

At-A-Glance Schedule



Annual Meeting

July 8–12, 2024 • Spokane, Washington, U.S.
July 18–20, 2024 • Online

SIAM Conference on Applied Mathematics Education

July 8–9, 2024 • Spokane, Washington, U.S.

SIAM Conference on Discrete Mathematics

July 8–11, 2024 • Spokane, Washington, U.S.

Unless otherwise noted, all events will take place at the Spokane Convention Center (SCC)
334 W Spokane Falls Blvd, Spokane, WA 99201 U.S.

Online Program

AN24 go.siam.org/an24/program

ED24 go.siam.org/ed24/program

DM24 go.siam.org/dm24/program

SIAM Events Mobile App



www.tripbuildermedia.com/apps/siam



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Philadelphia, PA 19104-2688 U.S.
Telephone: +1-215-382-9800

Conference E-mail: meetings@siam.org

Customer Service: (800) 447-7426 (U.S. & Canada) or +1-215-382-9800 (worldwide)

www.siam.org

Sunday, July 7

All times listed are Pacific Time Zone.

4:00 p.m. – 8:00 p.m.

Registration Open
Riverside Lobby

5:00 p.m. – 6:00 p.m.

Student Days: Orientation
Conference Theater

6:00 p.m. – 8:00 p.m.

Welcome Reception
Riverside Lawn

Monday, July 8

7:00 a.m. – 4:30 p.m.

Registration Open
Riverside Lobby

8:00 a.m. – 10:00 a.m.

Concurrent Sessions

PD1 Education Committee Panel Discussion:
Industrial Needs for Preparing Students
Hall C

MS1 Mathematical Advances in Algorithms Design
Enabling Emerging Energy Efficient Computing
Part I of III

401A

MS2 Numerical Methods for Geometric PDEs Part I
of III

401B

MS3 Advances in Neural Operators and Uncertainty
Quantification for Scientific Modeling Part I of II

401C

MS4 Recent Advances in Quantum Algorithms for
Optimization Problems Part I of II

402A

MS5 Contemporary Models in Mathematical
Biology Part I of II

402B

MS6 Quantum Computing for Transport Phenomena
Part I of II

402C

MS7 Student Research with Industry - PIC Math
Program Presentations Part I of II

207

CP1 Education

201A

CP2 Numerical & PDEs

201B

9:00 a.m. – 5:00 p.m.

Exhibit Hall Open
Hall B

10:00 a.m. – 10:15 a.m.

Coffee Break
Hall B

Monday, July 8

10:15 a.m. – 11:15 a.m.

Opening Remarks & IP1 Hearing the Will of the
People in the Vote: Computational Challenges in
Redistricting
Jonathan C. Mattingly, Duke University, U.S.
Hall C

11:15 a.m. – 12:00 p.m.

JP1 Joint Plenary with the SIAM Conference on
Discrete Mathematics (DM24): New Frontiers in
Structure Vs Randomness with Applications to
Combinatorics, Complexity, Algorithms
Raghu Meka, University of California, Los Angeles,
U.S.
Hall C

12:00 p.m. – 12:30 p.m.

SP1 W. T. and Idalia Reid Prize Lecture: 100 Years
of Traffic Models: From Road Tolls to Autonomy
Benedetto Piccoli, Rutgers University, U.S.
Hall C

12:30 p.m. – 2:00 p.m.

Lunch Break
MGB-SIAM EC Fellows Luncheon (by invitation)
Meeting Room 12, Davenport Grand Hotel

2:00 p.m. – 2:45 p.m.

IP2 Case Studies on the Role of Loss Landscape in
Neural Network Generalization
Maryam Fazel, University of Washington, U.S.
Hall C

2:45 p.m. – 3:30 p.m.

IP3 Gradient Flows, Non-smooth Kernels and
Generative Models for Posterior Sampling in
Inverse Problems
Gabriele Steidl, Technische Universität Berlin,
Germany
Hall C

3:30 p.m. – 4:00 p.m.

Coffee Break
Hall B

4:00 p.m. – 6:00 p.m.

Concurrent Sessions

MS8 Numerical Methods for Geometric PDEs Part
II of III

401B

MS9 Advances in Neural Operators and Uncertainty
Quantification for Scientific Modeling Part II of II

401C

MS10 Mathematical and Computational
Redistricting: Algorithms and Analysis Part I of III

402B

MS11 SIAM Education Committee Minitutorials
Part I of II

401A

Monday, July 8

MS12 Recent Advances in Quantum Algorithms for
Optimization Problems Part II of II

402A

MS13 Student Research with Industry - PIC Math
Program Presentations Part II of II

207

MS14 Ecological Approaches to Infectious Diseases
Part I of II

402C

CP3 Fluids2

201A

CP4 Linear Algebra

201B

CP5 Life Sciences and Medicine

201C

6:15 p.m. – 6:45 p.m.

MS89 Industry Lightning Symposium
Hall C

6:45 p.m. – 7:45 p.m.

PD2 Industry Career Panel
Hall C

7:45 p.m. – 9:00 p.m.

Graduate Student Reception and Industry Reception
Riverside Lawn

Tuesday, July 9

7:00 a.m. – 8:15 a.m.

Student Chapter Breakfast with Leadership (by
invitation only)
Cedar Ballroom, Davenport Grand Hotel

8:00 a.m. – 4:30 p.m.

Registration Open
Riverside Lobby

8:30 a.m. – 10:00 a.m.

MT2 Mathematical Contributions to Weather and
Climate Modelling Part I
Hall C

8:30 a.m. – 10:30 a.m.

Concurrent Sessions

MS15 Mathematical Advances in Algorithms
Design Enabling Emerging Energy Efficient
Computing Part II of III

401A

MS16 Numerical Methods for Geometric PDEs Part
III of III

401B

MS17 Workshop Celebrating Diversity: Advances
in Methods Development for Computational Physics

300C

Tuesday, July 9

MS18 SIAM Minisymposium in Honor of James Mac Hyman - Mac's Celebration of his 75th Trip around the Sun Part I of III
207

MS19 Mathematical and Computational Redistricting: Algorithms and Analysis Part II of III
402B

MS20 Excitable Media Dynamics: Methods and Models From Traveling Waves to Cardiac Fibrillation Part I of II
402A

MS21 Control and Parabolic PDEs in Infinite Dimension
401C

MS22 Contemporary Models in Mathematical Biology Part II of II
402C

CP6 Chemistry, Geosciences, Applications
201A

CP7 Miscellaneous
201B

CP8 Life Sciences and Dynamical Systems
201C

9:00 a.m. – 5:00 p.m.

Exhibit Hall Open
Hall B

10:30 a.m. – 11:00 a.m.

Coffee Break
Hall B

11:00 a.m. – 11:45 a.m.

JP2 Joint Plenary with the SIAM Conference on Applied Mathematics Education (ED24): Signals of a Critical Transition in Inclusive Stem Education
Carrie Diaz Eaton, Bates College, U.S.
Hall C

11:45 a.m. – 12:30 p.m.

IP4 Formulating Effective Models, Methods, and Conceptual Frameworks for the Geosciences
Juan M. Restrepo, Oak Ridge National Laboratory, U.S.
Hall C

12:30 p.m. – 2:30 p.m.

Lunch Break
Prizes and Awards Luncheon (ticketed event, separate fee applies)
Cedar Ballroom, Davenport Grand Hotel

2:30 p.m. – 3:30 p.m.

SP2 John von Neumann Lecture: Exploring the Mysteries of Deep Neural Network Optimization
Jorge Nocedal, Northwestern University, U.S.
Hall C

3:30 p.m. – 4:00 p.m.

Coffee Break
Hall B

Tuesday, July 9

4:00 p.m. – 6:00 p.m.

Concurrent Sessions

MS25 Data-driven Models for Imaging and Scientific Computing Part I of II
401B

MS26 Recent Developments in Numerical and Analytical Approaches to PDEs Part I of III
401C

MS27 Mathematical and Computational Redistricting: Algorithms and Analysis Part III of III
402B

MS28 SIAM Education Committee Minitutorials Part II of II
402A

MS29 Ecological Approaches to Infectious Diseases Part II of II
402C

MS30 SIAM-Simons Undergraduate Summer Research Program
207

MS31 Workshop Celebrating Diversity Minisymposium: Quantitative Justice through Applied Data Science
300C

CP9 Numerical Analysis

201A

CP10 Numerical Analysis++

201B

CP11 Life Science and Simulation

201C

6:15 p.m. – 7:15 p.m.

SIAM Business Meeting

Hall C

Complimentary beer, wine, and snacks will be served All SIAM members welcome.

7:45 p.m. – 8:45 p.m.

Fellows Recognition and Reception
Roof Deck

8:00 p.m. – 10:00 p.m.

PP1 Poster Session and Dessert Reception
MP1 Minisymposium: AWM Workshop
Hall C

8:30 p.m. – 9:30 p.m.

Spectra Reception (Association for LGBTQ+ Mathematicians)
Meeting Room 12, Davenport Grand Hotel

8:00 a.m. – 4:30 p.m.

Registration Open
Riverside Lobby

8:15 a.m. – 9:45 a.m.

MT3 Mathematical Contributions to Weather and Climate Modelling Part 2
Hall C

Wednesday, July 10

8:15 a.m. – 10:15 a.m.

Concurrent Sessions

MS33 AWM Workshop: Complex and Nonlinear Systems Part I of II
300D

MS34 Equation- and Data-Driven Model Reduction for Dynamical Systems Part I of II
401A

MS35 Modeling Dynamics in Biological Systems Part I of II
401B

MS36 Structure-Preserving Discretizations and Their Applications Part I of II
401C

MS37 SIAM Minisymposium in Honor of James Mac Hyman - Mac's Celebration of his 75th Trip around the Sun Part II of III
207

MS39 Numerical Methods for Data-driven Model Discovery Using Sparse Optimization
402A

MS40 Workshop Celebrating Diversity: Mathematical Modeling and Dynamics of Biological Systems
300C

MS41 SIAM Science Policy Part I of II

402B

MS43 Recent Developments in Numerical and Analytical Approaches to PDEs Part II of III
402C

CP12 Numerical+

201A

CP13 Applied and Computational Geometry

201B

CP14 Probability and Statistics

201C

9:00 a.m. – 5:00 p.m.

Exhibit Hall Open
Hall B

10:15 a.m. – 10:45 a.m.

Coffee Break
Hall B

10:45 a.m. – 11:30 a.m.

SP3 AWM-SIAM Sonia Kovalevsky Lecture: Mathematics for Bioartificial Organ Design
Suncica Canic, University of California, Berkeley, U.S.
Hall C

11:45 a.m. – 12:30 p.m.

SP4 Past President's Address: Finite Element Methods for Least-Squares Problems
Susanne Brenner, Louisiana State University, U.S.
Hall C

Wednesday, July 10

Thursday, July 11

Thursday, July 11

12:30 p.m. – 2:00 p.m.

Lunch Break

2:00 p.m. – 2:45 p.m.

IP5 Data-Driven Modeling of Nonlinear Dynamical Systems via Spectral Submanifolds
George Haller, ETH Zurich, Switzerland
Hall C

2:45 p.m. – 3:30 p.m.

IP7 The Mathematics of Nurturing a Digital Twin
Sebastian Reich, Universität Potsdam, Germany
Hall C

3:30 p.m. – 4:00 p.m.

Coffee Break
Hall B

4:00 p.m. – 6:00 p.m.

Concurrent Sessions

MS44 Mathematics and AI for Cybersecurity Part I of II
207

MS45 Understanding Cardiac Arrhythmia Mechanisms Using Dynamical Systems and Machine Learning Part I of III
401A

MS47 Uncovering the Dynamics: Modeling and Control of Infectious Diseases
401B

MS49 Workshop Celebrating Diversity: The Importance of Mathematical Modeling and Simulation for Time Dependent Problems
300C

MS50 SIAM Science Policy Part II of II
402B

MS52 AWM Workshop: Complex and Nonlinear Systems Part II of II
300D

MS73 Structure-Preserving Discretizations and Their Applications Part II of II
402A

MS87 Recent Developments in Numerical and Analytical Approaches to PDEs Part III of III
401C

CP15 Computer Science
201A

CP16 Computer Science+
201B

6:15 p.m. – 7:15 p.m.

SP5 I. E. Block Community Lecture: Go Boldly Where No Math Has Gone Before
Caoimhe Rooney, NASA and Mathematigals, U.S.
Hall C

7:15 p.m. – 8:45 p.m.

Community Reception
Riverside Lawn

8:00 a.m. – 4:30 p.m.

Registration Open
Riverside Lobby

8:30 a.m. – 10:30 a.m.

Concurrent Sessions

PD3 AWM Workshop: Panel on Career Advancement at All Stages
300D

MT1 Optimal Transport and Applications
Hall C

MS53 Recent Developments in The Study of Fluids Part I of III
401B

MS54 Equation- and Data-Driven Model Reduction for Dynamical Systems Part II of II
401A

MS55 SIAM Minisymposium in Honor of James Mac Hyman - Mac's Celebration of his 75th Trip around the Sun Part III of III
207

MS56 Recent Developments in Numerical Solutions for PDEs Part I of II
401C

MS57 Mathematics and AI for Cybersecurity Part II of II
206D

MS58 Understanding Cardiac Arrhythmia Mechanisms Using Dynamical Systems and Machine Learning Part II of III
402A

MS59 Time Integration for PDE Systems Part I of II
402B

MS60 Equity, Diversity, and Inclusion in the Mathematical and Computational Sciences
206C

CP17 Simulation and Modeling
201A

CP18 Control and Systems Theory, Physics
201B

9:00 a.m. – 11:00 a.m.

Human Resources Committee Meeting
Meeting Room 12, Davenport Grand Hotel

9:00 a.m. – 5:00 p.m.

Exhibit Hall Open
Hall B

10:30 a.m. – 11:00 a.m.

Coffee Break
Hall B

11:00 a.m. – 11:45 a.m.

SP6 Theodore von Kármán Prize Lecture: From Reduced-Order Modeling to Scientific Machine Learning
Karen E. Willcox, University of Texas at Austin, U.S.
Hall C

11:45 a.m. – 12:30 p.m.

IP8 Applied Mathematics, Clouds and Storm Dynamics
Leslie Smith, University of Wisconsin-Madison, U.S.
Hall C

12:30 p.m. – 2:00 p.m.

Lunch Break
AWM Workshop Mentoring Luncheon (by invitation only)
300B

1:00 p.m. – 5:00 p.m.

Financial Management Committee Meeting
Meeting Room 12, Davenport Grand Hotel

2:00 p.m. – 2:45 p.m.

IP9 Critical Transitions in Complex Systems: Theory and Applications to Climate and Ecosystem Dynamics
Ulrike Feudel, Carl von Ossietzky Universität Oldenburg, Germany
Hall C

2:45 p.m. – 3:30 p.m.

JP3 AN24/AMS Joint Plenary: Hydrodynamic Quantum Analogs
John W. Bush, Massachusetts Institute of Technology, U.S.
Hall C

3:30 p.m. – 4:00 p.m.

Coffee Break
Hall B

4:00 p.m. – 6:00 p.m.

Concurrent Sessions

PD4 Journeys of Black Mathematicians Screening and Discussion
Conference Theater

MS38 Showcasing Funded Research at Primarily Undergraduate Institutions: Advice for Faculty, Institutions, and Funding Agencies
206C

MS61 Recent Developments in The Study of Fluids - Part II of III
401B

MS62 Emerging Mathematics and AI for Biosciences Part I of II
401A

MS63 Recent Developments in Numerical Solutions for PDEs Part II of II
401C

MS64 Understanding Cardiac Arrhythmia Mechanisms Using Dynamical Systems and Machine Learning Part III of III
402A

Thursday, July 11

MS65 Excitable Media Dynamics: Methods and Models From Traveling Waves to Cardiac Fibrillation Part II of II
402B

MS66 New Methods in Probabilistic and Science-Guided Machine Learning
402C

MS67 Time Integration for PDE Systems Part II of II
207

MS68 Advances in Understanding the Large-Time Behavior of Fluids Part I of III
206D

CP19 Optimization
201A

CP20 Computer Science 2
201B

CP21 Computational Science & Social & Finance
201C

6:15 p.m. – 8:00 p.m.
Donor Reception
Terrace East, Davenport Grand Hotel

Friday, July 12

8:00 a.m. – 2:30 p.m.
Registration Open
Riverside Lobby

8:30 a.m. – 10:30 a.m.
Concurrent Sessions

MS48 Quantum Computing for Transport Phenomena Part II of II
206C

MS69 Recent Developments in The Study of Fluids - Part III of III
401B

MS70 Modeling Dynamics in Biological Systems Part II of II
401C

MS71 Theory and Applications of Optimal Transport in Machine Learning Part I of II
206D

MS72 Emerging Mathematics and AI for Biosciences Part II of II
401A

MS74 Recent Advances in High Order Mimetic Differences
402B

MS80 Mathematical Modeling of Resilience in Complex Systems
402C

MS81 Advances in Understanding the Large-Time Behavior of Fluids Part II of III
207

CP22 Optimization 2
201A

Friday, July 12

CP23 Materials
201B

9:00 a.m. – 1:30 p.m.
Exhibit Hall Open
Hall B

9:00 a.m. – 4:00 p.m.
SIAM Council Meeting
Meeting Room 12, Davenport Grand Hotel

10:30 a.m. – 11:00 a.m.
Coffee Break
Hall B

11:00 a.m. – 12:00 p.m.
Closing Remarks & IP10 Sampling and Generative Modeling Using Dynamical Representations of Transport
Youssef M. Marzouk, Massachusetts Institute of Technology, U.S.
Hall C

12:00 p.m. – 12:45 p.m.
IP11 Learning the Solution Operators of Forward and Inverse Problems for PDEs
Siddhartha Mishra, ETH Zurich, Switzerland
Hall C

12:45 p.m. – 2:00 p.m.
Lunch Break

2:00 p.m. – 4:00 p.m.
Concurrent Sessions

MS83 Mathematical Advances in Algorithms Design Enabling Emerging Energy Efficient Computing Part III of III
401B

MS85 Data-driven Models for Imaging and Scientific Computing Part II of II
402A

MS86 Theory and Applications of Optimal Transport in Machine Learning Part II of II
207

MS88 Advances in Understanding the Large-Time Behavior of Fluids Part III of III
402B

CP24 SIAM Student Paper Prize Presentations
Hall C

CP25 Fluids 3
201A

CP26 Fluids 1
201B

5:00 p.m. – 7:00 p.m.
Board of Trustees Executive Session
Meeting Room 5, Davenport Grand Hotel

Saturday, July 13

9:00 a.m. – 4:00 p.m.
Board of Trustees Regular Session
Meeting Room 11, Davenport Grand Hotel

Abbreviation Key

CP = Contributed Presentation Session
IP = Invited Plenary Speaker
MS = Minisymposium
MT = Minitutorial
PD = Panel Discussion
PP = Poster Session

CALL FOR SIAM PRIZE NOMINATIONS

Submit a nomination today!

2025 Major Awards

- AWM-SIAM Sonia Kovalevsky Lecture
- George Pólya Prize for Mathematical Exposition
- Germund Dahlquist Prize
- I. E. Block Community Lecture
- Ivo & Renata Babuška Prize*
- James H. Wilkinson Prize in Numerical Analysis and Scientific Computation
- Jerald L. Ericksen Prize*
- John von Neumann Prize
- Ralph E. Kleinman Prize
- SIAM/ACM Prize in Computational Science and Engineering
- SIAM Industry Prize*
- SIAM Student Paper Prizes
- W. T. and Idalia Reid Prize

*First time being awarded



Nominate a colleague at go.siam.org/prizes-nominate

Open dates and deadlines may vary. For details visit: siam.org/deadline-calendar

Sunday, July 7

All times listed are Pacific Time Zone.

4:00 p.m. – 8:00 p.m.

Registration
Riverside Lobby

5:00 p.m. – 6:00 p.m.

Student Days: Orientation
Conference Theater

6:00 p.m. – 8:00 p.m.

Welcome Reception
Riverside Lawn

Monday, July 8

7:00 a.m. – 4:30 p.m.

Registration
Riverside Lobby

8:00 a.m. – 10:00 a.m.

Concurrent Sessions
MS1 Democratizing Data
Conference Theater

MS2 Moving Beyond Traditional Grading in the Applied Mathematics Classroom
102D

9:00 a.m. – 5:00 p.m.

Exhibit Hall Open
Hall B

10:00 a.m. – 10:15 a.m.

Coffee Break
Hall B

10:15 a.m. – 10:30 a.m.

ED24 Opening Remarks
Conference Theater

10:30 a.m. – 11:15 a.m.

IP1 Transforming Mathematics Instruction Through the Use of Data Science
Mahmoud Harding, Data Science 4 Everyone, U.S.
Conference Theater

11:15 a.m. – 12:00 p.m.

SIAM Conference on Discrete Mathematics (DM24) and SIAM Annual Meeting (AN24) Joint Plenary Speaker
Raghu Meka, University of California, Los Angeles, U.S.
Hall C

Monday, July 8

12:00 p.m. – 12:30 p.m.

2024 SIAM Annual Meeting (AN24): W. T. and Idalia Reid Prize Lecture
Benedetto Piccoli, Rutgers University, U.S.
Hall C

12:30 p.m. – 2:00 p.m.

Lunch Break

2:00 p.m. – 2:45 p.m.

IP2 Creating a Welcoming, Collaborative Learning Environment in Undergraduate Research Programs
Rebecca Garcia, Colorado College, U.S.
Conference Theater

2:45 p.m. – 3:30 p.m.

IP3 MetaMath: A Quantitative Justice Project to Enhance EDI in the Mathematical Sciences
Ron Buckmire, Occidental College, U.S.
Conference Theater

3:30 p.m. – 4:00 p.m.

Coffee Break
Hall B

4:00 p.m. – 6:00 p.m.

Concurrent Sessions
MS3 NSF RTG Programs in Applied Mathematics and Data Science
Conference Theater

CP1 Contributed Session 1
102D

6:45 p.m. – 7:45 a.m.

2024 SIAM Annual Meeting (AN24): Industry Career Panel
Hall C

7:45 p.m. – 9:00 p.m.

2024 SIAM Annual Meeting (AN24): Graduate Student Reception and Industry Reception
Riverside Lawn

Tuesday, July 9

8:00 a.m. – 4:30 p.m.

Registration
Riverside Lobby

8:30 a.m. – 10:30 a.m.

Concurrent Sessions
MS4 Mathematical Modeling: Contests, Courses, and Resources
Conference Theater
MS5 Data Science and Data Literacy in K-12
102D

CP2 Contributed Session 2
103

9:00 a.m. – 5:00 p.m.

Exhibit Hall Open
Hall B

10:30 a.m. – 11:00 a.m.

Coffee Break
Hall B

11:00 a.m. – 11:45 a.m.

JP1 Joint Plenary Speaker with SIAM Annual Meeting AN24: Signals of a Critical Transition in Inclusive STEM Education
Carrie Diaz Eaton, Bates College, U.S.
Hall C

11:45 a.m. – 12:30 p.m.

IP4 Presentation and Closing Remarks: Supporting Graduate Students to Make Changes to the System from Within
Jess Ellis Hagman, Colorado State University, U.S.
Conference Theater

12:30 p.m. – 2:30 p.m.

Lunch Break
Prizes and Awards Luncheon (ticketed event, separate fee applies)

2:30 p.m. – 3:30 p.m.

2024 SIAM Annual Meeting (AN24): John von Neumann Prize Lecture - Jorge Nocedal, Northwestern University, U.S.
Hall C

3:30 p.m. – 4:00 p.m.

Coffee Break
Hall B

4:00 p.m. – 6:00 p.m.

Concurrent Sessions
MS6 Choose Your Own Adventure in Mathematical Modeling
Conference Theater

CP3 Contributed Session 3
102D

6:00 p.m. – 6:15 p.m.

Intermission

6:15 p.m. – 7:15 p.m.

2024 SIAM Annual Meeting (AN24): SIAM Business Meeting
Hall C

Complimentary beer, wine, and snacks will be served All SIAM members welcome.

Tuesday, July 9

7:15 p.m. – 7:30 p.m.

Intermission

7:30 p.m. – 8:00 p.m.

SIAG/ED Business Meeting

Conference Theater

Complimentary beer, wine, and snacks will be served All SIAG/ED members welcome.

7:45 p.m. – 8:45 p.m.

2024 SIAM Annual Meeting (AN24): Fellows

Recognition and Reception

Roof Deck

Tuesday, July 9

8:00 p.m. – 10:00 p.m.

Poster Session & Dessert Reception (AN24 posters will be presented)

Hall C

8:30 p.m. – 9:30 p.m.

Spectra Reception (Association for LGBTQ+ Mathematicians)

Meeting Room 12, Davenport Grand Hotel

Abbreviation Key

CP = Contributed Presentation Session

IP = Invited Plenary Speaker

MS = Minisymposium

A great way to get involved!

Collaborate and interact with mathematicians and applied scientists whose work involves education or discrete mathematics.



Conference on Applied Mathematics Education

Benefits of SIAG/ED membership:

- Membership in SIAG/ED's **SIAM Engage** online community
- Additional \$15 discount on registration for the **SIAM Conference on Applied Mathematics Education** (excludes student)
- Electronic communications about recent developments in your specialty
- Eligibility for candidacy for SIAG/ED office
- Participation in the selection of SIAG/ED officers

2023–24 SIAG/ED Officers

Chair: **Shelley Rohde Poole**, Metropolitan State University of DenverVice Chair: **Mario Banuelos**, California State UniversityProgram Director: **Roummel Marcia**, University of CaliforniaSecretary: **Allison Lewis**, Lafayette College

Conference on Discrete Mathematics

Benefits of SIAG/DM membership:

- Free electronic subscription to SIAM Journal on Applied Dynamical Systems
- Membership in SIAG/DM's **SIAM Engage** online community
- Additional \$15 discount on registration at the **SIAM Conference on Discrete Mathematics** (excludes student)
- Electronic communications about recent developments in your specialty
- Eligibility for candidacy for SIAG/DM office
- Participation in the selection of SIAG/DM officers

2023–24 SIAG/DM Officers

Chair: **Dana Randall**, Georgia Institute of TechnologyVice-chair: **Maya Stein**, University of ChileSecretary: **Daniel Panario**, School of Mathematics and Statistics, Carleton UniversityProgram Director: **Sarah Cannon**, National Oceanic and Atmospheric Administration

ELIGIBILITY:

Be a current SIAM member.

COST:

\$15 per year.

Student members can join two activity groups for free!



A Place to Collaborate and Communicate

Sunday, July 7

All times listed are Pacific Time Zone.

4:00 p.m. – 8:00 p.m.

Registration
Riverside Lobby

5:00 p.m. – 6:00 p.m.

Student Days: Orientation
Conference Theater

6:00 p.m. – 8:00 p.m.

Welcome Reception
Riverside Lawn

Monday, July 8

7:30 a.m. – 4:30 p.m.

Registration
Riverside Lobby

8:00 a.m. – 10:00 a.m.

Concurrent Sessions
MS1 Recent Advances in Probabilistic and Extremal Combinatorics - Part I of III
100B
MS2 Discrete Models In Signal Processing
102A
CP1 Applied Graph Theory
102B
CP2 Designs
102C

9:00 a.m. – 5:00 p.m.

Exhibit Hall Open
Hall B

10:00 a.m. – 10:15 a.m.

Coffee Break
Hall B

10:15 a.m. – 10:30 a.m.

DM24 Opening Remarks
100B

10:30 a.m. – 11:15 a.m.

IP1 A New Lower Bound for Sphere Packing
Julian Sahasrabudhe, University of Cambridge, United Kingdom
100B

11:15 a.m. – 12:00 p.m.

JP1 Joint Plenary Speaker with the 2024 SIAM Annual Meeting (AN24): New Frontiers in Structure vs Randomness with Applications to Combinatorics, Complexity, Algorithms
Raghu Meka, University of California, Los Angeles, U.S.
Hall C

Monday, July 8

12:00 p.m. – 12:30 p.m.

2024 SIAM Annual Meeting (AN24): W. T. and Idalia Reid Prize Lecture
Benedetto Piccoli, Rutgers University, U.S.
Hall C

12:30 p.m. – 2:00 p.m.

Lunch Break

2:00 p.m. – 2:45 p.m.

SP1 2024 Dénes König Prize Lecture: When Are Structures Robust Under Randomness?
Huy T. Pham, Stanford University, U.S.
100B

2:45 p.m. – 3:30 p.m.

IP2 Computational Complexity in Algebraic Combinatorics
Greta Panova, University of Southern California, U.S.
100B

3:30 p.m. – 4:00 p.m.

Coffee Break
Hall B

4:00 p.m. – 6:00 p.m.

Concurrent Sessions
MS3 Recent Advances in Probabilistic and Extremal Combinatorics - Part II of III
100B
MS4 Network Science Beyond Graphs - Part I of III
102A
CP3 Matroids
102B

6:45 p.m. – 7:45 p.m.

2024 SIAM Annual Meeting (AN24): Industry Career Panel
Hall C

7:45 p.m. – 9:00 p.m.

2024 SIAM Annual Meeting (AN24): Graduate Student Reception and Industry Reception
Riverside Lawn

Tuesday, July 9

8:00 a.m. – 4:30 p.m.

Registration
Riverside Lobby

8:30 a.m. – 10:30 a.m.

Concurrent Sessions
MS5 Graph Structure - Part I of III
100B

MS6 Network Science Beyond Graphs - Part II of III

102A

CP4 Spectral Graph Theory

102B

9:00 a.m. – 5:00 p.m.

Exhibit Hall Open
Hall B

10:30 a.m. – 11:00 a.m.

Coffee Break
Hall B

11:00 a.m. – 11:45 a.m.

SIAM Conference on Applied Mathematics Education (ED24) and SIAM Annual Meeting (AN24) Joint Plenary Speaker
Carrie Diaz Eaton, Bates College, U.S.
Hall C

11:45 a.m. – 12:30 p.m.

IP3 Random Cayley Graphs and Combinatorial Perspectives on Additive Number Theory Problems
Huy T. Pham, Stanford University, U.S.
100B

12:30 p.m. – 2:30 p.m.

Lunch Break
Prizes and Awards Luncheon (ticketed event, separate fee applies)

2:30 p.m. – 3:30 p.m.

2024 SIAM Annual Meeting (AN24): John von Neumann Prize Lecture
Jorge Nocedal, Northwestern University, U.S.
Hall C

3:30 p.m. – 4:00 p.m.

Coffee Break
Hall B

4:00 p.m. – 6:00 p.m.

Concurrent Sessions
MS7 Applied and Computational Discrete Algorithms - Part I of II
100B

MS8 Colourings and Homomorphisms of Graphs
102A

CP5 Extremal Combinatorics
102B

6:00 p.m. – 6:15 p.m.

Intermission

6:15 p.m. – 7:15 p.m.

2024 SIAM Annual Meeting (AN24): SIAM Business Meeting
Hall C

Complimentary beer, wine, and snacks will be served All SIAM members welcome.

Tuesday, July 9

7:15 p.m. – 7:30 p.m.

Intermission

7:30 p.m. – 8:00 p.m.

SIAG/DM Business Meeting
100B

Complimentary beer, wine, and snacks will be served All SIAG/DM members welcome.

7:45 p.m. – 8:45 p.m.

2024 SIAM Annual Meeting (AN24): Fellows Recognition and Reception
Roof Deck

8:00 p.m. – 10:00 p.m.

Poster Session & Dessert Reception (AN24 posters will be presented)
Hall C

8:30 p.m. – 9:30 p.m.

Spectra Reception (Association for LGBTQ+ Mathematicians)
Meeting Room 12, Davenport Grand Hotel

Wednesday, July 10

8:00 a.m. – 4:30 p.m.

Registration
Riverside Lobby

8:15 a.m. – 10:15 a.m.

Concurrent Sessions**MS9** Recent Advances in Probabilistic and Extremal Combinatorics - Part III of III
*100B***MS10** Network Science Beyond Graphs - Part III of III
*102A***CP6** Combinatorial Games
102B

9:00 a.m. – 5:00 p.m.

Exhibit Hall Open
Hall B

10:15 a.m. – 10:45 a.m.

Coffee Break
Hall B

10:45 a.m. – 11:30 a.m.

2024 SIAM Annual Meeting (AN24): AWM/SIAM Sonia Kovalevsky Lecture
Suncica Canic, University of California, Berkeley, U.S.
Hall C

Wednesday, July 10

11:30 a.m. – 12:30 p.m.

2024 SIAM Annual Meeting (AN24): Past President's Address
Susanne Brenner, Louisiana State University, U.S.
Hall C

12:30 p.m. – 2:00 p.m.

Lunch Break

2:00 p.m. – 2:45 p.m.

IP4 Complex Discrete Probability Models in Evolutionary Biology: Challenges and Opportunities
Sebastien Roch, University of Wisconsin, Madison, U.S.
100B

2:45 p.m. – 3:30 p.m.

IP5 Induced Subgraphs and Treewidth
Sophie Spirkl, University of Waterloo, Canada
100B

3:30 p.m. – 4:00 p.m.

Coffee Break
Hall B

4:00 p.m. – 6:00 p.m.

Concurrent Sessions**MS11** Graph Structure - Part II of III
*100B***MS12** Reconstruction of Stochastic Block Models on Sparse Graphs
*102A***CP7** Graph Coloring
102B

6:00 p.m. – 6:15 p.m.

Intermission

6:15 p.m. – 7:15 p.m.

2024 SIAM Annual Meeting (AN24): I. E. Block Community Lecture
Caoimhe Rooney, NASA and Mathematigals, U.S.
Hall C

7:15 p.m. – 8:15 p.m.

2024 SIAM Annual Meeting (AN24): Community Reception
Riverside Lawn

Thursday, July 11

8:00 a.m. – 4:30 p.m.

Registration
Riverside Lobby

Thursday, July 11

8:30 a.m. – 10:30 a.m.

Concurrent Sessions**MS13** Applied and Computational Discrete Algorithms - Part II of II
*100B***CP8** Graph Width Parameters
*102A***CP9** Discrete Probability
102B

9:00 a.m. – 5:00 p.m.

Exhibit Hall Open
Hall B

10:30 a.m. – 11:00 a.m.

Coffee Break
Hall B

11:00 a.m. – 11:45 a.m.

2024 SIAM Annual Meeting (AN24): Theodore von Kármán Prize Lecture
Karen E. Willcox, University of Texas at Austin, U.S.
Hall C

11:45 a.m. – 12:30 p.m.

IP6 Random Spanning Trees and Applications to the Traveling Salesperson Problem
Shayan Oveis Gharan, University of Washington, U.S.
100B

12:30 p.m. – 2:00 p.m.

Lunch Break

2:00 p.m. – 2:45 p.m.

IP7 Presentation and Closing Remarks: A Constant Lower Bound for Frankl's Union-closed Sets Conjecture
Justin Gilmer, Google DeepMind, U.S.
100B

2:45 p.m. – 3:30 p.m.

2024 SIAM Annual Meeting (AN24): AN24/AMS Joint Plenary
John W. Bush, Massachusetts Institute of Technology, U.S.
Hall C

3:30 p.m. – 4:00 p.m.

Coffee Break
Hall B

4:00 p.m. – 6:00 p.m.

Concurrent Sessions**MS14** Graph Structure - Part III of III
*100B***CP10** Combinatorial Algorithms
*102A***CP11** Graphs and Geometry
102B

Thursday, July 18

All times are listed in Eastern Time Zone.

All Invited Plenary and Prize talks are recorded and will be played back at the times listed with most speakers available for a live Q&A at the end of the recorded talk.

6:00 a.m. – 7:00 a.m.

IP Critical Transitions in Complex Systems: Theory and Applications to Climate and Ecosystem Dynamics

Ulrike Feudel, Carl von Ossietzky Universität Oldenburg, Germany

IP Learning the solution operators of forward and inverse problems for PDEs

Siddhartha Mishra, ETH Zurich, Switzerland

7:00 a.m. – 9:00 a.m.

Concurrent Sessions

MS1 Advances in Deep Learning Theory Part I of III

MS2 Recent Advances in Optimization for Training Neural Networks Part I of III

MS3 Advances in the Theory of Higher-order Tensors

CP1 VCP1

9:00 a.m. – 10:00 a.m.

Sampling and Generative Modeling Using Dynamical Representations of Transport
Youssef M. Marzouk, Massachusetts Institute of Technology, U.S.

9:00 a.m. – 11:00 a.m.

MT: Mathematical Contributions to Weather and Climate Modelling Part I

10:00 a.m. – 11:00 a.m.

W. T. and Idalia Reid Prize Lecture: 100 Years of Traffic Models: From Road Tolls to Autonomy
Benedetto Piccoli, Rutgers University, U.S.

11:00 a.m. – 1:00 p.m.

Concurrent Sessions

MS4 Modeling and Analysis of Multi-Constituent Systems Part I of II

MS5 Recent Advances in Optimization for Training Neural Networks Part II of III

MS6 Dynamics, Optimal Control and Machine Learning: Applications to Stochastic Interacting Populations - Part I of III

MS18 Learning From Data With Information Theory and Causal Inference Part I of II

CP2 VCP2

Thursday, July 18

1:00 p.m. – 2:00 p.m.

I. E. Block Community Lecture: Go Boldly Where No Math Has Gone Before
Caoimhe Rooney, NASA and Mathematigals, U.S
Formulating Effective Models, Methods, and Conceptual Frameworks for the Geosciences
Juan M. Restrepo, Oak Ridge National Laboratory, U.S.

Friday, July 19

1:00 p.m. – 2:00 p.m.

Hearing the Will of the People in the Vote: Computational Challenges in Redistricting
Jonathan C. Mattingly, Duke University, U.S.

Theodore von Kármán Prize Lecture: From Reduced-Order Modeling to Scientific Machine Learning

Karen E. Willcox, University of Texas at Austin, U.S.

2:00 p.m. – 4:00 p.m.

Concurrent Sessions

MS7 Phase Field Models: Theoretical Results, Computational Advances and Applications

MS8 Modeling and Analysis of Multi-Constituent Systems Part II of II

MS9 Dynamics, Optimal Control and Machine Learning: Applications to Stochastic Interacting Populations - Part II of III

MS10 Modeling and Computation of Optimal Transport with Applications in Biology Part I of II
CP3 VCP3

4:00 p.m. – 5:00 p.m.

John von Neumann Lecture: Exploring the Mysteries of Deep Neural Network Optimization
Jorge Nocedal, Northwestern University, U.S.

4:00 p.m. – 6:00 p.m.

MT: Optimal Transport and Applications

5:00 p.m. – 6:00 p.m.

Industry Lightning Symposium

6:00 p.m. – 8:00 p.m.

Concurrent Sessions

MS11 Modeling and Computation of Optimal Transport with Applications in Biology Part II of II

MS12 Dynamics, Optimal Control and Machine Learning: Applications to Stochastic Interacting Populations - Part III of III

MS19 Learning From Data With Information Theory and Causal Inference Part II of II

CP4 VCP4

Friday, July 19

8:00 p.m. – 9:00 p.m.

New Frontiers in Structure Vs Randomness with Applications to Combinatorics, Complexity, Algorithms
Raghu Meka, University of California, Los Angeles, U.S.

Saturday, July 20

2:00 a.m. – 3:00 a.m.

Case Studies on the Role of Loss Landscape in Neural Network Generalization

Maryam Fazel, University of Washington, U.S.

AWM-SIAM Sonia Kovalevsky Lecture: Mathematics for Bioartificial Organ Design

Suncica Canic, University of California, Berkeley, U.S.

3:00 a.m. – 5:00 a.m.

Concurrent Sessions

MS13 Advances in Deep Learning Theory Part II of III

MS14 Numerical Methods for Inverse Problems Part I of II

5:00 a.m. – 6:00 a.m.

Gradient Flows, Non-smooth Kernels and Generative Models for Posterior Sampling in Inverse Problems

Gabriele Steidl, Technische Universität Berlin, Germany

5:00 a.m. – 7:00 a.m.

MT: Mathematical Contributions to Weather and Climate Modelling Part 2

7:00 a.m. – 9:00 a.m.

Concurrent Sessions

MS15 Advances in Deep Learning Theory Part III of III

MS16 Recent Advances in Optimization for Training Neural Networks Part III of III

MS17 Numerical Methods for Inverse Problems Part II of II

CP5 VCP5

9:00 a.m. – 10:00 a.m.

Joint Plenary with the SIAM Conference on Applied Mathematics Education (ED24): Signals of a Critical Transition in Inclusive Stem Education
Carrie Diaz Eaton, Bates College, U.S.

Abbreviation Key

CP = Contributed Presentation Session

IP = Invited Plenary Speaker

MS = Minisymposium

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January 13–14, 2025 • New Orleans, Louisiana, U.S.

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March 3–7, 2025 • Fort Worth, Texas, U.S.

SIAM International Conference on Data Mining (SDM25)

May 1–3, 2025 • Alexandria, Virginia, U.S.

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May 11–15, 2025 • Denver, Colorado, U.S.

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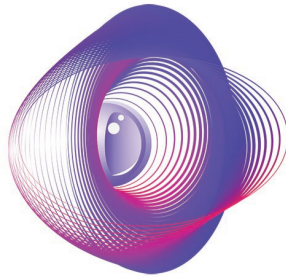
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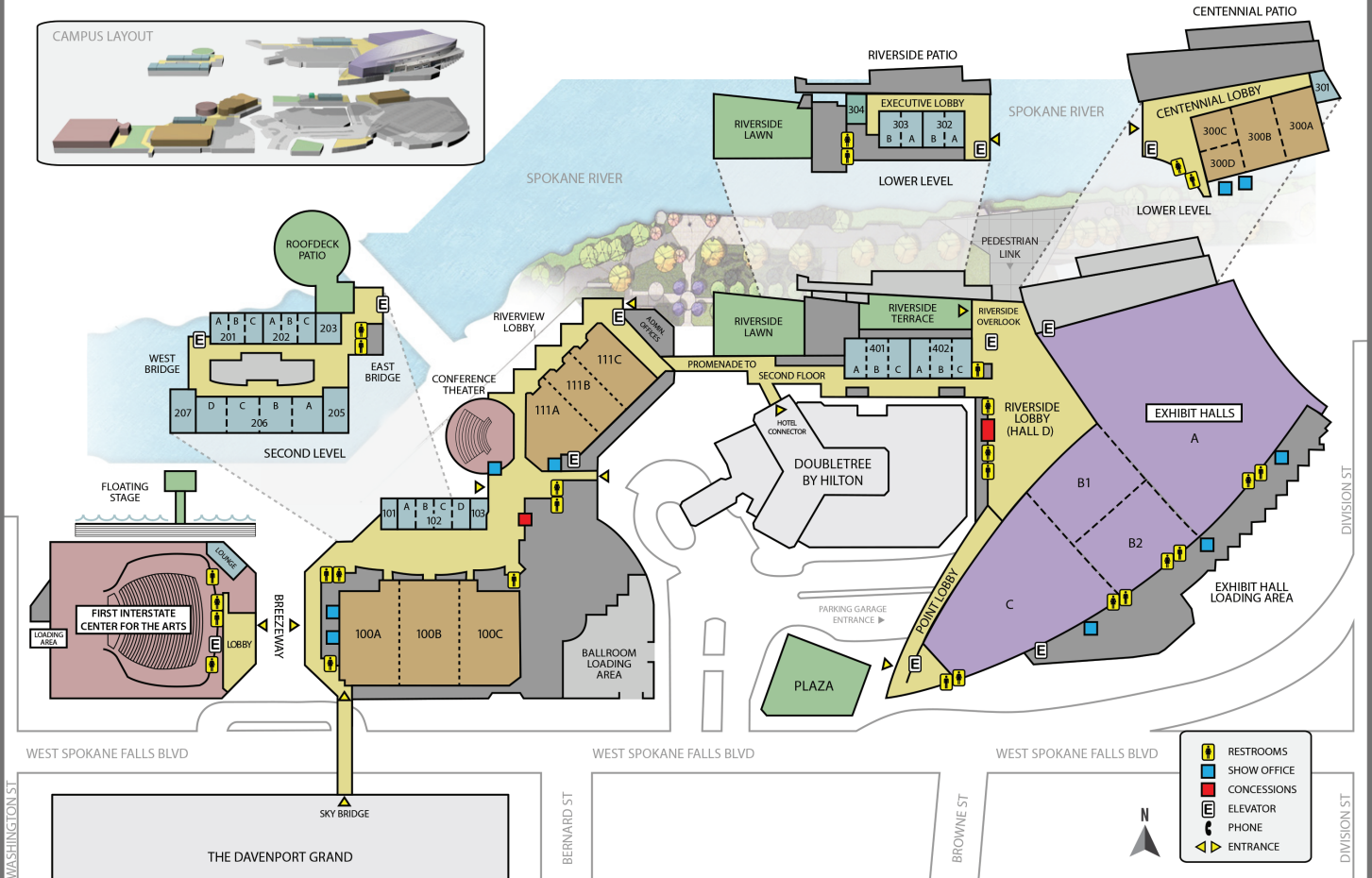
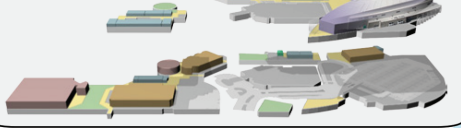
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