

Meetings & Conferences of the AMS

IMPORTANT INFORMATION REGARDING MEETINGS PROGRAMS: AMS Sectional Meeting programs do not appear in the print version of the *Notices*. However, comprehensive and continually updated meeting and program information with links to the abstract for each talk can be found on the AMS website. See <http://www.ams.org/meetings/>. Final programs for Sectional Meetings will be archived on the AMS website accessible from the stated URL and in an electronic issue of the *Notices* as noted below for each meeting.

Vancouver, Canada

*University of British Columbia and the
Pacific Institute of Mathematical Sciences
(PIMS)*

October 4–5, 2008

Saturday – Sunday

Meeting #1041

Western Section

Associate secretary: Michel L. Lapidus

Announcement issue of *Notices*: August 2008

Program first available on AMS website: August 21, 2008

Program issue of electronic *Notices*: October 2008

Issue of *Abstracts*: Volume 29, Issue 4

Deadlines

For organizers: Expired

For consideration of contributed papers in Special Sessions: Expired

For abstracts: Expired

*The scientific information listed below may be dated.
For the latest information, see www.ams.org/amsmtgs/sectional.html.*

Invited Addresses

Freeman Dyson, Institute for Advanced Study, *Birds and Frogs* (Einstein Public Lecture in Mathematics).

Richard Kenyon, Brown University, *Branched polymers in two and three dimensions*.

Alexander S. Kleshchev, University of Oregon, *Representation theory of symmetric groups*.

Mark Lewis, University of Alberta, *Population spread and the dynamics of biological invasions*.

Audrey A. Terras, University of California San Diego, *Ihara zeta functions and quantum chaos*.

Special Sessions

Algebraic Topology and Related Topics, **Alejandro Adem**, University of British Columbia, and **Stephen Ames Mitchell**, University of Washington.

Algorithmic Probability and Combinatorics, **Manuel Lladser**, University of Colorado, **Robert S. Maier**, University of Arizona, **Marni Mishna**, Simon Fraser University, and **Andrew Rechnitzer**, University of British Columbia.

Applications of Algebraic Geometry, **Elizabeth S. Allman**, University of Alaska Fairbanks, and **Rekha R. Thomas**, University of Washington.

Combinatorial Representation Theory, **Sara C. Billey**, University of Washington, **Alexander S. Kleshchev**, University of Oregon, and **Stephanie Jane Van Willigenburg**, University of British Columbia.

Convex and Discrete Geometry and Asymptotic Analysis, **Karoly Bezdek**, University of Calgary, and **A. E. Litvak**, University of Alberta.

Harmonic Analysis and Related Topics, **Malabika Pramanik**, University of British Columbia, and **Burak Erdogan**, University of Illinois at Urbana-Champaign.

Hilbert Functions and Free Resolutions, **Susan Cooper**, California Polytechnic State University, **Christopher A. Francisco**, Oklahoma State University, and **Benjamin P. Richert**, California Polytechnic State University.

History and Philosophy of Mathematics, **Shawnee L. McMurran**, California State University San Bernardino, and **James J. Tattersall**, Providence College.

Knotting and Linking of Macromolecules, **Eric J. Rawdon**, University of Saint Thomas, and **Kenneth C. Millett**, University of California Santa Barbara.

Moduli Spaces and Singularity Theory, **James B. Carrell**, **Patrick Brosnan**, and **Kalle Karu**, University of British Columbia.

Noncommutative Algebra and Geometry, **Jason Bell**, Simon Fraser University, and **James Zhang**, University of Washington.

Noncommutative Geometry, **Raphael Ponge**, University of Toronto, **Bahram Rangipour**, University of New Brunswick, and **Heath Emerson**, University of Victoria.

Nonlinear Waves and Coherent Structures, **Bernard Deconinck**, University of Washington, and **Jeffrey DiFranco**, Seattle University.

Probability and Statistical Mechanics, **David Brydges**, University of British Columbia, and **Richard Kenyon**, Brown University.

Special Functions and Orthogonal Polynomials, **Mizanur Rahman**, Carleton University, and **Diego Dominici**, State University of New York New Paltz.

Wavelets, Fractals, Tilings and Spectral Measures, **Dorin Ervin Dutkay**, University of Central Florida, **Palle E. T. Jorgensen**, University of Iowa, and **Ozgur Yilmaz**, University of British Columbia.

West End Number Theory, **Nils Bruin**, Simon Fraser University, **Matilde N. Lalin**, University of Alberta, and **Greg Martin**, University of British Columbia.

p-adic Groups and Automorphic Forms, **Clifton L. R. Cunningham**, University of Calgary, and **Julia Gordon**, University of British Columbia.

Middletown, Connecticut

Wesleyan University

October 11–12, 2008

Saturday – Sunday

Meeting #1042

Eastern Section

Associate secretary: Lesley M. Sibner

Announcement issue of *Notices*: August 2008

Program first available on AMS website: August 28, 2008

Program issue of electronic *Notices*: October 2008

Issue of *Abstracts*: Volume 29, Issue 4

Deadlines

For organizers: Expired

For consideration of contributed papers in Special Sessions: Expired

For abstracts: Expired

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtg/sectional.html.

Invited Addresses

Pekka Koskela, University of Jyväskylä, *Definitions of quasiconformality*.

Monika Ludwig, Polytechnic Institute of NYU, *$SL(n)$ invariant notions of surface area*.

Duong Hong Phong, Columbia University, *Flows and canonical metrics in Kaehler geometry*.

Thomas W. Scanlon, University of California, Berkeley, *Polynomial dynamics*.

Special Sessions

Algebraic Geometry, **Eyal Markman** and **Jenia Tevelev**, University of Massachusetts, Amherst.

Algebraic Topology, **Mark A. Hovey**, Wesleyan University, and **Kathryn Lesh**, Union College.

Analysis on Metric Measure Spaces and on Fractals, **Piotr Hajlasz**, University of Pittsburgh, **Luke Rogers**, University of Connecticut, **Robert S. Strichartz**, Cornell University, and **Alexander Teplyaev**, University of Connecticut.

Complex Geometry and Partial Differential Equations, **Jacob Sturm** and **Jian Song**, Rutgers University.

Computability Theory and Effective Algebra, **Joseph S. Miller**, **David Reed Solomon**, and **Asher Kach**, University of Connecticut.

Convex and Integral Geometry, **Monika Ludwig**, Polytechnic University of New York, **Daniel Klain**, University of Massachusetts, Lowell, and **Franz Schuster**, Vienna University of Technology.

Geometric Function Theory and Geometry, **Petra Bonfert-Taylor**, Wesleyan University, **Katsuhiko Matsuzaki**, Okayama University, and **Edward C. Taylor**, Wesleyan University.

Geometric Group Theory and Topology, **Matthew Horak**, University of Wisconsin-Stout, **Melanie Stein**, Trinity College, and **Jennifer Taback**, Bowdoin College.

History of Mathematics, **Robert E. Bradley**, Adelphi University, **Lawrence A. D'Antonio**, Ramapo College of New Jersey, and **Lee J. Stemkoski**, Adelphi University.

Low-Dimensional Topology, **Constance Leidy**, Wesleyan University, and **Shelly Harvey**, Rice University.

Model Theory and Its Applications, **Thomas Scanlon**, University of California, Berkeley, and **Philip H. Scowcroft** and **Carol S. Wood**, Wesleyan University.

Number Theory, **Wai Kiu Chan** and **David Pollack**, Wesleyan University.

Real and Complex Dynamics of Rational Difference Equations with Applications, **Mustafa Kulenovic** and **Gerasimos Ladas**, University of Rhode Island.

Riemannian and Lorentzian Geometries, **Ramesh Sharma**, University of New Haven, and **Philippe Rukimbira**, Florida International University.

Kalamazoo, Michigan

Western Michigan University

October 17–19, 2008

Friday – Sunday

Meeting #1043

Central Section

Associate secretary: Susan J. Friedlander

Announcement issue of *Notices*: August 2008

Program first available on AMS website: September 4, 2008

Program issue of electronic *Notices*: October 2008

Issue of *Abstracts*: Volume 29, Issue 4

Deadlines

For organizers: Expired

For consideration of contributed papers in Special Sessions: Expired

For abstracts: Expired

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgs/sectional.html.

Invited Addresses

M. Carme Calderer, University of Minnesota, *Title to be announced.*

Alexandru Ionescu, University of Wisconsin, *Title to be announced.*

Boris S. Mordukhovich, Wayne State University, *Variational analysis: New trends and applications.*

David Nadler, Northwestern University, *Title to be announced.*

Special Sessions

Affine Algebraic Geometry, **Shreeram Abhyankar**, Purdue University, **Anthony J. Crachiola**, Saginaw Valley State University, and **Leonid G. Makar-Limanov**, Wayne State University.

Computation in Modular Representation Theory and Cohomology, **Christopher P. Bendel**, University of Wisconsin-Stout, **Terrell L. Hodge**, Western Michigan University, **Brian J. Parshall**, University of Virginia, and **Cornelius Pillen**, University of South Alabama.

Computational Group Theory, **Luise-Charlotte Kappe**, State University of New York Binghamton, **Arturo Magidin**, University of Louisiana-Lafayette, and **Robert F. Morse**, University of Evansville.

Graph Labeling, Graph Coloring, and Topological Graph Theory, **Arthur T. White**, Western Michigan University, and **David L. Craft**, Muskingum College.

Homotopy Theory, **Michele Intermont**, Kalamazoo College, and **John R. Martino** and **Jeffrey A. Strom**, Western Michigan University.

Linear Codes Over Rings and Modules, **Steven T. Dougherty**, University of Scranton, and **Jay A. Wood**, Western Michigan University.

Mathematical Finance, **Qiji J. Zhu**, Western Michigan University, and **George Yin**, Wayne State University.

Mathematical Knowledge for Teaching, **Kate Kline** and **Christine Browning**, Western Michigan University.

Nonlinear Analysis and Applications, **S. P. Singh**, University of Western Ontario, **Bruce B. Watson**, Memorial University, and **Mahi Singh**, University of Western Ontario.

Optimization/Midwest Optimization Seminar, **Jay S. Treiman** and **Yuri Ledyaev**, Western Michigan University, and **Ilya Shvartsman**, Penn State Harrisburg.

Quasigroups, Loops, and Nonassociative Division Algebras, **Clifton E. Ealy Jr.** and **David Richter**, Western Michigan University, and **Petr Vojtechovsky**, University of Denver.

Representations of Real and P-adic Lie Groups, **Alessandra Pantano**, University of California Irvine, **Annegret**

Paul, Western Michigan University, and **Susana Alicia Salamanca-Riba**, New Mexico State University.

Topological Field Theory, **David Nadler**, Northwestern University.

Variational Analysis and its Applications, **Yuri Ledyaev** and **Jay S. Treiman**, Western Michigan University, **Ilya Shvartsman**, Penn State Harrisburg, and **Qiji J. Zhu**, Western Michigan University.

Huntsville, Alabama

University of Alabama, Huntsville

October 24–26, 2008

Friday – Sunday

Meeting #1044

Southeastern Section

Associate secretary: Matthew Miller

Announcement issue of *Notices*: August 2008

Program first available on AMS website: September 11, 2008

Program issue of electronic *Notices*: October 2008

Issue of *Abstracts*: Volume 29, Issue 4

Deadlines

For organizers: Expired

For consideration of contributed papers in Special Sessions: Expired

For abstracts: Expired

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgs/sectional.html.

Invited Addresses

Mark Behrens, Massachusetts Institute of Technology, *Congruences amongst modular forms and the stable homotopy groups of spheres.*

Anthony M. Bloch, University of Michigan, Ann Arbor, *Variational principles and nonholonomic dynamics.*

Roberto Camassa, University of North Carolina, Chapel Hill, *Spinning rods, microfluidics, and propulsion by cilia in biological systems.*

Mark V. Sapid, Vanderbilt University, *Geometry of groups, random walks, and polynomial maps over finite fields.*

Special Sessions

Applications of PDEs and ODEs (in honor of Karen Ames), **Suzanne M. Lenhart** and **Philip W. Schaefer**, University of Tennessee, Knoxville.

Applications of Topology to Dynamical Systems, **John C. Mayer** and **Lex G. Oversteegen**, University of Alabama at Birmingham.

Applied Probability, **Moonyu Park** and **Boris Kunin**, University of Alabama in Huntsville.

Dynamics and Applications of Differential Equations, **Wenzhang Huang** and **Shangbing Ai**, University of

Alabama in Huntsville, and **Weishi Liu**, University of Kansas.

Gaussian Analysis and Stochastic Partial Differential Equations, **Davar Khoshnevisan**, University of Utah, and **Dongsheng Wu**, University of Alabama in Huntsville.

Geometric Mechanics, Control, and Integrability, **Anthony M. Bloch**, University of Michigan, Ann Arbor, and **Dmitry Zenkov**, North Carolina State University.

Graph Decompositions, **Robert A. Beeler** and **Robert B. Gardner**, East Tennessee State University.

Graph Theory, **Peter J. Slater** and **Grant Zhang**, University of Alabama in Huntsville.

Homotopy Theory and Algebraic Topology, **Mark Behrens**, Massachusetts Institute of Technology, and **Michael Hill**, University of Virginia.

Inverse Limits and Their Applications, **Judy A. Kennedy**, Lamar University.

Mathematical Biology: Modeling, Analysis, and Simulations, **Jia Li**, University of Alabama in Huntsville, **Azmy S. Ackleh**, University of Louisiana at Lafayette, and **Maia Martcheva**, University of Florida.

Nonlinear Operator Theory and Partial Differential Equations, **Claudio H. Morales**, University of Alabama in Huntsville, and **Pei-Kee Lin**, University of Memphis.

Probability on Discrete and Algebraic Structures, **Kyle T. Siegrist**, University of Alabama in Huntsville.

Random Matrices, **Leonard N. Choup**, University of Alabama in Huntsville.

Set-Theoretic Topology, **Gary Gruenhage**, Auburn University, and **Peter J. Nyikos** and **Robert M. Stephenson Jr.**, University of South Carolina.

Shanghai, People's Republic of China

Fudan University

December 17–21, 2008

Wednesday – Sunday

Meeting #1045

First Joint International Meeting Between the AMS and the Shanghai Mathematical Society

Associate secretary: Susan J. Friedlander

Announcement issue of *Notices*: June 2008

Program first available on AMS website: Not applicable

Program issue of electronic *Notices*: Not applicable

Issue of *Abstracts*: Not applicable

Deadlines

For organizers: Expired

For consideration of contributed papers in Special Sessions: To be announced

For abstracts: October 31, 2008

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtg/internmtgs.html.

Invited Addresses

Robert J. Bryant, University of California Berkeley, *Title to be announced.*

L. Craig Evans, University of California Berkeley, *Title to be announced.*

Zhi-Ming Ma, Chinese Academy of Sciences, *Title to be announced.*

Richard Schoen, Stanford University, *Title to be announced.*

Xiaoping Yuan, Fudan University, *Title to be announced.*

Weiping Zhang, Chern Institute, *Title to be announced.*

Special Sessions

Biomathematics: Newly Developed Applied Mathematics and New Mathematics Arising from Biosciences, **Banghe Li**, Chinese Academy of Sciences, **Reinhard C. Laubenbacher**, Virginia Bioinformatics Institute, and **Jianjun Paul Tian**, College of William and Mary.

Combinatorics and Discrete Dynamical Systems, **Reinhard C. Laubenbacher**, Virginia Bioinformatics Institute, **Klaus Sutner**, Carnegie Mellon University, and **Yaokun Wu**, Shanghai Jiao Tong University.

Differential Geometry and Its Applications, **Jianguo Cao**, University of Notre Dame, and **Yu Xin Dong**, Fudan University.

Dynamical Systems Arising in Ecology and Biology, **Qishao Lu**, Beijing University of Aeronautics & Astronautics, and **Zhaosheng Feng**, University of Texas-Pan American.

Elliptic and Parabolic Nonlinear Partial Differential Equations, **Changfeng Gui**, University of Connecticut, and **Feng Zhou**, East China Normal University.

Harmonic Analysis and Partial Differential Equations with Applications, **Yong Ding**, Beijing Normal University, **Guo-Zhen Lu**, Wayne State University, and **Shanzhen Lu**, Beijing Normal University.

Integrable System and Its Applications, **En-Gui Fan**, Fudan University, **Sen-Yue Lou**, Shanghai Jiao Tong University and Ningbo University, and **Zhi-Jun Qiao**, University of Texas-Pan American.

Integral and Convex Geometric Analysis, **Deane Yang**, Polytechnic University, and **Jiazu Zhou**, Southwest University.

Lie Algebras, Vertex Operator Algebras and Related Topics, **Hu Nai Hong**, East China Normal University, and **Yi-Zhi Huang**, Rutgers University.

Nonlinear Systems of Conservation Laws and Related Topics, **Gui-Qiang Chen**, Northwestern University, and **Shuxing Chen** and **Yi Zhou**, Fudan University.

Optimization and Its Application, **Shu-Cherng Fang**, North Carolina State University, and **Xuexiang Huang**, Fudan University.

Quantum Algebras and Related Topics, **Naihuan N. Jing**, North Carolina State University, **Quanshui Wu**, Fudan University, and **James J. Zhang**, University of Washington.

Recent Developments in Nonlinear Dispersive Wave Theory, **Jerry Bona**, University of Illinois at Chicago, **Bo Ling Guo**, Institute of Applied Physics and Computational Mathematics, **Shu Ming Sun**, Virginia Polytech Institute and State University, and **Bingyu Zhang**, University of Cincinnati.

Representation of Algebras and Groups, **Birge K. Huisgen-Zimmermann**, University of California Santa Barbara, **Jie Xiao**, Tsinghua University, **Jiping Zhang**, Beijing University, and **Pu Zhang**, Shanghai Jiao Tong University.

Several Complex Variables and Applications, **Siqi Fu**, Rutgers University, **Min Ru**, University of Houston, and **Zhihua Chen**, Tongji University.

Several Topics in Banach Space Theory, **Gerard J. Buskes** and **Qingying Bu**, University of Mississippi, and **Lixin Cheng**, Xiamen University.

Stochastic Analysis and Its Application, **Jiangang Ying**, Fudan University, and **Zhenqing Chen**, University of Washington.

Topics in Partial Differential Equations and Mathematical Control Theory, **Xiaojun Huang**, Rutgers University, **Gengsheng Wang**, Wuhan University of China, and **Stephen S.-T. Yau**, University of Illinois at Chicago.

Washington, District of Columbia

Marriott Wardman Park Hotel and Omni Shoreham Hotel

January 5–8, 2009

Monday – Thursday

Meeting #1046

Joint Mathematics Meetings, including the 115th Annual Meeting of the AMS, 92nd Annual Meeting of the Mathematical Association of America (MAA), annual meetings of the Association for Women in Mathematics (AWM) and the National Association of Mathematicians (NAM), and the winter meeting of the Association for Symbolic Logic (ASL), with sessions contributed by the Society for Industrial and Applied Mathematics (SIAM).

Associate secretary: Bernard Russo

Announcement issue of *Notices*: October 2008

Program first available on AMS website: November 1, 2008

Program issue of electronic *Notices*: January 2009

Issue of *Abstracts*: Volume 30, Issue 1

Deadlines

For organizers: Expired

For consideration of contributed papers in Special Sessions: Expired

For abstracts: September 16, 2008

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtg/national.html.

Joint Invited Addresses

Douglas N. Arnold, University of Minnesota, Minneapolis, *Title to be announced*, 11:10 a.m. on Monday. (AMS-MAA)

Maryam Mirzakhani, Princeton University, *Title to be announced*, 11:10 a.m. on Wednesday. (AMS-MAA)

AMS Committee on Science Policy-MAA Science Policy Committee Government Speaker, speaker and title to be announced, 4:20 p.m. on Wednesday.

Steven H. Strogatz, Cornell University, *The story of a mathematical friendship*, 6:00 p.m. on Thursday. (AMS-MAA-SIAM Gerald and Judith Porter Public Lecture) Please note that the AMS-MAA-SIAM Joint Reception immediately follows this lecture; see the details in the “Social Events” section of this announcement.

Joint Prize Session

Prize Session and Reception: In order to showcase the achievements of the recipients of various prizes, the AMS and MAA are cosponsoring this event at 4:25 p.m. on Tuesday. A cash bar reception will immediately follow. All participants are invited to attend. The AMS, MAA, and SIAM will award the Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student. The AMS will announce the winners of the George David Birkhoff Prize in Applied Mathematics, Frank Nelson Cole Prize in Algebra, Levi L. Conant Prize, Ruth Lyttle Satter Prize in Mathematics, Leroy P. Steele Prizes, and the Albert Leon Whiteman Memorial Prize. The MAA will award the Beckenbach Book Prize, Chauvenet Prize, Euler Book Prize, Yueh-Gin Gung and Dr. Charles Y. Hu Award for Distinguished Service to Mathematics, Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics, and Certificates of Meritorious Service. The AWM will present the Alice T. Schafer Prize for Excellence in Mathematics by an Undergraduate Woman and the Louise Hay Award for Contributions to Mathematics Education.

This session will also be the venue for the announcement of the Joint Policy Board for Mathematics Communication Award and the Leonard M. and Eleanor B. Blumenthal Award for the Advancement of Research in Pure Mathematics.

115th Meeting of the AMS

AMS Invited Addresses

Luis A. Caffarelli, University of Texas at Austin, *Nonlinear problems involving integral diffusions*.

Mikhail Khovanov, Institute for Advanced Study, *Categorification of quantum groups and link invariants*.

Grigori A. Margulis, Yale University, *Homogeneous dynamics and number theory* (AMS Colloquium Lectures).

Ken Ono, University of Wisconsin-Madison, *Unearthing the visions of a master: The web of Ramanujan's mock theta functions in number theory*.

Christos Papadimitriou, University of California Berkeley, *On Nash, Brouwer, and other nonconstructive proofs*.

Oded Schramm, Microsoft, *Conformally invariant random systems in the plane* (AMS Josiah Willard Gibbs Lecture).

James A. Sethian, University of California Berkeley, *Advances in advancing interfaces*.

AMS Special Sessions

Some sessions are cosponsored with other organizations. These are noted within the parenthesis at the end of each listing, where applicable.

Algebraic Cryptography and Generic Complexity (Code: SS 41A), **Vladimir Shpilrain**, The City College of New York, and **Yesem Kurt**, Randolph College.

Algebraic Structures in Knot Theory (Code: SS 33A), **Sam Nelson**, Claremont McKenna College, and **Alissa S. Crans**, Loyola Marymount University.

Asymptotic Geometric Analysis (Code: SS 45A), **Alexander E. Litvak**, University of Alberta, and **Dmitry Ryabogin** and **Artem Zvavitch**, Kent State University.

Asymptotic Methods in Analysis with Applications (Code: SS 19A), **Diego Dominici**, SUNY New Paltz, and **Peter A. McCoy**, U.S. Naval Academy (AMS-SIAM).

Automorphic and Modular Forms in Number Theory (Code: SS 55A), **Ken Ono** and **Amanda Folsom**, University of Wisconsin-Madison, and **Sharon A. Garthwaite**, Bucknell University.

Categorification and Link Homology (Code: SS 58A), **Aaron Lauda** and **Mikhail Khovanov**, Columbia University.

Commutative Rings (Code: SS 1A), **Jay A. Shapiro**, George Mason University, **David E. Dobbs**, University of Tennessee, Knoxville, **Shane P. Redmond**, Eastern Kentucky University, and **Joe A. Stickles**, Millikin University.

Complex Dynamics and Complex Function Theory (Code: SS 16A), **Stephanie Edwards**, Hope College, and **Rich L. Stankewitz**, Ball State University.

Computational Algebra and Convexity (Code: SS 9A), **Dan Bates**, Colorado State University, **Tsung-Lin Lee**, Michigan State University, **Sonja Petrovic**, University of Illinois at Chicago, and **Zach Teitler**, Texas A&M University.

Computational Algebraic and Analytic Geometry for Low-dimensional Varieties (Code: SS 48A), **Mika K. Sepälä**, Florida State University, **Tanush Shaska**, Oakland University, and **Emil J. Volcheck**, Association for Computing Machinery.

Conformal Geometry, Twistor Theory, and Integrable Systems (Code: SS 36A), **Dana Mihai**, Carnegie Mellon University, and **George Sparling**, University of Pittsburgh.

Continued Fractions (Code: SS 50A), **James G. McLaughlin**, West Chester University, and **Nancy J. Wyshinski**, Trinity College.

Convex and Discrete Geometry (Code: SS 10A), **Włodzimierz Kuperberg**, Auburn University, and **Valeriu Soltan**, George Mason University.

Difference Equations (Code: SS 4A), **Michael Radin**, Rochester Institute of Technology.

Discrete Dynamical Systems in Periodic Environments (Code: SS 38A), **M. R. S. Kulenović** and **Orlando Merino**, University of Rhode Island, and **Abdul-Aziz Yakubu**, Howard University.

Dynamical Systems and Differential Equations: Theory and Applications (Code: SS 44A), **Annalisa Crannell**, Franklin & Marshall College, and **Suzanne Sindi**, Brown University.

Experimental Mathematics (Code: SS 27A), **Tewodros Amdeberhan**, **Luis A. Medina**, and **Victor H. Moll**, Tulane University.

Financial Mathematics (Code: SS 42A), **Erhan Bayraktar**, University of Michigan, and **Tim Siu-Tang Leung**, Princeton University.

Function Theoretic Operator Theory (Code: SS 13A), **John B. Conway**, George Washington University, **Sherwin Kouckian**, University of South Florida, and **William T. Ross**, University of Richmond.

Geometry, Algebra, and Topology of Character Varieties (Code: SS 29A), **Sean Lawton**, Instituto Superior Tecnico, and **Elisha Peterson**, United States Military Academy.

Group Actions on Curves (Code: SS 31A), **Darren Glass**, Gettysburg College, and **Amy E. Ksir**, United States Naval Academy.

Group Actions on Homogeneous Spaces and Applications (Code: SS 57A), **Dmitry Y. Kleinbock**, Brandeis University, **Gregory A. Margulis**, Yale University, and **Hee Oh**, Brown University.

Harmonic Analysis (Code: SS 49A), **Paul A. Hagelstein**, Baylor University, and **Alexander M. Stokolos**, DePaul University.

Heavy-Tailed Behavior: Theory and Applications (Code: SS 28A), **Thomas B. Fowler**, **Marty Fischer**, and **Denise Masi**, Noblis Incorporated, and **John F. Shortle**, George Mason University.

History of Mathematics (Code: SS 17A), **Joseph W. Dauben**, Lehman College, **Karen H. Parshall**, University of Virginia, **Patti Hunter**, Westmont College, and **Deborah Kent**, Hillsdale College (AMS-MAA).

Homotopy Theory and Higher Categories (Code: SS 3A), **Thomas M. Fiore**, University of Chicago, **Mark W. Johnson**, Penn State Altoona, **James M. Turner**, Calvin College, **W. Stephen Wilson**, Johns Hopkins University, and **Donald Yau**, Ohio State University at Newark.

Infinite Dimensional Analysis, Path Integrals and Related Fields (Code: SS 46A), **Tepper L. Gill**, Howard University, **Lance W. Nielsen**, Creighton University, and **Woodford W. Zachary**, Howard University.

Inquiry-Based Learning (Code: SS 35A), **William B. Jacob**, University of California Santa Barbara, **Paul J. Sally**, University of Chicago, **Ralf J. Spatzier**, University of Michigan, and **Michael Starbird**, University of Texas at Austin (AMS-MAA).

Logic and Dynamical Systems (Code: SS 12A), **Stephen G. Simpson**, Pennsylvania State University (AMS-ASL).

Mathematical Models of Biological Structures and Function (Code: SS 32A), **Chandrajit Bajaj** and **Andrew K. Gillette**, University of Texas at Austin.

Mathematics and Education Reform (Code: SS 52A), **William H. Barker**, Bowdoin College, **William G. McCallum**, University of Arizona, and **Bonnie S. Saunders**, University of Illinois at Chicago (AMS-MAA-MER).

Mathematics and Mathematics Education in Fiber Arts (Code: SS 30A), **Sarah-Marie Belcastro**, The Hampshire College Summer Studies in Mathematics, and **Carolyn A. Yackel**, Mercer University.

Mathematics of Computation (Code: SS 43A), **Susanne C. Brenner**, Louisiana State University, and **Chi-Wang Shu**, Brown University.

Model Theoretic Methods in Finite Combinatorics (Code: SS 18A), **Martin Grohe**, Humboldt University, and **Johann A. Makowsky**, Technion Israel Institute of Technology (AMS-ASL).

New Connections Between Topology, Combinatorics, and Physics (Code: SS 23A), **Paul Fendley** and **Slava Krushkal**, University of Virginia.

Noncommutative Algebra (Code: SS 39A), **Greg Marks** and **Ashish K. Srivastava**, St. Louis University.

Nonlinear Evolution Equations and Their Applications (Code: SS 34A), **Gaston N'Guerekata**, **Alexander A. Pankov**, **Guoping Zhang**, and **Xuming Xie**, Morgan State University, and **Zhijun Qiao**, University of Texas Pan American.

Nonlinear Partial Differential Equations and Applications (Code: SS 20A), **Gui-Qiang G. Chen**, Northwestern University, and **Cleopatra C. Christoforou**, University of Houston.

Nonsmooth Analysis in Inverse and Variational Problems (Code: SS 47A), **M. Zuhair Nashed**, University of Central Florida, and **Otmar Scherzer**, University of Innsbruck.

Orderings in Logic and Topology (Code: SS 54A), **Valentina S. Harizanov** and **Jozef H. Przytycki**, George Washington University.

Recent Advances in Mathematical Modeling in Medicine (Code: SS 21A), **David Chan**, **John W. Cain**, and **Rebecca A. Segal**, Virginia Commonwealth University.

Recent Trends in Coding Theory (Code: SS 14A), **Gretchen L. Matthews**, Clemson University, and **Judy L. Walker**, University of Nebraska.

Representation Theory of Lie Algebras and Algebraic Groups (Code: SS 15A), **David G. Taylor**, Roanoke College, **Terrell L. Hodge**, Western Michigan University, and **Daniel K. Nakano**, University of Georgia.

Research in Mathematics by Undergraduates (Code: SS 22A), **Darren A. Narayan**, Rochester Institute of Technology, **Jacqueline A. Jensen**, Sam Houston State University, **Carl V. Lutzer**, Rochester Institute of Technology, **Vadim Ponomarenko**, San Diego State University, and **Tamas Wiandt**, Rochester Institute of Technology (AMS-MAA-SIAM).

SAGE and Mathematical Research Using Open Source Software (Code: SS 2A), **William A. Stein**, University of Washington, Seattle, **David Saunders**, University of Delaware, **David Harvey**, Harvard University, and **David Joyner**, U.S. Naval Academy.

Scientific Computing and Advanced Computation (Code: SS 8A), **Edward Castillo Jr**, University of California Irvine,

James M. Rath, University of Texas at Austin, and **Sarah A. Williams**, University of California Davis.

Spectra of Matrix Patterns and Applications to Dynamical Systems (Code: SS 40A), **Bryan L. Shader**, University of Wyoming, **Luz M. DeAlba**, Drake University, **Leslie Hogben**, Iowa State University, and **In-Jae Kim**, Minnesota State University.

Stochastic, Large-Scale, and Hybrid Systems with Applications (Code: SS 26A), **Aghalaya S. Vatsala**, University of Louisiana at Lafayette, and **G. S. Ladde** and **K. Ramachandran**, University of South Florida.

Teichmüller Theory and Low-Dimensional Topology (Code: SS 7A), **Richard P. Kent**, Brown University, and **Madlena Tomova**, Rice University.

The Mathematics of Information and Knowledge (Code: SS 53A), **Ronald R. Coifman**, Yale University, **James G. Glimm**, SUNY at Stony Brook, **Peter W. Jones**, Yale University, and **Stephen Smale**, Toyota Institute.

The Redistricting Problem (Code: SS 51A), **Daniel Goroff**, Harvey Mudd College, and **Daniel Ullman**, George Washington University.

The Scholarship of Teaching and Learning (Code: SS 24A), **Curtis D. Bennett** and **Jacqueline M. Dewar**, Loyola Marymount University (AMS-MAA).

Topological Methods in Applied Mathematics (Code: SS 56A), **Yongwu Rong**, George Washington University.

Tracking Moving Interfaces in Complex Phenomena (Code: SS 59A), **James A. Sethian**, University of California Berkeley.

Von Neumann Algebras (Code: SS 37A), **Pinhas Grossman**, Vanderbilt University, and **Remus Nicoara**, University of Tennessee.

The Role of Generalized Maximal Monotonicity Frameworks in Optimization and Control Theory with Applications (Code: SS 6A), **Ram U. Verma**, International Publications.

Other AMS Sessions

Committee on the Profession Presentation, Tuesday, 2:30 p.m.-4:00 p.m.

Grad School Fair, Wednesday, 8:30 a.m.-10:00 a.m. Here is the opportunity for undergrads to meet representatives from mathematical sciences graduate programs from universities all over the country. January is a great time for juniors to learn more, and college seniors may still be able to refine their search. This is your chance for one-stop shopping in the graduate school market. At last year's meeting about 300 students met with representatives from 45 graduate programs. If your school has a graduate program and you are interested in participating, a table will be provided for your posters and printed materials for US\$50 (registration for this event must be made by a person already registered for the JMM), and you are welcome to personally speak to interested students. Complimentary coffee will be served. Cosponsored by the AMS and MAA.

Who Wants to Be a Mathematician, Wednesday, 10:00 a.m.-10:55 a.m., organized by **Michael A. Breen**, AMS, and **William T. Butterworth**, DePaul University. Come watch eight of the area's top high school students compete for cash and prizes by answering questions about mathematics.

You are invited to come and take part in this educational and fun presentation.

Current Events Bulletin, Wednesday, 1:00 p.m.–6:00 p.m., organized by **David Eisenbud**, University of California Berkeley. This session follows the model of the Bourbaki Seminars in that mathematicians with strong expository skills speak on work not their own. Written versions of the talks will be distributed at the meeting and also be available on line at www.ams.org/ams/current-events-bulletin.html after the conclusion of the meeting.

Committee on Science Policy Panel Discussion, Wednesday, 2:30 p.m.–4:00 p.m.

Wolfgang Doeblin—A Mathematician Rediscovered, Wednesday, 7:00 p.m.–8:30 p.m. This documentary film by Agnes Handwerk and Harrie Willems tells the moving story of a young Jewish mathematician who is tragically caught in the difficult times of World War II. During the winter of 1939–40, while serving in the French army, he wrote a mathematics manuscript entitled “On Kolmogorov’s equation”. He sealed and sent this to the Academy of Sciences in Paris. Later that winter, when trapped by German soldiers, he committed suicide. The sealed letter was not opened until May 2000; when deciphered, the manuscript showed that Doeblin developed a formula to calculate the role of chance in continuous random processes comparable to the formula that Kiyoshi Itô developed some years later. The film explores the biography of Wolfgang Doeblin, the intriguing history of his sealed letter with the manuscript, and the mathematics in the manuscript.

Committee on Education Panel Discussion, Thursday, 8:30 a.m.–10:00 a.m.

Other AMS Events

Council: Sunday, 1:30 p.m.

Business Meeting: Thursday, 11:45 a.m. The secretary notes the following resolution of the Council: Each person who attends a business meeting of the Society shall be willing and able to identify himself as a member of the Society. In further explanation, it is noted that each person who is to vote at a meeting is thereby identifying himself as and claiming to be a member of the American Mathematical Society. The Society has a Committee on the Agenda for Business Meetings. The purpose is to make business meetings orderly and effective. The committee does not have legal or administrative power. It is intended that the committee consider what may be called “quasipolitical” motions. The committee has several possible courses of action on a proposed motion, including but not restricted to:

- (a) doing nothing,
- (b) conferring with supporters and opponents to arrive at a mutually accepted amended version to be circulated in advance of the meeting,
- (c) recommending and planning a format for debate to suggest to a business meeting,
- (d) recommending referral to a committee, and
- (e) recommending debate followed by referral to a committee.

There is no mechanism that requires automatic submission of a motion to the committee. However, if a motion has not been submitted through the committee, it may be thought reasonable by a business meeting to refer it rather than to act on it without benefit of the advice of the committee.

In order that a motion for this business meeting receive the service offered by the committee in the most effective manner, it should be in the hands of the AMS Secretary by December 5, 2008.

AMS Short Course

This two-day course on *Quantum Computation and Quantum Information* is organized by **Samuel J. Lomonaco**, University of Maryland Baltimore County, and takes place on Saturday and Sunday, January 3 and 4. See the complete article beginning on PAGE ???

There are separate registration fees to participate.

Department Chairs Workshop

This annual one-day workshop for chairs and leaders of departments of mathematical sciences will be held a day before the start of the Joint Meetings on Sunday, 8:00 a.m.–6:30 p.m. The workshop format is intended to stimulate discussion among attending chairs and workshop leaders. Sharing ideas and experiences with peers provides a form of department chair therapy, creating an environment that enables attending chairs to address departmental matters from new perspectives.

Past workshop sessions have focused on a range of issues facing departments today, including personnel issues (staff and faculty), long-range planning, hiring, promotion and tenure, budget management, assessments, outreach, stewardship, junior faculty development, communication, and departmental leadership.

There is a separate registration fee to participate. For more information and to register, visit <http://www.ams.org/government/ChairsWorkshop2008.RSVPForm.pdf>. For further information please contact the AMS Washington Office at 202-588-1100 or amsdc@ams.org.

92nd Meeting of the MAA

MAA Invited Addresses

Maria Chudnovsky, Columbia University, *Perfect graphs—Structure and recognition*, 3:20 p.m. on Monday.

Ivars Peterson, MAA, *Geometreks*, 10:05 a.m. on Thursday.

Daniel C. Rockmore, Dartmouth College, *Title to be announced*, 9:00 a.m. on Wednesday.

Peter Sarnak, Princeton University, *Integral Appollonian packings and thin orbits*, 9:00 a.m. on Tuesday.

Peter M. Winkler, Dartmouth College, *Stacking bricks and stoning crows*, 2:15 p.m. on Monday.

Presentations by Teaching Award Recipients

Wednesday, 2:30 p.m.–4:00 p.m., organized by MAA Secretary **Martha J. Seigel**, Towson University, and moderated by MAA President, **Joseph A. Gallian**, University of Minnesota-Duluth. Winners of the Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching will give presentations on the secrets of their success.

MAA Minicourses

Minicourses are open only to persons who register for the Joint Meetings and pay the Joint Meetings registration fee in addition to the appropriate minicourse fee. The MAA reserves the right to cancel any minicourse that is undersubscribed. Participants in minicourses #1–4 are required to come with a laptop computer equipped with appropriate software. Instructions to download any data files needed for those courses will be provided by the organizers. The enrollment limit for each course is limited to 50 participants; the cost is \$60.

Minicourse #1: *Discrete models in biology and simulations*, organized by **Saber N. Elaydi**, Trinity University; **Huseyin Kocak**, University of Miami; and **David Ribble**, Trinity University. Part 1: Monday, 9:00 a.m.–11:00 a.m.; Part 2: Wednesday, 9:00 a.m.–11:00 a.m. This minicourse will present and analyze discrete models from population biology. Participants will use the software PHASER to simulate model behavior. There will be four modules. Each module will be discussed for 30 minutes followed by 30 minutes of computer experimentation. Each participant will be expected to bring a laptop computer equipped with Windows 2000/XP/Vista, Mac OS X (10.4.5 or later, with Java 5 or greater installed) or Linux. The participants will be provided electronic copies of the notes, simulations, and the software PHASER. Basic knowledge of calculus and linear algebra will be helpful.

Minicourse #2: *Using GeoGebra to create activities and applets for visualization and exploration*, organized by **Michael K. May**, Saint Louis University. Part 1: Monday, 2:15 p.m.–4:15 p.m.; Part 2: Wednesday, 2:15 p.m.–4:15 p.m. GeoGebra is an easy to use, free, open-source, cross-platform program that allows the user to visualize and experiment with both algebraic and geometric representations of mathematical concepts. Constructions can optionally be saved as applets that can be used in any java enabled browser. Sample applets can be found at www.slu.edu/classes/maymk/GeoGebra/. The minicourse assumes only novice computer skills and covers an introduction to GeoGebra up through deploying applets in web pages. We will work through creating several activities to illustrate features of the program and to get participants to create their own activities. Participants will need a computer loaded with GeoGebra, SeaMonkey, and a collection of examples created by the presenter. Links for downloading the needed software will be sent to participants who register in advance. Participants will be able to do a fast install on site if needed.

Minicourse #3: *Educating about the state of the planet and sustainability while enhancing calculus*, organized by **Thomas J. Pfaff**, Ithaca College. Part 1: Tuesday, 8:00

a.m.–10:00 a.m.; Part 2: Thursday, 9:00 a.m.–11:00 a.m. Society faces major challenges in climate change and energy security. This minicourse will illustrate how the use of data (climate, energy, etc.) and Excel can provide richer context and relevance (a sustainability theme) for calculus. When students use Excel to fit curves to real data, fundamentally important questions about sustainability become calculus questions about those curves. Overall the goal is to provide the necessary background information, ideas, and tools to successfully incorporate sustainability themes (or other areas of interest) into a calculus course, without having to change the typical content covered in calculus. Participants will need a laptop equipped with Microsoft Excel.

Minicourse #4: *An introduction to the mathematics of modern cryptography*, organized by **Jeffrey Ehme** and **Colm A. Mulcahy**, Spelman College. Part 1: Tuesday, 10:30 a.m.–12:30 p.m.; Part 2: Thursday, 1:00 p.m.–3:00 p.m. The mathematics of modern cryptography is for anyone with an interest in mathematics today, especially if that person also registers for classes (or submits grades) online, or pays bills or shops on the Internet. Since that includes most of our students and most of us, it is a perfect subject for adding to the standard undergraduate curriculum, either in a regular or special topics course, or as a subject for directed research. There can be no better way of illustrating the application to everyday life of abstract mathematics and clever modern ideas. This minicourse will focus on the basics, assuming only a rudimentary knowledge of number theory and abstract algebra (e.g., Fermat's Little Theorem and the concept of an abelian group), and cover topics ranging from 1970s breakthroughs such as Diffie Hellman key exchange and the RSA cryptography, to the more recent methods of ElGamal, Elliptic Curves, and Groebner Bases. Participants are expected to bring laptops equipped with Maple, Adobe Acrobat Reader, and a CD drive.

Minicourse #5: *Developing department self-studies*, organized by **Donna L. Beers**, Simmons College, and **Richard A. Gillman**, Valparaiso University. Part 1: Tuesday, 1:00 p.m.–3:00 p.m.; Part 2: Thursday, 3:30 p.m.–5:30 p.m. Self-study is a critical component of departmental program review. It is retrospective, engaging department members and other interested parties (e.g., other departments and the administration) in examining all aspects of departmental programs. It is also forward looking, anticipating new areas for growth and contribution. Self-study entails discussion of issues confronting a department; as such, it is both a process of reflection and a report. This minicourse enables participants to determine how a self-study, which is an administrative mandate, can be a positive opportunity for departmental renewal.

Minicourse #6: *Teaching with clickers and classroom voting*, organized by **Derek Bruff**, Vanderbilt University; and **Kelly Cline**, **Mark Parker**, and **Holly Zullo**, Carroll College. Part 1: Monday, 9:00 a.m.–11:00 a.m.; Part 2: Wednesday, 9:00 a.m.–11:00 a.m. Classroom response systems, or “clickers”, are instructional technologies that enable teachers to rapidly collect and analyze students' responses to multiple-choice questions. In this minicourse

participants will learn how to use clickers to transform the way they use class time—promoting active participation, engagement, and discussion among students; assessing student learning in real-time during class; and adapting lessons to respond to the particular learning needs of one's students. This minicourse will also feature a question-writing “workshop” and a mock clicker class as ways to explore the kinds of questions and activities that make the most of teaching with clickers.

Minicourse #7: *A game theory path to quantitative literacy*, organized by **David L. Housman**, Goshen College, and **Richard A. Gillman**, Valparaiso University. Part 1: Monday, 2:15 p.m.–4:15 p.m.; Part 2: Wednesday, 2:15 p.m.–4:15 p.m. Game theory, defined in the broadest sense, can be used to model many real world scenarios of decision making in situations involving conflict and cooperation. Further, mastering the basic concepts and tools of game theory require only an understanding of basic algebra, probability, and formal reasoning. These two features of game theory make it an ideal path to developing habits of quantitative literacy among our students. This audience participation minicourse develops some of the material used by the presenters in their general education courses on game theory and encourages participants to develop their own, similar, courses.

Minicourse #8: *Taking symbols seriously: Teaching form and function in college algebra*, organized by **Deborah Hughes Hallett**, University of Arizona and Harvard University; **Patti Frazer Lock**, St. Lawrence University; **William G. McCallum**, University of Arizona; and **Patricia D. Shure**, University of Michigan. Part 1: Tuesday, 8:00 a.m.–10:00 a.m.; Part 2: Thursday, 9:00 a.m.–11:00 a.m. College algebra courses often emphasize the idea of a function from multiple viewpoints. In this minicourse we will focus on the symbolic aspect, discussing what it means for students to acquire symbolic literacy. We will highlight the algebraic concepts that are essential for procedural fluency and for success in college. Common misconceptions about functions, expressions, equations, and equivalence will give us a window into student thinking. The workshop will give participants the opportunity to construct questions that probe student understanding and to develop examples that demonstrate the importance of college algebra for later coursework in the physical and social sciences.

Minicourse #9: *Beyond formulas and algorithms: Teaching a conceptual/thematics single variable calculus course*, organized by **Shahriar Shahriari**, Pomona College. Part 1: Tuesday, 10:30 a.m.–12:30 p.m.; Part 2: Thursday, 1:00 p.m.–3:00 p.m. Many students enter college having seen the main ideas of calculus and knowing how to do routine calculus problems but without a firm grasp of the concepts underlying calculus. In this hands-on course, the participants will be introduced to and have a chance to explore an honors calculus II class where the theme is approximations and one of the test cases is approximating the number of primes up to x . In this alternative calculus class the students take an active role in formulating questions and in developing the material. A thematic/conceptual approach using open-ended problems that incorporates

some unusual mathematics (in this case, analytic number theory) allows us to take advantage of the students' prior experience with calculus to get a deeper understanding of the subject.

Minicourse #10: *The ubiquitous Catalan numbers and their applications*, organized by **Thomas Koshy**, Framingham State College. Part 1: Tuesday, 1:00 p.m.–3:00 p.m.; Part 2: Thursday, 3:30 p.m.–5:30 p.m. Catalan numbers are both fascinating and ubiquitous. They pop up in quite unexpected places, such as triangulations of convex polygons, correctly parenthesized expressions, rooted trees, binary trees, full binary trees, trivalent binary trees, lattice walks, Bertrand's ballot problem, abstract algebra, linear algebra, chess, and the World Series, to name a few. Beginning with a brief history of Catalan numbers, this minicourse presents numerous examples from different areas. We will develop a number of combinatorial formulas for computing them, investigate their parity and their primality-link to Mersenne numbers, and present the various ways they can be extracted from Pascal's triangle and several Pascal-like triangles. As a bonus we will investigate tribinomial coefficients and extract Catalan numbers from them.

Minicourse #11: *Planning and teaching mathematics capstone courses for preservice, secondary school teachers*, organized by **Edward F. Aboufadel**, Grand Valley State University; **Richard Hill**, **Bruce Sagan**, **Sharon Senk**, and **Natasha Speer**, Michigan State University; and **Rebecca Walker**, Grand Valley State University. Part 1: Monday, 9:00 a.m.–11:00 a.m.; Part 2: Wednesday, 9:00 a.m.–11:00 a.m. Many mathematics departments now offer “capstone” courses for majors. This minicourse will explore the rationales for offering such courses specifically designed for preservice secondary school teachers, the different ways such courses have been designed, and the challenges instructors faced in planning and teaching such courses. In addition, materials developed by the instructors (as part of a NSF-funded project about these courses) will be shared and discussed. The presenters are teams of mathematicians and mathematics educators from two different institutions who collaborated to create and implement these courses and have many years of experience with this course.

Minicourse #12: *SNAP Math Fairs in elementary education*, organized by **Andrew C.-F. Liu**, University of Alberta, and **Tanya Thompson**, ThinkFun, Inc. Part 1: Monday, 2:15 p.m.–4:15 p.m.; Part 2: Wednesday, 2:15 p.m.–4:15 p.m. The focus of this minicourse is to examine what should be taught at a one-semester mathematics course in the faculty of science for students in elementary education, and how to teach this material. We will distribute a complete set of classroom notes, discuss the philosophy behind its construction, and offer techniques for its delivery. We will also distribute an extensive list of problems suitable for the course or for a special component of our course called the SNAP Math Fair. Participants will have opportunities to work on these problems, and solutions to some will be presented.

Minicourse #13: *Directing undergraduate research*, organized by **Aparna W. Higgins**, University of Dayton.

Part 1: Tuesday, 9:00 a.m.–11:00 a.m.; Part 2: Thursday, 9:00 a.m.–11:00 a.m. This course will cover many aspects of facilitating research by undergraduates, such as getting students involved in research, finding appropriate problems, deciding how much help to provide, and presenting and publishing the results. Similarities and differences between research conducted during summer programs and research that can be conducted during the academic year will be discussed. Although the examples used will be primarily in the area of discrete mathematics, the strategies discussed can be applied to any area of mathematics.

Minicourse #14: *Teaching a course in the history of mathematics*, organized by **V. Frederick Rickey**, U.S. Military Academy, and **Victor J. Katz**, University of the District of Columbia. Part 1: Tuesday, 1:00 p.m.–3:00 p.m.; Part 2: Thursday, 1:00 p.m.–3:00 p.m. Many schools are introducing courses in the history of mathematics and asking faculty who may never have taken such a course to teach them. This minicourse will assist those teaching history by introducing participants to numerous resources, discussing differing approaches and sample syllabi, providing suggestions for student projects and assessments, and giving those teaching such courses for the first time the confidence to master the subject themselves and to present the material to their students.

MAA Contributed Paper Sessions

The MAA Committee on Contributed Paper Sessions solicits contributed papers pertinent to the sessions listed below. Contributed paper session organizers generally limit presentations to fifteen minutes with a five-minute break between talks; in the general session talks are limited to 10 minutes with a five-minute break. Each session room contains a computer projector, an overhead projector, and one screen. Please note that the dates and times scheduled for these sessions remain tentative. Full descriptions of these sessions may be found in the August issue of the *Notices*, p. 900, or see www.maa.org/amsmtg/2109_maacontrib.html.

Assessment of Student Learning in Undergraduate Mathematics, Wednesday afternoon, **William O. Martin**, North Dakota State University, and **Bernard L. Madison**, University of Arkansas.

Building Diversity in Advanced Mathematics: Models that Work, Monday afternoon, **Patricia L. Hale**, California State Polytechnic University Pomona, and **Abbe Herzig**, University at Albany.

College Algebra: Focusing on Conceptual Understanding, Real-World Data, and Mathematical Modeling, Thursday morning, **Florence S. Gordon**, New York Institute of Technology; **Laurette B. Foster**, Prairie View A&M University; **Yajun Yang**, Farmingdale State College; and **Ray E. Collings**, Georgia Perimeter College. The session is cosponsored by CRAFTY and the Committee on Two-Year Colleges.

Cryptography for Undergraduates, Monday afternoon, **Chris Christensen**, Northern Kentucky University, and **Robert E. Lewand**, Goucher College.

Demos and Strategies with Technology that Enhance Teaching and Learning Mathematics, Tuesday morning

and afternoon. **David R. Hill**, Temple University; **Scott Greenleaf**, University of New England; **Mary L. Platt**, Salem State College; and **Lila F. Roberts**, Georgia College & State University. The session is endorsed by CTiME (Committee on Technology in Mathematics Education).

Developmental Mathematics Education: Helping Under-Prepared Students Transition to College-Level Mathematics, Thursday morning, **J. Winston Crawley** and **Kimberly Presser**, Shippensburg University.

Environmental Mathematics, Monday afternoon, **Karen Bolinger**, Clarion University, and **Ben A. Fusaro**, Florida State University. This session is sponsored by the SIGMAA Environmental Mathematics.

Guided Discovery in Mathematics Education, Thursday afternoon, **Jerome S. Epstein**, Polytechnic University. The session is sponsored by SIGMAA on Research in Undergraduate Mathematics Education (SIGMAA on RUME).

Innovative and Effective Ways to Teach Linear Algebra, Tuesday morning and afternoon, **David M. Strong**, Pepperdine University; **Gil Strang**, Massachusetts Institute of Technology; and **David C. Lay**, University of Maryland.

Mathematics and the Arts, Thursday morning and afternoon, **Douglas E. Norton**, Villanova University. The session is sponsored by the SIGMAA on Mathematics and the Arts.

Mathematics of Chemistry, Monday afternoon, **George T. Rublein**, College of William and Mary, and **Thomas R. Hagedorn**, The College of New Jersey.

Mathematics Experiences in Business, Industry, and Government, Wednesday morning, **Philip Gustafson**, Mesa State College, and **Michael Monticino**, University of North Texas. This session is sponsored by the MAA Business, Industry and Government Special Interest Group (BIG SIGMAA).

Mathematics of Games and Puzzles, Tuesday morning, **Laura A. Taalman**, James Madison University.

Mathematics and Sports, Tuesday morning, **Howard L. Penn**, U.S. Naval Academy.

Mathlets for Teaching and Learning Mathematics, Wednesday morning and afternoon, **Thomas E. Leathrum**, Jacksonville State University, **David M. Strong**, Pepperdine University, and **Joe Yanik**, Emporia University. This session is sponsored by the MAA Committee on Technology in Mathematics Education (CTiME).

Operations Research in the Undergraduate Classroom, Monday afternoon, **Gerald Kobylski** and **Josh Helms**, U.S. Military Academy, and **William Fox**, Naval Post Graduate School.

Performing Mathematics, Monday afternoon, **Timothy P. Chartier**, Davidson College, and **Karl Schaffer**, De Anza College.

Productive Roles for Math Faculty in the Professional Development of K-12 Teachers, Wednesday morning, **Dale R. Oliver**, Humboldt State University, and **Elizabeth Burroughs**, Montana State University. This session is sponsored by the MAA Committee on the Mathematical Education of Teachers (COMET).

Promoting Deep Learning for Mathematics Majors through Experiential Learning, Writing, and Reflection,

Thursday morning and afternoon, **Murphy Waggoner**, Simpson College, and **Chuck Straley**, Wheaton College.

Quantitative Literacy Across the Curriculum, Wednesday morning, **Kimberly M. Vincent**, Washington State University, and **Cinnamon Hillyard**, University of Washington, Bothell. The session is sponsored by SIGMAA-QL.

Research on the Teaching and Learning of Undergraduate Mathematics, Tuesday afternoon, **Keith H. Weber**, Rutgers University; **Michelle J. Zandieh**, Arizona State University; and **Karen A. Marrongelle**, Portland State University.

Statistics in K-12 Education: How Will It Affect Statistics at the College Level?, Wednesday morning, **Patricia B. Humphrey**, Georgia Southern University, and **Robin H. Lock**, St. Lawrence University. Presenters in the session will be considered for the SIGMAA on Statistics Education's Best Contributed Presentation Award.

Statistics Resources on the Web, Wednesday afternoon, **Dorothy W. Anway**, University of Wisconsin, Superior; **Patricia B. Humphrey**, Georgia Southern University; **Christopher J. Lacke**, Rowan University. The session is sponsored by the SIGMAA on Statistics Education. In order to be considered for this session, applicants should submit a one-page summary of the presentation to Dorothy Anway at danway@uwsuper.edu in addition to the abstract submitted through the JMM website. Presenters in the session will be considered for the SIGMAA on Statistics Education's Best Contributed Presentation Award.

Teaching Calculus in High School: Ideas that Work, Tuesday morning, **Dan Teague**, North Carolina School of Science and Mathematics, and **John F. Mahoney**, Benjamin Banneker Academic High School.

Undergraduate Mathematical Biology, Tuesday, morning and afternoon, **Timothy D. Comar**, Benedictine University, **Raina Robeva**, Sweet Briar College, and **Eric S. Marland**, Appalachian State University. This session is sponsored by the BIO SIGMAA.

General Session, Monday, Tuesday, Wednesday, and Thursday mornings and afternoons; **Sarah L. Mabrouk**, Framingham State University. Papers may be presented on any mathematical topic. Papers that fit into one of the other sessions should be sent to that organizer, not to this session. Note the restriction below that you may give only one talk in this session.

Submission Procedures for MAA Contributed Papers

Send your abstract directly to the meeting website (abstracts should not be sent to the organizer(s) who will automatically receive a copy). Please read the session descriptions thoroughly as some organizers require an additional summary of your proposal be sent to them directly. Participants may speak in at most two MAA contributed paper sessions. If your paper cannot be accommodated in the session for which it was submitted, it will be automatically considered for the general session. Speakers in the general session will be limited to one talk because of time constraints. Abstracts must be submitted by Tuesday, **September 16, 2008**.

All accepted abstracts will be published in a book available at the meeting to all registered participants. Abstracts must be submitted electronically. While no knowledge of L^AT_EX is necessary for submission, L^AT_EX and $\mathcal{A}\mathcal{M}\mathcal{S}$ -L^AT_EX are the only typesetting systems that can be used if mathematics or any text markup (e.g., accent marks) is included. The abstracts submissions page is at www.ams.org/cgi-bin/abstracts/abstract.pl. Simply select the Washington meeting, fill in the number of authors, and proceed with the step-by-step instructions. Submitters will be able to view their abstracts before final submission. Upon completion of your submission, your unique abstract number will immediately be sent to you. All questions concerning the submission of abstracts should be addressed to abs-coord@ams.org.

MAA Panels, Posters, and Other Sessions

National Science Foundation Programs Supporting Learning and Teaching in the Mathematical Sciences, Monday, 9:00 a.m.–10:20 a.m., organized by **Henry War-chall** (NSF/DMS); **Karen A. Marrongelle** (NSF/DRL); and **Daniel P. Maki**, **Ginger H. Rowell**, **Elizabeth J. Teles**, and **Lee L. Zia** (NSF/DUE). A number of NSF divisions offer a variety of grant programs that support innovations in learning and teaching in the mathematical sciences. These programs will be discussed along with examples of successful projects. Anticipated budget highlights and other new initiatives for the next fiscal year will also be presented.

Finding Your n^{th} Job (for n Greater than or Equal to 2), Monday, 9:00 a.m.–10:20 a.m., organized by **Joshua D. Laison**, Willamette University; **Aaron Luttmann**, Clarkson University; and **Raluca M. Gera**, Naval Postgraduate School. Your first job in academia is often not your last. Visiting positions, postdocs, and bad matches mean in many cases that the next step after finding a job in academia is to find another one. Many new issues arise when searching for your second, or third, or n^{th} position. This panel will focus on what makes later job searches different from your first and how best to prepare to re-enter the job market. Sponsored by the Young Mathematicians' Network.

ICME-11 in Retrospect, Monday 9:30 a.m.–10:30 a.m., organized by **Martha J. Siegel**, Towson University, and **William G. McCallum**, University of Arizona. Panelists will present the newest research in mathematics education K–20 from an international perspective.

Mathematical Sociology, Monday, 2:15 p.m.–4:15 p.m., organized by **Barbara F. Meeker** and **Joseph Auslander**, University of Maryland, College Park. Mathematical sociology is a branch of applied mathematics, in which sociologists use mathematical models (including graph theory, stochastic models, game theory, computer simulation, and differential equations) to describe sociological phenomena such as population growth and decline, income inequality, decision-making in small groups and social networks. This panel consists of presentations of examples of their own work by four members of the mathematical sociology section of the American Sociological Association. Speakers in this invited paper session include **Phillip Bonacich**,

University of California at Los Angeles, *Network implications of social exchange: An overview*; **John C. Angle**, Inequality Process Institute, *A particle system that mimics empirical income dynamics*; **Guillermina Jasso**, New York University, *Exploring polarization: The effects of general inequality and subgroup relative size on distance between subgroups and dispersion within subgroups*; and **Barbara F. Meeker**, *Mathematical models of talking in discussion groups*.

Project NExT/Young Mathematicians' Network Poster Session, Monday, 9:00 a.m.–11:00 a.m., organized by **Michael C. Axtell**, Wabash College, and **Kevin E. Charlwood**, Washburn University. This session is intended to highlight the research activities, both mathematical and pedagogical, of recent or future Ph.D.'s in mathematics and related fields. The organizers seek to provide an open venue for people who are near completion, or have finished their graduate studies in the last five years to present their work and make connections with other same-stage professionals, in much the same spirit as the YMN and Project NExT. The posterboard size will be 48" by 36"; it is best to have the posters 36" high. Posterboards and materials for posting pages on the posters will be provided on site. If you are interested in participating, submit copies of your abstract to axtellm@wabash.edu and kevin.charlwood@washburn.edu.

Starting and Maintaining an Academic Year Undergraduate Research Program, Monday, 3:50 p.m.–5:10 p.m., organized by **Michael J. Dorff**, Brigham Young University, and **Zsuzsanna Szaniszló**, Valparaiso University. There is a growing trend to have undergraduate students participate in research during the academic year. In this session several experienced professors will share their insight and ideas on the following topics: (1) Purposes for doing undergraduate research; (2) Finding students to do undergraduate research; (3) Finding research problems for undergraduates; (4) Characteristics of good undergraduate research problems; (5) Logistics of an academic year undergraduate research program; and (6) Student presentations and written report/paper. A question and answer period will conclude the session. Panelists are **Sarah Spence Adams**, Franklin W. Olin College of Engineering; **Rebecca Garcia**, Sam Houston State University; **Richard A. Gillman**, Valparaiso University; **Darren A. Narayan**, Rochester Institute of Technology; and **Daniel J. Schaal**, South Dakota State University. Sponsored by the MAA CUPM Subcommittee on Research by Undergraduates.

How to Apply for Jobs, Monday 4:30 p.m.–5:40 p.m., organized by **David C. Manderscheid**, University of Nebraska. This session is aimed at Ph.D. students and recent Ph.D.'s. An overview of the employment process will be given with ample opportunity for participants to ask questions. Questions that will be addressed include: How do you find which jobs are available? How do you choose which jobs you want to apply for? What are academic and other employers looking for in the materials that you send? What should you be doing now? How do schools conduct interviews? How can you best prepare for these interviews? How do employers choose to whom they will make offers? How do you negotiate once you

have an offer? Panelists are **Sharon M. Clarke**, Pepperdine University; **James H. Freeman**, Cornell College; **David C. Manderscheid**, plus someone from industry and possibly someone from a community college. Cosponsored by the MAA Committee on Graduate Students and the Young Mathematicians' Network.

The CNN United States of Mathematics Presidential Debate, Monday, 6:00 p.m.–7:00 p.m., coordinated by **Colin C. Adams** and **Thomas Garrity**, Williams College. In perhaps the most critical election in the history of the United States of Mathematics, two diametrically opposed candidates are vying for the presidency. Should it be the figure-eight knot, the first knot to run for the presidency and a strong supporter of the jobs program for unemployed mathematical symbols, or should it be the Euclidean algorithm, the first algorithm to run and a firm believer in cutting the equality sign tax? Don't miss the fireworks in this historic debate.

Mathematical Outreach Programs for Underrepresented Populations, Tuesday, 9:00 a.m.–11:00 a.m., organized by **Elizabeth (Betsy) G. Yanik**, Emporia State University. This poster session is designed to highlight special programs which have been developed to encourage students from underrepresented populations to maintain an interest in and commitment to succeeding in mathematics. These programs might include such activities as after school clubs, weekend activities, one-day conferences, mentoring opportunities with women professionals, summer camps, etc. In particular, recipients of Tensor and SUMMA grants will find this an ideal venue in which to share the progress of their funded projects. We encourage everyone involved with offering outreach activities to consider submitting an abstract to the session organizer, Betsy Yanik, yanikeli@emporia.edu. The deadline for submissions is **December 1, 2008**. Sponsored by the Women and Mathematics Network, a subcommittee of the MAA Committee on the Participation of Women.

Session for Chairs, Tuesday, 9:00 a.m.–10:20 a.m., organized by **Daniel P. Maki**, Indiana University, and **Catherine M. Murphy**, Purdue University Calumet. This session will focus on the suggestions contained in the MAA's Guidelines for Programs and Departments in Undergraduate Mathematical Sciences, www.maa.org/guidelines/guidelines.html. **Susan C. Geller**, Texas A&M University, chair of the MAA's Committee on the Profession, will present a summary of the Guidelines and, with the organizers of this session, will lead a discussion of areas of most interest to the attendees. Attendees are encouraged to read the Guidelines which are available at the above URL and come to the session with questions and suggestions.

Multidisciplinary Projects that Hook Those Not Usually Interested in Mathematics, Tuesday, 9:00 a.m.–10:20 a.m., organized by **Alex J. Heidenberg** and **Gerald C. Kobylski**, U.S. Military Academy at West Point. A majority of college students study mathematics courses to fulfill their degree requirements. These students, many of whom dislike or fear mathematics, generally do not see mathematics as a tool for their discipline. How do we as mathematics educators excite these students about learning mathematics? Panelists from

four different universities, **Laurie J. Heyer**, Davidson College; **Shawnee L. McMurren**, California State University, San Bernardino; **Michael Huber**, Muhlenberg College; and **Barbra S. Melendez**, U.S. Military Academy, will discuss examples of multi-disciplinary projects that they have used that require students to discover connections between mathematical concepts and disciplines in which they are interested. The panelists will specifically discuss their multi-disciplinary project, the logistics of its implementation, and an assessment regarding the effectiveness of the learning experience. Panelists will also discuss the barriers they had to overcome and provide suggestions for others who are interested in implementing these ideas at their institution.

Proposal Writing Workshop for Grant Applications to the NSF Division of Undergraduate Education, Tuesday, 10:45 a.m.–12:05 p.m., organized by **Daniel P. Maki**, **Ginger H. Rowell**, **Elizabeth J. Teles**, and **Lee L. Zia**, Division of Undergraduate Education, National Science Foundation. Presenters will describe the general NSF grant proposal process and consider particular details relevant to programs in the Division of Undergraduate Education. This interactive session will feature a series of “read/think/share/report” exercises built around a series of short excerpts from sample proposals.

Picture This! Geometry Software, Tuesday, 10:45 a.m.–12:05 p.m., organized by **Mary L. Platt**, Salem State College; **Marina Vulis**, University of New Haven; and **Lawrence Moore**, Duke University. Interested in using geometry software in the classroom? This panel will showcase four options for freeware, Geometry Explorer, GeoGebra, Google SketchUp, and Spherical Easel. Each panelist will give a brief history of the software, describe what the software is designed to do, discuss any extensions of the software beyond geometry topics, and demonstrate of the software. Time will be reserved for questions and comments from the audience. Panelists include **Michael D. Hvidsten**, Gustavus Adolphus College, *Geometry Explorer*; **David Fowler**, University of Nebraska-Lincoln, *Geogebra*; **Jon Choate**, Groton School, *Google SketchUp*; and **David Austin**, Grand Valley State University, *Spherical Easel*. The panel will be moderated by **Mary L. Platt** and **Marina Vulis**. Sponsored by the Committee on Technology in Mathematics Education.

The Intersection of the History and Philosophy of Mathematics, Tuesday, 10:45 a.m.–12:05 p.m., organized by **Bonnie Gold**, Monmouth University, and **Amy Shell-Gellasch**, Pacific Lutheran University. The best work in the philosophy of mathematics is accurately descriptive of mathematics as it is actually done. This often requires careful examination of the history of mathematics. On the other hand, the best work in the history of mathematics must include philosophical concerns related to that mathematics. This panel will discuss several cases of the history of mathematics and the philosophy of mathematics influencing each other. Panelists are **Thomas L. Drucker**, University of Wisconsin-Whitewater; **Kenneth L. Manders**, University of Pittsburgh; and **Daniel C. Sloughter**, Furman University. Cosponsored by the SIGMAA on the History

of Mathematics and the SIGMAA on the Philosophy of Mathematics.

Using Open Source Software for Undergraduate Courses, Tuesday 1:00 p.m.–2:20 p.m., organized by **Karl-Dieter Crisman**, Gordon College; **Marshall E. Hampton**, University of Minnesota, Duluth; and **David Joyner**, U.S. Naval Academy. The open source software paradigm provides freely available and freely modifiable software to anyone with an Internet connection, including much mathematics software. Some of the most familiar to the math community are L^AT_EX and the Firefox web browser, but there are many other high-quality projects as well. Two reasons this software is appropriate for use in the undergraduate curriculum are its affordability for institutions where this is a limiting factor, and the ability for advanced students with programming experience to see the inner workings of, contribute to, and improve upon software they constantly use. This panel will describe and demonstrate a variety of successful uses of open source software in contexts ranging from the introductory classroom to senior projects. Panelists are **John A. Verzani**, CUNY, *Introductory Statistics with R*; **Michael E. Gage**, University of Rochester, *WebWork*; and **David Joyner**, *Differential Equations with Sage*.

Teaching Postdocs: A Journey from Graduate School to a Position in the World of Mathematics, Tuesday, 1:00 p.m.–2:20 p.m., organized by **Stephen M. Gagola III**, University of Arizona, and **Feryal Alayont**, Grand Valley State University. Teaching postdoc programs can play an important role in helping people gain different types of experience that are relevant to their future careers. These positions are similar to postdoctoral positions in research except that the postdoctoral fellow is introduced to new teaching techniques and scholarly activities pertaining to teaching. Such programs offer postdocs an opportunity to gain experience in broad instructional and scholarly activities in an environment committed to excellence in teaching and learning. Examples of such activities are teaching across the undergraduate curriculum, participating in independent study and research projects, training teaching assistants, designing courses, grant writing, outreach activities, along with participating in research groups. The session will serve to inform the audience of the ways a teaching postdoc program can be beneficial to potential employees, math departments interested in starting such a program, and current teaching postdocs interested in how such programs have helped others in the past. Panelists are **Taliesin Sutton**, University of Arizona; **Andrew G. Bennett**, Kansas State University; **Nathan A. Carlson**, University of Arizona; **Steven J. Schlicker**, Grand Valley State University; and **Matt Salomone**, Bates College. Sponsored by the MAA Committee on Graduate Students.

Preparing Students to Communicate Mathematics, Tuesday, 1:00 p.m.–2:20 p.m., organized by **Lewis D. Ludwig**, Denison University. As research in mathematics by undergraduates becomes more and more prevalent, it is important that students effectively communicate and disseminate their ideas and findings. The participants in this panel will share their experiences and suggestions for successfully preparing students to communicate mathematics

through oral presentations, posters sessions, and articles, ranging from the classroom to organized conferences. This panel is intended for a general audience. Panelists are **Joseph A. Galian**, University of Minnesota-Duluth; **Darren A. Narayan**, Rochester Institute of Technology; and **Michael E. Orrison**, Harvey Mudd College. Cosponsored by the CUPM Subcommittee on Research by Undergraduates and Project NEXt.

Projects Supported by the NSF Division of Undergraduate Education, Tuesday, 2:00 p.m.–4:00 p.m., organized by **Jon W. Scott**, Montgomery Community College. This poster session will feature principal investigators (PIs) presenting progress and outcomes from various NSF funded projects in the Division of Undergraduate Education. The poster session format will permit ample opportunity for attendees to engage in small group discussions with the PIs and to network with each other. Information about presenters and their projects will appear in the program.

Online Homework Systems: A Pedagogical Perspective, Tuesday, 2:30 p.m.–3:50 p.m., organized by **Ellen E. Kirkman**, Wake Forest University, and **Cheryl Miner**, Nebraska Wesleyan University. This panel will consider online homework systems in courses at the calculus level and above from a pedagogical perspective. Panelists will include faculty who have experience using online homework systems and/or have done research on their effectiveness as a teaching tool. The panelists will consider questions such as: How can online systems be used to facilitate student learning? For what sorts of topics are they useful, or not useful? What are problems that one encounters in using online systems? What are the best practices in using online systems effectively? Our focus is not on the particular products and how to use them, but rather the pedagogical strengths and weaknesses that they bring to the classroom. Panelists include **Andrew G. Bennett**, Kansas State University; **Ellen E. Kirkman**; and **P. Gavin LaRose**, University of Michigan. Sponsored by the Committee on the Teaching of Undergraduate Mathematics.

Hiring, Tenuring, and Promoting Statisticians in a Mathematics or Mathematical Sciences Department, Tuesday, 2:30 p.m.–3:50 p.m., organized by **Patricia B. Humphrey**, Georgia Southern University; **Chris J. Lacke**, Rowan University; **Michael A. Posner**, Villanova University; and **Robin H. Lock**, St. Lawrence University. At many small and medium-size institutions, statistics courses are offered by departments of mathematics, mathematics and statistics, or mathematical sciences. Our hope and intention is to help educate chairs and members of mathematics departments who incorporate statisticians to the fact that these individuals may need to be treated somewhat differently than the typical mathematician. Specifically, we will address (1) Any differences in the search/hiring process. (For example, there are typically many times fewer statisticians than mathematicians in any given year. Salary surveys indicate statisticians command higher salaries. Is this a problem?) (2) What role, if any, does consulting work play in the promotion and tenure processes? (3) The assessment of the quality and value of statistical research as opposed to mathematical research. (4) Any other ways in which statisticians might be

“different” from the typical mathematician. Panelists include **Carolyn K. Cuff**, Westminster College (moderator); **Patti Frazer Lock**, St. Lawrence University; **Douglas E. Norton**, Villanova University; and **Lila F. Roberts**, Georgia College & State University and Clayton State University. Cosponsored by the SIGMAA on Statistics Education and the ASA-MAA Joint Committee on Statistics.

The Story of Maths I, Tuesday, 3:00 p.m.–4:00 p.m. This film will be introduced by **Robin Wilson**, The Open University, and covers Egyptian, Mesopotamian, and Greek mathematics. It is the first of a series of four one-hour television programs by the BBC and The Open University, filmed around the world by Marcus du Sautoy. See Wednesday at 3:00 p.m. for Part II.

Lewis Carroll in Numberland, Tuesday, 6:00 p.m.–7:30 p.m., performed by **Robin Wilson**, The Open University. This illustrated one-hour informal dramatic performance presents the mathematical life of Charles Dodgson (Lewis Carroll)—as a student, a mathematics lecturer, a champion of Euclid and a logician—in a light-hearted and informative way. What mathematics did he do? What was he interested in? How good a mathematician was he? Sponsored by the SIGMAA on the History of Mathematics.

Environmental Mathematics—Getting It in the Curriculum, Wednesday, 9:00 a.m.–10:20 a.m., organized by **Karen D. Bolinger**, Clarion State University, and **Ben A. Fusaro**, Florida State University. Introducing an unconventional subject into a mathematics program, even as a relatively harmless general education course, raises some interesting challenges. How can a course in applications offer any depth if it has no college mathematics pre-requisites? How can there be time for other than toy applications in a subject with the broad sweep of the environment? How can a faculty member be expected to cope with a subject that often requires a background in biology, chemistry, or geology? These, as well as audience-generated questions, will be addressed by the panelists **Charles R. Hadlock**, Bentley College; **Martin E. Walter**, University of Colorado at Boulder; and **Ben A. Fusaro**. The panel will be moderated by **Lee Seitelman**, United Technologies. Sponsored by the SIGMAA on Environmental Mathematics.

Placement Testing: Is It Working?, Wednesday, 9:00 a.m.–10:20 a.m., organized by **Jerry F. Dwyer**, Texas Tech University, and **Susan L. Forman**, Bronx Community College, CUNY. Panelists will describe the processes used by colleges and universities to evaluate the reliability, validity and effectiveness of their testing procedures for placing students into mathematics courses. Several perspectives will be presented including that of **Bernard L. Madison**, University of Arkansas, who is leading the development of the new MAA placement instrument. **Dan Miller** and **Kent Pearce** have developed placement tests at Milliken (private college) and Texas Tech (large public university), respectively. **Judy E. Ackerman**, Montgomery College, will present the view from a two-year college standpoint. Cosponsored by the MAA/NCTM Committee on Mutual Concerns and the MAA Committee on Articulation and Placement.

Refocusing the Courses below Calculus: The View from the Dean's Office, Wednesday, 1:00 p.m.–2:20 p.m.,

organized by **Sheldon P. Gordon**, Farmingdale State College. Each year over a million students take college algebra and related courses that typically aim to prepare students for calculus. However, these courses do not adequately serve the needs of the overwhelming majority of students; do not adequately prepare most students who go on to subsequent mathematics courses; do not serve the needs of most quantitative disciplines or today's workplace; and are not an appropriate terminal mathematics experience for most students. The MAA is addressing the challenge of changing the focus in these courses to better serve the majority of students who take them. This session will give the dean's perspective on the college algebra issues: Information about enrollment and success rates; what the dean hears about these courses from students, parents, and faculty in other disciplines; how to approach the dean to request support to change the focus in these courses; and the kinds of support a dean can provide to facilitate change. Panelists include **Bruce C. Crauder**, Oklahoma State University; **Judi H. Morrel**, Butler University; **Rhonda Mandel**, SUNY Oswego; and **Reggie K. U. Luke**, Middlesex County College.

Power of Three: How the Public, Private, and Academic Sector Need to Work Together to Restore Education in America, Wednesday, 1:00 p.m.–2:20 p.m., organized by **Jim Whaley**, president, Siemens Foundation. Education in America is on a slippery slope. According to the World Economic Forum's "Global Competitiveness Report 2006-07", the U.S. dropped from first place to sixth place in global rankings. Today, countries such as Switzerland, Finland, and Sweden have moved up significantly on the list, due in part to their top-notch education systems that focus on technology and innovation. The Power of Three panel will discuss how the public, private and academic sectors must work together to restore America's competitiveness, particularly in the field of math. Without an emphasis on math-oriented education, American youth will not have the tools and abilities to solve complex problems such as developing ground-breaking technologies to improve homeland security, modernize our infrastructures, and further usher in the digital world. Representatives from some of the country's most prestigious institutions, along with pioneering private-sector companies and government officials, will discuss innovation and what is needed from all three sectors to restore America's educational system leadership at all levels.

From the Trenches: Middle School Teachers Look at Their Training, Wednesday, 2:30 p.m.–3:50 p.m., organized by **Florence D. Fasanelli**, AAAS, and **George M. Rosenstein**, Franklin & Marshall College. Four middle school teachers representing a variety of backgrounds and school settings (for example, public, private, and charter schools; diverse educational backgrounds; diverse ethnic groups) will discuss, under the guidance of a moderator, their training as mathematics teachers and their reactions to that training. Following their discussion a person active in the training of middle school teachers will respond. Panelists are **Beth Cole**, St. Patrick Episcopal School, Georgetown; **Michelle Johncock**, Edmund Burke School, Washington DC; **Brieta Dougherty-Brill**, Maya Angelou

Public Charter School, Washington DC; and **Marcia Cole**, Clark Elementary School, Washington DC. **Hyman Bass**, University of Michigan, will moderate this panel.

The Story of Maths II, Wednesday, 3:00 p.m.–4:00 p.m. This film will be introduced by **Robin Wilson**, The Open University, and is the last of a series of four one-hour television programs by the BBC and the Open University, filmed around the world by Marcus du Sautoy. This film covers twentieth-century European and American mathematics and contains some interesting archive material.

Actuarial Education Session, Wednesday, 5:00–7:00 p.m., organized by **Robert E. Buck**, Slippery Rock University; **Bettye Anne Case**, Florida State University; **Kevin E. Charlwood**, Washburn University; and **Steve P. Paris**, Florida State University. Panelists will be local practicing actuaries, and discuss topics of import to the profession currently, with an emphasis on ties to programs in actuarial science in academia. The session is sponsored by Actuarial Educators.

Mathematics and Love: A Poetry Reading, Wednesday, 7:00 p.m.–9:00 p.m., organized by **JoAnne S. Growney**, Silver Spring, MD. Mathematicians and friends of mathematicians are invited to this reading of "mathematical" love poems. An opening portion of the poetry program features guest readers whose poems are collected in a recent anthology of poems of love and mathematics edited by Sarah Glaz and JoAnne Growney. A second portion of the program is open for all math-poets to submit work on the same theme and to read. Mathematician poets who wish to participate should submit one to three poems (not more than three pages) via email to JoAnne Growney, japoet@msn.com, by **November 14, 2008**. Each poem should involve mathematics in its structure or imagery—it might have, for example, a triangular shape or mention love's division or love's geometry. The theme, "Mathematics and Love," includes love's various categories: not only romantic love but also love of family, love of nature, spiritual love and—not to be forgotten—love of mathematics. Participating poets include **Sarah Glaz**, University of Connecticut (moderator); **JoAnne S. Growney**; **Karren LaLonde Alenier**, Bethesda, MD; **Marion Deutsche Cohen**, Arcadia University; **Emily Grosholz**, Pennsylvania State University; **Bob Grumman**, Port Charlotte, FL; **Israel Lewis**, Silver Spring, MD; **Kaz Maslanka**, D3 Industries; **Wilmer Mills**, University of North Carolina; **Wendy Mnookin**, Newton, MA; **Deanna Nikaido**, Baltimore, MD; **Elizabeth Anne Socolow**, Evergreen Forum; and **Ellen Wehle**, West Chester University. Sponsored by SIGMAA on Mathematics and the Arts.

Technology in Statistics Education, Thursday, 9:00 a.m.–10:20 a.m., organized by **Patricia B. Humphrey**, Georgia Southern University; **Chris J. Lacke**, Rowan University; and **Michael A. Posner**, Villanova University. Since the late 1980s the birth and enhancement of technological tools for teaching and performing statistical analyses has substantially changed the way introductory data analysis courses are taught. Instead of concentrating on formulas, making graphs by hand, and using tables to obtain results, many teachers of statistics let the technology do the number crunching and spend more time on analyzing

the results. A “not-so-random” survey of statisticians and teachers of statistics makes it clear that different people use different forms of technology, whether by choice or institutional mandate. In this panel session, the members seek to discuss the strengths and weaknesses of different types of technology. The various technologies will be grouped as follows: (1) graphing calculators, (2) spreadsheets, (3) Fathom, and (4) packages with user-friendly GUI’s (e.g., JMP, Minitab, SPSS). Panelists include **Patricia B. Humphrey**; **John D. McKenzie**, Babson College; **Paul L. Myers**, Woodward Academy; **Chris J. Lacke**; and **Michael A. Posner** (moderator). Sponsored by SIGMAA on Statistics Education.

Beyond T.A. Training: Calculus Curriculum Development by Graduate Teaching Assistants, Thursday, 1:00 p.m.–2:20 p.m., organized by **Timothy Lucas**, Pepperdine University, and **Joseph A. Spivey**, Wofford College. Although graduate students teach the majority of calculus sections at Duke, there is no formal framework for graduate student input in the calculus program. To that end, in the spring of 2007 a group of graduate students formed a committee to review the calculus curriculum. In response to placement issues the committee created a Calculus II course for undergraduates with AP credit, designed to encourage students to pursue mathematics. It is currently taught and maintained by graduate students. In addition two committee members created a dynamic, indexed electronic database to assist in the sharing of handouts and exams among teachers. **Jack Bookman** will discuss the teacher training program that he leads and his interactions with the graduate student projects. Three committee members will talk about the organization process, the curriculum review, developing a calculus course that emphasizes both theory and applications, and the politics involved in lobbying for a new course. Panelists include **Jack Bookman**, Duke University; **Paul L. Bendich**, Pennsylvania State University; **Abraham D. Smith**, Duke University; **Rann Bar-On**, Duke University; and **Timothy Lucas**. The session will be moderated by **Joseph A. Spivey**.

Mathematicians and Public Policy, Thursday, 2:30 p.m.–3:50 p.m., organized by **Philippe M. Tondeur**, University of Illinois at Urbana-Champaign. Panelists will include members of Congress and/or their staff and mathematicians who have worked in the public policy arena. The panel will discuss how mathematicians can serve to influence public policy on issues affecting the funding for research and education and other policy matters and how to learn about these issues.

Project NExT Sessions

Project NExT (New Experiences in Teaching) is the MAA’s professional development program for new and recent Ph.D.’s in the mathematical sciences. Each year, about sixty new faculty are selected as Project NExT Fellows; application materials for 2009–2010 are available at the Project NExT booth in the exhibit area.

Project NExT has organized several sessions to which it invites all meeting participants. The following sessions were organized by the “middle dots” Project NExT Fellows

to address the concerns of faculty who have four to ten years of teaching experience.

The Art of Test-Making and Alternative Assessments, Monday, 2:00 p.m.–3:15 p.m., organized by **Suzanne Caulk**, Regis University; **Gertrud L. Kraut**, Southern Virginia University; **Laurie Lenz**, Marymount University; and **Beth Schaubroeck**, United States Air Force Academy. The panelists will discuss test design including how to address different learning styles and how to make tests a learning experience. They will discuss examples of good tests and of tests that could be improved. The panelists will also explore alternative forms of assessment. Audience participation will be encouraged and all are invited to bring their own samples of tests to share. This session was organized by the 1994–2004 Project NExT Fellows to address issues of concern to faculty who have four to ten years of teaching experience. Panelists include **David M. Bressoud**, Macalester College; **Richard J. Cleary**, Bentley College; **Gary Hagerty**, Black Hills State University; and **Barbara E. Reynolds**, SDS, Cardinal Stritch University. All Meetings participants are invited to attend.

Establishing Your Identity as a Post-Tenure Professor, Tuesday, 1:00 p.m.–2:15 p.m., organized by **Linda Braddy**, East Central University; **Sharon M. Frechette**, College of the Holy Cross, and **Jennifer McLoud-Mann**, University of Texas at Tyler. The panelists will discuss the academic endeavors in which they have been engaged since receiving tenure. Topics will include administrative duties, undergraduate research, educational outreach, grant-funded projects (conferences, workshops, REUs), writing and publishing, and more. The panelists’ remarks will be followed by questions from the audience. This session was organized by the 1994–2004 Project NExT Fellows to address issues of concern to faculty who have four to ten years of teaching experience. The panelists are **Colin L. Adams**, Williams College; **Jaimie Hebert**, Sam Houston State University; **Catherine A. Roberts**, College of the Holy Cross; **Charlotte K. Simmons**, University of Central Oklahoma; and **Judy L. Walker**, University of Nebraska–Lincoln.

Designing and Teaching a Geometry Course for Pre-service Secondary Mathematics Teachers, Thursday, 9:30 a.m.–10:45 a.m., organized by **James E. Hamblin**, Shippensburg University; **William O. Martin**, North Dakota State University; and **Todd D. Oberg**, Illinois College. Preservice secondary mathematics teachers are expected to help their future students comprehend how geometry provides a way to represent and understand the world. How can undergraduate geometry courses prepare these students for this task? What geometric topics help our students develop a deep understanding of the material in order to promote geometric learning in the classroom? What techniques used in undergraduate geometry courses will help students in their future teaching careers? Panelists are **William E. Fenton**, Bellarmine University; **Angela M. Hodge**, North Dakota State University; **Barbara E. Reynolds**, Cardinal Stritch University; and **Thomas Q. Sibley**, St. John’s University.

Special Interest Groups of the MAA (SIGMAAs)

SIGMAAs will be hosting a number of interesting activities, sessions, and guest lecturers. There are currently nine such focus groups offering members opportunities to interact not only at meetings but throughout the year via newsletters and email-based communications. For more information visit www.maa.org/SIGMAA/SIGMAA.html.

SIGMAA Officers Meeting, Tuesday 10:00 a.m.–11:30 a.m., chaired by **Amy Shell-Gellasch**, Pacific Lutheran University.

SIGMAA on Mathematical and Computational Biology

Undergraduate Mathematical Biology, Tuesday, morning and afternoon (see the “MAA Contributed Paper Sessions” section).

SIGMAA on Business, Industry, and Government

Mathematics Experiences in Business, Industry, and Government, Wednesday morning (see the “MAA Contributed Paper Sessions” section).

Guest Lecture, Wednesday, 5:00 p.m.–6:00 p.m., by **Dan Kalman**, American University, who will speak on *Calculus in Orbit*.

SIGMAA on Environmental Mathematics

Environmental Mathematics, Monday afternoon (see the “MAA Contributed Paper Sessions” section).

Guest Lecture and Business Meeting, Monday, 5:30 p.m.–7:30 p.m., speaker and title to be announced.

Environmental Mathematics—Getting It in the Curriculum, Wednesday, 9:00 a.m.–10:20 a.m. (see the “MAA Panels, Posters, and Other Sessions” section).

Bus trip to the Conservatory of the U.S. Botanical Gardens, Thursday, 1:30 p.m.–4:30 p.m.

SIGMAA on the History of Mathematics

Business Meeting and Reception, Monday, 5:30 p.m.–6:30 p.m.

Guest Lecture, Monday, 6:30 p.m.–7:30 p.m., by **Chandler Davis**, University of Toronto, *Title to be announced*. Cosponsored by the SIGMAA on the Philosophy of Mathematics.

The Intersection of the History and Philosophy of Mathematics, Tuesday, 10:45 a.m. (see the “MAA Panels, Posters and Other Sessions” section).

Lewis Carroll in Numberland, Tuesday, 6:00 p.m. (see the “MAA Panels and Poster Sessions” section).

SIGMAA on Mathematics and the Arts

Art Exhibition in the Exhibit Hall, Monday–Thursday

Business Meeting, Tuesday, 7:00 p.m.–8:00 p.m.

Mathematics and Love: A Poetry Reading, Wednesday, 7:00 p.m. (see the “MAA Panels and Poster Sessions” section).

Mathematics and the Arts, Thursday morning and afternoon (see the “MAA Contributed Paper Sessions” section).

SIGMAA on the Philosophy of Mathematics

The Intersection of the History and Philosophy of Mathematics, Tuesday, 10:45 a.m.–12:05 p.m. (See the “MAA Panels, Posters and Other Sessions” section).

Guest Lecture, Monday, 6:30 p.m.–7:30 p.m., by **Chandler Davis**, University of Toronto, *Title to be announced*. Cosponsored by the SIGMAA on the History of Mathematics.

Business Meeting and Reception, Tuesday, 5:45 p.m.–6:45 p.m.

SIGMAA on Quantitative Literacy

Business Meeting, Tuesday, 5:45 p.m.–7:15 p.m.

Quantitative Literacy Across the Curriculum, Wednesday morning (see the “MAA Contributed Paper Sessions” section).

SIGMAA on Research in Undergraduate Mathematics

Guided Discovery in Mathematics Education, Thursday (see the “MAA Contributed Paper Sessions” section).

SIGMAA on Statistics Education

Hiring, Tenuring, and Promoting Statisticians in a Mathematics or Mathematical Sciences Department, Tuesday, 2:30 p.m.–3:50 p.m., and

Technology in Statistics Education, Thursday, 9:00 a.m.–10:20 a.m. (see the “MAA Panels, Posters and Other Sessions” section).

Statistics in K–12 Education: How Will it Affect Statistics at the College Level?, Wednesday morning, and

Statistics Resources on the Web, Wednesday afternoon (see the “MAA Contributed Paper Sessions” section).

SIGMAA on the Teaching of Advanced High School Mathematics

Teaching Calculus in High School: Ideas that Work, Tuesday morning (See the “MAA Contributed Paper Sessions” section).

MAA Sessions for Students

Graduate School: Choosing One, Getting In, Staying In, Monday, 2:15 p.m.–3:35 p.m., organized by **Kristi Meyer**, Wisconsin Lutheran College; **Vanessa Garcia**, Texas State University–San Marcos; and **Alan Alewine**, McKendree University. With so much information about graduate schools available how do you narrow down your list of schools to apply to? How do you get into a program? How do you successfully complete a program? Our panelists will discuss these and other important issues for those choosing a graduate school or considering switching graduate programs. Cosponsored by the Young Mathematicians’ Network.

Career Options for Undergraduate Mathematics Majors, Tuesday, 9:00 a.m.–10:20 a.m., organized by **Vanessa Garcia**, Texas State University–San Marcos, and **Dov N. Chelst**, ICMA. There is a vast amount of options available for students in today’s global market. A degree in mathematics continues to be a desirable asset, yet a common question for students to ask is “what options are available for someone with a math degree?” This panel showcases

several options for career paths for students with an undergraduate degree in mathematics. A variety of panelists will speak on their own experiences of finding a job and answer questions from the audience. Cosponsored by the Young Mathematicians' Network.

Grad School Fair, Wednesday, 8:30 a.m.–10:00 a.m. Here is the opportunity for undergrads to meet representatives from mathematical sciences graduate programs from universities all over the country. January is a great time for juniors to learn more, and college seniors may still be able to refine their search. This is your chance for one-stop shopping in the graduate school market. At last year's meeting about 300 students met with representatives from 45 graduate programs. If your school has a graduate program and you are interested in participating, a table will be provided for your posters and printed materials for US\$50 (registration for this event must be made by a person already registered for the JMM), and you are welcome to personally speak to interested students. Complimentary coffee will be served. Cosponsored by the AMS and MAA.

MAA Lecture for Students, Wednesday, 1:00 p.m.–1:50 p.m., will be given by **Nathaniel Dean**, Texas State University, San Marcos, on *Some elementary problems that remain unsolved*.

Undergraduate Student Poster Session, Wednesday, 4:00 p.m.–5:30 p.m., organized by **Diana M. Thomas**, Montclair State University. The session is reserved to undergraduates and first-year graduate students submitting posters on work done while undergraduates. Abstracts are accepted on a first come basis. Space is limited and students are encouraged to apply early. Beginning August 1, 2008, students can submit abstracts online at www.maa.org/students/undergrad/poster09.htm. Examples of poster topics include a new result, a different proof of a known theorem, an innovative solution of a Putnam problem, a new mathematical model, or method of solution of an applied problem. Purely expository posters cannot be accepted. Prizes will be awarded to the top rated posters with money provided by the AMS, MAA, AWM, CUR, PME and by the Moore Foundation. Trifold, self-standing 48" by 36" tabletop posterboards will be provided. Additional material or equipment is the responsibility of the presenters. Questions regarding this session should be directed to Diana Thomas at thomasdia@mail.montclair.edu. The deadline for proposals is **November 7, 2008**. Cosponsored by the MAA-CUPM Subcommittee on Undergraduate Research and the MAA Committee on Undergraduate Student Activities and Chapters (CUSAC).

Also see the "Social Events" section for the open hours of the **Student Hospitality Center** and the **Reception for Undergraduates**. There are several sessions of general interest

MAA Short Course

This two-day Short Course on *Data Mining and New Trends in Teaching Statistics* organized by **Richard D. De Veaux**, Williams College, and will take place on Saturday and Sunday, January 3 and 4.

There are two main themes. It will serve as a practical introduction to and an overview of data mining. It will also highlight some of the ways that technology has changed the way we practice and teach statistics.

Forty years ago the emphasis in introductory statistics was on formulas and their calculation. For example students were taught the formula for standard deviation and learned alternatives for avoiding rounding errors and short cuts for grouped data. Technology has made much of that subject matter irrelevant and obsolete. Today, we have been freed by technology to focus on the concepts of data analysis and inference. Where is this trend taking us? Computational methods in statistics are rendering some of our methods obsolete as well. How much should be introduced in the introductory statistics course?

Data mining is the exploration and analysis of large data sets by automatic or semiautomatic means with the purpose of discovering meaningful patterns. The knowledge learned from these patterns can then be used for decision making via a process known as "knowledge discovery". Much of exploratory data analysis and inferential statistics concern the same type of problems, so what is different about data mining? What is similar? In the course I will attempt to answer these questions by providing a broad survey of the problems that motivate data mining and the approaches that are used to solve them.

The course will start with an overview of how the introductory statistics course is taught today and what the main concepts are. Examples of how technology enables us to get to the heart of the subject early will be given. Some elementary modeling concepts will be reviewed before we embark on an introduction to data mining. Then, we will use case studies and real data sets to illustrate many of the algorithms used in data mining. The applications will come from a wide variety of industries and include applications from my personal experiences as a consultant for companies that deal with such topics as financial services, chemical processing, pharmaceuticals, and insurance.

There are separate registration fees to participate. See the fee schedule on the registration form at the back of this issue or visit www.ams.org/amsmtgs/2110_reg.html.

Other MAA Events

Board of Governors, Sunday, 9:00 a.m.–5:00 p.m.

Section Officers, Monday, 2:30 p.m.–5:00 p.m.

Joint PME and MAA Student Chapter Advisors' Meeting, Monday, 3:00 p.m.–3:50 p.m.

Business Meeting, Thursday, 11:10 a.m.–11:40 a.m., organized by MAA Secretary, **Martha J. Siegel**, Towson University, and moderated by MAA President **Joseph A. Gallian**, University of Minnesota-Duluth.

Department Liaisons Meeting, day and time to be determined.

Minority Chairs Meeting, day and time to be determined.

See the listings for various receptions in the "Social Events" section.

Activities of Other Organizations

This section includes scientific sessions. Several organizations or special groups are having receptions or other social events. Please see the "Social Events" section of this announcement for details.

Association for Symbolic Logic (ASL)

This **two-day program on Tuesday and Wednesday** will include sessions of contributed papers as well as Invited Addresses by **Barbara Csima**, University of Waterloo; **Inessa Epstein**, California Institute of Technology; **Rahim Moosa**, University of Waterloo; **Christian Rosendal**, University of Illinois at Urbana-Champaign; **Albert Visser**, Utrecht University; and **Jouko Väänänen**, University of Amsterdam.

See also the Special Sessions cosponsored by the ASL on *Logic and Dynamical Systems* on Monday and Tuesday, and *Model Theoretic Methods in Finite Combinatorics* on Tuesday and Wednesday in the "AMS Special Sessions" listings.

Association for Women in Mathematics (AWM)

Thirtieth Annual Emmy Noether Lecture, Tuesday, 10:05 a.m., will be given by **Fan Chung Graham**, University of California San Diego, *The geometry of graphs*. A luncheon will be given in her honor; see the "Social Events" section for details.

What and Where will the Jobs Be? Trends in Mathematics and in Employment, Monday, 2:15 p.m.–3:40 p.m., organized by **Cathy B. Kessel**, Mathematics Education Consultant. Panelists are **Ellen E. Kirkman**, Wake Forest University, and **Mary E. Morley**, Ocean County College. Just before the panel discussion, AWM will recognize the honorees for the Alice T. Schafer Prize for Excellence in Mathematics by an Undergraduate Woman and the Louise Hay Award for Contributions to Mathematics Education. Note that formal prizewinner announcements are made at the Joint Prize Session on Tuesday afternoon.

Business Meeting, Monday, 3:45 p.m.–4:15 p.m.

Workshop, Thursday, 8:20 a.m.–4:20 p.m. With funding from the Office of Naval Research and the National Security Agency, AWM will conduct its workshop for women graduate students and women who have received the Ph.D. within the last five years. Twenty women mathematicians are selected in advance of this workshop to present their research; graduate students will present posters, and the recent Ph.D.'s will give 20-minute talks. The workshop includes a panel discussion at 1:00 p.m. on *What is the right job for me?*, moderated by **Gail D. L. Ratcliff**, East Carolina University, with panelists **Deanna Haunsperger**, Carleton College; **Magnhild Lien**, California State University Northridge; **David L. Manderscheid**, University of Nebraska-Lincoln; and **Carol S. Wood**, Wesleyan University. All mathematicians (female and male) are invited to attend the entire program. Departments are urged to help graduate students and recent Ph.D.'s who do not receive funding to obtain some institutional support to attend the workshop and other meeting sessions. The deadline for applications for presenting and funding has expired.

Updated information about the Workshop is available at www.awm-math.org/workshops.html. AWM seeks volunteers to lead discussion groups and to act as mentors for workshop participants. If you are interested, please contact the AWM office; inquiries regarding future workshops may be made to the office at awm@awm-math.edu.

Reception, Monday, 9:30 p.m.–11:00 p.m. See the listing in the "Social Events" section of this announcement.

National Association of Mathematicians (NAM)
Granville-Brown-Haynes Session of Presentations by Recent Doctoral Recipients in the Mathematical Sciences, Wednesday, 2:15 p.m.–4:00 p.m.

Cox-Talbot Address, to be given Wednesday after the banquet; speaker and title to be announced.

Panel Discussion, Thursday, 9:00 a.m.–9:50 a.m.

Business Meeting, Thursday, 10:00 a.m.–10:50 a.m.

Claytor-Woodard Lecture: Thursday, 1:00 p.m., speaker and title to be announced.

See details about the banquet on Tuesday in the "Social Events" section.

National Science Foundation (NSF)

The NSF will be represented at a booth in the exhibit area. NSF staff members will be available to provide counsel and information on NSF programs of interest to mathematicians. The booth is open the same days and hours as the exhibits. Times that staff will be available will be posted at the booth.

Pi Mu Epsilon (PME)

Council Meeting, Wednesday, 8:00 a.m.–11:00 a.m.

Rocky Mountain Mathematics Consortium (RMMC)

Board of Directors Meeting, Wednesday, 2:15 p.m.–4:10 p.m.

Society for Industrial and Applied Mathematics (SIAM)

This program consists of an Invited Address at 11:10 a.m. on Tuesday by **Kenneth M. Golden**, University of Utah, *Mathematics of sea ice to help predict climate change*, and a series of Minisymposia scheduled Monday through Thursday.

Young Mathematicians Network (YMN)

Concerns of Young Mathematicians: A Town Meeting, Tuesday, 7:30 p.m.–8:30 p.m., organized by **Sarah Ann Stewart**, Belmont University, and **Joshua D. Laison**, Willamette University. This panel discussion will focus on the current primary concerns of young mathematicians, from undergraduates to newly-tenured professors, with emphasis on audience participation.

Also see details about other sessions cosponsored by the YMN under these headings: *MAA Panels, Posters, and Other Sessions (Finding Your nth Job...*, Monday at 9:00 a.m.; **Project NExT-YMN Poster Session**, Monday at 2:15 p.m.; **How to Apply for Jobs**, Monday at 4:30 p.m.;) and *MAA Sessions for Students (Graduate School: Choosing One...*, Monday at 2:15 p.m.; **Career Options**

for **Undergraduate Mathematics Majors**, Tuesday at 9:00 a.m.).

Others

Mathematical Art Exhibition, organized by **Robert Fathauer**, Tessellations Company, **Nathaniel A. Friedman**, ISAMA and SUNY Albany, and **Anne Burns**, Long Island University, C. W. Post University. A popular feature at the last Joint Mathematics Meetings this exhibition provides a break in your day. On display are works in various media by artists who are inspired by mathematics and by mathematicians who use visual art to express their findings. Fractals, symmetry, and tiling are some of the ideas at play here. Don't miss this unique opportunity for a different perspective on mathematics. The exhibition will be open during the regular exhibit hours.

Summer Program for Women in Mathematics (SPWM) Reunion, Tuesday 1:00 p.m.–4:00 p.m., organized by **Murli M. Gupta**, George Washington University. SPWM participants will describe their experiences from past programs.

Social Events

All events listed are open to all registered participants. It is strongly recommended that for any event requiring a ticket, tickets should be purchased through advance registration. Only a very limited number of tickets, if any, will be available for sale on site. If you must cancel your participation in a ticketed event, you may request a 50% refund by returning your ticket(s) to the Mathematics Meetings Service Bureau (MMSB) **by December 22**. After that date no refunds can be made. Special meals are available at banquets upon advance request, but this must be indicated on the Advance Registration/Housing Form.

AMS-MAA-SIAM Joint Reception, Thursday, 7:00 p.m.–7:45 p.m. All are cordially invited to this reception immediately following the AMS-MAA-SIAM Gerald and Judith Porter Public Lecture and immediately preceding the AMS Banquet.

AMS Banquet: As a fitting culmination to the meetings, the AMS banquet provides an excellent opportunity to socialize with fellow participants in a relaxed atmosphere. The participant who has been a member of the Society for the greatest number of years will be recognized and will receive a special award. The banquet will be held on Thursday, with dinner served at 7:45 p.m. Tickets are US\$52.50 including tax and gratuity. Please note there is a Joint AMS-MAA-SIAM Reception held immediately preceding the banquet beginning at 7:00 p.m.

Association of Christians in the Mathematical Sciences (ACMS) Reception and Banquet, Tuesday, 6:00 p.m.–10:00 p.m. This annual dinner at 6:30 p.m. is preceded by a reception and will be followed by an after-dinner talk. Tickets must be ordered by **November 30**; see www.acmsonline.org for details.

Association of Lesbian, Gay, Bisexual, and Transgendered Mathematicians Reception, Monday, 5:45 p.m.–7:00 p.m. Everyone is welcome to attend this open reception

cosponsored by NOGLSTP. Come and meet some old friends and allies and make new friends, too.

AWM Reception: There is an open reception on Monday at 9:30 p.m. after the AMS Gibbs Lecture. This has been a popular, well-attended event in the past.

AWM Luncheon to honor Noether Lecturer, Fan Chung Graham, Tuesday. Those interested may email awm@awm-math.org; a sign-up sheet for those interested will also be located at the AWM table in the exhibit area and also at the AWM panel discussion and Business Meeting on Monday afternoon.

Budapest Semesters in Mathematics Reunion, Wednesday, 6:30 p.m.–8:30 p.m. All alumni, family, and spouses are invited.

University of Chicago Mathematics Alumni Reception, Tuesday, 6:00 p.m.–7:00 p.m.

Reception for Graduate Students and First-Time Participants, Monday, 5:30 p.m.–6:30 p.m. The AMS and the MAA cosponsor this social hour. Graduate students and first-timers are especially encouraged to come and meet some old-timers to pick up a few tips on how to survive the environment of a large meeting. Refreshments will be served.

Hawkes Learning Systems Courseware Presentation, Wednesday, 6:00 p.m.–7:00 p.m. All participants are invited to a presentation on *Improving Student Performance with Mastery-Based Software*. The demonstration of this interactive math software system will illustrate how it motivates students to succeed and promotes grade improvement. Students learn more efficiently and effectively through tutorials, unlimited practice, mastery-based homework, and error-specific feedback.

University of Kansas Alumni and Friends Reception, Wednesday, 5:45 p.m.–7:00 p.m. All friends and graduates of the University of Kansas Mathematics Department are invited to attend.

University of Illinois at Urbana-Champaign Department of Mathematics Alumni Reception, Wednesday, 5:30 p.m.–7:30 p.m. Everyone ever connected with the department is encouraged to get together for conversation and to hear about mathematics at the University of Illinois. Please see www.math.uiuc.edu/jmm-reception.html.

University of Iowa Mathematics Department Reception, Tuesday, 5:45 p.m.–7:00 p.m.

Knitting Circle, Tuesday, 8:15 p.m.–9:45 p.m. Bring a project (knitting/crochet/tatting/beading/etc.) and chat with other mathematical crafters!

University of Maryland Mathematics Department Reception, Tuesday, 6:00 p.m.–8:00 p.m. All alumni, faculty, students, and friends of the department are welcome.

MAA-Project NExT Reception, Wednesday, 8:30 p.m.–10:30 p.m., organized by **T. Christine Stevens**, St. Louis University, **Joseph A. Gallian**, University of Minnesota-Duluth, and **Aparna W. Higgins**, University of Dayton. All Project NExT Fellows, consultants, and other friends of Project NExT are invited.

MAA Two-Year College Reception, Tuesday, 5:45 p.m.–7:00 p.m., is open to all meeting participants, particularly two-year faculty members. This is a great opportunity to meet old friends and make some new ones. There will be

hot and cold refreshments and a cash bar. Sponsored by Pearson Education.

Mathematical Reviews Reception, Wednesday, 6:00 p.m.–7:00 p.m. All friends of *Mathematical Reviews* (MR) are invited to join reviewers and MR editors and staff (past and present) for a reception in honor of all the efforts that go into the creation and publication of the *Mathematical Reviews* database. Refreshments will be served.

Mathematical Institutes Open House, Monday, 5:30 p.m.–8:00 p.m. Participants are warmly invited to attend this open house cosponsored by several North American mathematical institutes. Come find out about the latest activities and programs at each of the institutes that may be suited to your own research interests.

MER Banquet: The Mathematicians and Education Reform (MER) Forum welcomes all mathematicians who are interested in precollege, undergraduate, and/or graduate educational reform to attend the MER banquet on Wednesday evening. This is an opportunity to make or renew contacts with other mathematicians who are involved in education projects and to engage in lively conversation about educational issues. The after-dinner discussion is an open forum for participants to voice their impressions, observations, and analyses of the current education scene. There will be a cash bar beginning at 6:30 p.m. Dinner will be served at 7:30 p.m. Tickets are US\$53 each, including tax and gratuity.

Millersville University Alumni Association, Wednesday, 7:00 p.m.–9:00 p.m. All alumni and friends are invited to attend; light refreshments will be provided.

NAM Banquet, Wednesday, 6:00 p.m.–8:40 p.m. The National Association of Mathematicians will host a banquet on Tuesday evening. A cash bar reception will be held at 6:00 p.m., and dinner will be served at 6:30 p.m. Tickets are US\$52 each, including tax and gratuity.

National Association of Math Circles Reception and Meeting, Wednesday, 7:00 p.m.–9:00 p.m. All current and potential Math Circles (and similar programs) organizers are invited to the second annual NAMC Reception. The newly appointed NAMC Board will present the NAMC mission and program structure and information about upcoming Math Circle projects including the mathcircles.org Circle-in-A-Box wiki.

New Mexico State University Mathematics Association Reception, Tuesday, 5:45 p.m.–7:15 p.m. Current and former students and faculty as well as other friends of the New Mexico State University Department of Mathematical Sciences are cordially invited to this reception.

The Ohio State University Friends and Alumni Reception, Tuesday, 6:00 p.m.–8:00 p.m.

Luncheon in Honor of Retiring MAA Associate Secretary James Tattersall, Thursday, 12:05 a.m.–1:30 p.m. For ten years Jim has served the MAA community with flair and aplomb (and that bow tie!) as associate secretary, overseeing its extensive JMM and Mathfest programs. Join your colleagues in wishing Jim well in the next chapter of his life. Tickets are US\$36.00 each, including tax and gratuity.

University of Oregon Mathematics Department Reception, Monday, 6:00 p.m.–7:30 p.m. All alumni and friends are welcome.

Student Hospitality Center, Monday–Wednesday, 9:00 a.m.–5:00 p.m., and Thursday, 9:00 a.m.–3:00 p.m., organized by **Richard** and **Araceli Neal**, American Society for the Communication of Mathematics.

Reception for Undergraduates, Monday, 4:00 p.m.–5:00 p.m.

Other Events of Interest

AMS Information Booth: All meetings participants are invited to visit the AMS Information Booth during the meetings. A special gift will be available for participants, compliments of the AMS. AMS staff will be at the booth to answer questions about AMS programs and membership.

Book Sales and Exhibits: All participants are encouraged to visit the book, education media, and software exhibits from 12:15 p.m.–5:30 p.m. on Monday, 9:30 a.m.–5:30 p.m. on Tuesday and Wednesday, and 9:00 a.m.–noon on Thursday. Books published by the AMS and MAA will be sold at discounted prices somewhat below the cost for the same books purchased by mail. These discounts will be available only to registered participants wearing the official meetings badge. Participants visiting the exhibits are required to display their meetings badge in order to enter the exhibit area.

The AMS and the MAA cordially invite all registered participants to enjoy complimentary tea and coffee while perusing the associations' booths.

Mathematical Sciences Employment Center: Those wishing to participate in the Mathematical Sciences Employment Center should read carefully the important article about the center beginning on page ??? in this issue of *Notices* or at www.ams.org/emp-reg/.

Networking Opportunities: There are many opportunities to meet new friends and greet old acquaintances in addition to the vast array of scientific sessions offered at these meetings. These opportunities are listed on the newcomers page at www.ams.org/amsmtgs/2110_newcomers.html. Newcomers may want to investigate the many receptions listed in the “Social Events” section, the Student Hospitality Center, and the Employment Center. On site a Networking Center featuring casual seating and lists of registered participants sorted by school and math subject classification will be available for your perusal. This is a great place to relax between sessions and forge new friendships.

Registering in Advance and Obtaining Hotel Accommodations

The AMS and MAA make every effort to keep participant expenses at meetings and registration fees for meetings as low as possible. We work hard to negotiate the best hotel rates and to make the best use of your registration dollars to keep the meetings affordable for you. The AMS and the MAA encourage all participants to register for

the meeting. When you pay the registration fee, you are helping to support a wide range of activities associated with planning, organizing, and running a major meeting of this size.

How to Register in Advance: The importance of advance registration cannot be overemphasized. Advance registration fees are considerably lower than the fees that will be charged for registration at the meetings. Participants registering by November 14 may receive their badges, programs, and tickets (where applicable) in advance by mail approximately three weeks before the meetings. Those who do not want their materials mailed should check the box on the form. Because of delays that occur in U.S. mail to Canada, advance registrants from Canada must pick up their materials at the meetings. Because of delays that occur in U.S. mail to overseas, materials are never mailed overseas. There will be a special Registration Assistance Desk at the Joint Meetings to assist individuals who either did not receive this mailing or who have a problem with their registration. Please note that a US\$5 replacement fee will be charged for programs and badges that are mailed but not taken to Washington DC. Acknowledgments of registrations will be sent by email to the email addresses given on the Advance Registration/Housing Form. If you do not wish your registration acknowledged by email, please mark the appropriate box on the form.

Internet Advance Registration: This service is available for advance registration and hotel reservations at www.ams.org/amsmtgs/2110_reg.html. VISA, MasterCard, Discover, and American Express are the only methods of payment which are accepted for Internet advance registration, and charges to credit cards will be made in U.S. funds. All Internet advance registrants will receive acknowledgment of payment upon submission of this form.

Cancellation Policy: Those who cancel their advance registration for the meetings, MAA Minicourses, or Short Courses by December 30 (the deadline for refunds for banquet tickets is December 22) will receive a 50% refund of fees paid. No refunds will be issued after this date.

Joint Mathematics Meetings Registration Fees

by Dec. 15 at meeting

Member of AMS, ASL, Canadian Mathematical Society, MAA, SIAM	US\$216	US\$282
Emeritus Member of AMS, MAA; Unemployed; Librarian; High School Teacher;		
Developing Countries Special Rate	43	53
Graduate Student	44	54
Undergraduate Student	30	40
Temporarily Employed	174	202
Nonmember	335	435
High School Student	5	10
One-Day Member of AMS, ASL, CMS, MAA, SIAM	N/A	154
One-Day Nonmember	N/A	240
Nonmathematician Guest	15	15
MAA Minicourses	60	60*
*if space is available		

Grad Student Fair (table/posterboard/electricity)	US\$50	N/A
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Employment Center (please note that earlier deadlines apply for inclusion in the *Winter Lists*; see the full article)

Employer—Quiet area table (up to two interviewers)	US\$250	US\$330
Employer—Additional quiet area table	100	N/A
Employer—Committee table (three–six interviewers)	350	425
Employer—Curtained booth (one–three interviewers)	425	N/A
Applicant	25	40

AMS Short Course

Member of AMS or MAA	US\$96	US\$130
Nonmember	130	160
Student/Unemployed/Emeritus	44	65

MAA Short Course

MAA or AMS Member	\$125	\$140
Nonmember	175	190
Student/Unemployed/Emeritus	50	60

Full-Time Students: Those currently working toward a degree or diploma. Students are asked to determine whether their status can be described as graduate (working toward a degree beyond the bachelor's), undergraduate (working toward a bachelor's degree), or high school (working toward a high school diploma) and to mark the Advance Registration/Housing Form accordingly.

Emeritus: Any person who has been a member of the AMS or MAA for twenty years or more and who retired because of age or long-term disability from his or her latest position.

Librarian: Any librarian who is not a professional mathematician.

Unemployed: Any person currently unemployed, actively seeking employment, and not a student. It is not intended to include any person who has voluntarily resigned or retired from his or her latest position.

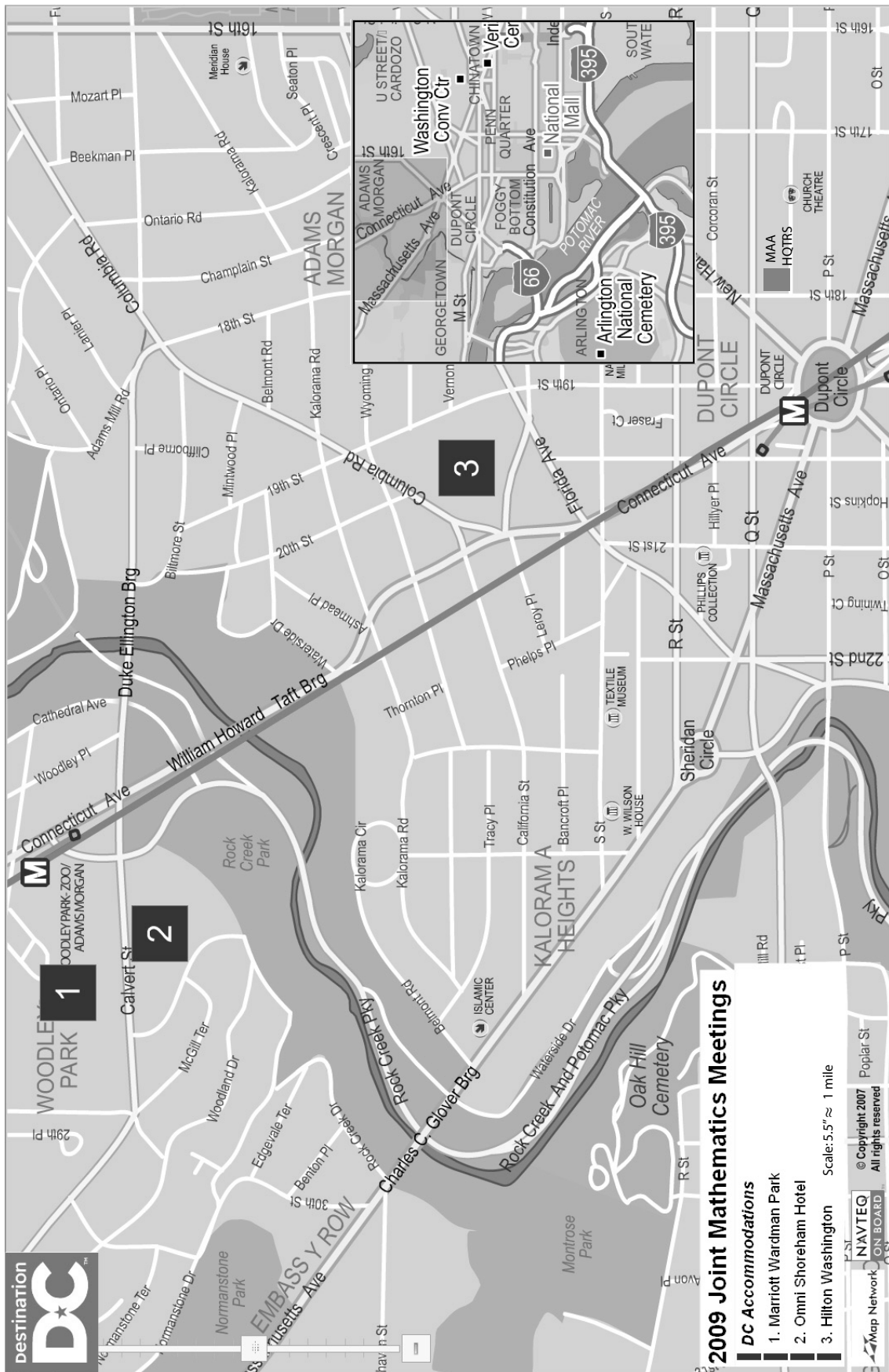
Developing Country Participant: Any person employed in developing countries where salary levels are radically noncommensurate with those in the U.S.

Temporarily Employed: Any person currently employed but who will become unemployed by June 1, 2009, and who is actively seeking employment.

Nonmathematician Guest: Any family member or friend who is not a mathematician and who is accompanied by a participant in the meetings. These official guests will receive a badge and may attend all sessions and the exhibits.

Participants Who Are Not Members of the AMS and register for the meetings as a nonmember will receive mailings after the meetings are over with a special membership offer.

Advance registration and on-site registration fees only partially cover the expenses of holding meetings. All mathematicians who wish to attend sessions are expected to register and should be prepared to show their badges if so requested. Badges are required to enter the exhibit



How to Obtain Hotel Accommodations – 2009 JMM

Complimentary Room Drawing:

Anyone who reserves a room at the Marriott, Omni or Hilton through the MMSB by **October 31** is eligible for a drawing to have their room reservation made complimentary. See *How to Register in Advance* for details.

Deadlines:

- Complimentary Room Drawing: **October 31**
- Reservations through MMSB: **November 14**
- Changes/Cancellations through MMSB: **December 5**

Rates:

- Subject to a 14.5% state and local tax
- Only certified students or unemployed mathematicians qualify for student rates.
- See Advanced Registration/Housing (ARH) Form for detailed breakdown of rates for each hotel.

Guarantee Requirements:

- One night deposit by check, or
- Credit cards: Visa, MC, AMEX, Diners, and Discover.
- Hilton charges credit cards one night's deposit immediately.

Cancellation Policies:

- **Marriott:** 7 days before arrival
- **Omni:** 48 hours before arrival
- **Hilton:** 72 hours before arrival; US \$50 early departure fee

General Instructions:

Participants must register in advance in order to obtain hotel accommodations through the Mathematics Meetings Service Bureau (MMSB). Special rates have been negotiated exclusively for this meeting at the following hotels. Reservations must be made through the MMSB to receive these rates. These hotels should **ONLY** start accepting reservations directly after **December 14**, at which time rooms and rates will be based on availability. Higher rates will be applied to any rooms reserved directly with these hotels at the JMM rates before **December 12**.

To make a **reservation**, please submit a completed housing section of the Advance Registration/Housing Form (ARH) Form (paper or internet) with a guarantee by **November 14**. **Sorry, reservations cannot be taken by phone.** The internet form can be found at www.ams.org/meetreg?meetnum=2110. The paper form can be found at the back of this announcement. Participants interested in suites should contact the MMSB directly at mmsb@ams.org or 1-800-321-4267 ext. 4143 or 4144 for further information.

General Information:

- Check-in at all hotels is 3:00 p.m. Check-out is 12:00 p.m. at the Marriott & Omni and 11:00 a.m. at the Hilton.
- Windows open in the Omni and Hilton and a little in the Marriott.
- Children under 18 years old free in all hotels if they are in a room with an adult.
- Cribs are free of charge (limited availability). The Omni does not permit cribs in rooms that have two beds.
- The Omni and the Hilton have environmental policies regarding linen, and the Marriott is all "green".
- Internet Access/Wireless: Marriott: Complimentary wired internet in guest rooms, complimentary wireless in public areas. Omni: Complimentary Wi-Fi service in guest rooms for members of Omni's Select Guest Program (otherwise US \$10 per day), complimentary high speed wireless in the lobby. Hilton: Internet access (wired) US \$12.95/day. Go to https://ssl.omnihotels.com/sg?pagedst=SG5&lang_code=en-us to become a member of Omni's Select Guest Program. This service is free of charge.
- All hotels are in acceptable compliance with ADA and have TDD phones on premises. Marriott also has a TTY text phone.
- The Omni will not send separate hotel confirmations. You may contact the MMSB after December 15 if you would like your confirmation number.

Marriott Wardman Park Hotel (co-headquarters)	Omni Shoreham Hotel (co-headquarters)	Hilton Washington Hotel (3/4 mile from the Marriott Wardman Park 4 blocks from Dupont Circle Metro Station)
2660 Woodley Road NW Washington, DC 20008 202-328-2000 Single/Double: US \$150 Student Single/Double: US \$120 All nonsmoking hotel; Restaurants; Lounge; Starbucks; Gourmet Deli. Fitness center; Business center; Full amenities in guest rooms; Complimentary wired internet access in guest rooms; Complimentary wireless in public areas; Pets allowed with US \$50 non-refundable fee; Valet parking US \$37 per day; Self parking US \$32 per day. Credit cards will not be charged in advance. Confirmations sent by email only.	2500 Calvert St. NW (at Connecticut Avenue) Washington, DC 20008 202-234-0700 Single/Double: US \$150 Student Single/Double: US \$120 Restaurants; Lounge; Fitness center (US \$10 per day or US \$18 per person per stay); Business center; Full amenities in guest rooms; Complimentary Wi-Fi service in guest rooms for members of Omni's Select Guest Program (otherwise US \$10 per day); Complimentary high speed wireless internet access in lobby; Pets allowed with US \$50 non-refundable fee; Valet park- ing including in/out privileges US \$28 per day. Credit cards will not be charged until check-out. Confirmations not sent.	1919 Connecticut Avenue NW Washington, DC 20009 202-483-3000 Hilton Rate 1 Single/Double: US \$109 Hilton Rate 2 Single/Double: US \$119 Restaurants; Lounge; Deli; Fitness center; Business center; Full amenities in guest rooms; Wired internet access in guest rooms for US \$12.95 per day; Complimentary wireless in the lobby lounge; Self-parking US \$23 per day. Credit cards are charged one night's deposit as soon as reservation is sent to hotel. Changes to departure dates must be made no later than check-in or a US \$50 fee will be charged. Confirmations sent by email only.

area, to obtain discounts at the AMS and MAA Book Sales, and to cash a check with the Joint Meetings cashier.

Advance registration forms accompanied by insufficient payment will be returned, thereby delaying the processing of any housing request, or a US\$5 charge will be assessed if an invoice must be prepared to collect the delinquent amount. Overpayments of less than US\$5 will not be refunded.

For each invalid check or credit card transaction that results in an insufficient payment for registration or housing, a US\$5 charge will be assessed. Participants should check with their tax preparers for applicable deductions for education expenses as they pertain to these meetings.

If you wish to be included in a **list of individuals sorted by mathematical interest**, please provide the one mathematics subject classification number of your major area of interest on the Advance Registration/Housing Form. (A list of these numbers is available by sending an empty email message to abs-submit@ams.org; include the number 1035 as the subject of the message.) Copies of this list will be available for your perusal in the Networking Center.

If you do not wish to be included in any mailing list used for promotional purposes, please indicate this in the appropriate box on the Advance Registration/Housing Form.

Advance Registration Deadlines

There are four separate advance registration deadlines, each with its own advantages and benefits.

EMPLOYMENT CENTER advance registration
(inclusion in the *Winter Lists*) **October 22**

EARLY meetings advance registration
(room drawing) **October 31**

ORDINARY meetings advance registration
(hotel reservations, materials mailed) **November 14**

FINAL meetings advance registration
(advance registration, Short Courses, Employment Center, MAA Minicourses, banquets) **December 15**

Employment Center Advance Registration: Applicant and employer forms must be received by **October 22** in order to appear in the publications distributed to all participants. For detailed information on the Employment Center, see the separate article on page 1157.

Early Advance Registration: Those who register by the **early** deadline of **October 31** will be included in a random drawing to select winners of complimentary hotel rooms in Washington DC. Multiple occupancy is permissible. The location of rooms to be used in this drawing will be based on the number of complimentary rooms available in the various hotels. Therefore, the free room may not necessarily be in the winner's first-choice hotel. The winners will be notified by mail prior to **December 20**. So register early!

Applicant and employer forms must be received by

October 22 in order to be reproduced in the *Winter Lists* for the Employment Center.

Ordinary Advance Registration: Those who register **after October 31** and by the **ordinary** deadline of **November 14** may use the housing services offered by the MMSB but are not eligible for the room drawing. You may also elect to receive your badge and program by mail in advance of the meetings.

Final Advance Registration: Those who register after November 14 and by the **final** deadline of **December 15** must pick up their badges, programs, and any tickets for social events at the meetings. Unfortunately, it is sometimes not possible to provide **final** advance registrants with housing, so registrants are strongly urged to make their hotel reservations by **November 14**. Please note that the **December 15 deadline is firm**; any forms received after that date will be returned and full refunds issued. Please come to the Meetings Registration Desk in the Marriott Wardman Park Hotel located near the Marriott Ballroom.

Hotel Reservations

Participants should be aware that the AMS and MAA contract only with facilities who are working toward being in compliance with the public accommodations requirements of the ADA.

Participants requiring hotel reservations should read the instructions on the following hotel pages. Participants who did not reserve a room during advance registration and would like to obtain a room at one of the hotels listed on the following pages should call the hotels directly after **December 14**. However, after that date the MMSB can no longer guarantee availability of rooms or special convention rates. Participants should be aware that most hotels are starting to charge a penalty fee to guests for departure changes made before or after guests have checked into their rooms. These hotels are indicated on the hotel page at www.ams.org/amsmtgs/2110_hotelpage.html. Participants should also inquire about this at check-in and make their final plans accordingly.

Participants should also be aware that it is general hotel practice in most cities to hold a nonguaranteed reservation until 6:00 p.m. only. When one guarantees a reservation by paying a deposit or submitting a credit card number as a guarantee in advance, however, the hotel usually will honor this reservation up until checkout time the following day. If the individual holding the reservation has not checked in by that time, the room is then released for sale, and the hotel retains the deposit or applies one night's room charge to the credit card number submitted. Please note that the Hilton will be immediately charging your credit card for your first night's deposit when your reservation is booked.

If you hold a guaranteed reservation at a hotel but are informed upon arrival that there is no room for you, there are certain things you can request the hotel do. First, they should provide for a room at another hotel in town for that evening at no charge. (You already paid for the first night when you made your deposit.) They should pay for taxi fares to the other hotel that evening and back to the meetings the following morning. They should also pay for

one telephone toll call so that you can let people know you are not at the hotel you expected. They should make every effort to find a room for you in their hotel the following day and, if successful, pay your taxi fares to and from the second hotel so that you can pick up your baggage and bring it to the first hotel. Not all hotels in all cities follow this practice, so your request for these services may bring mixed results or none at all.

Importance of Staying in the Official Meetings Hotels:

Your patronage of the official headquarters hotels enables the JMM to secure the meeting space at a greatly reduced cost which helps to keep the cost of the meeting and your registration fees down.

Room Drawing: Win FREE room nights at our official hotels as listed on the hotel pages. Multiple winners! Participants who register and reserve a room at any of the listed meetings hotels by October 31, 2008, will automatically be included in a random drawing to select a winner of free room nights in that hotel. The number of drawings to be made will be based on the number of complimentary room nights available in the various hotels. Multiple occupancy is permissible. The winners will be drawn at random from the hotel reservation lists and notified by email or phone prior to December 20, 2008.

Miscellaneous Information

Audio-Visual Equipment: Standard equipment in all session rooms is one overhead projector and screen. (Invited 50-minute speakers are automatically provided with two overhead projectors and a laptop projector; AMS Special Sessions and MAA Contributed Paper Sessions are provided with the standard equipment and a laptop projector. Blackboards are not available. Organizers of sessions that by their nature demand additional equipment and where the majority of speakers in the session require this equipment should contact the audio-visual coordinator for the meetings at the AMS office in Providence at 401-455-4140 or by email at wsd@ams.org to obtain the necessary approvals. Individual speakers must consult with the session organizer(s) if additional equipment or services are needed. If your session has no organizer, please contact the audio-visual coordinator directly. All requests should be received by November 1.

Equipment requests made at the meetings most likely will not be granted because of budgetary restrictions. Unfortunately no audio-visual equipment can be provided for committee meetings or other meetings or gatherings not on the scientific program.

Childcare: The American Mathematical Society and the Mathematical Association of America will again offer childcare services for the Joint Mathematics Meetings to registered participants.

The child care will be offered through KiddieCorp Children's Program. KiddieCorp is an organization that has been providing high quality programs for children of all ages at meetings throughout the United States and Canada since 1986. Read all about them at www.kiddiecorp.com/.

The childcare services provided at the JMM are for children ages 6 months through 12 years old. Space per day will be limited and is on a space available basis. The dates and times for the program are January 5–8, 2009, 8:00 a.m.–5:00 p.m. each day. It will be located at the Marriott Wardman Park. Parents are encouraged to bring snacks and beverages for their children but items such as juice boxes, Cheerios, and crackers will be provided. KiddieCorp can arrange meals for children at cost plus 15% or parents can be responsible for meals for their children.

Registration starts on September 1. The registration fee is US\$30 per family (nonrefundable). Additional cost will be US\$10 per hour per child or US\$8 per hour per child for graduate students. These reduced child care rates are made possible to the meetings participant by the American Mathematical Society and the Mathematical Association of America, who heavily subsidize the cost of this service thus keeping this program affordable for families. Parents must be registered for the JMM to participate. Full payment is due at the time of registration with KiddieCorp. Deadline for registering is December 8, 2008.

If parents do not pick up their children at the time scheduled or by the end of the day (no later than 5:00 p.m.), they will be charged a late fee of US\$5 per child for every 15 minutes thereafter.

Cancellations must be made to KiddieCorp prior to December 8, 2008, for a full refund. Cancellations made after that date will be subject to a 50% cancellation fee. Once the program has begun, no refunds will be issued.

To register, go to <https://www.kiddiecorp.com/jmmkids.htm> or call KiddieCorp at (858) 455-1718 to request a form.

Email Services: Limited email access for all Joint Meetings participants will be available in an email center located near the JMM Registration Desk. The hours of operation will be published in the program. Participants should be aware that **complimentary Internet access** will be available in all sleeping rooms at the Marriott and Omni, and **free wireless Internet** is available in all public areas of these hotels. Be sure to bring your laptop to take advantage of this special consideration for JMM participants.

Information Distribution: Tables are set up in the exhibit area for dissemination of general information of possible interest to the members and for the dissemination of information of a mathematical nature not promoting a product or program for sale. Information must be approved by the Director of Meetings prior to being placed on these tables.

If a person or group wishes to display information of a mathematical nature promoting a product or program for sale, they may do so in the exhibit area at the Joint Books, Journals, and Promotional Materials exhibit for a fee of US\$50 (posters are slightly higher) per item. Please contact the exhibits manager, MMSB, P.O. Box 6887, Providence, RI 02940, for further details.

The administration of these tables is in the hands of the AMS-MAA Joint Meetings Committee, as are all arrangements for Joint Mathematics Meetings.

Local Information: For information about the city see www.washington.org.

Petition Table: At the request of the AMS Committee on Human Rights of Mathematicians, a table will be made available in the exhibit area at which petitions on behalf of named individual mathematicians suffering from human rights violations may be displayed and signed by meetings participants acting in their individual capacities. For details contact the director of meetings in the Providence office at 401-455-4145 or by email at pop@ams.org.

Signs of moderate size may be displayed at the table but must not represent that the case of the individual in question is backed by the Committee on Human Rights unless it has, in fact, so voted. Volunteers may be present at the table to provide information on individual cases, but notice must be sent at least seven days in advance of the meetings to the director of meetings in the Providence office. Since space is limited, it may also be necessary to limit the number of volunteers present at the table at any one time. The Committee on Human Rights may delegate a person to be present at the table at any or all times, taking precedence over other volunteers.

Any material that is not a petition (e.g., advertisements, résumés) will be removed by the staff. At the end of the exhibits on Monday, any material on the table will be discarded, so individuals placing petitions on the table should be sure to remove them prior to the close of exhibits.

Telephone Messages: The most convenient method for leaving a message is to do so with the participant's hotel. Another method would be to leave a message at the meetings registration desk from January 5 through 8 during the hours that the desk is open. These messages will be posted on the Mathematics Meetings Message Board; however, staff at the desk will try to locate a participant in the event of a bona fide emergency. The telephone number will be published in the program and daily newsletter.

Discounted Air Travel

The official airline for the meetings is **Delta**. The AMS and MAA have made an agreement with Delta that will enable meetings' participants to enjoy exclusive discounts! Discounts vary depending on the cabin and available airfare level. We cannot guarantee that these will be the lowest fares when you make your arrangements but they will be Delta's best online fares. We strongly urge participants to make use of this special deal if at all possible, since the AMS and MAA can earn complimentary tickets. These tickets are used to send meetings' staff (not officers or other staff) to the Joint Mathematics Meetings, thereby keeping the costs of the meetings (and registration fees) down.

To make reservations, visit www.ams.org/amsmtgs/2110_travel.html#delta and click on the Delta Air Lines logo. This will bring you to the Delta Air Lines website where you can make your reservations and have your tickets issued. The applicable discount will automatically apply and the total airfare noted included all taxes and fees—convenient, fast and no special meeting code is needed. Reservations must be made through this link to be recognized as a Joint Mathematics Meetings participant. If you go to the www.delta.com website directly you will **not** get a discount. Your benefits include no airline or agency

booking fees and the opportunity to skip the airport lines! Check in online and print your boarding pass within 24 hours of your flight time.

You may also make reservations by calling Delta's Association Desk at 1-800-455-2720, Monday-Friday, 9:00 a.m.–5:00 p.m. Please cite reference #DP29. A booking fee will be applied to reservations made by telephone. This option is available for those who prefer not to book online.

Traveling from the airport: Washington DC is on Eastern Standard Time and is conveniently served by three large airports: Ronald Reagan/Washington National (DCA), Dulles International Airport (IAD), and Baltimore/Washington International Thurgood Marshall Airport (BWI). Terminal maps of each airport can be found online: Ronald Reagan/Washington National: www.metwashairports.com/reagan/about_reagan_national/directions_maps_reagan/terminal_map_2; Dulles International: www.metwashairports.com/dulles/flight_information_3/terminal_map; Baltimore/Washington International: www.bwiairport.com/customer_assistance/lower_level_terminal_map/.

Driving Directions (to the Marriott/Omni):

From Ronald Reagan Washington National (DCA): The Marriott and the Omni are approximately nine miles northwest of DCA. Leaving the airport, follow the signs to Washington DC northbound along the George Washington Parkway. Take I-395 North to Route 1 (Route 1 is the 14th Street Bridge). Merge to the far left lane on the bridge and follow the signs for 14th Street. Take 14th Street for one mile. Turn left onto K Street. Continue on K for five blocks. Turn right onto Connecticut Ave. and drive about one mile. Cross over the William Taft Bridge. Turn left onto Calvert St. to the Omni, or continue on and make a left turn at the third light after the bridge onto Woodley Rd. for the Marriott.

From Dulles Airport (IAD): The Marriott and the Omni are approximately 25 miles northeast of IAD. Upon leaving the airport, follow the signs to Interstate 66 east to Washington. Follow I-66 to the Theodore Roosevelt Bridge (U.S. Route 50). Take the Constitution Ave. exit off of the bridge. Continue on Constitution for six blocks and make a left turn onto 17th Street. This will change to Connecticut Ave. Continue on Connecticut Ave. for one mile. Cross over the William Taft Bridge. Turn left onto Calvert St. to the Omni, or continue on and make a left turn at the third light after the bridge onto Woodley Rd. for the Marriott.

From Baltimore/Washington International Thurgood Marshall Airport (BWI): The Marriott and the Omni are approximately 33 miles northeast of BWI. Upon leaving the airport, follow the signs to I-95 South. From I-95 S take I-495 West towards Silver Spring to Exit 33, Connecticut Ave. Southbound. Continue south on Connecticut Avenue for about 6.5 miles. Turn right onto Woodley Rd. for the Marriott or continue on and take a right onto Calvert S. for the Omni.

Taxi: One-way taxi fare to the Marriott Wardman Park or to the Omni Shoreham is approximately US\$18–20

from DCA, approximately US\$55 from IAD, and around US\$79 from BWI.

SuperShuttle: www.supershuttle.com or 1-800-BLUE VAN (258-3826). Trips can be booked in shared vans, up to seven people. The fares below (current at press time) are from the airport to the Marriott Wardman Park, the Omni Shoreham, or the Hilton.

From DCA: US\$12 for the first person and US\$10 for each additional person in the party. Upon leaving the Baggage Claim area, proceed to the outside curb and contact the SuperShuttle representative. After hours, call 1-800-258-3826 and press 1 for dispatch or 2 for reservations.

From IAD: US\$27 for the first person and US\$10 for each additional person in the party. Proceed to parking and ground transportation curb outside the Baggage Claim area to the SuperShuttle stop. A map showing the shuttle stop can be seen at www.washfly.com/pdfs/ss-map.pdf.

From BWI: US\$36 for the first person, and US\$13 for each additional person in the party. Proceed to the lower level near luggage carousels 1-5 (Southwest Airlines in Pier A/B).

Public Transportation:

Metro (Washington Metropolitan Area Transit Authority, www.wmata.com): The Marriott Wardman Park and the Omni Shoreham are right next to the Woodley Park-Zoo/Adams Morgan Metro Stop on the Red Line. The Hilton is closer to the Dupont Circle stop, also on the Red Line. The Metrorail (subway) system map can be accessed at www.wmata.com/metrorail/systemmap.cfm. To phone for information on the Metrorail system, call (202) 637-7000; TDD (202) 638-3780.

From DCA: The airport is on the Yellow Line. The metro station is on Concourse Level 2, accessible from Terminals B and C by enclosed pedestrian bridges. If you arrive at Terminal A, exit the terminal to the street-side curb, and board any Airport Shuttle bus. At the stops for Parking Garages B and C (bus shelter #3 and bus shelter #5) you may access an enclosed bridge which connects to the Metrorail station. Travel on the Yellow Line to Gallery Pl/Chinatown. Change to the Red Line in the direction of Shady Grove to the Woodley Park/Zoo/Adams Morgan stop. Regular fare is around US\$2.55 (discounted fares are available).

From IAD: Purchase a ticket (one-way or round-trip) at the Washington Flyer Coach ticket counter located at Arrivals Door #4 in the Main Terminal and board the Coach from this location. The buses depart approximately every 30 minutes, but please listen for announcements for exact bus departure times. The schedule is at www.washfly.com/flyer_bus_schedule.htm. Ticket prices are US\$10 one way and US\$18 round trip. The Washington Flyer will bring you to the West Falls Church Metro stop on the Orange Line. Trains bound for New Carrollton will take you toward downtown Washington DC. Change at Metro Center to the Red Line. Take the Red Line to Woodley Park or Dupont Circle.

From BWI: It is possible to take the BWI Express Metro Bus Service into Washington DC. (Please refer to www.bwiairport.com/ground_transportation/

washington_dc__wmata_/) Metro Bus Service provides a direct connection between BWI and the Greenbelt Metro Station on the Green Line in Washington DC. The fare is approximately US\$7. The BWI Express/B30 service runs every 40 minutes, seven days a week to the Greenbelt Metro Station. Buses run 25 times each weekday and 21 times on Saturdays and Sunday, every 40 minutes. There are two WMATA Bus Stops. One is located on the lower level of the International Concourse and the other stop is located on the lower level of Concourse A/B. The B30 will pick you up outside at the bus shelter. Follow the signs that say "Public Transit".

When you arrive at the Greenbelt Station, take the Green line south and transfer to the Red Line at Gallery Pl-Chinatown to proceed to the Marriott, Omni, or Hilton. For more information call 202-637-7000 or go to www.wmata.com/timetables/md/b30.pdf.

Train from BWI: Rail transportation is available from the BWI Train Station; for details and a map of its location relative to the airport terminal, see www.visitingdc.com/airport/bwi-train-station.htm. MARC trains provide service (Monday to Friday only) to Union Station in Washington DC for US\$6 one way. The MARC route to from BWI to Union Station is the Penn Line. The schedule is at www.mtmaryland.com/services/marc/schedules-SystemMaps/penn.cfm.

Amtrak has daily train service to Union Station in Washington DC starting at US\$12 one way. Four routes connect BWI to Union Station (WAS), so Amtrak trains are fairly frequent. To check possible trains and prices, see www.amtrak.com or call 1-800-USA-RAIL.

From Union Station, transfer to the Metro (subway). The Marriott, Omni, and Hilton are all on the Red line. It is also possible to take a taxi from Union Station.

Discounted Car Rental

Avis Rent A Car is the official car rental company for the meetings. All car rentals include unlimited free mileage. Renters must meet Avis's age, driver, and credit requirements. Return to the same rental location or additional surcharges may apply. Rates do not include any state or local surcharges, tax, optional coverages, or gas refueling charges. Watch the JMM website at www.ams.org/amsmtgs/2110_travel.html for contact and rate information.

Travel Information for International Participants

International participants should view the important information about traveling to the United States at www7.nationalacademies.org/visas/Traveling_to_US.html.

Because of increased scrutiny of visa applicants, many potential attendees of scientific meetings in the United States have experienced unusual delays in obtaining travel visas. If you need a letter of invitation from the AMS and have not yet requested it, please send email to meet@ams.org and an invitation will be forwarded as soon as possible. In order to compose and send your letter, we will need your document number, email address, and your complete mailing address. Also see this very informative

document from the U.S. Department of State which lists answers to frequently asked questions about the processing of visas (www.ams.org/amsmtgs/FAQ-Bus-1-Visa.pdf). You should also be aware that this meeting has been registered with the U.S. Department of State.

Machine Readable Passports Required by June 26, 2005: The Department of Homeland Security reminds travelers from the 27 Visa Waiver Program (VWP) countries (see the website cited above for a list) that as of June 26, 2005, they must have a machine-readable passport to enter the United States without a visa. Beginning June 26, 2005, transportation carriers will be fined US\$3,300, per violation, for transporting any VWP traveler to the United States without a machine-readable passport. Similarly, VWP travelers arriving in the United States on that date without a machine-readable passport should not anticipate being granted one-time entry into the country. As an alternative for persons with immediate travel plans who are unable to obtain a machine-readable passport in time, the individual may apply for a U.S. visa at a U.S. Consulate or Embassy abroad.

Weather

January weather in Washington DC can be quite variable. While average daily high and low temperatures are between 42 °F and 27 °F, it can reach the low 60s during the day when the “January thaw” is evident. However, snowstorms are also possible. Please plan accordingly. Visit your favorite weather site for up-to-the-minute forecasts, or see www.usatoday.com/weather/default.htm.

Urbana, Illinois

University of Illinois at Urbana-Champaign

March 27–29, 2009

Friday – Sunday

Meeting #1047

Central Section

Associate secretary: Susan J. Friedlander

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: Expired

For consideration of contributed papers in Special Sessions: December 9, 2008

For abstracts: February 3, 2009

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgs/sectional.html.

Invited Addresses

Jeffrey C. Lagarias, University of Michigan, *Title to be announced* (Erdős Memorial Lecture).

Jacob Lurie, Massachusetts Institute of Technology, *Title to be announced*.

Gilles Pisier, Texas A&M University, *Title to be announced*.

Akshay Venkatesh, New York University-Courant Institute, *Title to be announced*.

Special Sessions

Algebra, Geometry and Combinatorics (Code: SS 10A), **Rinat Kedem**, University of Illinois at Urbana-Champaign, and **Alexander T. Yong**, University of Minnesota.

Algebraic Methods in Statistics and Probability (Code: SS 3A), **Marlos A. G. Viana**, University of Illinois at Chicago.

Complex Dynamics and Value Distribution (Code: SS 11A), **Aimo Hinkkanen** and **Joseph B. Miles**, University of Illinois at Urbana-Champaign.

Differential Geometry and Its Applications (Code: SS 16A), **Stephanie B. Alexander**, University of Illinois at Urbana-Champaign, and **Jianguo Cao**, University of Notre Dame.

Geometric Function Theory and Analysis on Metric Spaces (Code: SS 6A), **Sergiy Merenkov**, **Jeremy Taylor Tyson**, and **Jang-Mei Wu**, University of Illinois at Urbana-Champaign.

Geometric Group Theory (Code: SS 2A), **Sergei V. Ivanov**, **Ilya Kapovich**, **Igor Mineyev**, and **Paul E. Schupp**, University of Illinois at Urbana-Champaign.

Graph Theory (Code: SS 4A), **Alexander V. Kostochka** and **Douglas B. West**, University of Illinois at Urbana-Champaign.

Holomorphic and CR Mappings (Code: SS 9A), **John P. D'Angelo**, **Jiri Lebl**, and **Alex Tumanov**, University of Illinois at Urbana-Champaign.

Local and Homological Methods in Commutative Algebra (Code: SS 13A), **Florian Enescu**, Georgia State University, and **Sandra Spiroff**, University of Mississippi.

Mathematical Visualization (Code: SS 7A), **George K. Francis**, University of Illinois at Urbana-Champaign, **Louis H. Kauffman**, University of Illinois at Chicago, **Dennis Martin Roseman**, University of Iowa, and **Andrew J. Hanson**, Indiana University.

Number Theory in the Spirit of Erdős (Code: SS 14A), **Kevin Ford** and **A. J. Hildebrand**, University of Illinois at Urbana-Champaign.

Operator Algebras and Operator Spaces (Code: SS 8A), **Zhong-Jin Ruan**, **Florin P. Boca**, and **Marius Junge**, University of Illinois at Urbana-Champaign.

Probabilistic and Extremal Combinatorics (Code: SS 5A), **Jozsef Balogh** and **Zoltan Furedi**, University of Illinois at Urbana-Champaign.

The Interface Between Number Theory and Dynamical Systems (Code: SS 17A), **Florin Boca**, University of Illinois at Urbana-Champaign, **Jeffrey Lagarias**, University of Michigan, and **Kenneth Stolarsky**, University of Illinois at Urbana-Champaign.

Time, Scale and Frequency Methods in Harmonic Analysis (Code: SS 15A), **Richard S. Laugesen**, University of Illinois at Urbana-Champaign, and **Darrin M. Speegle**, St. Louis University.

Topological Field Theories, Representation Theory, and Algebraic Geometry (Code: SS 12A), **Thomas Nevins**, University of Illinois at Urbana-Champaign, and **David Ben-Zvi**, University of Texas at Austin.

q-Series and Partitions (Code: SS 1A), **Bruce Berndt**, University of Illinois at Urbana-Champaign, and **Ae Ja Yee**, Pennsylvania State University.

Raleigh, North Carolina

North Carolina State University

April 4–5, 2009

Saturday – Sunday

Meeting #1048

Southeastern Section

Associate secretary: Matthew Miller

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: Expired

For consideration of contributed papers in Special Sessions: December 16, 2008

For abstracts: February 10, 2009

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgsectional.html.

Invited Addresses

Nathan Dunfield, University of Illinois at Urbana-Champaign, *Title to be announced*.

Reinhard C. Laubenbacher, Virginia Biomathematics Institute at Virginia Tech, *Title to be announced*.

Jonathan C. Mattingly, Duke University, *Stochastically forced fluid equations: Transfer between scales and ergodicity*.

Raman Parimala, Emory University, *Title to be announced*.

Special Sessions

Advancements in Turbulent Flow Modeling and Computation (Code: SS 8A), **Leo G. Rebholz**, Clemson University, and **Traian Iliescu**, Virginia Polytechnic Institute and State University.

Applications of Algebraic and Geometric Combinatorics (Code: SS 2A), **Seth M. Sullivant**, Harvard University, and **Carla D. Savage**, North Carolina State University.

Brauer Groups, Quadratic Forms, Algebraic Groups, and Lie Algebras (Code: SS 12A), **Eric S. Brussel** and **Skip Garibaldi**, Emory University.

Computational Methods in Lie Theory (Code: SS 10A), **Eric Sommers**, University of Massachusetts, Amherst, and **Molly Fenn**, North Carolina State University.

Enumerative Geometry and Related Topics (Code: SS 7A), **Richard L. Rimanyi**, University of North Carolina, Chapel Hill, and **Leonardo C. Mihalcea**, Duke University.

Geometry of Differential Equations (Code: SS 9A), **Thomas A. Ivey**, College of Charleston, and **Irina A. Kogan**, North Carolina State University.

Homotopical Algebra with Applications to Mathematical Physics (Code: SS 3A), **Thomas J. Lada**, North Carolina State University, and **Jim Stasheff**, University of North Carolina, Chapel Hill.

Kac-Moody Algebras, Vertex Algebras, Quantum Groups, and Applications (Code: SS 1A), **Bojko N. Bakalov**, **Kailash C. Misra**, and **Naihuan N. Jing**, North Carolina State University.

Low Dimensional Topology and Geometry (Code: SS 4A), **Nathan M. Dunfield**, University of Illinois at Urbana-Champaign, **John B. Etnyre**, Georgia Institute of Technology, and **Lenhard Ng**, Duke University.

Nonlinear Dynamics and Control (Code: SS 11A), **Anthony M. Bloch**, University of Michigan, Ann Arbor, and **Dmitry Zenkov**, North Carolina State University.

Recent Advances in Symbolic Algebra and Analysis (Code: SS 5A), **Michael F. Singer** and **Agnes Szanto**, North Carolina State University.

Rings, Algebras, and Varieties in Combinatorics (Code: SS 6A), **Patricia Hersh**, North Carolina State University, **Christian Lenart**, SUNY Albany, and **Nathan Reading**, North Carolina State University.

Worcester, Massachusetts

Worcester Polytechnic Institute

April 25–26, 2009

Saturday – Sunday

Meeting #1050

Eastern Section

Associate secretary: Steven H. Weintraub

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: September 25, 2008

For consideration of contributed papers in Special Sessions: January 6, 2009
For abstracts: March 3, 2009

*The scientific information listed below may be dated.
For the latest information, see www.ams.org/amsmtgs/sectional.html.*

Invited Addresses

Octav Cornea, Université de Montréal, *Title to be announced*.

Fengbo Hang, Courant Institute of New York University, *Title to be announced*.

Umberto Mosco, Worcester Polytechnic Institute, *Title to be announced*.

Kevin Whyte, University of Illinois at Chicago, *Title to be announced*.

Special Sessions

Number Theory (Code: SS 4A), **John T. Cullinan**, Bard College, and **Siman Wong**, University of Massachusetts, Amherst.

Symplectic and Contact Topology (Code: SS 1A), **Peter Albers**, Courant Institute of Mathematical Sciences, and **Basak Gurel**, Université de Montréal.

The Mathematics of Climate Change (Code: SS 3A), **Catherine A. Roberts**, College of the Holy Cross, **Mary Lou Zeeman**, Bowdoin College, and **Gareth E. Roberts**, College of the Holy Cross.

Topological Robotics (Code: SS 2A), **Li Han** and **Lee N. Rudolph**, Clark University.

San Francisco, California

San Francisco State University

April 25–26, 2009

Saturday – Sunday

Meeting #1049

Western Section

Associate secretary: Michel L. Lapidus

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: September 25, 2008

For consideration of contributed papers in Special Sessions: January 6, 2009

For abstracts: March 3, 2009

*The scientific information listed below may be dated.
For the latest information, see www.ams.org/amsmtgs/sectional.html.*

Invited Addresses

Yehuda Shalom, University of California Los Angeles, *Title to be announced*.

Roman Vershynin, University of California Davis, *Title to be announced*.

Karen Vogtmann, Cornell University, *Title to be announced*.

Efim Zelmanov, University of California Los Angeles, *Title to be announced*.

Special Sessions

Banach Algebras, Topological Algebras and Abstract Harmonic Analysis (Code: SS 1A), **Thomas V. Tonev**, University of Montana-Missoula, and **Fereidoun Ghahramani**, University of Manitoba.

Concentration Inequalities (Code: SS 3A), **Sourav Chatterjee**, University of California Berkeley, and **Roman Vershynin**, University of California Davis.

Nonlinear Dispersive Equations (Code: SS 4A), **Sebastian Herr**, University of California Berkeley, and **Jeremy L. Marzuola**, Columbia University.

Recent Progress in Geometric Group Theory (Code: SS 2A), **Seonhee Lim** and **Anne Thomas**, Cornell University.

Waco, Texas

Baylor University

October 16–18, 2009

Friday – Sunday

Meeting #1051

Central Section

Associate secretary: Susan J. Friedlander

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: March 17, 2009

For consideration of contributed papers in Special Sessions: June 30, 2009

For abstracts: August 25, 2009

*The scientific information listed below may be dated.
For the latest information, see www.ams.org/amsmtgs/sectional.html.*

Invited Addresses

David Ben-Zvi, University of Texas at Austin, *Title to be announced*.

Alexander A. Kiselev, University of Wisconsin, *Title to be announced.*

Michael C. Reed, Duke University, *Title to be announced.*

Igor Rodnianski, Princeton University, *Title to be announced.*

Special Sessions

Commutative Algebra: Module and Ideal Theory (Code: SS 4A), **Lars W. Christensen**, Texas Tech University, **Louiza Fouli**, University of Texas at Austin, and **David Jorgensen**, University of Texas at Arlington.

Dynamic Equations on Time Scales: Analysis and Applications (Code: SS 1A), **John M. Davis**, **Ian A. Gravagne**, and **Robert J. Marks**, Baylor University.

Mathematical Models of Neuronal and Metabolic Mechanisms (Code: SS 3A), **Janet Best**, Ohio State University, and **Michael Reed**, Duke University.

Numerical Solutions of Singular or Perturbed Partial Differential Equation Problems with Applications (Code: SS 2A), **Peter Moore**, Southern Methodist University, and **Qin Sheng**, Baylor University.

Topological Methods for Boundary Value Problems for Ordinary Differential Equations (Code: SS 5A), **Richard Avery**, Dakota State University, **Paul W. Elloe**, University of Dayton, and **Johnny Henderson**, Baylor University.

University Park, Pennsylvania

Pennsylvania State University

October 24–25, 2009

Saturday – Sunday

Meeting #1052

Eastern Section

Associate secretary: Steven H. Weintraub

Announcement issue of *Notices*: August 2009

Program first available on AMS website: September 24, 2009

Program issue of electronic *Notices*: October 2009

Issue of *Abstracts*: To be announced

Deadlines

For organizers: March 24, 2009

For consideration of contributed papers in Special Sessions: July 7, 2009

For abstracts: September 1, 2009

Boca Raton, Florida

Florida Atlantic University

October 30 – November 1, 2009

Friday – Sunday

Meeting #1053

Southeastern Section

Associate secretary: Matthew Miller

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: March 30, 2009

For consideration of contributed papers in Special Sessions: July 14, 2009

For abstracts: September 8, 2009

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgs/sectional.html.

Invited Addresses

Spyros Alexakis, Princeton University, *Title to be announced.*

Kai-Uwe Bux, University of Virginia, *Title to be announced.*

Dino J. Lorenzini, University of Georgia, *Title to be announced.*

Eduardo D. Sontag, Rutgers University, *Title to be announced.*

Special Sessions

Concentration, Functional Inequalities, and Isoperimetry (Code: SS 2A), **Mario Milman**, Florida Atlantic University, **Christian Houdre**, Georgia Institute of Technology, and **Emanuel Milman**, Institute for Advanced Study.

Constructive Mathematics (Code: SS 1A), **Robert Lubar-sky**, **Fred Richman**, and **Martin Solomon**, Florida Atlantic University.

Riverside, California

University of California

November 7–8, 2009

Saturday – Sunday

Meeting #1054

Western Section

Associate secretary: Michel L. Lapidus

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced
Issue of *Abstracts*: To be announced

Deadlines

For organizers: April 6, 2009
For consideration of contributed papers in Special Sessions: July 21, 2009
For abstracts: September 15, 2009

The scientific information listed below may be dated. For the latest information, see www.ams.org/amsmtgsectional.html.

Special Sessions

Algebraic Geometry (Code: SS 1A), **Christopher Hacon**, University of Utah, and **Ziv Ran**, University of California Riverside.

Noncommutative Geometry (Code: SS 2A), **Vasilii Dolgushev** and **Wee Liang Gan**, University of California Riverside.

Representation Theory (Code: SS 3A), **Vyjayanthi Chari**, **Wee Liang Gan**, and **Jacob Greenstein**, University of California Riverside.

San Francisco, California

Moscone Center West and the San Francisco Marriott

January 13–16, 2010

Wednesday – Saturday

Joint Mathematics Meetings, including the 116th Annual Meeting of the AMS, 93rd Annual Meeting of the Mathematical Association of America (MAA), annual meetings of the Association for Women in Mathematics (AWM) and the National Association of Mathematicians (NAM), and the winter meeting of the Association for Symbolic Logic (ASL), with sessions contributed by the Society of Industrial and Applied Mathematics (SIAM).

Associate secretary: Matthew Miller

Announcement issue of *Notices*: October 2009

Program first available on AMS website: November 1, 2009

Program issue of electronic *Notices*: January 2010

Issue of *Abstracts*: Volume 31, Issue 1

Deadlines

For organizers: April 1, 2009
For consideration of contributed papers in Special Sessions: To be announced
For abstracts: To be announced

Lexington, Kentucky

University of Kentucky

March 27–28, 2010

Saturday – Sunday

Southeastern Section

Associate secretary: Matthew Miller

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: August 28, 2009

For consideration of contributed papers in Special Sessions: To be announced

For abstracts: To be announced

St. Paul, Minnesota

Macalester College

April 10–11, 2010

Saturday – Sunday

Central Section

Associate secretary: Susan J. Friedlander

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: September 10, 2009

For consideration of contributed papers in Special Sessions: To be announced

For abstracts: To be announced

Albuquerque, New Mexico

University of New Mexico

April 17–18, 2010

Saturday – Sunday

Western Section

Associate secretary: Michel L. Lapidus

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: September 17, 2009

For consideration of contributed papers in Special Sessions: To be announced

For abstracts: To be announced

Berkeley, California

University of California Berkeley

June 2–5, 2010

Wednesday – Saturday

Eighth Joint International Meeting of the AMS and the Sociedad Matematica Mexicana.

Associate secretary: Susan J. Friedlander

Announcement issue of *Notices*: February 2010

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: To be announced

For consideration of contributed papers in Special Sessions: To be announced

For abstracts: To be announced

Notre Dame, Indiana

Notre Dame University

September 18–19, 2010

Saturday – Sunday

Central Section

Associate secretary: Susan J. Friedlander

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: February 19, 2010

For consideration of contributed papers in Special Sessions: To be announced

For abstracts: To be announced

Los Angeles, California

University of California Los Angeles

October 9–10, 2010

Saturday – Sunday

Western Section

Associate secretary: Michel L. Lapidus

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: March 10, 2010

For consideration of contributed papers in Special Sessions: To be announced

For abstracts: To be announced

New Orleans, Louisiana

New Orleans Marriott and Sheraton New Orleans Hotel

January 5–8, 2011

Wednesday – Saturday

Joint Mathematics Meetings, including the 117th Annual Meeting of the AMS, 94th Annual Meeting of the Mathematical Association of America, annual meetings of the Association for Women in Mathematics (AWM) and the National Association of Mathematicians (NAM), and the winter meeting of the Association for Symbolic Logic (ASL), with sessions contributed by the Society for Industrial and Applied Mathematics (SIAM).

Associate secretary: Steven H. Weintraub

Announcement issue of *Notices*: October 2010

Program first available on AMS website: November 1, 2010

Program issue of electronic *Notices*: January 2011

Issue of *Abstracts*: Volume 32, Issue 1

Deadlines

For organizers: April 1, 2010

For consideration of contributed papers in Special Sessions: To be announced

For abstracts: To be announced

Boston, Massachusetts

John B. Hynes Veterans Memorial Convention Center, Boston Marriott Hotel, and Boston Sheraton Hotel

January 4–7, 2012

Wednesday – Saturday

Joint Mathematics Meetings, including the 118th Annual Meeting of the AMS, 95th Annual Meeting of the Mathematical Association of America, annual meetings of the Association for Women in Mathematics (AWM) and the National Association of Mathematicians (NAM), and the winter meeting of the Association for Symbolic Logic (ASL), with sessions contributed by the Society for Industrial and Applied Mathematics (SIAM).

Associate secretary: Michel L. Lapidus

Announcement issue of *Notices*: October 2011

Program first available on AMS website: November 1, 2011

Program issue of electronic *Notices*: January 2012

Issue of *Abstracts*: Volume 33, Issue 1

Deadlines

For organizers: April 1, 2011

For consideration of contributed papers in Special Sessions: To be announced

For abstracts: To be announced

San Diego, California

San Diego Convention Center and San Diego Marriott Hotel and Marina

January 9–12, 2013

Wednesday – Saturday

Joint Mathematics Meetings, including the 119th Annual Meeting of the AMS, 96th Annual Meeting of the Mathematical Association of America, annual meetings of the Association for Women in Mathematics (AWM) and the National Association of Mathematicians (NAM), and the winter meeting of the Association for Symbolic Logic (ASL), with sessions contributed by the Society for Industrial and Applied Mathematics (SIAM).

Associate secretary: Susan J. Friedlander

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: April 1, 2012

For consideration of contributed papers in Special Sessions: To be announced

For abstracts: To be announced

Baltimore, Maryland

Baltimore Convention Center

January 15–18, 2014

Wednesday – Saturday

Joint Mathematics Meetings, including the 120th Annual Meeting of the AMS, 97th Annual Meeting of the Mathematical Association of America, annual meetings of the Association for Women in Mathematics (AWM) and the National Association of Mathematicians (NAM), and the winter meeting of the Association for Symbolic Logic, with sessions contributed by the Society for Industrial and Applied Mathematics (SIAM).

Associate secretary: Matthew Miller

Announcement issue of *Notices*: To be announced

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: To be announced

Issue of *Abstracts*: To be announced

Deadlines

For organizers: April 1, 2013

For consideration of contributed papers in Special Sessions: To be announced

For abstracts: To be announced

San Antonio, Texas

Henry B. Gonzalez Convention Center and Grand Hyatt San Antonio

January 10–13, 2015

Saturday – Tuesday

Joint Mathematics Meetings, including the 121st Annual Meeting of the AMS, 98th Annual Meeting of the Mathematical Association of America, annual meetings of the Association for Women in Mathematics (AWM) and the National Association of Mathematicians (NAM), and the winter meeting of the Association for Symbolic Logic, with sessions contributed by the Society for Industrial and Applied Mathematics (SIAM).

Associate secretary: Steven H. Weintraub

Announcement issue of *Notices*: October 2014

Program first available on AMS website: To be announced

Program issue of electronic *Notices*: January 2015

Issue of *Abstracts*: To be announced

Deadlines

For organizers: April 1, 2014

For consideration of contributed papers in Special Sessions: To be announced

For abstracts: To be announced