamic Systems with Applications, II*
1:00 p.m.–5:50 p.m. *Hopf Algebras and Tensor Categories, I*
1:00 p.m.–3:00 p.m. **MAA MINICOURSE #10: PART B** *Humanistic mathematics.*
1:00 p.m.–3:00 p.m. **MAA MINICOURSE #15: PART B** *How to run a successful math circle.*
1:00 p.m.–3:00 p.m. **MAA MINICOURSE #9: PART B** *Teaching college mathematics (for instructors new to teaching at the collegiate level and for instructors who prepare GTAs for their first teaching experience).*

MAA CONTRIBUTED PAPER SESSIONS

1:00 p.m.–6:00 p.m. *Trends in Undergraduate Mathematical Biology Education*
1:00 p.m.–6:00 p.m. *Wavelets in Undergraduate Education*
1:00 p.m.–5:00 p.m. *Well-Designed Online Assessment: Well-Formed Questions, Discovery-Based Explorations, and Their Success in Improving Student Learning*
1:00 p.m.–6:00 p.m. *Program and Assessment Implications of Common Core State Standards Implementation*
1:00 p.m.–2:50 p.m. **NAM GRANVILLE-BROWN-HAYNES SESSION OF PRESENTATIONS BY RECENT DOCTORAL RECIPIENTS IN THE MATHEMATICAL SCIENCES**
1:00 p.m.–5:55 p.m. **AMS SESSIONS FOR CONTRIBUTED PAPERS**
1:00 p.m.–5:55 p.m. **MAA GENERAL CONTRIBUTED PAPER SESSIONS**
1:00 p.m.–2:20 p.m. **MAA COMMITTEE ON THE UNDERGRADUATE PROGRAM IN MATHEMATICS PANEL DISCUSSION** *Mathematics and the sciences: Necessary dialogue.*
2:00 p.m.–3:20 p.m. **PRESENTATIONS BY MAA TEACHING AWARD PARTICIPANTS**
2:15 p.m.–4:00 p.m. **ROCKY MOUNTAIN MATHEMATICS CONSORTIUM BOARD OF DIRECTORS MEETING**
2:30 p.m.–4:00 p.m. **AMS COMMITTEE ON SCIENCE POLICY PANEL DISCUSSION** *Title to be announced.*
3:30 p.m.–5:30 p.m. **MAA MINICOURSE #12: PART B** *Introducing matroids to undergraduates.*
3:30 p.m.–5:30 p.m. **MAA MINICOURSE #13: PART B** *WeBWorK: An open source alternative for generating and delivering online homework problems.*
3:30 p.m.–5:30 p.m. **MAA MINICOURSE #4: PART B** *A dynamical systems approach to the differential equations course.*
4:00 p.m.–4:50 p.m. **MAA INVITED ADDRESS** *Making the case for data journalism.* **Catherine O'Neil**
4:30 p.m.–6:00 p.m. **AMS CONGRESSIONAL FELLOWSHIP SESSION**
4:30 p.m.–6:00 p.m. **MAA STUDENT POSTER SESSION**
5:00 p.m.–7:00 p.m. **MAA PANEL DISCUSSION** *Actuarial science: What faculty need to know.*
5:30 p.m.–5:50 p.m. **SIGMAA ON THE PHILOSOPHY OF MATHEMATICS RECEPTION, BUSINESS MEETING, AND GUEST LECTURE**
6:00 p.m.–7:15 p.m. **AWM WORKSHOP POSTER PRESENTATIONS AND RECEPTION**
6:00 p.m.–7:00 p.m. **MAA SPECIAL DRAMATIC PRESENTATION** *Mathematically Bent Theater*
6:00 p.m.–7:00 p.m. **AMS *MATHEMATICAL REVIEWS* RECEPTION**
6:00 p.m.–8:40 p.m. **NAM RECEPTION AND BANQUET**
7:45 p.m.–8:35 p.m. **NAM COX-TALBOT ADDRESS** *Speaker and title to be announced.*

Tuesday, January 13

7:30 a.m.–2:00 p.m. **JOINT MEETINGS REGISTRATION**, East Registration, Convention Center

7:30 a.m.–2:00 p.m. **EMAIL CENTER**

AMS SPECIAL SESSIONS

8:00 a.m.–10:50 a.m. *Research in Mathematics by Undergraduates and Students in Post-Baccalaureate Programs, III (AMS-MAA-SIAM)*

8:00 a.m.–10:50 a.m. *Recent Developments in Algebraic Number Theory, I (AMS-AWM)*

8:00 a.m.–10:50 a.m. *Fixed Point Theory and Applications, II*

8:00 a.m.–10:50 a.m. *The Scottish Book, I*

8:00 a.m.–10:50 a.m. *What's New in Group Theory?, I*

8:00 a.m.–10:50 a.m. *Progress in Multivariable Operator Theory, I*

8:00 a.m.–10:50 a.m. *Graphs, Matrices, and Related Problems, I*

8:00 a.m.–10:50 a.m. *Syzygies, I*

8:00 a.m.–10:50 a.m. *Topological Measures of Complexity: Inverse Limits, Entropy, and Structure of Attractors, I*

8:00 a.m.–10:50 a.m. *Positivity and Matrix Inequalities, I*

8:00 a.m.–10:50 a.m. *Studies in Interconnections among Parameters in Graph Theory, Combinatorics, and Discrete Geometry, I*

8:00 a.m.–10:50 a.m. *Creating Coherence in K–12 Mathematics, III*

8:00 a.m.–10:50 a.m. *Heavy-Tailed Distributions and Processes, I*

8:00 a.m.–10:50 a.m. *Geosystems Mathematics, I*

8:00 a.m.–10:50 a.m. *Hopf Algebras and Tensor Categories, II*

8:00 a.m.–10:50 a.m. *Quantum Markov Chains, Quantum Walks, and Related Topics, I*

MAA INVITED PAPER SESSION

8:00 a.m.–10:55 a.m. *Mathematics and Voting Theory*

MAA CONTRIBUTED PAPER SESSIONS

8:00 a.m.–11:00 a.m. *USE Math: Undergraduate Sustainability Experiences in the Mathematics Classroom*

8:00 a.m.–11:00 a.m. *Using Flipping Pedagogy to Engage Students in Learning Mathematics*

8:00 a.m.–11:00 a.m. *Teaching Proof Writing Techniques within a Content-Based Mathematics Course*

8:00 a.m.–11:00 a.m. *Original Sources and Archives in the Classroom*

8:00 a.m.–5:00 p.m. **AWM WORKSHOP ON HOMOTOPY THEORY**

8:00 a.m.–10:55 a.m. **AMS SESSIONS FOR CONTRIBUTED PAPERS**

8:00 a.m.–10:55 a.m. **MAA COMMITTEE ON PROFESSIONAL DEVELOPMENT SESSION, I** *"Post Plus 5" session on open source resources in mathematics.*

8:00 a.m.–10:55 a.m. **MAA GENERAL CONTRIBUTED PAPER SESSIONS**

8:00 a.m.–9:20 a.m. **MAA COMMITTEE ON THE MATHEMATICAL EDUCATION OF TEACHERS PANEL DISCUSSION** *A positive feedback loop? The impact of mathematics education research and K–12 instructional changes on our teaching of undergraduate mathematics.*

8:00 a.m.–10:00 a.m. **SIGMAA ON THE TEACHING OF ADVANCED HIGH SCHOOL MATHEMATICS-MAA COUNCIL ON OUTREACH WORKSHOP** *Creating a course in mathematical modelling.*

9:00 a.m.–9:50 a.m. **AMS INVITED ADDRESS** *Title to be announced.* **Ian Agol**

9:00 a.m.–11:00 a.m. **MAA MINICOURSE #16: PART B** *Using games in an introductory statistics course.*

9:00 a.m.–11:00 a.m. **MAA MINICOURSE #7: PART B** *Teaching introductory statistics (for instructors new to teaching statistics).*

9:00 a.m.–11:00 a.m. **MAA MINICOURSE #8A: PART B** *Doing the scholarship of teaching and learning in mathematics.*

9:00 a.m.–9:50 a.m. **NAM PANEL DISCUSSION** *Title to be announced*

9:00 a.m.–12:00 p.m. **EXHIBITS AND BOOK SALES**

9:00 a.m.–12:00 p.m. **EMPLOYMENT CENTER**

10:00 a.m.–10:50 a.m.	**NAM BUSINESS MEETING**
10:05 a.m.–10:55 a.m.	**MAA RETIRING PRESIDENTIAL ADDRESS** *Cantor and Sierpinski, Julia and Fatou: Crazy Topology in Complex Dynamics.* **Robert L. Devaney**
11:10 a.m.–11:40 a.m.	**MAA BUSINESS MEETING**
11:45 a.m.–12:15 p.m.	**AMS BUSINESS MEETING**
1:00 p.m.–1:50 p.m.	**NAM CLAYTOR-WOODARD LECTURE** *Speaker and title to be announced.*
	AMS SPECIAL SESSIONS
1:00 p.m.–5:50 p.m.	*Research in Mathematics by Undergraduates and Students in Post-Baccalaureate Programs, IV (AMS-MAA-SIAM)*
1:00 p.m.–5:50 p.m.	*Recent Developments in Algebraic Number Theory, II (AMS-AWM)*
1:00 p.m.–5:50 p.m.	*Knot Theory, II*
1:00 p.m.–5:50 p.m.	*The Scottish Book, II*
1:00 p.m.–5:50 p.m.	*What's New in Group Theory?, II*
1:00 p.m.–5:50 p.m.	*Progress in Multivariable Operator Theory, II*
1:00 p.m.–5:50 p.m.	*Graphs, Matrices, and Related Problems, II*
1:00 p.m.–5:50 p.m.	*Syzygies, II*
1:00 p.m.–5:50 p.m.	*Topological Measures of Complexity: Inverse Limits, Entropy, and Structure of Attractors, II*
1:00 p.m.–5:50 p.m.	*Positivity and Matrix Inequalities, II*
1:00 p.m.–5:50 p.m.	*Geometries Defined by Differential Forms, II*
1:00 p.m.–5:00 p.m.	*Studies in Interconnections among Parameters in Graph Theory, Combinatorics, and Discrete Geometry, II*
1:00 p.m.–5:50 p.m.	*Successes and Challenges in Teaching Mathematics*
1:00 p.m.–5:50 p.m.	*Heavy-Tailed Distributions and Processes, II*
1:00 p.m.–5:50 p.m.	*Geosystems Mathematics, II*
1:00 p.m.–5:50 p.m.	*Quantum Markov Chains, Quantum Walks, and Related Topics, II*
1:00 p.m.–3:00 p.m.	**MAA MINICOURSE #11: PART B** *Healthcare applications and projects for introductory college mathematics courses.*
1:00 p.m.–3:00 p.m.	**MAA MINICOURSE #2: PART B** *Developing departmental self-studies.*
1:00 p.m.–3:00 p.m.	**MAA MINICOURSE #6: PART B** *Public- and private-key cryptography.*
	MAA CONTRIBUTED PAPER SESSIONS
1:00 p.m.–5:00 p.m.	*Teaching Inquiry*
1:00 p.m.–5:00 p.m.	*Infusing Quantitative Literacy into Mathematics and Nonmathematics Courses*
1:00 p.m.–5:00 p.m.	*First-Year Calculus: Fresh Approaches for Jaded Students*
1:00 p.m.–5:00 p.m.	*Discovery and Insight in Mathematics*
1:00 p.m.–5:55 p.m.	**AMS SESSIONS FOR CONTRIBUTED PAPERS**
1:00 p.m.–5:00 p.m.	**MAA COMMITTEE ON PROFESSIONAL DEVELOPMENT SESSION, II** *"Post Plus 5" session on open source resources in mathematics.*
1:00 p.m.–4:55 p.m.	**MAA GENERAL CONTRIBUTED PAPER SESSIONS**
1:00 p.m.–2:20 p.m.	**MAA WORKSHOP** *The New Mathways Project's STEM prep initiative: A reconceptualized pathway to calculus.*
1:00 p.m.–5:50 p.m.	**PURE AND APPLIED TALKS BY WOMEN MATH WARRIORS PRESENTED BY EDGE (ENHANCING DIVERSITY IN GRADUATE EDUCATION)**