SIAM.CSS2017
SIAM Central States Section 2017 Meeting

4 plenary talks, 25 mini-symposia, 4 posters
All in Lory Student Center (LSC), on 3rd floor
On Colorado State University (CSU) campus

Each plenary talk is 50 minutes including questions and answers.
Each mini-symposium talk is 20 minutes including questions and answers.

Plenary Talk #1
Sat. Sep.30, 9:00-9:50am, CSU Lory Student Center, Ballroom A
Numerical Homogenization and Multiscale Methods for Heterogeneous Problems
Yalchin Efendiev, Texas A&M University

Plenary Talk #2
Sat. Sep.30, 9:50-10:40am, CSU Lory Student Center, Ballroom A
Topology-based Deep Learning for Drug Discovery
Guowei Wei, Michigan State University

Plenary Talk #3
Sat. Sep.30, 2:00-2:50pm, CSU Lory Student Center, Ballroom A
Entropy Stable High Order Discontinuous Galerkin Methods for Hyperbolic Conservation Laws
Chi-Wang Shu, Brown University

Plenary Talk #4
Sun. Oct.1, 8:30-9:20am, CSU Lory Student Center, Ballroom A
A New Approach to Stochastic Inverse Problems for Scientific Inference
Don Estep, Colorado State University

MS01 "Tools for Efficient Forward, Inverse, and Stochastic Models"

Mahadevan Ganesh, Colorado School of Mines, *mganesh@mines.edu*

MS01a4: Parallel Session I, LSC 300

Sat. 09/30, 11:10am, LSC 300
A Stochastic Approach to Reconstruction of Faults in Elastic Half Space
Darko Volkov, Worcester Polytechnic Institute

Sat. 09/30, 11:30am, LSC 300
Ultra-efficient Reduced Basis Method and Its Integration with Uncertainty Quantification
Yanlai Chen, University of Massachusetts at Dartmouth

Sat. 09/30, 11:50am, LSC 300
An FEM-MLMC Algorithm for a Class of Time-Dependent Stochastic Models
Brandon Reyes, Colorado School of Mines

Sat. 09/30, 12:10pm, LSC 300
A Class of Efficient Forward and Inverse 3D Dielectric Media UQ Models
Mahadevan Ganesh, Colorado School of Mines

MS01b4: Parallel Session II, LSC 300

Sat. 09/30, 03:00pm, LSC 300
Stochastic Tools for Large Linear Least-Squares and Inverse Problems
Luis Tenorio, Colorado School of Mines

Sat. 09/30, 03:20pm, LSC 300
Optimal Low-rank Approximations of Bayesian Linear Inverse Problems
Alessio Spantini, MIT

Sat. 09/30, 03:40pm, LSC 300
Photoacoustic Tomography and Thermodynamic Attenuation
Sebastian Acosta, Texas Children's Hospital

Sat. 09/30, 04:00pm, LSC 300
Waves in Random Media: Asymptotics and Applications
Oliver Pinaud, Colorado State University

MS01c4: Parallel Session III, LSC 300

Sat. 09/30, 04:50pm, LSC 300
Deferred-corrections Fourth and Sixth Order Schemes for Time-Harmonic Acoustic Waves
Vianey Villamizar, Brigham Young University

Sat. 09/30, 05:10pm, LSC 300
Structure-preserving Exponential Integrators for Damped-driven PDE
Brian Moore, University of Central Florida

Sat. 09/30, 05:30pm, LSC 300
Highly Accurate Equation Based Finite Difference Method Coupled with Farfield ABC for Acoustic Scattering
Dane Grundvig, Brigham Young University

Sat. 09/30, 05:50pm, LSC 300
Toward Optimal Recovery of Compressible Orthogonal Expansions
Akil Narayan, University of Utah

MS02 "Perspectives on Uncertainty Quantification"

Jehanzeb Chaudhry, University of New Mexico, *jehanzeb@unm.edu*
Simon Tavener, Colorado State University, *tavener@math.colostate.edu*

MS02a4: Parallel Session I, LSC 324

Sat. 09/30, 11:10am, LSC 324
A Posteriori Analysis for Multi-step and Multi-stage IMEX Methods
Jehanzeb Chaudhry, University of New Mexico

Sat. 09/30, 11:30am, LSC 324
Towards Parallel in Time for Full Space Optimization
Eric Cyr, Sandia National Laboratories

Sat. 09/30, 11:50am, LSC 324
A Consistent Bayesian Approach for Stochastic Inverse Problems
Tim Wildey, Sandia National Laboratories

Sat. 09/30, 12:10pm, LSC 324
Data-driven Polynomial Ridge Approximation Using Variable Projection
Jeffrey Hokanson, University of Colorado at Boulder

MS02b4: Parallel Session II, LSC 324

Sat. 09/30, 03:00pm, LSC 324
Convergence of Distributions Arising from a Fixed Point Iteration
Simon Tavener, Colorado State University

Sat. 09/30, 03:20pm, LSC 324
Petrov-Galerkin FEM for Solving Second-order IVPs and its a Posteriori Error Estimation
Victor Ginting, University of Wyoming

Sat. 09/30, 03:40pm, LSC 324
Optimal Experimental Design Using Sampled Singular Values
Troy Butler, University of Colorado at Denver

Sat. 09/30, 04:00pm, LSC 324
Quantification of Uncertainties for the Numerical Simulation of Compressible Multiphase Flows
Tulin Kaman, University of Arkansas

MS03 "Molecular Bioscience and Biophysics: Modeling and Computation"

Shan Zhao, University of Alabama, *szhao@ua.edu*
Yongcheng Zhou, Colorado State University, *yzhou@math.colostate.edu*

MS03a3: Parallel Session I, LSC 312

Sat. 09/30, 11:10am, LSC 312
New Finite Element Iterative Methods for Solving a Nonuniform Ionic Size Modified Poisson-Boltzmann Equation
Dexuan Xie, University of Wisconsin - Milwaukee

Sat. 09/30, 11:30am, LSC 312
A Two-Component Regularization for Charge Singularity in Implicit Solvation
Shan Zhao, University of Alabama

Sat. 09/30, 11:50am, LSC 312
Bilayers as Local Structures of the Functionalized Cahn-Hilliard Functional
Shibin Dai, University of Alabama

MS03b4: Parallel Session II, LSC 312

Sat. 09/30, 03:00pm, LSC 312
An Energy-preserving Scheme for PNP Equations
Xiaofan Li, Illinois Institute of Technology

Sat. 09/30, 03:20pm, LSC 312
Fractional Poisson-Nernst-Planck Model for Ion Channels
Duan Chen, University of North Carolina at Charlotte

Sat. 09/30, 03:40pm, LSC 312
Geometric Singular Approach to Steady-State Poisson-Nernst-Planck Systems with Local Excess Chemical Potentials: Competition Bet
Mingji Zhang, New Mexico Institute of Mining and Technology

Sat. 09/30, 04:00pm, LSC 312
Rigidity Strengthening: A Mechanism for Protein-Çoligand Binding
Duc Nguyen, Michigan State University

MS03c4: Parallel Session III, LSC 312

Sat. 09/30, 04:50pm, LSC 312
Wrinkling Dynamics of a Vesicle in Stokes Flow
Shuwang Li, Illinois Institute of Technology

Sat. 09/30, 05:10pm, LSC 312
Persistent Homology and Machine Learning for Structure-Based Biomolecular Property Predictions
Zixuan Cang, Michigan State University

Sat. 09/30, 05:30pm, LSC 312
Data-driven Approach for Uncertainty Quantification with High Dimensional Random Space
Huan Lei, Pacific Northwest National Laboratory

Sat. 09/30, 05:50pm, LSC 312
Multiscale Virtual Particle Based Elastic Network Model for Biomolecular Dynamic Analysis
Kelin Xia, Nanyang Technological University

MS03d3: Parallel Session IV, LSC 312

Sun. 10/01, 09:30am, LSC 312
Mathematical Models of Membrane Bending: Atomistic to Continuum
Michael Grabe, University of California at San Francisco

Sun. 10/01, 09:50am, LSC 312
Rotational Diffusion of Membrane Proteins and Their Curvature Modulation
Yongcheng Zhou, Colorado State University

Sun. 10/01, 10:10am, LSC 312
Mathematics in Crime
Bao Wang, University of California at Los Angeles

MS04 "Recent Advances in Computational Plasma Physics"
Qi Tang, Rensselaer Polytechnic Institute, *tangq3@rpi.edu*
Yuan Liu, Mississippi State University, *yliu@math.msstate.edu*

MS04a5: Parallel Session III, LSC 304

Sat. 09/30, 04:50pm, LSC 304
A High Order Conservative Semi-Lagrangian Discontinuous Galerkin Method for the Vlasov-Poisson Simulations
Wei Guo, Michigan State University

Sat. 09/30, 05:10pm, LSC 304
Implicit Solution of the Vlasov-Poisson System
Cory Hauck, Oak Ridge National Laboratory

Sat. 09/30, 05:30pm, LSC 304
Positivity Limiters for Spectral Approximations of Linear Kinetic Transport Equations
Paul Laiu, Oak Ridge National Laboratory

Sat. 09/30, 05:50pm, LSC 304
Asymptotic Preserving IMEX-LDG Schemes for Kinetic Transport Equations in a Diffusive Scaling
Zhichao Peng, Rensselaer Polytechnic Institute

Sat. 09/30, 06:10pm, LSC 304
High-Order Finite-Difference Time-Domain Methods for Electromagnetic Wave Propagation in Plasmonic Materials
Michael Jenkinson, Rensselaer Polytechnic Institute

MS05 "PDEs in Fluid Dynamics: Analysis and Computations"

Hakima Bessaih, University of Wyoming, *bessaih@uwyo.edu*
Magdalena Czubak, University of Colorado at Boulder, *Magda.Czubak@colorado.edu*

MS05a4: Parallel Session I, LSC 306

Sat. 09/30, 11:10am, LSC 306
Downscaling Data Assimilation Algorithm with Applications to Statistical Solutions
Animikh Biswas, University of Maryland - Baltimore County

Sat. 09/30, 11:30am, LSC 306
Recent Developments on the Magnetohydrodynamics and Its Related Systems
Kazuo Yamazaki, University of Rochester

Sat. 09/30, 11:50am, LSC 306
Viscous Fluids in General Relativity
Marcelo Disconzi, Vanderbilt University

Sat. 09/30, 12:10pm, LSC 306
Data Assimilation in Geophysical and Fluid Dynamics
Yuan Pei, University of Nebraska - Lincoln

MS05b4: Parallel Session II, LSC 306

Sat. 09/30, 03:00pm, LSC 306
Dynamics of Singularities, Wave-breaking and Turbulence in 2D Hydrodynamics with Free Surface
Pavel Lushnikov, University of New Mexico

Sat. 09/30, 03:20pm, LSC 306
On the Convergence of Statistical Solutions of Evolution Equations
Cecilia Mondaini, Texas A&M University

Sat. 09/30, 03:40pm, LSC 306
The Voigt Model as a Tool for Computationally Analyzing the Blow-Up of the 3D Euler Equations
Adam Larios, University of Nebraska - Lincoln

Sat. 09/30, 04:00pm, LSC 306
Continuous Data Assimilation for Miscible Displacement in Porous Media
Bradley McCaskill, University of Wyoming

MS05c4: Parallel Session IV, LSC 306

Sun. 10/01, 09:30am, LSC 306
Energy Stability of Hydrodynamic Systems Driven by a Stochastic Forcing
Jared Whitehead, Brigham Young University

Sun. 10/01, 09:50am, LSC 306
Analysis of a Stratified Kraichnan Flow
Davar Khoshnevisan, University of Utah

Sun. 10/01, 10:10am, LSC 306
Geometry of 3D Turbulent Flows and the Scaling Gap in the 3D Navier Stokes Regularity Problem
Aseel Farhat, University of Virginia

Sun. 10/01, 10:30am, LSC 306
Turbulence in Vertically Averaged 3D Rayleigh-Benard Convection
Michael Jolly, Indiana University

MS06 "Numerical Simulation under Uncertainty"

Jan Mandel, University of Colorado at Denver, *jan.mandel@ucdenver.edu*
Aime Fournier, University of Colorado at Denver & MIT, *aime.fournier@ucdenver.edu*

MS06a4: Parallel Session IV, LSC 322

Sun. 10/01, 09:30am, LSC 322
Sequential vs Joint Inversion of Probability Distributions
Troy Butler, University of Colorado at Denver

Sun. 10/01, 09:50am, LSC 322
Statistical Analysis of Initial-condition Constraints and Parametric Sensitivity
Aimé Fournier, University of Colorado at Denver

Sun. 10/01, 10:10am, LSC 322
Multi-grid and Multi-level Monte Carlo Method for Stokes-Darcy Model with Random Permeability
Xiaoming He, Missouri University of Science and Technology

Sun. 10/01, 10:30am, LSC 322
Functional Bayesian Data Assimilation with White Data Error Noise and Applications to Assimilation of Active Fires Satellite Set
Jan Mandel, University of Colorado at Denver

MS07 "Advances in Anisotropic Mesh Adaption for Numerical Computations"

Xianping Li, University of Missouri - Kansas City, *lixianp@umkc.edu*

MS07a4: Parallel Session III, LSC 306

Sat. 09/30, 04:50pm, LSC 306
Optimal Mass Transport-Based Approach for Anisotropic Adaptive Mesh Generation
Mohamed Sulman, Wright State University

Sat. 09/30, 05:10pm, LSC 306
Moving Simulation of Fourth Order PDES in 2D
Kelsey DiPietro, University of Notre Dame

Sat. 09/30, 05:30pm, LSC 306
Anisotropic Mesh Adaptation for Porous Medium Equation in Fractured Reservoir
Ahmed Azeez, University of Missouri - Kansas City

Sat. 09/30, 05:50pm, LSC 306
Adaptive Moving Mesh Central-Upwind Schemes for Hyperbolic System of Conservation and Balance Laws
Tong Wu, North Carolina State University

MS07b4: Parallel Session V, LSC 306

Sun. 10/01, 11:10am, LSC 306
Selection of the Regularization Parameter in the Ambrosio-Tortorelli Approximation of the Mumford-Shah Functional for Image Segmentation.
Yufei Yu, University of Kansas

Sun. 10/01, 11:30am, LSC 306
Anisotropic Mesh Adaptation for Chan-Vese Image Segmentation Model
Karrar Abbas, University of Missouri - Kansas City

Sun. 10/01, 11:50am, LSC 306
A New Functional for Variational Mesh Generation and Adaptation Based on Equidistribution and Alignment for Bulk Meshes
Avary Kolasinski, University of Kansas

Sun. 10/01, 12:10pm, LSC 306
Mesh Adaptation for Finite Element Solution of Anisotropic Porous Medium Equation
Xianping Li, University of Missouri - Kansas City

MS08 "Applied Dynamical Systems"

Patrick Shipman, Colorado State University, *shipman@math.colostate.edu*
Iuliana Oprea, Colorado State University, *juliana@math.colostate.edu*
Gerhard Dangelmayr, Colorado State University, *gerhard@math.colostate.edu*

MS08a5: Parallel Session III, LSC 310

Sat. 09/30, 04:50pm, LSC 310
Where's Waldo? (and where isn't he): Neural Field Models of Memory-Guided Search
Zachary Kilpatrick, University of Colorado at Boulder

Sat. 09/30, 05:10pm, LSC 310
Least Action Methods and Noise Induced Transitions in Periodically Forced Systems
John Gemmer, Wake Forest University

Sat. 09/30, 05:30pm, LSC 310
Regulatory Network Identification from Time Series Data
Bree Cummins, Montana State University

Sat. 09/30, 05:50pm, LSC 310
Optimizing Mixing in Laminar Flows: Aref's Blinking Vortex
James Meiss, University of Colorado at Boulder

Sat. 09/30, 06:10pm, LSC 310
Pattern Formation and Spatiotemporal Complex Dynamics in Extended Anisotropic Systems
Iuliana Oprea, Colorado State University

MS08b5: Parallel Session V, LSC 310

Sun. 10/01, 11:10am, LSC 310
Pattern Formation in the Wake of Growth Mechanisms
Ryan Goh, Boston University

Sun. 10/01, 11:30am, LSC 310
Virtually Defect-free Patterns and Undercompressive Shocks Produced by Ion Bombardment of Surfaces
Mark Bradley, Colorado State University

Sun. 10/01, 11:50am, LSC 310
On the Contribution of Phase Separation to Pattern Formation during Normal-Incidence Ion Bombardment of Binary Compounds
Wes Galbraith, Colorado State University

Sun. 10/01, 12:10pm, LSC 310
Estimating the Reproductive Number, Total Outbreak Size, and Reporting Rates for Zika Epidemics in Central & South America
Stephen Pankavich, Colorado School of Mines

Sun. 10/01, 12:30pm, LSC 310
Physics, Innovation, and Entrepreneurship Explored Through Nonlinear Dynamics
Randall Tagg, University of Colorado at Denver

MS09 "Methods of Applied and Numerical Complex Analysis"

Anna Zemlyanova, Kansas State University, *azem@ksu.edu*
Thomas DeLillo, Wichita State University, *delillo@math.wichita.edu*

MS09a4: Parallel Session I, LSC 382

Sat. 09/30, 11:10am, LSC 382
An Introduction to Some Fourier Series Methods for Computing Conformal Maps to Exterior Simply and Multiply Connected Domains
Thomas DeLillo, Wichita State University

Sat. 09/30, 11:30am, LSC 382
Computation of Plane Potential Flow Past Multi-element Airfoils Using Conformal Mapping, Revisited
Saman Sahraei, Wichita State University

Sat. 09/30, 11:50am, LSC 382
Surface Elasticity in Steigmann-Ogden Form in Modeling of Fracture
Anna Zemlyanova, Kansas State University

Sat. 09/30, 12:10pm, LSC 382
An Electromagnetic Inverse Scattering Problem for Periodic Structures
Dinh-Liem Nguyen, Kansas State University

MS10 "Modeling, Computation, and Imaging of Pulmonary Activity"

Jennifer Mueller, Colorado State University, *mueller@math.colostate.edu*

MS10a4: Parallel Session IV, LSC 300

Sun. 10/01, 09:30am, LSC 300
D-bar Reconstructions with Prior Spatial Information for 2-D Human Thoracic EIT Data
Melody Alsaker, Gonzaga University

Sun. 10/01, 09:50am, LSC 300
Modeling as a Tool to Investigate Ventilator Induced Lung Injury
Michelle Mellenthin, University of Colorado at Denver (Anschutz Medical Campus)

Sun. 10/01, 10:10am, LSC 300
Bayesian Framework for the Reconstruction of Anisotropic Conductivities in Electrical Impedance Tomography
Rashmi Murthy, Colorado State University

Sun. 10/01, 10:30am, LSC 300
Results of a Study Deriving Pulmonary Function Measures from Functional Electrical Impedance Tomography in Children with Cystic Fibrosis
Michael Capps, Colorado State University

MS11 "Modeling the Immune Response to Infection"

Michael Kirby, Colorado State University, *Michael.Kirby@Colostate.edu*

MS11a6: Parallel Session V, LSC 300

Sun. 10/01, 11:10am, LSC 300
Manifold Learning Techniques for Visualizing Temporal Biomarkers
Shannon Stiverson, Colorado State University

Sun. 10/01, 11:30am, LSC 300
Centroid-Encoder Neural Networks for Data Visualization and Classification
Tomojit Ghosh, Colorado State University

Sun. 10/01, 11:50am, LSC 300
Generative Adversarial Neural Networks for Learning Contagion
Lange Simmons, Colorado State University

Sun. 10/01, 12:10pm, LSC 300
Sparse Support Vector Machines for Identifying Asympotomatic Shedders in the First 24 Hours
Ariel Liu, Colorado State University

Sun. 10/01, 12:30pm, LSC 300
A Dynamical Systems Approach to Real Time Anomaly Detection for Monitoring Infectious Disease
Xiaofeng Ma, Colorado State University

Sun. 10/01, 12:50pm, LSC 300
Geometric Classification of Tolerant, Resistant and Susceptible Mice using Time Series Data
Manucher Aminian, Colorado State University

MS12 "Models and Methods for Problems in Applied Mathematics"

James Liu, Colorado State University, *liu@math.colostate.edu*
Jennifer Mueller, Colorado State University, *mueller@math.colostate.edu*

MS12a3: Parallel Session I, LSC 378

Sat. 09/30, 11:10am, LSC 378
Perspectives on Exponential Random Graphs
Mei Yin, University of Denver

Sat. 09/30, 11:30am, LSC 378
A Dimension Reduction Method for Time-Series Prediction
Mahsa Ghorbani, Colorado State University

Sat. 09/30, 11:50am, LSC 378
A Demonstration of the Julia Programming Language
Derek Handwerk, Colorado State University

MS12b4: Parallel Session II, LSC 378

Sat. 09/30, 03:00pm, LSC 378
Lowest-order Weak Galerkin Finite Element Method for Darcy Equation on Polygonal Meshes
Zhuoran Wang, Colorado State University

Sat. 09/30, 03:20pm, LSC 378
Discrete Miranda-Talenti Estimates and Applications to Linear and Nonlinear PDEs
Mohan Wu, University of Pittsburgh

Sat. 09/30, 03:40pm, LSC 378
Modified Radon Transform Inversion Using Moments
Regene DePiero, University of Wyoming

Sat. 09/30, 04:00pm, LSC 378
Matrix Spectral Factorization
Fritz Keinert, Iowa State University

MS12c5: Parallel Session III, LSC 378

Sat. 09/30, 04:50pm, LSC 378
Modeling of Chirped Gratings Based on Interferometric Lithography
Steve Benoit, Colorado State University

Sat. 09/30, 05:10pm, LSC 378
On Stochastic Boussinesq Equations
Geordie Richards, Utah State University

Sat. 09/30, 05:30pm, LSC 378
A Variable Nonlinear Splitting Algorithm for Reaction Diffusion Systems with Self and Cross-diffusion
Matthew A. Beauregard, Stephen F. Austin State University

Sat. 09/30, 05:50pm, LSC 378
Interactions of Solitary Waves and Compression/Expansion Waves in Core-annular Flows
Michelle Maiden, University of Colorado at Boulder

Sat. 09/30, 06:10pm, LSC 378
A Numerical Method for the Quantum Liouville-BGK Equation
Sophia Potoczak, Colorado State University

MS12d3: Parallel Session IV, LSC 378

Sun. 10/01, 09:30am, LSC 378
Biomechanics of Micro-Colony Morphology in Cyanobacteria
Sabina Altus, University of Colorado at Boulder

Sun. 10/01, 09:50am, LSC 378
Sensitivity and Bifurcation Analysis for a Differential-Algebraic Equation Model of a Microbial Electrolysis Cell
Harry Dudley, University of Colorado at Boulder

Sun. 10/01, 10:10am, LSC 378
Modeling Light Propagation in Tissues
Shelley Rohde, Metropolitan State University of Denver

MS13 "Novel Numerical Methods for Multiphysics Problems"

Lin Mu, Oak Ridge National Lab, *jraver@gmail.com*
Xiaozhe Hu, Tufts University, *Xiaozhe.Hu@tufts.edu*
Xiu Ye, University of Arkansas at Little Rock, *xxye@ualr.edu*

MS13a3: Parallel Session I, LSC 376

Sat. 09/30, 11:10am, LSC 376
A Posteriori Error Analysis on Polytopal Meshes and Simple Methods for the Problems with Non-divergence Forms
Xiu Ye, University of Arkansas at Little Rock

Sat. 09/30, 11:30am, LSC 376
An Immersed Discontinuous Finite Element Method for the Stokes Problem with a Moving Interface
Pengtao Yue, Virginia Tech

Sat. 09/30, 11:50am, LSC 376
Numerical Modeling of Incommensurate 2D Moir Atomic Structures via C* Algebras
Paul Cazeaux, University of Kansas

MS13b3: Parallel Session II, LSC 376

Sat. 09/30, 03:00pm, LSC 376
Superconvergence of Immersed Finite Element Methods and Finite Volume Methods
Xu Zhang, Mississippi State University

Sat. 09/30, 03:20pm, LSC 376
A Trefftz Discontinuous Galerkin Method for Time-Harmonic Waves with a Generalized Impedance Boundary Condition
Shelvean Kapita, University of Georgia

Sat. 09/30, 03:40pm, LSC 376
Superconvergence of PN Equations on Linear Kinetic Equations
Zheng Chen, Oak Ridge National Laboratory

MS13c4: Parallel Session IV, LSC 376

Sun. 10/01, 09:30am, LSC 376
Error Estimate for New Weak Galerkin Finite Element Methods
Lin Mu, Oak Ridge National Laboratory

Sun. 10/01, 09:50am, LSC 376
A Modified Weak Galerkin Finite Element Method
Nolisa Malluwawadu, University of Arkansas at Little Rock

Sun. 10/01, 10:10am, LSC 376
Stabilized Discretizations for Poroelasticity and Stokes' Equations
Peter Ohm, Tufts University

Sun. 10/01, 10:30am, LSC 376
Wavelet Method for Eigenvalue Problem
Ruihao Huang, Michigan Technological University

MS14 "Efficient Methods for PDEs and Applications"

Thomas Lewis, University of North Carolina at Greensboro, *tllewis3@uncg.edu*
James Liu, Colorado State University, *liu@math.colostate.edu*

MS14a5: Parallel Session III, LSC 376

Sat. 09/30, 04:50pm, LSC 376
Efficient Time Domain Decomposition Algorithms for PDE-constrained Optimization Problems
Jun Liu, Southern Illinois University Edwardsville

Sat. 09/30, 05:10pm, LSC 376
Adaptive C^0 Interior Penalty Methods for a Fourth Order Variational Inequality
Yi Zhang, University of North Carolina at Greensboro

Sat. 09/30, 05:30pm, LSC 376
A Multi-scale Model for Optical Responses of Nano-structures
Songting Luo, Iowa State University

Sat. 09/30, 05:50pm, LSC 376
Validating a Dynamic Wildfire Risk PDE Model
Alex Masarie, Colorado State University

Sat. 10/01, 06:10pm, LSC 376
Maximum Principles for P1-P0 Weak Galerkin Finite Element Approximations of Quasi-linear Second Order Elliptic Equations
Ran Zhang, Jilin University (China)

MS14b5: Parallel Session V, LSC 376

Sun. 10/01, 11:10am, LSC 376
Numerical Approximations for a Three-component Cahn-Hilliard Phase-field Model
Jia Zhao, Utah State University

Sun. 10/01, 11:30am, LSC 376
A Two-sided Fractional Conservation of Mass Equation
Aleksey Telyakovskiy, University of Nevada at Reno

Sun. 10/01, 11:50am, LSC 376
A Space-time Fractional Phase-field Model with Tunable Sharpness and Decay Behavior
Hong Wang, University of South Carolina

Sun. 10/01, 12:10pm, LSC 376
A Weak Galerkin Finite Element Method for Second Order Elliptic Problems with Mixed Boundary Conditions
Saqib Hussain, University of Arkansas at Little Rock

Sun. 10/01, 12:30pm, LSC 376
Lowest-order Weak Galerkin Finite Element Methods for Elasticity on Quadrilateral and Hexahedral Meshes
Graham Harper, Colorado State University

MS15 "Interactions among Analysis, Optimization and Network Science"

Pietro Poggi-Corradini, Kansas State University, *pietro@math.ksu.edu*,
Nathan Albin, Kansas State University, *albin@mant.ksu.edu*

MS15a4: Parallel Session II, LSC 382

Sat. 09/30, 03:00pm, LSC 382
A Modulus Framework in Broad Strokes
Nathan Albin, Kansas State University

Sat. 09/30, 03:20pm, LSC 382
Analysis and Design of Robust and High-Performance Complex Dynamical Networks
Milad Siami, MIT

Sat. 09/30, 03:40pm, LSC 382
Graphs versus Metric Graphs, and First Order Analysis in Metric Spaces
Nageswari Shanmugalingam, University of Cincinnati

Sat. 09/30, 04:00pm, LSC 382
Using Loop Structure to Detect Communities in Networks
Michael Higgins, Kansas State University

MS15b5: Parallel Session III, LSC 382

Sat. 09/30, 04:50pm, LSC 382
Dirichlet Graph Partitions
Braxton Osting, University of Utah

Sat. 09/30, 05:10pm, LSC 382
Random Trees via Conformal Welding
Peter Lin, University of Washington

Sat. 09/30, 05:30pm, LSC 382
Leveraging Multiple Networks for Enhanced Recommendations
Doina Caragea, Kansas State University

Sat. 09/30, 05:50pm, LSC 382
Hierarchical Cluster Analysis via Network Flow Duality
David Matula, Southern Methodist University

Sat. 09/30, 06:10pm, LSC 382
Fulkerson Duality for p-Modulus and Applications
Pietro Poggi-Corradini, Kansas State University

MS15c4: Parallel Session IV, LSC 382

Sun. 10/01, 09:30am, LSC 382
Conformal Dimension and Graph Approximations
Lukas Geyer, Montana State University

Sun. 10/01, 09:50am, LSC 382
An Approach to Quad Meshing Based on Harmonic Cross-Valued Maps and the Ginzburg-Landau Theory
Ryan Viertel, University of Utah

Sun. 10/01, 10:10am, LSC 382
Graph-based Geometrical Data Analysis: Local and Scale-Dependent Dimension
Dominique Zosso, Montana State University

Sun. 10/01, 10:30am, LSC 382
A Practical Anytime Algorithm for Bipartite Networks
Timothy Goodrich, North Carolina State University

MS15d5: Parallel Session V, LSC 382

Sun. 10/01, 11:10am, LSC 382
Modulus Metrics on Networks
Thiwanka Fernando, Kansas State University

Sun. 10/01, 11:30am, LSC 382
Hardy-Sobolev Inequalities in Metric Measure Spaces
Lizaveta Ihnatsyeva, Kansas State University

Sun. 10/01, 11:50am, LSC 382
Identification of Missing Links Using Susceptible-Infected-Susceptible Epidemic Traces
Aram Vajdi, Kansas State University

Sun. 10/01, 12:10pm, LSC 382
Gradient Young Measures and Functions of Exponentially Integrable Distortion
Christopher Halverson, Saint Louis University

Sun. 10/01, 12:30pm, LSC 382
Stolarsky Principle and Energy Optimization on the Sphere
Ryan Matzke, University of Minnesota

MS16 "Analysis, Computation, and Applications of PDE"

Ying Wang, University of Oklahoma, *wang@ou.edu*

MS16a4: Parallel Session II, LSC 310

Sat. 09/30, 03:00pm, LSC 310
Local Discontinuous Galerkin Methods for the Coupled BBM-BBM System
Yulong Xing, Ohio State University

Sat. 09/30, 03:20pm, LSC 310
Weak Galerkin Finite Element Methods and Numerical Applications
Lin Mu, Oak Ridge National Laboratory

Sat. 09/30, 03:40pm, LSC 310
Large Time Step Method for Conservation Laws
Ilija Jegdic, Texas Southern University

Sat. 09/30, 04:00pm, LSC 310
A Hybrid Method for Stiff Reaction-diffusion Equations
Weitao Chen, University of California at Riverside

MS16b3: Parallel Session IV, LSC 308

Sun. 10/01, 09:30am, LSC 308
Interior Penalty Discontinuous Galerkin Finite Element Methods for Linear Elliptic PDEs in Non-divergence Form
Stefan Schnake, University of Oklahoma

Sun. 10/01, 09:50am, LSC 308
Nonlinear Diffusion Equations with Orientated Convection
Hailong Ye, Shenzhen University (China)

Sun. 10/01, 10:10am, LSC 308
Mean Ages for a Terrestrial Carbon Dynamics Model
Ying Wang, University of Oklahoma

MS17 "Dynamical Systems - Theory and Applications"

Alex Grigo, University of Oklahoma, *grigo@math.ou.edu*
Nikola Petrov, University of Oklahoma, *npetrov@math.ou.edu*

MS17a4: Parallel Session I, LSC 310

Sat. 09/30, 11:10am, LSC 310
Homoclinic Intersections for Generic Geodesic Flows on S^2
Pengfei Zhang, University of Oklahoma

Sat. 09/30, 11:30am, LSC 310
On Rigidity of Circle Diffeomorphisms with Breaks and Generalized Interval Exchange Transformations
Sasa Kocic, University of Mississippi

Sat. 09/30, 11:50am, LSC 310
Competing Interactions, Patterns, and Traveling Waves in Discrete Systems
Erik Van Vleck, University of Kansas

Sat. 09/30, 12:10pm, LSC 310
Can the Dimension of a Set or Measure Be Inferred from Finite-Dimensional Projections?
William Ott, University of Houston

MS17b5: Parallel Session III, LSC 308

Sat. 09/30, 04:50pm, LSC 308
Local Limit Theorem for Some Hyperbolic Flows
Peter Nandori, University of Maryland

Sat. 09/30, 05:10pm, LSC 308
Hitting Times Distribution and Extreme Value Laws for Semi-Flows
Fan Yang, University of Oklahoma

Sat. 09/30, 05:30pm, LSC 308
No-slip Billiards in Three Dimensions
Chris Cox, University of Delaware

Sat. 09/30, 05:50pm, LSC 308
Specialization Model of Network Growth and its Dynamic Consequences
Ben Webb, Brigham Young University

Sat. 09/30, 06:10pm, LSC 308
Young Tower and Thermodynamic Formalism for Hyperbolic Systems with Singularities
Jianyu Chen, University of Massachusetts at Amherst

MS17c4: Parallel Session IV, LSC 310

Sun. 10/01, 09:30am, LSC 310
Billiard Models, Averaging, and Transport Problems
Alex Grigo, University of Oklahoma

Sun. 10/01, 09:50am, LSC 310
A Stage-structured Fisher's Equation with Applications in Biochemistry
John Nardini, University of Colorado at Boulder

Sun. 10/01, 10:10am, LSC 310
Stationary Distributions and Convergence Rates for Semistochastic Processes
Nikola Petrov, University of Oklahoma

Sun. 10/01, 10:30am, LSC 310
Bistability and Hopf Bifurcation in a Refined Model of HIV Infection
Stephen Pankavich, Colorado School of Mines

MS18 "Model Reduction and Data Assimilation"

Erik Van Vleck, University of Kansas, *erikvv@ku.edu*
Agneiszka Miedlar, University of Kansas, *amiedlar@ku.edu*
Xuemin Tu, University of Kansas, *xuemin@ku.edu*

MS18a5: Parallel Session III, LSC 374

Sat. 09/30, 04:50pm, LSC 374
Data Assimilation for Geophysical Flows Employing Only Surface Measurements
Michael Jolly, Indiana University

Sat. 09/30, 05:10pm, LSC 374
Numerical Approximation of a Feedback-Control Data Assimilation Algorithm: Uniform in Time Error Estimates
Cecilia Mondaini, Texas A&M University

Sat. 09/30, 05:30pm, LSC 374
Exploiting Time Scale Separation to Assimilate Lagrangian Data
John Maclean, University of North Carolina at Chapel Hill

Sat. 09/30, 05:50pm, LSC 374
Subspace-based Dimension Reduction: Inputs and Outputs
Paul Constantine, Colorado School of Mines

Sat. 09/30, 06:10pm, LSC 374
Projected Data Assimilation and Applications
Erik Van Vleck, University of Kansas

MS18b5: Parallel Session V, LSC 374

Sun. 10/01, 11:10am, LSC 374
Sequential Implicit Sampling Methods for Bayesian Inverse Problems
Xuemin Tu, University of Kansas

Sun. 10/01, 11:30am, LSC 374
Accelerating Bayesian Inverse Methods by Approximating Likelihoods as Jagged Random Fields
Gregor Robinson, University of Colorado at Boulder

Sun. 10/01, 11:50am, LSC 374
Data Assimilation for Combustion
Xinfeng Gao, Colorado State University

Sun. 10/01, 12:10pm, LSC 374
Optimal Model Reduction of Quadratic Nonlinear Dynamical Systems
Serkan Gugercin, Virginia Tech

Sun. 10/01, 12:30pm, LSC 374
Reducing FEM Computations of Eigenvalues via p-Hierarchical Enrichment
Agneiszka Miedlar, University of Kansas

MS19 "Recent Advances in Numerical PDEs"

Xiaoming He, Missouri University of Science and Technology, *hex@mst.edu*
Ari Stern, Washington University in St. Louis, *stern@wustl.edu*
Timo Heister, Clemson University, *heister@clemson.edu*

MS19a4: Parallel Session I, LSC 322

Sat. 09/30, 11:10am, LSC 322
Multisymplecticity of Finite Element Methods for Hamiltonian PDEs
Ari Stem, Washington University in St. Louis

Sat. 09/30, 11:30am, LSC 322
Practical and Efficient Time Integration and Kronecker Product Solvers
Jed Brown, University of Colorado at Boulder

Sat. 09/30, 11:50am, LSC 322
An Explicit Posteriori Error Estimations for the Cell Functional Minimization Scheme of Elliptic Problems
Yanzhao Cao, Auburn University

Sat. 09/30, 12:10pm, LSC 322
Elastodynamics Coupling over Non-coincident Interfaces
Paul Kuberry, Sandia National Laboratories

MS19b4: Parallel Session II, LSC 322

Sat. 09/30, 03:00pm, LSC 322
Numerical Approximation of the Stokes-Biot system
Hyesuk Lee, Clemson University

Sat. 09/30, 03:20pm, LSC 322
A Positivity-preserving Numerical Scheme for the Cahn-Hilliard Equation with Logarithmic Potential
Cheng Wang, University of Massachusetts at Dartmouth

Sat. 09/30, 03:40pm, LSC 322
Discontinuous Galerkin Method for Solving a Thin-film Equation
Caleb Logemann, Iowa State University

Sat. 09/30, 04:00pm, LSC 322
Bayesian Method for Inverse Problem with Uncertainty Quantification
Ju Ming, Huazhong University of Science and Technology (China)

MS19c5: Parallel Session III, LSC 322

Sat. 09/30, 04:50pm, LSC 322
Uniqueness of Discrete Solutions to Quasilinear PDE
Sara Pollock, Wright State University

Sat. 09/30, 05:10pm, LSC 322
Symplectic Hamiltonian HDG Methods for Wave Propagation Phenomena
Manuel Sanchez, University of Minnesota

Sat. 09/30, 05:30pm, LSC 322
Superconvergence of HDG Methods for Convection-diffusion Equations
Huiqing Zhu, University of Southern Mississippi

Sat. 09/30, 05:50pm, LSC 322
Fractional Dynamics for Quantum Random Walks
Lucas Bouck, George Mason University

Sat. 09/30, 06:10pm, LSC 322
Discrete Unified Gas Kinetic Scheme with a Force Term for Micro-channel Flows
Yong Cao, Harbin Institute of Technology at Shenzhen (China)

MS19d5: Parallel Session V, LSC 322

Sun. 10/01, 11:10am, LSC 322
A Finite Element Framework for Flexible and Adaptive Geometric Multigrid
Timo Heister, Clemson University

Sun. 10/01, 11:30am, LSC 322
A Multi-Physics Domain Decomposition Method for Navier-Stokes-Darcy Model
Changxin Qiu, Missouri University of Science and Technology

Sun. 10/01, 11:50am, LSC 322
Stochastic Inverse Problems for Multiscale Computation
Nishant Panda, Colorado State University

Sun. 10/01, 12:10pm, LSC 322
An Immersed Finite Element Direct Implicit Particle-in-cell Method for Simulation of Plasmas
Jinwei Bai, Harbin Institute of Technology at Shenzhen (China)

Sun. 10/01, 12:30pm, LSC 322
Thermo-acoustic Tomography in an Inhomogeneous Medium with Planar Detectors
Yang Yang, Michigan State University

MS20 "Numerical Methods for Multi-physics Problems"

Xiaoming He, Missouri University of Science and Technology, *hex@mst.edu*
Craig Douglas, University of Wyoming, *cdougla6@uwyo.edu*

MS20a5: Parallel Session III, LSC 324

Sat. 09/30, 04:50pm, LSC 324
Coupled Fire-atmosphere-fuel Moisture-smoke Online Modeling with WRF-SFIRE
Jan Mandel, University of Colorado at Denver

Sat. 09/30, 05:10pm, LSC 324
Accurate Solution of Flow Problems for the Earth Mantle
Wolfgang Bangerth, Colorado State University

Sat. 09/30, 05:30pm, LSC 324
A Spectral Projection Preconditioner for Solving Ill Conditioned Linear Systems
Man-Chung Yeung, University of Wyoming

Sat. 09/30, 05:50pm, LSC 324
A Stabilized Dual Mixed Hybrid Finite Element Method for Three-Dimensional Transmission Problems
Aurelio Giancarlo Mauri, University Politecnico Milano (Italy)

Sat. 09/30, 06:10pm, LSC 324
Splitting up Method for the 2D Stochastic Navier-Stokes Equations
Hakima Bessaih, University of Wyoming

MS20b4: Parallel Session IV, LSC 324

Sun. 10/01, 09:30am, LSC 324
GPU Accelerated Sequential Quadratic Programming
Craig Douglas, University of Wyoming

Sun. 10/01, 09:50am, LSC 324
Numerical Simulation of 2D Unsteady Shear-Thinning Non-Newtonian Incompressible Fluid in Screw Extruder with Fictitious Domain
Qiaolin He, Sichuan University (China)

Sun. 10/01, 10:10am, LSC 324
A Decoupled Unconditionally Stable numerical Method for Solving the Cahn-Hilliard-Stokes-Darcy Phase Field System
Daozhi Han, Missouri University of Science and Technology

Sun. 10/01, 10:30am, LSC 324
Numerical Renormalization Group Algorithms for Self-similar Solutions of Partial Differential Equations
Long Lee, University of Wyoming

MS20c4: Parallel Session V, LSC 324

Sun. 10/01, 11:10am, LSC 324
A Finite Element Method Perturbation Expansion for a Coupled 2D Structural-Acoustic System
Li Deng, University of Wyoming

Sun. 10/01, 11:30am, LSC 324
A Locally Conservative Stabilized Continuous Galerkin Finite Element Method for Two-Phase Flow in Poroelastic Subsurfaces
Bradley McCaskill, University of Wyoming

Sun. 10/01, 11:50am, LSC 324
UKF-GMMR Approach for Fault Detection and Diagnosis
Liping Wang, University of Wyoming

Sun. 10/01, 12:10pm, LSC 324
Immersed Finite Element Time Domain Methods for Maxwell Equations in Complex Media
Chang Lu, Harbin Institute of Technology, Shenzhen Graduate School (China)

MS21 "Recent Developments in Discontinuous Galerkin Methods for Partial Differential Equations"

Mahboub Baccouch, University of nebraska at Omaha, *mbaccouch@unomaha.edu*
Jue Yan, Iowa State University, *jyan@iastate.edu*

MS21a4: Parallel Session I, LSC 304

Sat. 09/30, 11:10am, LSC 304
A Stochastic Local Discontinuous Galerkin Method for Stochastic Boundary-value Problems Driven by Additive Noises
Mahboub Baccouch, University of Nebraska at Omaha

Sat. 09/30, 11:30am, LSC 304
Direct Discontinuous Galerkin Methods for Keller-Segel Chemotaxis Equations
Jue Yan, Iowa State University

Sat. 09/30, 11:50am, LSC 304
Positivity-preserving Well-Balanced Discontinuous Galerkin Method for Tidal Bores
Yulong Xing, Ohio State University

Sat. 09/30, 12:10pm, LSC 304
A Multiscale Discontinuous Galerkin Method for 1D Stationary Schrodinger Equations
Wei Wang, Florida International University

MS21b4: Parallel Session II, LSC 304

Sat. 09/30, 03:00pm, LSC 304
An HDG Method for a Distributed Optimal Control Problem
Fatih Celiker, Wayne State University

Sat. 09/30, 03:20pm, LSC 304
Optimally Convergent HDG Method for Fifth-Order Korteweg-de Vries type Equations
Bo Dong, University of Massachusetts at Dartmouth

Sat. 09/30, 03:40pm, LSC 304
Divergence-conforming HDG Methods for the Brinkman Equations
Guosheng Fu, Brown University

Sat. 09/30, 04:00pm, LSC 304
Positivity-preserving Limiters for the Piecewise-PN Equations
Minwoo Shin, Iowa State University

MS21c3: Parallel Session IV, LSC 304

Sun. 10/01, 09:30am, LSC 304
Solvers for Interfaces Problems with Unfitted Meshes
Marcus Sarkis, Worcester Polytechnic Institute

Sun. 10/01, 09:50am, LSC 304
High Degree Immersed Finite Element Spaces by a Least Squares Method based on Fictitious Elements
Ruchi Guo, Virginia Tech

Sun. 10/01, 10:10am, LSC 304
An EDG Method for Distributed Control of Convection Diffusion PDEs
Xiao Zhang, Missouri University of Science and Technology

MS22 "Mathematically-based Insights into Health and Disease"
Cecilia Diniz Behn, Colorado School of Mines, *cdinizbe@mines.edu*
Karin Leiderman, Colorado School of Mines, *kleiderman@mines.edu*

MS22a5: Parallel Session III, LSC 372

Sat. 09/30, 04:50pm, LSC 372
Toward a Mathematical Model of Hemostasis
Nicholas Danes, Colorado School of Mines

Sat. 09/30, 05:10pm, LSC 372
Fibrin-Thrombin Binding Under Flow
Michael Kelley, Colorado School of Mines

Sat. 09/30, 05:30pm, LSC 372
Interacting Bumps Model of Working Memory Limitations
Nikhil Krishnan, University of Colorado at Boulder

Sat. 09/30, 05:50pm, LSC 372
Network Science and the Ongoing Evolution of Malaria's Virulence in Humans and Apes
Daniel Larremore, University of Colorado at Boulder

Sat. 09/30, 06:10pm, LSC 372
Approximate Bayesian Computation Methods for Parameter Estimation of SEIR Model
Kaitlyn Martinez, Colorado School of Mines

MS22b5: Parallel Session V, LSC 372

Sun. 10/01, 11:10am, LSC 372
Analyzing the Role of Blood Flow in Glaucoma Using Mathematical Modeling
Brendan Fry, Metropolitan State University Denver

Sun. 10/01, 11:30am, LSC 372
Establishing a Theoretical Framework for Ultradian Forced Desynchrony Protocols
Nora Stack, Colorado School of Mines

Sun. 10/01, 11:50am, LSC 372
Comparison of Methods for Calculating the Rate of Appearance of Exogenous Glucose
Kai Bartlette, Colorado School of Mines

Sun. 10/01, 12:10pm, LSC 372
Data Assimilation Approaches Using Self-monitoring Data to Forecast and Phenotype Type 2 Diabetes
David Albers, Columbia University

Sun. 10/01, 12:30pm, LSC 372
Towards Personalized Verification and Synthesis for the Artificial Pancreas
Taisa Kushner, University of Colorado at Boulder

MS23 "Advances in Higher-Order and Reduced-Order Numerical Methods"

David Wells, Rensselaer Polytechnic Institute, *wellsd2@rpi.edu*
Zhu Wang, University of South Carolina, *WANGZHU@math.sc.edu*

MS23a3: Parallel Session I, LSC 308

Sat. 09/30, 11:10am, LSC 308
Improving Numerical Boundary Derivative Recovery for Elliptic PDEs
David Wells, Rensselaer Polytechnic Institute

Sat. 09/30, 11:30am, LSC 308
HDG-POD Reduced Order Model of the Heat Equation
Yangwen Zhang, Missouri University of Science and Technology

Sat. 09/30, 11:50am, LSC 308
Data-driven Filtered Reduced Order Model
Xuping Xie, Oak Ridge National Laboratory

MS23b3: Parallel Session II, LSC 308

Sat. 09/30, 03:00pm, LSC 308
A Split-Step Finite-Element Method for Incompressible Navier-Stokes Equations with High-Order Accuracy up-to the Boundary
Longfei Li, University of Louisiana at Lafayette

Sat. 09/30, 03:20pm, LSC 308
Efficient High-order Conservative Upwind Schemes for the Wave Equation on Overlapping Grids
Jordan Angel, Rensselaer Polytechnic Institute

Sat. 09/30, 03:40pm, LSC 308
Muntz Polynomials with Applications to Numerical Solutions for Differential Equations
Yingwei Wang, University of Wisconsin - Madison

MS24 "Applications of Algebraic Topology"

Brittany Terese Fasy, Montana State University, *brittany@cs.montana.edu*
Lori Ziegelmeier, Macalester College, *lziegel1@macalester.edu*

MS24a4: Parallel Session I, LSC 374

Sat. 09/30, 11:10am, LSC 374
Persistence-Based Summaries for Metric Graphs
Ellen Gasparovich, Union College

Sat. 09/30, 11:30am, LSC 374
Metric Thickenings of Euclidean Submanifolds
Joshua Mirth, Colorado State University

Sat. 09/30, 11:50am, LSC 374
Applications of Multidimensional Persistence
Matthew Wright, St. Olaf College

Sat. 09/30, 12:10pm, LSC 374
Higher Structures in Topological Data
Ryan Grady, Montana State University

MS24b4: Parallel Session II, LSC 374

Sat. 09/30, 03:00pm, LSC 374
Dualities and Combinatorics of Simplicial Sheaves of Vector Spaces on Finite Topologies
Emilie Purvine, Pacific Northwest National Laboratory

Sat. 09/30, 03:20pm, LSC 374
The Topology of Biological Aggregations: Experiments and Simulations
Lori Ziegelmeier, Macalester College

Sat. 09/30, 03:40pm, LSC 374
Applications of Persistence to Time Series Analysis
Elizabeth Munch, Michigan State University

Sat. 09/30, 04:00pm, LSC 374
Node Filtrations in Biological Data
Chad Giusti, University of Delaware

MS24c4: Parallel Session IV, LSC 374

Sun. 10/01, 09:30am, LSC 374
Mathematical Morphology Applied To Non-Directed Simple Graphs
Catherine Potts, Montana State University

Sun. 10/01, 09:50am, LSC 374
Topological Features in Random Geometry
Chris Peterson, Colorado State University

Sun. 10/01, 10:10am, LSC 374
Topological Methods on Ion Bombardment Patterns
Rachel Neville, University of Arizona

Sun. 10/01, 10:30am, LSC 374
Optimally Topologically Transitive Orbits in Two-dimensional Discrete Dynamical Systems
Patrick Shipman, Colorado State University

MS25 "Ecology and Evolution of Infectious Diseases"

Majid Bani-Yaghoub, University of Missouri - Kansas City, *baniyaghoubm@umkc.edu*

MS25a4: Parallel Session I, LSC 372

Sat. 09/30, 11:10am, LSC 372
Origins and Patterns of Foodborne Bacterial Resistance: Implication for Antimicrobial Comparison Based on MIC Frequency Distribution
Majid Jaberi-Douraki, Kansas State University

Sat. 09/30, 11:30am, LSC 372
Network Spread of Invasive Species and Infectious Diseases
Patrick Shipman, Colorado State University

Sat. 09/30, 11:50am, LSC 372
Parasite Species Interactions and Epidemics
Charles Mitchell, University of North Carolina at Chapel Hill

Sat. 09/30, 12:10pm, LSC 372
Transmission Dynamics of Emerging and Zoonotic Infectious Diseases Governed by the Triad of Ecology, Evolution and Anthropogenic
Majid Bani-Yaghoub, University of Missouri - Kansas City

MS25b4: Parallel Session II, LSC 372

Sat. 09/30, 03:00pm, LSC 372
Modeling Environmentally Transmitted Diseases
Jin Wang, University of Tennessee at Chattanooga

Sat. 09/30, 03:20pm, LSC 372
Information Loss for Describing Antimicrobial Resistance Dynamics in Populations due to Breakpoint-based Categorization
Reza Mazloom, Kansas State University

Sat. 09/30, 03:40pm, LSC 372
Deciphering Prevalence and Dynamics of Collateral Antimicrobial Resistance within and among Bacterial Species
Heman Shakeri, Kansas State University

Sat. 09/30, 04:00pm, LSC 372
Mathematical Modeling of Cholera Epidemics
Xueying.Wang, Washington State University

MS25c3: Parallel Session IV, LSC 372

Sun. 10/01, 09:30am, LSC 372
Bayesian Inference in Within-Host Disease Models
Sama Shrestha, University of Colorado at Boulder

Sun. 10/01, 09:50am, LSC 372
Understanding Variance Reduction Behavior in Diversity-disease Studies
Peter Shaffery, University of Colorado at Boulder

Sun. 10/01, 10:10am, LSC 372
Optimal Control Strategy for Abnormal Innate Immune Response
Jinying Tan, Huazhong Agricultural University (China)

Poster Presentation

Dan Bates, Colorado State University, *bates@math.colostate.edu*

Sat. 09/30, 6:30pm—9:00pm, LSC Ballroom A

Filtered Discrete Ordinate Equations
Vincent Heningburg, University of Tennessee

Graph-Based Geometrical Data Analysis
Carrington Metts, College of William and Mary and Montana State University

Stochastic System Study of Urban Response and Recovery in the Aftermath of a Disaster
Saeed Nozhati, Colorado State University

Tipping Times for Periodically Forced Stochastic Differential Equations with Piecewise Linear Drift
Jessica Zanetell, Wake Forest University