



The Third Joint SIAM/CAIMS Annual Meetings

July 28–August 1, 2025

Conference on Computational Geometric Design

July 28–July 30, 2025

Conference on Control and Its Applications

July 28–July 30, 2025

Conference on Applied and Computational Discrete Algorithms

July 30–August 1, 2025

**Unless otherwise noted, all events will take place at the Montréal Convention Center:
159, rue Saint-Antoine Ouest, 9e étage, Montréal, QC, H2Z 1H2, Métro Place-d'Armes**

Attendees are encouraged to view the Online Programs:

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Monday, July 28

8:00 a.m. – 10:00 a.m.

MS3 Quantum Linear Algebra and Quantum Algorithms Part I
518A

MS14 Digital Twin: Methods and Applications Part I
513A

10:40 a.m. – 11:25 a.m.

IP1 Science 2.0 - Evolving the Scientific Method Through Learning and Reasoning Symbiosis
Lior Horesh, IBM Research, U.S.
517D

11:40 a.m. – 12:25 p.m.

SP1 CAIMS-SCMAI Cecil Graham Doctoral Dissertation Award Lecture: Concentration Phenomena in Several Reaction-Diffusion Equations with Kinetic Effect
Fanze Kong, University of British Columbia, Canada
517C

1:45 p.m. – 2:30 p.m.

JP1 AMS-SIAM Joint Plenary: (Machine) Learning Ocean & Climate Physics Across Scales
Laure Zanna, Courant Institute of Mathematical Sciences, New York University, U.S.
517D

2:45 p.m. – 3:30 p.m.

SP2 AWM-SIAM Sonia Kovalevsky Lecture: From Neurological Disorders to Additive Manufacturing: Integrating Isogeometric Analysis with Deep Learning and Digital Twins
Jessica Zhang, Carnegie Mellon University, U.S.
517D

4:00 p.m. – 6:00 p.m.

MT1 Julia for HPC/Scientific Computing
516B

MS19 Image Analysis and Learning with Variational Models and PDEs Part I
522C

MS22 Quantum Linear Algebra and Quantum Algorithms Part II
518A

MS33 Digital Twin: Methods and Applications Part II
513A

6:15 p.m. – 6:45 p.m.

PD1 Industry Lightning Talks
517D

6:45 p.m. – 7:45 p.m.

PD2 Industry Career Panel
517D

Monday, July 28

7:45 p.m. – 9:15 p.m.

Graduate Student and Industry Reception
720/725

Tuesday, July 29

8:00 a.m. – 10:00 a.m.

MS41 Quantum Linear Algebra and Quantum Algorithms Part III
518A

10:30 a.m. – 11:15 a.m.

JP2 Joint Plenary with the SIAM Conference on Control and Its Applications: Stackelberg Strategies for the Control of Partial Differential Equations
Luz de Teresa, Universidad Nacional Autónoma de México, Mexico
517D

11:30 a.m. – 12:15 p.m.

IP2 Deep Unfolding Approach for Inverse Problems in Imaging : The Usecase of Limited-Angle Computed Tomography
Emilie Chouzenoux, CentraleSupélec and Université Paris-Saclay, France
517D

2:00 p.m. – 2:30 p.m.

SP3 W.T and Idalia Reid Prize Lecture: PDE Systems Describing the Motion of Rigid Bodies in an Incompressible Fluid: Wellposedness, Control and Long-time Behaviour
Marius Tucsnak, University of Bordeaux, France
517D

2:45 p.m. – 3:45 p.m.

SP4 John von Neumann Prize Lecture: Thirty Years of Cartesian Cut-cell Methods: Where Are We Now?
Marsha Berger, Flatiron Institute, New York University, U.S.
517D

4:00 p.m. – 6:00 p.m.

PD3 AWM Women in Data Science Panel: Navigating Success and Challenges
516D

MS57 Image Analysis and Learning with Variational Models and PDEs Part III
522C

MS61 Methods and Models for Numerical Optimization in Quantum Information Sciences
518A

MS63 Mathematical Software Packages for High Performance Computers Part I
520B

Tuesday, July 29

MS69 Data- and Model-driven Approaches for Inverse Problems Part I
524C

6:15 p.m. – 7:00 p.m.

SIAM Business Meeting
Complimentary beer & wine will be served
All are welcome to attend
517C

8:00 p.m. – 10:00 p.m.

PP1 Poster Presentations and Dessert Reception
517B

Wednesday, July 30

8:00 a.m. – 10:00 a.m.

MS76 Applied Mathematics and Data Science for Cybersecurity
516D

MS79 Challenges of Sampling and Data Analysis of Disease Ecology
518A

MS85 Mathematical Modeling and Analysis Tools for Biomechanical and Biomedical Applications Part II
524A

10:30 a.m. – 11:25 a.m.

JP3 Joint Plenary with Conference on Computational Geometric Design: Geometry for Computational Design and Fabrication
Helmut Pottmann, TU Wien, Austria and KAUST, Saudi Arabia
517D

11:30 a.m. – 12:15 p.m.

SP5 CAIMS/SCMAI-Fields Industrial Mathematics Prize Lecture: Full Waveform Inversion: Mathematical Challenges, Computational Issues, and Applications
Wenyuan Liao, University of Calgary, Canada
517C

12:15 p.m. – 1:45 p.m.

IP3 Inference of Dynamic Networks with Mathematical Modeling and Ai from Time-Series Data
Jae Kyoung Kim, Korea Advanced Institute of Science and Technology, Korea
517D

Wednesday, July 30

1:45 p.m. – 2:45 p.m.

SP6 Past President's Address: Solving Massive Combinatorial Optimization Problems
Sven Leyffer, Argonne National Laboratory, U.S.
517D

3:00 p.m. – 3:45 p.m.

SP7 Jerald L. Ericksen Prize Lecture: Variational Analysis of a Data-Driven Formulation of the Theory of Elasticity
Sergio Conti, Universität Bonn, Germany
517D

4:00 p.m. – 6:00 p.m.

PD4 From Your Lab to DC: What's Happening to U.S. Science and What You Can Do About It, 517C
MS98 Mechanistic Data-Driven QSP Modeling for Efficient Clinical Drug Development, 518A
MS100 Mathematical Software Packages for High Performance Computers Part III
520B

6:15 p.m. – 7:15 p.m.

SP8 I.E. Block Community Lecture : An Unexpected Journey: from Music to Art Via Math
Timothy A. Davis, Texas A&M University, U.S.
517D

7:15 p.m. – 8:15 p.m.

Community Reception
720/725

Thursday, July 30

11:30 a.m. – 12:15 p.m.

JP4 Joint Plenary with the SIAM Conference on Applied and Computational Discrete Algorithms: Setting a Course for Post-Moore Software Performance
Charles E. Leiserson, Massachusetts Institute of Technology, U.S.
517D

1:45 p.m. – 2:30 p.m.

SP9 CAIMS/SCMAI Research Prize Lecture: We are all different: Modeling key individual differences in physiological systems
Anita Layton, University of Waterloo, Canada
517C

2:45 p.m. – 3:30 p.m.

SP10 SIAM Industry Prize Lecture: Bringing Medicines to Patients with Mathematical Biology
Richard Allen, Pfizer Inc., U.S.
517D

6:15 p.m. – 7:45 p.m.

PD5 Career Opportunities Panel
517D

8:00 p.m. – 10:00 p.m.

MS190 An Applied Mathematicians' Storytelling Event
516B

Friday, August 1

2:45 p.m. – 3:30 p.m.

IP10 Integer Distances
David Eppstein, University of California, Irvine, U.S.
517D

4:00 p.m. – 6:00 p.m.

MS170 Automating Scientific Discovery with Digital Twins, AI and High-Performance Computing
520B

Thursday, July 31

8:00 a.m. – 9:00 a.m.

CP32 2025 SIAM Student Paper Prize Presentations
517D

8:00 a.m. – 10:00 a.m.

MS123 Scalable Deep Learning Part I
520F
MS134 Career Secrets Unveiled: Success in Applied Math
524C
MS189 Quantum Intersections Convening
516B

10:30 a.m. – 11:15 a.m.

IP4 Women in Mathematics Around the World: Strategies for Gender Equality
Marie-Francoise Roy, Université de Rennes 1, France
517D

Friday, August 1

10:30 a.m. – 11:15 a.m.

IP8 Information Complexity of Convex Optimization with Integer Variables
Amitabh Basu, Johns Hopkins University, U.S.
517D

11:30 a.m. – 12:15 p.m.

SP11 CAIMS/SCMAI-PIMS Early Career Award Lecture: High-dimensional Optimization in Machine Learning with Applications to Scaling Limits and Compute-Optimal Neural Scaling Laws
Courtney Paquette, McGill University/Google Research, Brain team, Canada
517C

1:45 p.m. – 2:30 p.m.

IP9 On Peaks, Plateaus and Thorny Patches: The Path to Hybrid Quantum-Classical Supercomputing
Laura Schulz, Argonne National Laboratory, U.S.
517D

