

## PROGRAM-AT-A- GLANCE

### SATURDAY EVENING, JULY 12

5:00 PM-8:00 PM Registration

### SUNDAY MORNING, JULY 13

7:30 AM-8:00 PM Registration

8:30 AM-5:00 PM

#### Short Course on Linear Algebra Algorithms and Software for Large Scientific Problems

Jack Dongarra  
8:45 AM-5:30 PM

#### Short Course on Level Set Methods

James Sethian

10:00 AM-10:30 AM Coffee

### SUNDAY AFTERNOON, JULY 13

12:00 PM-1:30 PM Lunch (for Short Courses participants only)

4:00 PM-8:00 PM

#### Annual Meeting poster set-up begins

6:00 PM-8:00 PM Welcoming Reception

### MONDAY MORNING, JULY 14

7:30 AM-8:00 AM Coffee

7:30 AM-5:00 PM Registration

8:15 AM-8:30 AM Welcoming Remarks and Announcements

Gene H. Golub, Stanford University; and William M. Coughran, Jr., Bell Laboratories, Lucent Technologies

8:30 AM-9:15 AM

#### IP1 Structured Total Least Squares, the Riemannian SVD and Applications in Signal Processing and System Identification

Bart De Moor, Katholieke Universiteit Leuven, Belgium

Chair: Gene H. Golub, Stanford University

8:30 AM-4:00 PM Exhibits open

8:30 AM-5:30 PM

#### AWM Workshop (see separate program)

9:15 AM-10:00 AM

#### IP2 Algorithms for Computing Matrix Logarithms and Exponentials

Alan J. Laub, University of California, Davis  
Chair: Gene H. Golub, Stanford University

10:00 AM-10:30 AM Coffee and Poster Session

10:30 AM-12:30 PM Concurrent Sessions

#### MS1 Non-Normal Matrix Eigenvalue Problems (Part I of II)

Organizer: Ilse C. F. Ipsen, North Carolina State University

#### MS2 Magnetohydrodynamics and Related Topics (Part I of II)

Organizers: Richard K. Jordan, University of Michigan, Ann Arbor; and Paul G. Schmidt, Auburn University

#### MS3 Numerical Solution of Ill-Posed Problems

Organizer: Dianne P. O'Leary, University of Maryland, College Park

#### MS4 LINPACK and Its Impact on High Performance Computing

Organizer: Horst D. Simon, Lawrence Berkeley National Laboratory

#### MS5 Least Squares and Related Problems in Metrology (Part I of II)

Organizer: Walter Gander, Eidgenössische Technische Hochschule-Zentrum, Switzerland

#### MS6 Multiresolution Geometry

Organizer: Wim Sweldens, Bell Laboratories, Lucent Technologies

#### MS7 Analysis and Control of Nonlinear and Coupled Distributed Parameter Systems

Organizers: John E. Lagnese, Georgetown University; and Vilmos Komornik, Université de Louis Pasteur, France

#### MS8 Computational Geometry Approaches to Mesh Generation

Organizers: Steven J. Fortune, Bell Laboratories, Lucent Technologies; and Marshall W. Bern, Xerox PARC

#### MS9 A Tribute to the Memory of Garrett Birkhoff

Organizer: David M. Young, Jr., University of Texas, Austin

#### CP1 Dynamical and Stochastic Systems

Chair: Debra Lewis, University of California, Santa Cruz

#### CP2 Mathematical and Computational Methods in Biology I

Chair: Kathleen A. Rogers, University of Maryland, College Park

#### CP3 Numerical Ordinary Differential Equations

Chair: Dirk Roose, Katholieke Universiteit Leuven, Belgium

### MONDAY AFTERNOON, JULY 14

12:30 PM-2:00 PM Lunch (attendees are on their own)

2:00 PM-2:45 PM

#### IP3 Recent Advances and Open Problems in Iterative Methods for Solving Linear Systems

Anne Greenbaum, Courant Institute of Mathematical Sciences, New York University  
Chair: Kathryn E. Brenan, Aerospace Corporation

2:45 PM-3:15 PM Coffee and Poster Session

3:15 PM-5:45 PM Concurrent Sessions

#### MS10 Magnetohydrodynamics and Related Topics (Part II of II)

Organizers: Richard K. Jordan, University of Michigan, Ann Arbor; and Paul G. Schmidt, Auburn University

#### MS11 Recursive Methods in Filtering and Estimation

Organizers: Ming Gu and Ali H. Sayed, University of California, Los Angeles; and S. Chandrasekaran, University of California, Santa Barbara

#### MS12 Noisy Dynamics: Analysis and Applications

Organizers: Malgorzata M. Klosek, University of Wisconsin, Milwaukee; and Rachel Kuske, Tufts University

#### MS13 Student Paper Prize: Award and Presentation

Organizer: Robert Borrelli, Harvey Mudd College

#### MS14 Handbooks for Special Functions and the World Wide Web

Organizers: Richard A. Askey, University of Wisconsin, Madison; and Willard Miller, Jr., University of Minnesota, Minneapolis

#### MS15 Non-Normal Matrix Eigenvalue Problems (Part II of II)

Organizer: Ilse C. F. Ipsen, North Carolina State University

#### MS16 Statistical Methods in Inverse Problems and Tomography

Organizer: Bernard A. Mair, University of Florida

#### MS17 Implementation Issues Concerning Control and Identification in Distributed Parameter Systems

Organizers: Robert E. Miller, University of Arkansas, Fayetteville; and Ralph C. Smith, Iowa State University

#### MS18 Least Squares and Related Problems in Metrology (Part II of II)

Organizer: Walter Gander, Eidgenössische Technische Hochschule-Zentrum, Switzerland

#### CP4 Software, Tools, Environments

Chair: Anne E. Trefethen, Cornell University

#### CP5 Mathematical and Computational Methods in Biology II

Chair: Sharon Lubkin, University of Washington

#### CP6 Numerical PDE I

Chair: G. F. Carey, University of Texas, Austin

### MONDAY EVENING, JULY 14

6:00 PM-7:00 PM

#### Special Session: Funding Opportunities in Applied Mathematics and Computation

Organizer: James M. Crowley, Executive Director, SIAM

### TUESDAY MORNING, JULY 15

7:30 AM-8:00 AM Coffee

7:30 AM-5:00 PM Registration

7:30 AM-8:30 PM

#### Graduate Student Focus on Diversity Workshop (see separate program)

8:00 AM-10:30 AM

**AWM Workshop (see separate program)**

8:30 AM-4:00 PM Exhibits open

8:30 AM-9:10 AM

**IP4 Mathematical Problems in Electrical Impedance Imaging**

*Margaret Cheney, Rensselaer Polytechnic Institute*

*Chair: Raymond Chan, Chinese University of Hong Kong, Hong Kong*

9:10 AM-9:20 AM

**Awarding of The SIAM Prize for Distinguished Service to the Profession**

*Chair: John Guckenheimer, President, SIAM, and Cornell University*

9:20 AM-10:00 AM

**IP5 Computer-Aided Design of Bioactive Molecules**

*J. Andrew McCammon, University of California, San Diego*

*Chair: Raymond Chan, Chinese University of Hong Kong, Hong Kong*

10:00 AM-10:30 AM Coffee and Poster Session

**10:30 AM-12:30 PM Concurrent Sessions**

**MS19 Solving Large-Scale Nonsymmetric Eigenvalue Problems**

*Organizer: Nicholas J. Higham, University of Manchester, United Kingdom*

**MS20 Modeling of Natural Science Phenomena: Comparison of Theory with Experiment**

*Organizer: David J. Wollkind, Washington State University*

**MS21 Effective Numerical Methods for Free Boundary Problems (Part I of II)**

*Organizers: Thomas Y. Hou, California Institute of Technology; Hongkai Zhao, Stanford University; and Xiaolin Li, Indiana University-Purdue University, Indianapolis*

**MS22 Structured Total Least Norm Approximation Methods and Applications**

*Organizers: Haesun Park, University of Minnesota, Minneapolis; and J. Ben Rosen, University of California, San Diego*

**MS23 A Proposed Curriculum for the Professional MS Degree**

*Organizer: Ben A. Fusaro, Florida State University*

**MS24 Nonlinear Models in Electrical Engineering, Review and Open Problems**

*Organizer: Michal Odyneć, Hewlett Packard Co.*

**MS25 A Tribute to the Memory of George Forsythe**

*Organizer: Cleve Moler, The MathWorks, Inc.*

**MS26 High Order Methods for Compressible Flow Calculations (Part I of III)**

*Organizers: George Karniadakis and Chi-Wang Shu, Brown University*

**MS27 Architectures for Scientific Computing**

*Organizer: Jack Dongarra, University of Tennessee, Knoxville and Oak Ridge National Laboratory*

**CP7 Special Functions, Approximations, and Applications**

*Chair: Charles Tier, University of Illinois, Chicago*

**CP8 Solitons, Waves, Flow**

*Chair: Suncica Canic, Iowa State University*

**CP9 Control and Applications I**

*Chair: I. Norman Katz, Washington University*

## TUESDAY AFTERNOON, JULY 15

12:30 PM-2:00 PM Lunch

2:00 PM-2:45 PM

**The John von Neumann Lecture**

*William Kahan, University of California, Berkeley*

*Chair: John Guckenheimer, President, SIAM and Cornell University*

2:45 PM-3:15 PM Coffee and Poster Session

**3:15 PM-5:45 PM Concurrent Sessions**

**MS28 Preconditioning and Iterative Methods for Problems Arising in Fluid Flow**

*Organizer: Andy Wathen, Oxford University, United Kingdom*

**MS29 The Development of O(N), First Principles, LDA Based Electronic**

*Organizer: William A. Shelton, Oak Ridge National Laboratory*

**MS30 Effective Numerical Methods for Free Boundary Problems (Part II of II)**

*Organizers: Thomas Y. Hou, California Institute of Technology; Hong-Kai Zhao, Stanford University; and Xiaolin Li, Indiana University-Purdue University, Indianapolis*

**MS31 Challenging Optimization Problems in Computational Biology (Part I of II)**

*Organizer: Zhijun Wu, Argonne National Laboratory*

**MS32 New Methods for Least Squares Problems with Uncertainty and Structure**

*Organizers: Laurent El Ghaoui and Herve Lebret, Ecole Nationale Supérieure de Techniques Avancées, France*

**MS33 DD/MG Algorithms in Unstructured Grid Applications: Basic Algorithms (Part I of II)**

*Organizers: Tony F. Chan, University of California, Los Angeles; Timothy J. Barth and Wei-Pai Tang, RIACS, NASA Ames Research Center*

**MS34 High Order Methods for Compressible Flow Calculations (Part II of III)**

*Organizers: George Karniadakis and Chi-Wang Shu, Brown University*

**MS35 Experiences in Teaching Mathematical Modeling**

*Organizer: Fadil Santosa, University of Minnesota, Minneapolis*

**MS36 Object-Oriented Software Design and Development of Partial Differential Equations**

*Organizers: David L. Brown and William D. Henshaw, Los Alamos National Laboratory*

**CP10 Matrix Decomposition**

*Chair: Haesun Park, University of Minnesota, Minneapolis*

**CP11 Numerical PDE II**

*Chair: Daniel L. Marcus, Lawrence Berkeley National Laboratory*

**CP12 Control and Applications II**

*Chair: I. G. Rosen, University of Southern California*

## TUESDAY EVENING, JULY 15

5:45 PM-6:15 PM

**SIAM Business Meeting**

*John Guckenheimer, President, SIAM and Cornell University*

6:15 PM-7:15 PM

**The I. E. Block Community Lecture**

**Mathematics of Games and Sports**

*Joseph B. Keller, Stanford University*  
*Chair: John Guckenheimer, President, SIAM; and Cornell University*

7:15 PM-8:30 PM Reception

## WEDNESDAY MORNING, JULY 16

7:30 AM-8:00 AM Coffee

7:30 AM-5:00 PM Registration

8:30 AM-2:00 PM Exhibits open

8:30 AM-9:15 AM

**IP6 Multiresolution Algorithms in Computer Graphics**

*Peter Schröder, California Institute of Technology*  
*Chair: Rosemary E. Chang, Silicon Graphics Computer Systems*

9:15 AM-10:00 AM

**IP7 High Performance Computer Architecture**

*John L. Hennessy, Stanford University*  
*Chair: Rosemary E. Chang, Silicon Graphics Computer Systems*

10:00 AM-10:30 AM Coffee and Poster Session

**10:30 AM-12:30 PM Concurrent Sessions**

**MS37 Recent Development and Applications of Least-Squares Finite Element Methods**

*Organizers: Daniel C. Chan, Boeing North American, Rocketdyne Division; and Zhiqiang Cai, Purdue University, West Lafayette*

**MS38 DD/MG Algorithms in Unstructured Grid Applications: CFD and Structures Algorithms (Part II of II)**

*Organizers: Tony F. Chan, University of California, Los Angeles; Timothy J. Barth and Wei-Pai Tang, RIACS, NASA Ames Research Center*

**MS39 Applications of Compiler Technology in Computational Science**

*Organizers: Vladimir Kotlyar, Cornell University; and Lucas Roh, Argonne National Laboratory*

**MS40 High Order Methods for Compressible Flow Calculations (Part III of III)**

*Organizers: George Karniadakis and Chi-Wang Shu, Brown University*

**MS41 New Time Integration Algorithms for Solving PDEs**

*Organizer: Jianping Zhu, Mississippi State University*

**MS42 Preconditioned Methods for Large Eigenproblems**

Organizer: Andrew V. Knyazev, University of Colorado, Denver

**MS43 The Mathematical Contest in Modeling (MCM)**

Organizer: Ben A. Fusaro, Florida State University

**MS44 Reduced-Order Modeling and Applications in Circuit Simulation (Part I of II)**

Organizer: Roland W. Freund, Bell Laboratories, Lucent Technologies

**MS45 Modeling in Optical Science (Part I of II)**

Organizers: Gang Bao, University of Florida, Gainesville; and Lawrence C. Cowsar, Bell Laboratories, Lucent Technologies

**CP13 Economics and Finance**

Chair: Agapi Somwaru, ERS, Washington, DC

**CP14 Numerical PDE III**

Chair: Donna Calhoun, University of Washington

**CP15 Least Squares and Singular Value Decomposition**

Chair: Gilbert Strang, Massachusetts Institute of Technology

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**WEDNESDAY AFTERNOON,  
JULY 16**


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12:30 PM-2:00 PM Lunch

2:00 PM-2:45 PM

**IP8 Title of presentation to be determined**

Donald E. Knuth, Professor Emeritus, Stanford University

Chair: William M. Coughran, Jr., Bell Laboratories, Lucent Technologies

2:45 PM-3:15 PM Coffee and Poster Session

**3:15 PM-5:45 PM Concurrent Sessions****MS46 Advances in Level Set and Fast Marching Methods**

Organizer: David Adalsteinsson, Lawrence Berkeley National Laboratory

**MS47 Modeling in Optical Science (Part II of II)**

Organizers: Gang Bao, University of Florida, Gainesville; and Lawrence C. Cowsar, Bell Laboratories, Lucent Technologies

**MS48 Large-Scale Scientific Computing in Physics and Engineering**

Organizers: Marc Garbey, Université Claude Bernard - Lyon I, France; and Hans G. Kaper, Argonne National Laboratory

**MS49 Advances in Optimal Flow Control (Part I of III)**

Organizers: S. S. Sritharan, Naval Command Control and Ocean Surveillance Center, and University of Colorado, Boulder; and S. S. Ravindran, North Carolina State University

**MS50 Numerical Methods for Low Speed and All Speed Flows**

Organizer: Karen Pao, Los Alamos National Laboratory

**MS51 Reduced-Order Modeling and Applications in Circuit Simulation (Part II of II)**

Organizer: Roland W. Freund, Bell Laboratories, Lucent Technologies

**MS52 Moving-Grid Methods for Partial Differential Equations (Part I of III)**

Organizers: Guojun G. Liao, University of Texas, Arlington; and Paul A. Zegeling, Utrecht University, The Netherlands

**MS53 Preconditioning with Incomplete Factorizations**

Organizers: Esmond G. Ng, Oak Ridge National Laboratory; and Padma Raghavan, The University of Tennessee, Knoxville

**MS54 Deterministic and Stochastic Parabolic Problems: Analysis and Computations**

Organizer: Martin J. Gander, Stanford University

**CP16 Eigenvalue Computation and Applications**

Chair: To be announced

**CP17 Algorithms for Discrete and Stochastic Problems**

Chair: Alan Genz, Washington State University

**CP18 Computational Electromagnetics**

Chair: Bradley K. Alpert, National Institute of Standards and Technology

5:45 PM Poster Session closes.

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**THURSDAY MORNING,  
JULY 17**


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7:30 AM-8:00 AM Coffee

7:30 AM-5:00 PM Registration

8:30 AM-9:15 AM

**IP9 Clusters and Massively Parallel Computers: Are the Architectures Converging?**

Paul C. Messina, California Institute of Technology

Chair: Robert G. Voigt, National Science Foundation

9:15 AM-10:00 AM

**IP10 Impact of the Internet on Scientific Computing**

Eric Grosse, Bell Laboratories, Lucent Technologies

Chair: Robert G. Voigt, National Science Foundation

10:00 AM-10:30 AM Coffee

**10:30 AM-12:30 PM Concurrent Sessions****MS55 Fast Toeplitz Solvers (Part I of II)**

Organizer: Xiao-Qing Jin, University of Macau, People's Republic of China

**MS56 The Mathematical Sciences and their Applications Throughout the Undergraduate Curriculum: An NSF Initiative Whose Time is Now**

Organizers: Lee L. Zia, University of New Hampshire; and I. Edward Block, SIAM

**MS57 Advances in Optimal Flow Control (Part II of III)**

Organizers: S. S. Sritharan, Naval Command Control and Ocean Surveillance Center, and University of Colorado, Boulder; and S. S. Ravindran, North Carolina State University

**MS58 Moving-Grid Methods for Partial Differential Equations (Part II of III)**

Organizers: Guojun G. Liao, University of Texas, Arlington; and Paul A. Zegeling, Utrecht University, The Netherlands

**MS59 Nasty Nonsmooth Nonlinear Optimization**

Organizers: C. T. Kelley, North Carolina State University; and Margaret H. Wright, Bell Laboratories

**MS60 Mimetic Finite-Difference Methods for Partial Differential Equations**

Organizers: James M. Hyman and Mikhail J. Shashkov, Los Alamos National Laboratory

**MS61 Theory and Applications of Orthogonal Decompositions**

Organizers: Ricardo D. Fierro, California State University, San Marcos; and Sabine Van Huffel, Katholieke Universiteit Leuven, Belgium

**MS62 Nonlinear PDE Methods in Image Processing (Part I of II)**

Organizer: Tony F. Chan, University of California, Los Angeles

**MS63 Challenging Optimization Problems in Computational Biology (Part II of II)**

Organizer: Zhijun Wu, Argonne National Laboratory

**CP19 Electromagnetics**

Chair: Jane Cullum, IBM T. J. Watson Research Center

**CP20 Geophysics**

Chairs: Nancy K. Nichols, University of Reading, United Kingdom; and Jennifer Mueller, University of Nebraska, Lincoln

**CP21 Combustion**

Chair: Christopher H. Raymond, Northwestern University

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**THURSDAY AFTERNOON,  
JULY 17**


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12:30 PM-2:00 PM SIAM Networking Picnic Lunch

2:00 PM-2:45 PM

**Past-President's Address****The Pursuit of Optimality: From the Big Picture to the Gory Details**

Margaret H. Wright, Bell Laboratories

Chair: John Guckenheimer, President, SIAM and Cornell University

2:45 PM-3:15 PM Coffee

**3:15 PM-5:45 PM Concurrent Sessions****MS64 Fast Toeplitz Solvers (Part II of II)**

Organizer: Xiao-Qing Jin, University of Macau, People's Republic of China

**MS65 Adaptive Method of Lines (Part I of III)**

Organizers: A. Vande Wouwer and P. Saucez, Faculté Polytechnique de Mons, Belgium; and William E. Schiesser, Lehigh University

**MS66 Advances in Optimal Flow Control (Part III of III)**

Organizers: S. S. Sritharan, Naval Command Control and Ocean Surveillance Center, and University of Colorado, Boulder; and S. S. Ravindran, North Carolina State University

**MS67 Large-Scale Optimization and Automatic Differentiation**

Organizers: Thomas F. Coleman, Cornell University; and Andreas Griewank, Technical University of Dresden, Germany

**MS68 Nonlinear PDE Methods in Image Processing (Part II of II)**

Organizer: Tony F. Chan, University of California, Los Angeles



**MS69 Applications of the Least Squares Finite Element Methods**

Organizer: Tsu-Fen Chen, National Chung Cheng University, Taiwan

**MS70 Complementary-Dual Variational Principles and Numerical Methods (Part I of III)**

Organizers: David Y. Gao, Virginia Polytechnic Institute and State University; and Bez Tabarrok, University of Victoria, Canada  
Chair: Bez Tabarrok, Organizer

**MS71 Mimetic Finite-Difference Methods for Partial Differential Equations (Part II of II)**

Organizers: James M. Hyman and Mikhail Shashkov, Los Alamos National Laboratory

**MS72 Industrial Projects in Undergraduate Education**

Organizers: Arthur C. Heinricher, Jr., Worcester Polytechnic Institute; and Ben G. Fitzpatrick, Carolina State University

**CP22 Computational Fluid Dynamics I**

Chair: Mary Catherine Kropinski, Simon Fraser University, Canada

**CP23 Iterative Methods in Linear Algebra**

Chair: To be announced

**CP24 Optimization I**

Chair: Patricia D. Hough, Sandia National Laboratories, Livermore

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**THURSDAY EVENING,  
JULY 17**


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5:45 PM-6:45 PM

**Panel on Mathematics Education in the 21st Century**

Organizer: Stefan Ehrlich, Rivier College  
6:45 PM-7:45 PM

**MAW Session (Mathematics Awareness Week)**

Organizer: Mike Harris, JPBM Public Information Office

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**FRIDAY MORNING, JULY 18**


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7:30 AM-8:00 AM Coffee

7:30 AM-12:00 PM Registration

8:30 AM-9:15 AM

**IP11 Modeling Error, Error Estimations, and Adaptivity in the Analysis of Heterogeneous Materials**

J. Tinsley Oden, University of Texas, Austin  
Chair: Randolph E. Bank, University of California, San Diego

9:15 AM-10:00 AM

**Award and Presentation: The James H. Wilkinson Prize in Numerical Analysis and Scientific Computing****Numerical Algorithms as Dynamical Systems**

Andrew Stuart, Stanford University

**Awarding of the George B. Dantzig Prize**

Chair: John Guckenheimer, President, SIAM; and Cornell University

10:00 AM-10:30 AM Coffee

10:30 AM-12:30 PM Concurrent Sessions

**MS73 Numerical Methods for Solving Free-Boundary Problems (Part I of II)**

Organizers: Mark M. Sussman and Elbridge Gerry Puckett, University of California, Davis

**MS74 Industrial Strength Mathematics: Case Studies of High Impact Mathematics and the Mathematician/Industry Interface**

Organizer: Jeffrey R. Sachs, D. H. Wagner & Associates

**MS75 Verified Methods with Computational Differentiation**

Organizer: Martin Berz, Michigan State University

**MS76 Numerical Solution of Elliptic PDEs in Unbounded Domain**

Organizer: Weimin Xue, Hong Kong Baptist University, Hong Kong

**MS77 Adaptive Method of Lines (Part II of III)**

Organizers: A. Vande Wouwer and P. Saucez, Faculte Polytechnique de Mons, Belgium; and William E. Schiesser, Lehigh University

**MS78 Modeling and Simulation of Superconductivity**

Organizer: Mo Mu, Hong Kong University of Science and Technology, Hong Kong; and Purdue University, West Lafayette

**MS79 Cartesian Grid Methods for PDEs in Complex Geometry (Part I of II)**

Organizers: Randall J. LeVeque, Washington University; and Marsha J. Berger, Courant Institute of Mathematical Sciences, New York University

**MS80 Influence and Treatment of Multiple Scales in Modeling Heterogeneous Media**

Organizer: J. David Moulton, Los Alamos National Laboratory

**MS81 Complementary-Dual Variational Principles and Numerical Methods (Part II of III)**

Organizers: David Y. Gao, Virginia Polytechnic Institute and State University; and Bez Tabarrok, University of Victoria, Canada  
Chair: David Y. Gao, Organizer

**CP25 Computational Fluid Dynamics II**

Chair: L. Pamela Cook, University of Delaware

**CP26 Fluids, Suspensions, Turbulence**

Chair: Anne C. Morlet, Cleveland State University and Northern Illinois University

**CP27 Optimization II**

Chair: John M. Conroy, Institute for Defense Analysis

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**FRIDAY AFTERNOON,  
JULY 18**


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12:30 PM-2:00 PM Lunch

2:00 PM-2:45 PM

**IP12 New Perspectives in Turbulence: Scaling, Asymptotics, and the Role of Intermittency**

Alexandre Chorin, University of California, Berkeley  
Chair: James Sethian, University of California, Berkeley and Lawrence Berkeley National Laboratory

2:45 PM-3:15 PM Coffee

3:15 PM-5:45 PM Concurrent Sessions

**MS82 Numerical Methods for Solving Free-Boundary Problems (Part II of II)**

Organizers: Mark M. Sussman and Elbridge Gerry Puckett, University of California, Davis

**MS83 Moving-Grid Methods for Partial Differential Equations (Part III of III)**

Organizers: Guojun G. Liao, University of Texas, Arlington; and Paul A. Zegeling, Utrecht University, The Netherlands

**MS84 Adaptive Method of Lines (Part III of III)**

Organizers: A. Vande Wouwer and P. Saucez, Faculte Polytechnique de Mons, Belgium; and William E. Schiesser, Lehigh University

**MS85 Complementary-Dual Variational Principles and Numerical Methods (Part III of III)**

Organizers: David Y. Gao, Virginia Polytechnic Institute and State University; and Bez Tabarrok, University of Victoria, Canada

**MS86 Quasi-Monte Carlo Methods**

Organizers: Fred J. Hickernell, Hong Kong Baptist University, Hong Kong; and Art Owen, Stanford University

**MS87 Cartesian Grid Methods for PDEs in Complex Geometry (Part II of II)**

Organizers: Randall J. LeVeque, University of Washington; and Marsha J. Berger, Courant Institute of Mathematical Sciences, New York University

**MS88 Industrial Strength Mathematics: Case Studies of High Impact Mathematics and the Mathematician/Industry Interface**

Jeffrey R. Sachs, D. H. Wagner & Associates

**MS89 Scaling Laws in Turbulence (tentative)**

Organizer: K. R. Sreenivasan, Yale University

**MS90 Fuzzy Logic and Its Applications**

Organizers: Luisa Maria N. McAllister, Moravian College; and Enrique Ruspini, SRI International

**CP28 Computational Fluid Dynamics III**

Chair: Yi-Ling F. Chiang, ACCUTEK

**CP29 Optimization and Applications**

Richard H. Burkhardt, The Boeing Company

**CP30 Mechanics, Elasticity, and Materials**

Chair: Tanya Leise, Texas A&M University, College Station

**CP31 Differential Equations, Transfer Functions, and Applications**

Chair: Ellis Cumberbatch, The Claremont Graduate School

5:45 PM Meeting adjourns