

# PROGRAM-AT-A-GLANCE

## SUNDAY EVENING, JUNE 15

5:00 PM-8:00 PM Registration

## MONDAY MORNING, JUNE 16

7:30 AM-4:00 PM

8:20 AM Opening Remarks and Welcome

Clint Dawson, University of Texas, Austin

8:30 AM-9:15 AM

### IP1 Fluids in Porous Media: Angstroms to Kilometers

John H. Cushman, *Purdue University, West Lafayette*

Chair: James G. Glimm, *State University of New York, Stony Brook*

9:15 AM-10:00 AM

### IP2 Scale-Up of Flow in Porous Media

David H. Sharp, *Los Alamos National Laboratory*

Chair: James G. Glimm, *State University of New York, Stony Brook*

10:00 AM-10:30 AM Coffee

10:30 AM-12:30 PM Concurrent Sessions

### MS1 Numerical Simulation of Field-Scale Remediation for Heterogeneous Subsurface Conditions (Part I of II)

Organizer: Jeffery P. Holland, *Waterways Experiment Station, U.S. Army Corps of Engineers*

### MS2 Inverse Methods and History Matching in Flow and Transport

Organizer: Allan Gutjahr, *New Mexico Institute of Mining and Technology*

### MS3 Upscaling Complex Flows in Strongly Heterogeneous Porous Medium

Organizer: Alain P. Bourgeat, *Université St. Etienne, France*

### MS4 Characteristic Methods for Advection-Dominated Flows

Organizer: Hong Wang, *University of South Carolina, Columbia*

### MS5 Computational Issues in Geostatistical Simulation for Petroleum Reservoir Characterization

Organizer: Timothy C. Coburn, *National Renewable Energy Laboratory*

### MS6 Thermal-Hydrologic Modeling in Geologic Disposal of High-Level Radioactive Waste (Part I of II)

Organizers: Nicholas D. Francis and Bill W. Arnold, *Sandia National Laboratories, Albuquerque*

### MS7 Large-Scale Seismic Modeling

Organizers: Paul L. Stoffa, *University of Texas, Austin*; and Ken Kelly, *Amoco Technology Center*

## MONDAY AFTERNOON, JUNE 16

12:30 PM-2:00 PM Lunch

2:00 PM-2:45 PM

### IP3 Effective Coarse Scale Descriptions of Multiphase Displacements in Heterogeneous Reservoirs

Louis J. Durlofsky, *Chevron Petroleum Technology Company, La Habra, California*

Chair: Michael Christie, *BP Exploration*

2:45 PM-3:15 PM Coffee

3:15 PM-5:15 PM Concurrent Sessions

### MS8 Numerical Solution of Field-Scale Remediation for Heterogeneous Subsurface Conditions (Part II of II)

Organizer: Jeffery P. Holland, *Waterways*

*Experiment Station, U.S. Army Corps of Engineers*

### MS9 Thermal-Hydrologic Modeling in Geologic Disposal of High-Level Radioactive Waste (Part II of II)

Organizers: Nicholas D. Francis and Bill W. Arnold, *Sandia National Laboratories, Albuquerque*

### MS10 Modeling in Heterogeneous and Non-Isotropic Materials

Organizers: Stanly L. Steinberg, *University of New Mexico*; and Mikhail Shashkov, *Los Alamos National Laboratory*

### MS11 Adaptive Finite Volume/Multi-grid Simulation of Variable Density Flows in Porous Media

Organizer: Peter Knabner, *University of Erlangen, Germany*

### MS12 Modeling of Multiscale Phenomena in Porous Media (Part I of IV)

Organizers: Lynn S. Bennethum and Thomas F. Russell, *University of Colorado, Denver*

### MS13 Bayesian Versus Frequentist Methods of Inference (Part I of II)

Organizer: John A. Scales, *Colorado School of Mines*

### MS14 Seismic Imaging and Inversion (Part I of II)

Organizers: Eileen McCarron, *Amoco Technology Center*; and R. Phillip Bording, *University of Texas, Austin*

2:45 PM Poster Setup begins

## MONDAY EVENING, JUNE 16

5:30 PM-7:30 PM

### Poster Session and Welcoming Reception

## TUESDAY MORNING, JUNE 17

7:30 AM-4:00 PM Registration

8:30 AM-9:15 AM

### IP4 Uniqueness Conditions in a Hyperbolic Model for Oil Recovery by Steam Drive

Hans J. van Duijn, *Center for Mathematics and Computer Science (CWI), The Netherlands*

Chair: Mary F. Wheeler, *University of Texas, Austin*

9:15-10:00 AM

### IP5 Applications of Optimization, Numerical Analysis, and Parallel Processing to Groundwater Remediation

Christine Shoemaker, *Cornell University*

Chair: Mary F. Wheeler, *University of Texas, Austin*

10:00 AM-10:30 AM Coffee

10:30 AM-12:30 PM Concurrent Sessions

### MS15 Modeling of Multiscale Phenomena in Porous Media (Part II of IV)

Organizers: Lynn S. Bennethum and Thomas F. Russell, *University of Colorado, Denver*

### MS16 Modeling and Analysis of In-Situ Bioremediation Systems

Organizer: Jack X. Xin, *University of Arizona*

### MS17 Optimization Techniques in Groundwater Remediation

Organizer: David E. Dougherty, *University of Vermont*

### MS18 Finite Volume and Mixed Finite Element Methods in Geoscience Applications

Organizer: Ilya D. Mishev, *Duke University*

### MS19 Numerical Modeling of Ocean Circulation (Part I of II)

Organizer: Robert L. Higdon, *Oregon State University*

### MS20 Object-Oriented Programming for Geophysical Estimation

Organizer: William W. Symes, *Rice University*

### MS21 Seismic Imaging and Inversion (Part II of II)

Organizers: Eileen McCarron, *Amoco Technology Center*; and R. Phillip Bording, *University of Texas, Austin*

## TUESDAY AFTERNOON, JUNE 17

12:30 PM-2:00 PM Lunch

2:00 PM-2:45 PM

### IP6 On the Significance of Effective Properties in Flow and Transport in Heterogeneous Porous Formations

Geden Dagan, *Tel Aviv University, Israel*

Chair: Thomas F. Russell, *University of Colorado, Denver*

2:45 PM-3:15 PM Coffee

3:15 PM-5:15 PM Concurrent Sessions

### MS22 Numerical Modeling of Ocean Circulation (Part II of II)

Organizer: Robert L. Higdon, *Oregon State University*

### MS23 Biofilms in Porous Media

Organizer: Kenneth L. Bowers, *Montana State University*

**MS24 Estimating Nonlinear Properties in Models of Flow Through Porous Media**

Organizers: Jerome Jaffre, INRIA, France; and A. Ted Watson, Texas A&M University

**MS25 Modeling of Multiscale Phenomena in Porous Media (Part III of IV)**

Organizers: Lynn S. Bennethum and Thomas F. Russell, University of Colorado, Denver

**MS26 Estimating Velocities from Surface Seismic Data**

Organizer: William W. Symes, Rice University

**MS27 Effective Numerical Methods for Multiscale Heterogeneous Problems in Geophysics**

Organizers: Thomas Y. Hou and Xiao-Hui Wu, California Institute of Technology

**MS28 Artificial Intelligence in Geosciences**

Organizers: Ahmed Ouene and Adwait Chawathe, New Mexico Petroleum Recovery Research Center

**TUESDAY EVENING, JUNE 17**

6:30 PM-9:00 PM

Banquet

**WEDNESDAY MORNING, JUNE 18**

7:30 AM-4:00 PM Registration

8:30 AM-9:15 AM

**IP7 Modeling Coastal Ocean Hydrodynamics Using Finite Elements**

Rick Luettich, University of North Carolina, Chapel Hill  
Chair: William G. Gray, University of Notre Dame

9:15 AM-9:45 AM Coffee

9:45 AM-11:45 AM Concurrent Sessions

**CP1 Rock Properties/Characterization**

Chair: Allan Gutjahr, New Mexico Institute of Mining and Technology

**CP2 Ocean Circulation**

Chair: Johannes J. Westerink, University of Notre Dame

**CP3 Flow in Porous Media I**

Chair: Jeffery P. Holland, Waterways Experiment Station, U.S. Army Corps of Engineers

**CP4 Seismic Inversion/Imaging I**

Chair: R. Phillip Bording, University of Texas, Austin

**CP5 Reservoir Simulation I**

Chair: William Fitzgibbon, Rice University

**CP6 Upscaling/Homogenization**

Chair: Richard E. Ewing, Texas A&M University, College Station

**CP7 Climate Modeling**

Chair: Monica Martinez, University of Texas, Austin

**WEDNESDAY AFTERNOON, JUNE 18**

11:45 AM-1:00 PM Lunch

1:00 PM-1:45 PM

**IP8 The Role of Convex and Nonconvex Duality in the Inversion of the Reflection in Seismic Data for Velocities**

Guy Chavent, INRIA, France

Chair: Mrinal K. Sen, University of Texas, Austin

1:45 PM-3:45 PM Concurrent Sessions

**MS29 Environmental Surface Flow Modeling (Part I of II)**

Organizers: Srinivas Chippada, Monica L. Martinez, and Mary F. Wheeler, University of Texas, Austin

**MS30 Seismic Imaging in Complex Structure**

Organizer: William W. Symes, Rice University

**MS31 Reaction-Diffusion Systems in Geoscience Applications (Part I of II)**

Organizer: William E. Fitzgibbon, University of Houston

**MS32 Modeling of Multiscale Phenomena in Porous Media (Part IV of IV)**

Organizers: Lynn S. Bennethum and Thomas F. Russell, University of Colorado, Denver

**MS33 Software Tools for Porous Media Flow**

Organizers: Hans Petter Langtangen and Aslak Tveito, University of Oslo, Norway

**MS34 Multigrid Methods for Flow and Transport Processes in Porous Media**

Organizers: Rainer Helmig and Volker H. Schulz, University of Stuttgart, Germany

3:45 PM-4:15 PM Coffee

4:15 PM-6:15 PM Concurrent Sessions

**MS35 Effect of Microprocesses and Microstructure on Soil Properties and Fluid Flow in Porous Media (Part I of II)**

Organizers: Carlo D. Montemagno, Cornell University; Andrew F. B. Tompson, Lawrence Livermore National Laboratory; William G. Gray, University of Notre Dame; and Wendy E. Soll, Los Alamos National Laboratory

**MS36 Reaction-Diffusion Systems in Geoscience Applications (Part II of II)**

Organizer: William E. Fitzgibbon, University of Houston

**MS37 Environmental Surface Flow Modeling (Part II of II)**

Organizers: Srinivas Chippada, Monica L. Martinez, and Mary F. Wheeler, University of Texas, Austin

**CP8 Contaminant Transport/Remediation**

Chair: Hans J. van Duijn, Centre for Mathematics and Computer Science (CWI), The Netherlands

**CP9 Seismic Inversion/Imaging II**

Chair: Mrinal Sen, University of Texas, Austin

**CP10 Reservoir Simulation II**

Chair: Louis J. Durlofsky, Chevron Oil Field Research Co.

**CP11 Flow in Porous Media II**

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

6:15 PM-7:00 PM Business Meeting and Reception

**THURSDAY MORNING, JUNE 19**

7:30 AM-10:00 AM Registration

8:30 AM-9:15 AM

**IP9 Statistical-Dynamical Methods in Atmospheric Prediction**

Joseph J. Tribbia, National Center for Atmospheric Research

Chair: Andrew F. B. Tompson, Lawrence Livermore National Laboratory

9:15 AM-9:45 AM Coffee

9:45 AM-11:45 AM Concurrent Sessions

**MS38 Effect of Microprocesses and Microstructure on Soil Properties and Fluid Flow in Porous Media (Part II of II)**

Organizers: Carlo D. Montemagno, Cornell University; Andrew F. B. Tompson, Lawrence Livermore National Laboratory; William G. Gray, University of Notre Dame; and Wendy E. Soll, Los Alamos National Laboratory

**MS39 Optimization Methods in Geophysics**

Organizers: Mrinal K. Sen and Jake Aggarwal, University of Texas, Austin

**CP12 Stochastic Methods in Porous Media**

Chair: Brent Lindquist, State University of New York, Stony Brook

**CP13 Reservoir Simulation III**

Chair: Stephen Lyons, Mobil Research and Development Corporation

**CP14 Seismic Inversion/Imaging III**

Chair: William W. Symes, Rice University

**CP15 Parameter Estimation/History Matching**

Chair: Debra L. Hughson, New Mexico Institute of Mining and Technology

**CP16 Flow and Transport Processes**

Chair: Hong Wang, University of South Carolina, Columbia

11:45 AM Conference adjourns