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.

Annandale-on-Hudson, New York

Bard College

October 8–9, 2005

Saturday – Sunday

Meeting #1009

Eastern Section
Associate secretary: Lesley M. Sibner
Announcement issue of *Notices*: August 2005
Program first available on AMS website: August 25, 2005
Program issue of electronic *Notices*: October 2005
Issue of *Abstracts*: Volume 26, 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

Persi Diaconis, Stanford University, Erdős *picture of "most things"* (Erdős Memorial Lecture).

Harold Rosenberg, University of Paris VII, *Minimal and constant mean curvature surfaces in homogeneous 3-manifolds.*

Alice Silverberg, University of California Irvine, *Applying number theory and algebraic geometry to cryptography.*

Christopher Sogge, Johns Hopkins University, *Estimates for eigenfunctions of the Laplacian.*

Benjamin Sudakov, Princeton University, *Probabilistic reasoning and Ramsey theory.*

Special Sessions

Algebraic and Geometric Combinatorics, **Cristian P. Lenart**, State University of New York at Albany, and **Lauren L. Rose** and **Sheila Sundaram**, Bard College.

Extremal and Probablistic Combinatorics, **Benjamin Sudakov**, Princeton University.

Geometric Group Theory, **Sean Cleary**, The City College of New York, and **Melanie I. Stein**, Trinity College.

Geometric Transversal Theory, **Richard Pollack**, Courant Institute, New York University, and **Jacob Eli Goodman**, The City College of New York.

Global Theory of Minimal Surfaces, **David A. Hoffman**, Mathematical Sciences Research Institute, and **Harold Rosenberg**, University of Paris VII.

History of Mathematics, **Patricia R. Allaire**, Queensborough Community College, CUNY, **Robert E. Bradley**, Adelphi University, and **Jeff Suzuki**, Bard College.

Homological Aspects of Commutative Algebra, **Alexandre Tchernev**, University of Albany, SUNY, and **Janet Vassilev**, University of Arkansas.

Infinite Groups, **Anthony M. Gaglione**, United States Naval Academy, **Benjamin Fine**, Fairfield University, and **Dennis Spellman**, Philadelphia University.

Invariants of Graphs and Matroids, **Gary Gordon** and **Lorenzo Traldi**, Lafayette College.

Mathematical Methods for the Analysis of Images and High-Dimensional Data, **Erik M. Bollt**, Clarkson University, and **Rick Chartrand**, Los Alamos National Laboratory.

Measurable, Symbolic, and Tiling Dynamical Systems, **Natalie Priebe Frank**, Vassar College, and **Samuel J. Lightwood**, Western Connecticut State University.

Special Functions and Orthogonal Polynomials: Theory and Applications, **Diego Dominici**, State University of New York at New Paltz.

Theory of Infinite-Dimensional Lie Algebras, Vertex Operator Algebras, and Related Topics, **Antun Milas**, SUNY at Albany, **Alex J. Feingold**, Binghamton University, and **Yi-Zhi Huang**, Rutgers University.

Johnson City, Tennessee

East Tennessee State University

October 15–16, 2005

Saturday – Sunday

Meeting #1010

Southeastern Section
Associate secretary: Matthew Miller
Announcement issue of *Notices*: August 2005
Program first available on AMS website: September 1, 2005
Program issue of electronic *Notices*: October 2005
Issue of *Abstracts*: Volume 26, 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

Alberto Bressan, Pennsylvania State University, *Optimal transportation metrics and nonlinear wave equations.*

Assaf Naor, Microsoft Research, *The b-Lipschitz theory of metric spaces: A survey of recent progress and algorithmic applications.*

Prasad V. Tetali, Georgia Institute of Technology, *Markov chain mixing: An update.*

Rekha R. Thomas, University of Washington, *Gröbner bases: From theory to applications and back.*

Special Sessions

Approximation Theory, **Robert Gardner**, East Tennessee State University, and **Narendra Kumar Govil**, Auburn University.

Commutative Ring Theory, **David F. Anderson** and **David E. Dobbs**, University of Tennessee at Knoxville.

Discrete Models in Biology, **Debra Knisley**, East Tennessee State University, and **Michael A. Langston**, University of Tennessee, Knoxville.

Geometry and Algorithms in Metric Spaces, **W. J. Bo Brinkman** and **Beata Randrianantoanina**, Miami University.

Mathematical Applications in Survival Analysis and Biostatistics, **Don Hong** and **Tiejian Wu**, East Tennessee State University.

Mathematical Aspects of Wave Propagation Phenomena, **Boris P. Belinskiy**, University of Tennessee at Chattanooga, and **Anjan Biswas**, Tennessee State University.

Mathematical Education of Teachers, **Frederick Norwood** and **Michel Helfgott**, East Tennessee State University.

Nonlinear PDE Evolutionary Systems and Their Control, **George Avalos**, University of Nebraska-Lincoln, and **Irena M. Lasiecka**, University of Virginia.

Nonlinear Wave Equations and Applications, **Alberto Bressan** and **Yuxi Zheng**, Pennsylvania State University.

Lincoln, Nebraska

University of Nebraska in Lincoln

October 21–23, 2005

Friday – Sunday

Meeting #1011

Central Section
Associate secretary: Susan J. Friedlander
Announcement issue of *Notices*: August 2005
Program first available on AMS website: September 8, 2005
Program issue of electronic *Notices*: October 2005
Issue of *Abstracts*: Volume 26, 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

Sir Michael Atiyah, University of Edinburgh, *The nature of space* (Einstein Public Lecture in Mathematics "In celebration of the 100th anniversary of Albert Einstein's annus mirabilis").

Howard A. Masur, University of Illinois at Chicago, *Billiards in polygons: Connections of geometry and complex analysis to dynamical systems.*

Alejandro Uribe, University of Michigan, *Title to be announced.*

Judy Walker, University of Nebraska, *Title to be announced.*

Jack Xin, University of Texas, *Title to be announced.*

Special Sessions

Algebraic Geometry, **Brian Harbourne**, University of Nebraska-Lincoln, and **Bangere P. Purnaprajna**, University of Kansas.

Analysis of Partial Differential and Integral Equations, **Congming Li**, University of Colorado.

Association Schemes and Related Topics, **Sung Yell Song**, Iowa State university, and **Paul M. Terwilliger**, University of Wisconsin.

Calculus of Variations, **Mikil Foss**, University of Nebraska-Lincoln, and **Giovanni Leoni**, Carnegie Mellon University.

Combinatorial Matrix Theory, **Leslie Hogben**, Iowa State University, and **Bryan L. Shader**, University of Wyoming.

Commutative Algebra, **Lars Winther Christensen**, **Srikanth B. Iyengar**, and **Sean M. Sather-Wagstaff**, University of Nebraska-Lincoln.

Dynamic Equations on Time Scales, **Lynn H. Erbe** and **Allan C. Peterson**, University of Nebraska-Lincoln.

Geometric Methods in Group Theory and Semigroup Theory, **Susan M. Hermiller** and **John C. Meakin**, University of Nebraska-Lincoln, and **Zoran Sunik**, Texas A&M University.

Geometry of Differential Equations, **Jeanne Nielsen Clelland**, University of Colorado, **Irina A. Kogan**, North Carolina State University, and **Zhijun Qiao**, University of Texas-Pan American.

Graph Theory, **Andrew J. Radcliffe**, University of Nebraska-Lincoln, **Zsuzsanna Szaniszlo**, Valparaiso University, and **Jonathan Cutler**, University of Nebraska-Lincoln.

K-Theory and Algebraic Cycles, **Christian Haesemeyer**, University of Illinois at Urbana-Champaign, and **Gregory Grant Piepmeyer** and **Mark Edward Walker**, University of Nebraska-Lincoln.

Mathematical Ecology, **David Logan**, University of Nebraska-Lincoln, and **William Robert Wolesensky**, College of St. Mary.

Mathematical Education of Teachers, **W. James Lewis**, University of Nebraska-Lincoln, **Cheryl Lynn Olsen**, Shippensburg University of Pennsylvania, and **Ira J. Papick**, University of Missouri-Columbia.

Mathematical and Engineering Aspects of Coding Theory, **Lance Perez** and **Judy Walker**, University of Nebraska-Lincoln.

Nonlinear Analysis and Control of Partial Differential Equations, **George Avalos**, **Petronela Radu**, **Mohammad A. Rammaha**, and **Richard L. Rebarber**, University of Nebraska-Lincoln.

Randomness in Computation, **John M. Hitchcock**, University of Wyoming, **Aduri Pavan**, Iowa State University, and **Vinodchandran Variyam**, University of Nebraska-Lincoln.

Recent Progress in Operator Algebras, **Allan P. Donsig** and **David R. Pitts**, University of Nebraska-Lincoln.

Representation Theory of Noetherian Rings, **Roger A. Wiegand** and **Sylvia Margaret Wiegand**, University of Nebraska-Lincoln.

Scattering and Spectral Problems in Geometry, **Peter A. Perry**, University of Kentucky, and **Alejandro Uribe**, University of Michigan.

Undergraduate Research, **Richard L. Rebarber** and **Gordon S. Woodward**, University of Nebraska-Lincoln.

Universal Algebra and Order, **John William Snow**, Sam Houston State University, and **Japheth L. M. Wood**, Chatham College.

Eugene, Oregon

University of Oregon

November 12–13, 2005

Saturday – Sunday

Meeting #1012

Western Section
Associate secretary: Michel L. Lapidus
Announcement issue of *Notices*: September 2005
Program first available on AMS website: September 29, 2005
Program issue of electronic *Notices*: November 2005
Issue of *Abstracts*: Volume 26, Issue 4

Deadlines

For organizers: Expired
For consideration of contributed papers in Special Sessions: Expired
For abstracts: September 20, 2005

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

Invited Addresses

Matthew Foreman, University of California Irvine, *Classification and anti-classification theorems for measure preserving transformations.*

Mark Haiman, University of California Berkeley, *Title to be announced.*

Wilhelm Schlag, California Institute of Technology, *On spectral theory and nonlinear PDE.*

Hart F. Smith, University of Washington, *Wave packets and wave equations.*

Special Sessions

Algebraic Combinatorics and Geometry (Code: SS 7A), **Sara C. Billey**, University of Washington, and **Mark Haiman**, University of California Berkeley.

Algebraic Geometry Motivated by Physics (Code: SS 9A), **Alexander Polishchuk** and **Arkady Vaintrob**, University of Oregon.

Algebraic Topology of Moduli Spaces (Code: SS 8A), **Boris I. Botvinnik**, University of Oregon, **Uwe Kaiser**, Boise State University, and **Dev Sinha**, University of Oregon.

Applications of Algebraic Topology (Code: SS 12A), **Daniel Dugger** and **Hal Sadofsky**, University of Oregon.

Harmonic Analysis and PDEs (Code: SS 13A), **Wilhelm Schlag**, California Institute of Technology, and **Hart F. Smith**, University of Washington.

K-Theory in M-Theory (Code: SS 6A), **Gregory D. Landweber**, University of Oregon, and **Charles F. Doran**, University of Washington.

New Directions in Spectral Theory and Geometric Analysis (Code: SS 11A), **Leon Friedlander**, University of Arizona, and **Patrick McDonald**, New College of Florida.

Noncommutative Algebra and Noncommutative Birational Geometry (Code: SS 3A), **Arkady Dmitrievich Berenstein**, University of Oregon, and **Vladimir Retakh**, Rutgers University.

Partial Differential Equations with Applications (Code: SS 4A), **Alexander Panchenko**, Washington State University, **R. E. Showalter**, Oregon State University, and **Hong-Ming Yin**, Washington State University.

Regular Algebras and Noncommutative Projective Geometry (Code: SS 2A), **Brad Shelton**, University of Oregon, **Michaela Vancliff**, University of Texas at Arlington, and **James J. Zhang**, University of Washington.

Representations of Groups and Algebras (Code: SS 5A), **Jonathan W. Brundan**, **Alexander S. Kleshchev**, and **Viktor Ostrik**, University of Oregon.

Resolutions (Code: SS 1A), **Christopher Alan Francisco**, University of Missouri, and **Irena Peeva**, Cornell University.

Wavelets, Frames, and Related Expansions (Code: SS 10A), **Marcin Bownik**, University of Oregon, and **Darrin M. Speegle**, St. Louis University.

Taichung, Taiwan

Tung-Hai University

December 14–18, 2005

Wednesday – Sunday

Meeting #1013

First Joint International Meeting between the AMS and the Taiwanese Mathematical Society.
Associate secretary: John L. Bryant
Announcement issue of *Notices*: June 2005
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: September 30, 2005
For abstracts: September 30, 2005

See `www.math.thu.edu.tw/2005ims/en/index.htm` *for current information.*

Invited Addresses

Ching-Shui Cheng, Academia Sinica, *Title to be announced.*

Lawrence Ein, University of Illinois at Chicago, *Title to be announced.*

Chang-Shou Lin, National Chung Cheng University, *Title to be announced.*

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

Jing Yu, National Tsing Hua University, *Title to be announced.*

Jiu-Kang Yu, Purdue University, *Title to be announced.*

Special Sessions

Affine Algebraic Geometry, **Ming-Chang Kang**, National Taiwan University, and **Kwai-Man Fan**, National Chung Cheng University.

Algebraic Geometry, **Jung-Kai Chen**, National Taiwan University, **Chin-Lung Wang**, National Central University, and **Robert Lazarsfeld**, University of Michigan.

Differential Geometry, **Dong-Ho Tsai**, National Tsing Hua University, and **Bennett Chow**, University of California San Diego.

Discrete Mathematics (Graph Coloring), **Gerard J. Chang**, National Taiwan University, **Douglas B. West**, University of Illinois at Urbana-Champaign, and **Xuding Zhu**, National Sun Yat-sen University.

Dynamics and Differential Equations, **Song-Sun Lin**, National Chiao Tung University, and **Shui-Nee Chow**, Georgia Institute of Technology.

Lie Algebra and Representation Theory, **Shun-Jen Cheng**, National Taiwan University, and **Brian J. Parshall** and **Weiqiang Wang**, University of Virginia.

Number Theory (Arithmetic Geometry over Local and Global Fields), **Liang-Chung Hsia**, National Central University, and **William A. Cherry**, University of North Texas.

Operator Theory and Control, **Fang-Bo Yeh**, Tung-Hai University, and **Nicholas J. Young**, University of Newcastle.

Optimization and Applications, **Soon-Yi Wu**, National Cheng Kung University, and **Shu-Cherng Fang**, North Carolina State University.

Partial Differential Equations and Geometric Analysis, **Chiun-Chuan Chen** and **Yng-Ing Lee**, National Taiwan University, **Sun-Yung Alice Chang**, Princeton University, and

Robert J. Sibner, Graduate College, City University of New York.

Probability, **Tai-Ho Wang**, National Chung Cheng University, **Ching-Tang Wu**, National Kaohsiung University, and **George Yin**, Wayne State University.

Scientific Computing, **Wei-Cheng Wang**, National Tsing-Hua University, and **Thomas Y. Hou**, California Institute of Technology.

Statistical Modeling and Applications, **Ming-Yen Cheng**, National Taiwan University, and **Jianqing Fan**, Department of Operations Research and Financial Engineering, Princeton University.

San Antonio, Texas

Henry B. Gonzalez Convention Center

January 12–15, 2006

Thursday – Sunday

Meeting #1014

Joint Mathematics Meetings, including the 112th Annual Meeting of the AMS, 89th 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), the winter meeting of the Association for Symbolic Logic (ASL), with sessions contributed by the Society for Industrial and Applied Mathematics (SIAM).
Associate secretary: Matthew Miller
Announcement issue of *Notices*: October 2005
Program first available on AMS website: November 1, 2005
Program issue of electronic *Notices*: January 2006
Issue of *Abstracts*: Volume 27, Issue 1

Deadlines

For organizers: Expired
For consideration of contributed papers in Special Sessions: Expired
For abstracts: September 28, 2005

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

Joint AMS-MAA Invited Addresses

Svetlana Y. Jitomirskaya, University of California Irvine, *Title to be announced*, Saturday, 11:10 a.m.

László Lovász, Microsoft, *Title to be announced*, Thursday, 11:10 a.m.

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

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 Friday. 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, Award for an Exemplary Program or Achievement in a Mathematics Department, JPBM Communications Award, Award for Distinguished Public Service, and the Leroy P. Steele Prizes. The MAA will award the Yueh-Gin Gung and Dr. Charles Y. Hu Award for Distinguished Service to Mathematics, Certificates of Meritorious Service, Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics, Chauvenet Prize, and the Beckenbach Book Prize. The AWM will present the Alice T. Schafer Prize for Excellence in Mathematics by an Undergraduate Woman.

112th Annual Meeting of the AMS

AMS Invited Addresses

Herbert Edelsbrunner, Duke University, *Persistent homology, diagrams, and vineyards*, Saturday, 10:05 a.m.

David Eisenbud, Mathematical Sciences Research Institute, *Threads From My Life: Linear (good) Resolutions and Small (seductive) Varieties*, Friday, 3:20 p.m.

Charles L. Fefferman, Princeton University, *Whitney's extension problems*, Saturday, 9:00 a.m.

Mikhail Kapranov, Yale University, *Title to be announced*, Thursday, 10:05 a.m.

Hendrik W. Lenstra Jr., Universiteit Leiden, *Entangled radicals*, (Colloquium Lectures) Thursday, Friday, and Saturday, 1:00 p.m.

Dusa McDuff, SUNY at Stony Brook, *Recent developments in symplectic topology*, Friday, 2:15 p.m.

Michael Savageau, University of California Davis, *Title to be announced*, (Josiah Willard Gibbs Lecture), Thursday, 8:30 p.m.

AMS Special Sessions

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

Algebraic and Enumerative Combinatorics (Code: SS 12A), **Catherine H. Yan** and **Marcelo Aguiar**, Texas A&M University, **Joseph P. Kung**, University of North Texas, and **Laura F. Matusevich**, University of Pennsylvania; Friday, Saturday, and Sunday mornings.

Algebraic Groups, Symmetric Spaces, and Invariant Theory (Code: SS 15A), **Aloysius G. Helminck**, North Carolina State University, and **Dan Gagliardi**, St. Lawrence University; Saturday afternoon.

Algebraic Statistics: Theory and Practice (Code: SS 4A), **Seth M. Sullivant**, University of California Berkeley, and

Elizabeth S. Allman, University of Southern Maine; Thursday and Friday mornings, and Friday afternoon.

Analysis and Implementation of Finite Element Methods (Code: SS 19A), **Atife Caglar**, University of Wisconsin-Green Bay (AMS-SIAM); Saturday afternoon.

Ancient and Nonwestern Mathematics (Code: SS 14A), **Duncan J. Melville**, St. Lawrence University (AMS-MAA); Thursday and Friday afternoons.

Arithmetic Geometry and Modular Forms (Code: SS 16A), **Matthew A. Papanikolas** and **Ahmad M. El-Guindy**, Texas A&M University; Friday, Saturday, and Sunday mornings.

Boundary Value Problems for Ordinary Differential Equations (Code: SS 22A), **John R. Graef**, University of Tennessee at Chattanooga, and **Johnny L. Henderson**, Baylor University (AMS-SIAM); Sunday morning and afternoon.

Commutative Rings and Monoids (Code: SS 25A), **Scott T. Chapman**, Trinity University, and **James B. Coykendall**, North Dakota State University; Thursday and Saturday mornings, and Thursday afternoon.

Contemporary Dynamical Systems (Code: SS 21A), **Dmitry Zenkov**, University of Michigan, **Youngna Choi**, Montclair State University, **Anthony M. Bloch**, University of Michigan, **Todd L. Fisher**, University of Maryland, **Melvin Leok**, University of Michigan, **David S. Richeson**, Dickenson College, and **James S. Wiseman**, Swarthmore College (AMS-SIAM); Thursday and Sunday afternoons, and Saturday morning.

Continued Fractions (Code: SS 6A), **Nancy Wyshinski** and **James G. McLaughlin**, Trinity College; Friday and Saturday mornings, and Saturday afternoon.

Current Events (Code: SS 10A), **David Eisenbud**, Mathematical Sciences Research Institute; Saturday afternoon. 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 session.

Division Algebras, Galois Theory, Cohomology and Geometry (Code: SS 1A), **Kelly L. McKinnie** and **David J. Saltman**, University of Texas at Austin; Thursday morning, and Thursday and Friday afternoons.

Dynamic Equations with Applications (Code: SS 23A), **Allan C. Peterson**, University of Nebraska, and **Martin J. Bohner**, University of Missouri-Rolla; Thursday afternoon and Friday morning.

Extension of Functions (Code: SS 5A), **Alvario Arias**, University of Denver, **Charles L. Fefferman**, Princeton University, **Edward W. Odell**, University of Texas Austin, and **Thomas Slumprecht**, Texas A&M University; Thursday morning, and Thursday and Friday afternoons.

Field Extensions and Algorithms (Code: SS 33A), **Peter Stevenhagen** and **H. W. Lenstra Jr.**, Universiteit Leiden; Saturday and Sunday mornings, and Saturday afternoon.

Frames and Operator Theory in Analysis and Signal Processing (Code: SS 20A), **Peter R. Massopust**, Tuboscope Vetco Pipeline Services, **David R. Larson**, Texas A&M University, **Manos I. Papadakis**, University of Houston, **Zuhair Nashed**, University of Central Florida, **Ahmed I. Zayed**, DePaul University, and **Minh Chuong Nguyen**, Institute of Mathematics, Hanoi, Vietnam (AMS-SIAM); Thursday, Saturday, and Sunday mornings, and Friday afternoon.

History of Mathematics (Code: SS 26A), **Joseph W. Dauben**, Herbert H. Lehman College (CUNY), **Patti Hunter**, Westmont College, and **Karen H. Parshall**, University of Virginia (AMS-MAA); Saturday and Sunday afternoons.

Interdisciplinary Research Involving Analysis and Logic (Code: SS 35A), **Su Gao**, University of North Texas, **Jose N. Iovino**, University of Texas at San Antonio, and **Itay Ben-Yacov**, University of Wisconsin-Madison (AMS-ASL); Thursday and Friday mornings.

Invariant Theory (Code: SS 31A), **Mara D. Neusel**, Texas Tech University, and **David L. Wehlau**, Royal Military College; Sunday afternoon.

Mahler Measure and Heights (Code: SS 13A), **Michael J. Mossinghoff**, Davidson College, and **Jeffrey D. Vaaler**, University of Texas at Austin; Thursday morning, and Thursday and Friday afternoons.

The Many Lives of Lattice Theory, the Theory of Ordered Sets, and Universal Algebra (Code: SS 9A), **Japheth L. M. Wood**, Chatham College, **John W. Snow**, Sam Houston State University, **Jonathon D. Farley**, Harvard University, **Stefan E. Schmidt**, Phoenix Math Systems Modeling, Inc., and **Anthony A. Harkin**, Harvard University; Friday morning, and Friday and Saturday afternoons.

Mathematical Results and Challenges in Learning Theory (Code: SS 37A), **Cynthia Rudin**, Courant Institute, NYU (AMS-AWM-MAA); Sunday morning.

Mathematics Education Reform (Code: SS 8A), **Bonnie S. Saunders**, University of Illinois at Chicago, **William H. Barker**, Bowdoin College, **Dale R. Oliver**, Humboldt State University, and **Kenneth Millet**, University of California Santa Barbara (AMS-MAA-MER); Thursday and Friday mornings, and Thursday afternoon.

New Developments in Symplectic Topology (Code: SS 34A), **Dusa McDuff**, SUNY at Stony Brook, **Aleksey Zinger**, SUNY at Stony Brook and Stanford University, **Ely Kerman**, University of Illinois at Urbana-Champaign, and **Margaret F. Symington**, Georgia Institute of Technology and Mercy College; Saturday afternoon and Sunday morning.

Nonautonomous Discrete Dynamics (Code: SS 36A), **Saber N. Elaydi**, Trinity University, and **Jim M. Cushing**, University of Arizona; Friday, Saturday, and Sunday mornings.

Nonlinear Dynamical Systems (Code: SS 11A), **Zhijun Qiao**, **Andras Balogh**, and **Zhaosheng Feng**, University of Texas Pan American, **Guihua Fei**, University of Minnesota-Duluth, (AMS-SIAM); Friday and Saturday mornings, and Saturday afternoon.

Quantum Invariants of Knots and 3-Manifolds (Code: SS 18A), **Patrick M. Gilmer**, Louisiana State University, and **Charles D. Frohman**, University of Iowa; Saturday and Sunday afternoons.

Recent Advances in Mathematical Biology and Epidemiology (Code: SS 29A), **Sophia Jang**, University of Louisiana at Lafayette, and **Linda Allen** and **Lih-Ing Roeger**, Texas Tech University (AMS-MAA-SIAM); Sunday morning and afternoon.

Recent Trends in Convex and Discrete Geometry (Code: SS 17A), **Valeriu Soltan**, George Mason University, **Tibor Bisztriczky**, University of Calgary, and **Paul Goodey**, University of Oklahoma; Friday and Saturday mornings, and Friday afternoon.

Research in Mathematics by Undergraduates (Code: SS 28A), **Darren Narayan**, **Carl V. Lutzer**, **Bernard Brooks**, and **Tamas I. Wiandt**, Rochester Institute of Technology, **Michael J. Fisher**, California State University, Fresno (AMS-MAA-SIAM); Saturday and Sunday afternoons.

Stochastic, Large Scale and Hybrid Systems with Applications (Code: SS 7A), **Aghalaya S. Vatsala**, University of Louisiana at Lafayette, and **Gangaram S. Ladde**, University of Texas at Arlington (AMS-SIAM); Saturday and Sunday afternoons.

Symbolic-Numeric Computation and Applications (Code: SS 30A), **Agnes Szanto**, North Carolina State University, **Jan Verschelde**, University of Illinois at Chicago, and **Zhonggang Zeng**, Northeastern Illinois University (AMS-SIAM); Sunday morning and afternoon.

Syzygies in Commutative Algebra and Geometry (Code: SS 32A), **Irena Peeva**, Cornell University, **Sorin E. Popescu**, SUNY at Stony Brook, and **Gregory G. Smith**, Queen's University; Thursday and Saturday mornings, and Thursday afternoon.

Theory and Application of Stochastic Differential Equations (Code: SS 24A), **Armando Arciniega**, University of Texas at San Antonio, and **Edward J. Allen**, Texas Tech University (AMS-SIAM); Sunday morning and afternoon.

Time Reversal Methods: Analysis and Applications (Code: SS 3A), **Peter A. McCoy** and **Reza Malek-Madani**, U.S. Naval Academy (AMS-SIAM); Saturday and Sunday afternoons.

Topological Spaces Associated with C(X) (Code: SS 27A), **Chawne M. Kimber**, Lafayette College, and **Warren Wm. McGovern**, Bowling Green State University; Thursday morning, and Thursday and Friday afternoons.

Value Distribution in Classical and p-adic Functions Theory (Code: SS 2A), **Alain Escassut**, University Blaise Pascal, **Chung-Chun Yang**, Hong Kong University of Science and Technology, and **Ilpo Laine**, University of Joensuu; Thursday morning, and Thursday and Friday afternoons.

AMS Contributed Papers

There will be sessions for contributed papers of ten minutes' duration. Contributed papers will be grouped by related Mathematics Subject Classification into sessions insofar as possible. The author(s) and their affiliation(s) and the title of each paper accepted will be listed in the program along with the date and time of presentation. Abstracts will be published in *Abstracts Presented to the American Mathematical Society* and should be submitted electronically. See `www.ams.org/meetings/abstracts/` for the form. Select AMS CP 1 as the event code. See the beginning of this announcement for pertinent deadlines.

Other AMS Sessions

Who Wants to Be a Mathematician, Friday, 10:30 a.m.–noon, organized by **Michael A. Breen** and **Annette W. Emerson**, AMS; and **William T. Butterworth**, DePaul University. Come watch seven of the area's top high school students as they compete for cash and prizes by answering questions about mathematics. You are invited to come and take part in this educational and fun presentation.

Committee on the Profession Presentation, Thursday, 4:30 p.m.–6:00 p.m.

T.A. Development Using Case Studies: A Workshop for Faculty, Friday, 10:30 a.m.–noon and 2:30 p.m.–4:00 p.m. **Solomon Friedberg**, Boston College, and **Diane L. Herrmann**, University of Chicago, will guide workshop participants in the effective use of the case studies method as a tool in preparing Teaching Assistants for their important roles as classroom instructors. The faculty edition of the publication *Teaching Mathematics in Colleges and Universities: Case Studies for Today's Classroom* will be provided to workshop participants at no charge, compliments of the AMS. For a recent review of the book, visit www.maa.org/reviews/casestudies.html. There is a separate registration fee of $20 to participate; see the registration and housing form. There are also modest travel grants for this workshop available on a very limited basis. For the application process and other details see `www.ams.org/amsmtgs/2095_amswork.html`.

Committee on Science Policy Panel Discussion: Saturday, 2:30 p.m. to 4:00 p.m.

Committee on Education Panel Discussion: Saturday, 8:30 a.m. to 10:00 a.m.

Other AMS Events

Council: Wednesday, 1:00 p.m.

Business Meeting: Sunday, 11:10 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 15, 2005.

AMS Short Course

This two-day course on *Modeling and Simulation of Biological Networks* is organized by **Reinhard Laubenbacher**, Virginia Polytechnic Institute and State University, and takes place on Tuesday and Wednesday, January 10 and 11. Please see the complete article on page 1102. Speakers are **Elizabeth Allman**, University of Southern Maine, *Phylogenetics*; **Suzanne M. Lenhart**, University of Tennessee, *Optimal control of population and disease models*; **Madhav Marathe,** Virginia Bioinformatics Institute, *Interaction-based computing approach to modeling and simulations of large biological and socio-technical systems*; **Pedro Mendes**, Virginia Bioinformatics Institute, *Modeling and simulation of biochemical networks;* **Lior Pachter**, University of California Berkeley, *Title to be announced*; and **Brandilyn Stigler**, Virginia Polytechnic Institute and State University, *A computational algebra approach to systems biology*. There are separate registration fees to participate. See the fee schedule on the registration form at the back of this issue.

AMS 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 Wednesday, 8:00 a.m. to 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 registration fee for the workshop, which is in addition to and separate from the Joint Meetings registration. An invitation to attend the workshop will be sent to department chairs in the fall. Information will also be posted on the AMS website. For further information, please contact the AMS Washington office at 202-588-1100 or amsdc@ams.org.

89th Annual Meeting of the MAA

MAA Invited Addresses

Marc Chamberland, Grinnell College, *The many faces of pi*, (Student Lecture) Saturday, 1:00 p.m.

Keith J. Devlin, Center for the Study of Language and Information, Stanford University, *The mathematics of everyday language*, Friday, 10:05 a.m.

Naomi Fisher, University of Illinois at Chicago, *Mathematicians and education reform: A cautionary tale*, Sunday, 9:00 a.m.

Ben Green, University of Bristol, *Patterns of primes*, Sunday, 10:05 a.m.

Robert E. Megginson, University of Michigan, Ann Arbor, *Participation in mathematics by American Indians: A case study in underrepresentation*, Thursday, 3:20 p.m.

Francis Edward Su, Harvey Mudd College, *Preference sets, graphs, and voting in agreeable societies*, Thursday, 2:15 p.m.

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.

Minicourse #1: *Designing and evaluating assessments for introductory statistics*, organized by **Beth L. Chance**, California Polytechnic State University, San Luis Obispo; **Robert C. Delmas**, University of Minnesota; **Allan J. Rossman**, California Polytechnic State University, San Luis Obispo. Part 1: Thursday, 9:00 a.m.–11:00 a.m.; Part 2: Saturday, 9:00 a.m.–11:00 a.m. Statistics teachers find it challenging to construct student assessments that focus on conceptual understanding, allow consistent scoring, and provide informative feedback. Participants will be involved in constructing assessment instruments for use in introductory courses using an online assessment resource, ARTIST, and in evaluating the results. We will discuss guidelines of effective assessment, resources for assessment material categorized by concept and level of difficulty, suggestions for evaluating student performance through examinations and performance assessments, and use of a comprehensive first-course exam. Participants will be invited to pilot items, contribute new items, and share outcome data for comparison across institutions through ARTIST. Cost is $95; enrollment limit is 30.

Minicourse #2: *JAVA applets in teaching mathematics*, organized by **Joe Yanik**, Emporia State University, and **Michael E. Mays**, West Virginia University. Part 1: Thursday, 2:15 p.m.–4:15 p.m.; Part 2: Saturday, 1:00 p.m.–3:00 p.m. This minicourse will introduce the participants to the Java programming language and its use in creating mathematical activities. No previous experience in Java programming will be assumed. Through the use of a Visual Development Environment and a MathToolkit that was

developed with the support of an NSF grant, this hands-on workshop will lead the participants through the creation of some sample applets and introduce them to the MathToolkit. In addition, they will be provided with a more complete tutorial that they can take home that will teach them the Java programming language and its use in creating mathematical applets. Cost is $95; enrollment limit is 30.

Minicourse #3: *Using and adapting online materials*, organized by **David A. Smith** and **Lang Moore**, Duke University. Part 1: Thursday, 4:45 p.m.–6:45 p.m.; Part 2: Saturday, 3:30 p.m.–5:30 p.m. After a general introduction, the minicourse will begin with a discussion and demonstration of the use of Math Gateway and MathDL to identify, explore, and evaluate online mathematics materials. We will also discuss current trends in online mathematics, e.g., writing in MathML, for the presentation and use of mathematical content, and the increasing use of Flash as a way to create mathlets. Participants will be able to experiment with searching for online materials. At the end of the first session, we will collect suggestions for issues to be discussed in the second session. In the second session, we will respond to these issues with more time for participant exploration. The course will conclude with a general summary. Cost is $95; enrollment limit is 30.

Minicourse #4: *Creating interactive workbooks using MS Excel*, organized by **Sarah L. Mabrouk**, Framingham State College. Part 1: Friday, 8:00 a.m.–10:00 a.m.; Part 2: Sunday, 9:00 a.m.–11:00 a.m. Using the Control Toolbox, one can create interactive workbooks containing scrollbars, buttons, and graphs that can be used for course demonstrations and for course assignments/projects as well as workbooks that allow students to explore concepts. Creating interactive workbooks using MS Excel requires only basic knowledge of graph and data creation, and students need only MS Excel to use these workbooks; no specialized knowledge is needed to create them and the Internet is not required in order to use them. Participants will create interactive workbooks containing graph and data components. Sample topics include analysis of spring-mass system and numerical integration. Cost is $95; enrollment limit is 30.

Minicourse #5: *Finite group behavior: Windows software for teaching beginning group theory*, organized by **Edward C. Keppelmann**, University of Nevada Reno, and **Ellen J. Maycock**, Depauw University. Part 1: Friday, 10:30 a.m.–12:30 p.m.; Part 2: Sunday, 1:00 p.m.–3:00 p.m. In providing the ability to calculate with examples, FGB allows an instructor to teach beginning group theory in a more effective way than would be possible by the traditional theorem/proof based approach. The software is free from `http://unr.edu/homepage/keppelma/fgb.html`. This minicourse will provide an overview of the software along with a series of collaborative activities that show the pedagogical power of the program. Users of the FGB are able to construct and visualize subgroups homomorphisms, cosets and factor groups among other features. Participants will receive a handbook of materials along with a limited release superpowered beta version of the program which provides enhanced pedagogical possibilities. Cost is $95; enrollment limit is 30.

Minicourse #6: *Technology tools for discrete mathematics*, organized by **Douglas E. Ensley** and **Katherine G. McGivney**, Shippensburg University. Part 1: Friday, 1:00 p.m.–3:00 p.m.; Part 2: Sunday, 3:30 p.m.–5:30 p.m. Discrete math courses primarily serve students studying math and computer science. This minicourse will focus on three major areas of discrete math (sets/relations/graphs, combinatorics/probability, and writing mathematical proofs) and how computer technology can be used to make these courses more student centered. We will use Maple for the first day and predesigned Flash movies for the second day, and in each case we will spend some time on special features of the software and some time on design issues for effective classroom use. The minicourse participants will come away with new ideas and customized material for their own discrete math courses. Some familiarity with basic Maple syntax is expected, but no experience with Flash will be assumed. Cost is $95; enrollment limit is 30.

Minicourse #7: *Geometry with history for teaching teachers*, organized by **David W. Henderson** and **Daina Taimina**, Cornell University. Part 1: Thursday, 9:00 a.m.–11:00 a.m.; Part 2: Saturday, 9:00 a.m.–11:00 a.m. This workshop will facilitate a hands-on cooperative experience of the geometries of various surfaces (cones, cylinders, spheres, and hyperbolic planes), studying the intrinsic geometry of these surfaces. We will also explore the interactions (both ways) between geometry and mechanical motions. We will use four historical strands to organize our reflection on the basic geometric notions of Euclidean and non-Euclidean geometry. These explorations enhance our understandings of Euclidean geometry and help to demonstrate a nonaxiomatic, nonformal view of mathematics and mathematics learning. Appropriate for all mathematicians teaching teachers. Teaching materials and references to Web and paper resources will be provided. Cost is $60; enrollment limit is 50.

Minicourse #8: *Mathematical and statistical modeling in biology: Competitive exclusion, coexistence, estimation, and control*, organized by **Azmy S. Ackleh**, University of Louisiana at Lafayette, and **H. Thomas Banks**, North Carolina State University. Part 1: Thursday, 2:15 p.m.–4:15 p.m.; Part 2: Saturday, 1:00 p.m.–3:00 p.m. The participants will learn about differential equation models which validate the competitive exclusion principle and others where coexistence between competing species occurs. Furthermore, we will discuss some aspects of current HIV modeling research including basic multiscale mathematical modeling (cellular to individual to population), the importance of qualitative properties of models, statistical modeling including inverse problem formulations for estimation of distributions, treatment of censored data in both estimation and control, and computational methodology for both open loop and closed loop control in nonlinear systems. No particular background in modeling, inverse problems or control theory will be assumed of participants. The participants will work on short projects

which provide them with hands-on experience in using these tools. Cost is $60; enrollment limit is 50.

Minicourse #9: *Discrete dynamical systems and problem solving,* organized by **Steve Horton**, **Rodney Sturdivant**, and **Gary W. Krahn**, U.S. Military Academy. Part 1: Thursday, 4:45 p.m.–6:45 p.m.; Part 2: Saturday, 3:30 p.m.–5:30 p.m. Discrete dynamical systems describe changing behavior in the forms of growth, decay, oscillation, velocity, acceleration, and accumulation. Studying and analyzing these changing phenomena is important for undergraduates. In this minicourse, the concepts of dynamical systems are explored and used to solve problems that connect mathematics to other subjects. Important mathematical concepts such as equilibria, stability, and long-term behavior are covered along with an introduction to numerical, graphical, and analytical solution methods. Cost is $60; enrollment limit is 50.

Minicourse #10: *A beginner's guide to the scholarship of teaching and learning in mathematics*, organized by **Curtis D. Bennett** and **Jacqueline M. Dewar**, Loyola Marymount University; **Thomas F. Banchoff**, Brown University; and **John P. Holcomb**, Cleveland State University. Part 1: Friday, 9:00 a.m.–11:00 a.m.; Part 2: Sunday, 9:00 a.m.–11:00 a.m. The Scholarship of Teaching and Learning (SoTL) encompasses the work done when a faculty member uses disciplinary knowledge and a scholarly frame of mind to investigate questions about student learning in order to better understand how students learn disciplinary knowledge and to share this new understanding with others. We will present a framework that illustrates the similarities between disciplinary research and SoTL work, offer examples of SoTL projects in mathematics at varying stages of development, and discuss methods for investigation and publication. Participants will be guided in transforming a teaching problem of their own into a problem for scholarly investigation. Cost is $60; enrollment limit is 50.

Minicourse #11: *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: Friday, 1:00 p.m.–3:00 p.m.; Part 2: Sunday, 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. Cost is $60; enrollment limit is 50.

Minicourse #12: *Getting students involved in undergraduate research*, organized by **Aparna W. Higgins**, University of Dayton, and **Joseph A. Gallian**, University of Minnesota Duluth. Part 1: Thursday, 9:00 a.m.–11:00 a.m.; Part 2: Saturday, 9:00 a.m.–11:00 a.m. This course will cover many aspects of facilitating research by undergraduates, such as finding appropriate problems, deciding how much help to provide, and presenting and publishing the results. Examples will be presented of research in summer programs and research that can be conducted during the academic year. Although the examples used will be primarily in the area of discrete mathematics, the strategies discussed can be applied to any area of mathematics. Cost is $60; enrollment limit is 50.

Minicourse #13: *The Fibonacci and Catalan numbers*, organized by **Ralph P. Grimaldi**, Rose-Hulman Institute of Technology. Part 1: Thursday, 2:15 p.m.–4:15 p.m.; Part 2: Saturday, 1:00 p.m.–3:00 p.m. In introductory courses in discrete or combinatorial mathematics one encounters the Fibonacci numbers and sometimes the Catalan numbers. This minicourse will review and then extend this first encounter as it examines some of the properties these numbers exhibit as well as applications where these sequences arise. A survey of applications dealing with chemistry, physics, computer science, linear algebra, set theory, graph theory, and number theory will show why these sequences are of interest and importance. Cost is $60; enrollment limit is 50.

Minicourse #14: *Teaching linear algebra with applications*, organized by **Gilbert Strang**, Massachusetts Institute of Technology. Part 1: Thursday, 4:45 p.m.–6:45 p.m.; Part 2: Saturday, 3:30 p.m.–5:30 p.m. Linear algebra is a crucial subject in the teaching and applications of mathematics. We hope to suggest new ideas in its presentation. Among those ideas is a range of problems whose exploration (by hand and mind, not by computer) will lead us to the central ideas of linear algebra. The pure and applied parts of this subject will be intertwined in the minicourse, as they are in reality. In a way, the minicourse itself will try to show the fascination of teaching and learning and using linear algebra. The problems will be distributed (with some solutions!), and we describe our use of the course page. Cost is $60; enrollment limit is 50.

Mincourse #15: *A novel approach to problem solving*, organized by **Andrew C.-F. Liu**, University of Alberta. Part 1: Friday, 9:00 a.m.–11:00 a.m.; Part 2: Sunday, 9:00 a.m.–11:00 a.m. At the University of Alberta, we have designed a very successful sophomore course on problem solving, using as an innovative text a mathematical novel in which the main character, a mathematical version of Sherlock Holmes, solves important, instructive, and interesting problems for his clients. In this minicourse, we will run a simulated class and examine suitable problems from various sources. We will also provide a brief history and discuss the basic philosophy of our course. There are no prerequisites, and sample notes and problems will be distributed to the participants. Cost is $60; enrollment limit is 50.

Minicourse #16: *Fair division: From cake-cutting to dispute resolution*, organized by **Steven J. Brams**, New York University. Part 1: Friday, 1:00 p.m.–3:00 p.m.; Part 2: Sunday, 1:00 p.m.–3:00 p.m. Cutting a cake, dividing up the property in an estate, determining the borders in an international dispute—such problems of fair division are ubiquitous. Rigorous procedures for allocating goods (or

"bads" like chores), or deciding who wins on what issues in disputes, will be analyzed, starting with the well-known cake-cutting procedure of "I cut, you choose". Particular attention will be given to procedures that produce "envy-free" allocations, in which everybody thinks he or she received the largest portion and hence does not envy anybody else. Results obtained in the last five years will be highlighted. Applications to real-life conflicts, from interpersonal to international, will be discussed. Cost is $60; enrollment limit is 50.

Invited Paper Sessions

The Role of On-Line Technology Courses for Teachers of Preservice Mathematics Teachers, Thursday 9:00 a.m.–11:00 a.m., organized by **Judy O'Neal**, North Georgia College & State University, and **Franklin D. Demana**, Ohio State University.

Assessment of Learning in the Mathematics Major, Thursday, 2:15 p.m.–5:15 p.m., organized by **Bernard L. Madison**, University of Arkansas, and **William E. Haver**, Virginia Commonwealth University. The papers in this session will be descriptions of assessment programs aimed at learning in the major. The invitees will be teams of faculty who are currently participants in an MAA PREP/SAUM workshop that assists faculty in these programs. The workshop began in March 2004 and will conclude just before the 2006 Joint Mathematics Meetings. The session is part of the MAA-NSF Supporting Assessment in Undergraduate Mathematics (SAUM) project.

Environmental Modeling, Thursday, 2:15 p.m.–5:15 p.m., organized by **Ben A. Fusaro**, Florida State University. This session provides a spectrum of environmental modeling. It begins with a modification of the classical predator-prey equations and then moves on to factors associated with the likelihood of extinction of a species. The third presentation looks at the challenge of managing a natural resource. The last talk deals with algorithms for models of flows in porous media and the numerical solutions of these models. Speakers include **Michael Olinick**, Middlebury College, *Modeling the predator-prey relationship*; **Roland H. Lamberson**, Humboldt State University, *A mathematical look at extinction*; **Catherine A. Roberts**, College of the Holy Cross, *White water rafting in the Grand Canyon*; and **Shuyu Sun** and **Mary Wheeler**, Institute for Computational Engineering & Science, University of Texas at Austin, *Algorithms for modeling flow and reactive transport in porous media*. The session is sponsored by the MAA SIGMAA on Environmental Mathematics.

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 ten or fifteen minutes. Each session room contains an overhead projector and screen; blackboards will not be available. Speakers needing additional audio-visual equipment should contact, as soon as possible but prior to September 28, 2005, the session organizer whose name is followed by an asterisk (*). Organizers have been advised that the majority of speakers in a session must require the use of additional audio-visual equipment in order to justify the expenditure. Please note that the dates and times scheduled for these sessions remain tentative. Full descriptions of these sessions may be found in the June/July issue of the Notices, p. 702, or see www.ams.org/amsmtgs/2095_maacontrib.html

Achieving Quantitative Literacy (MAA CP P1), Friday afternoon; **Aaron Montgomery***, Central Washington University (montgoaa@cwu.edu); **Stuart Boersma**, Central Washington University; and **Semra Kilic-Bahi**, Colby Sawyer College.

Countering "I Can't Do Math": Strategies for Teaching Underprepared, Math-Anxious Students (MAA CP S1), Saturday and Sunday mornings; **Bonnie Gold***, Monmouth University (bgold@monmouth.edu); **Suzanne Dorée**, Augsburg College; and **Richard Jardine**, Keene State College.

Courses below Calculus: A Continuing Focus (MAA CP L1), Friday and Saturday mornings; **Mary Robinson***, University of New Mexico-Valencia Campus (maryrobn@ unm.edu); **Florence S. Gordon**, New York Institute of Technology; **Laurette Foster**, Prairie View A&M University; **Arlene Kleinstein**, Farmingdale State University of New York; **Norma Agras**, Miami Dade Community College; and **Linda Martin**, Albuquerque T-VI. This session is cosponsored by the CUPM Subcommittee on Curriculum Renewal Across the First Two Years, the Committee on Two-Year Colleges, and the Committee on Service Courses.

First Steps for Implementing the Recommendations of the Guidelines for Assessment and Instruction in Statistics Education (GAISE) College Report (MAA CP X1), Saturday afternoon; **Ginger Holmes Rowell***, Middle Tennessee State University (rowell@mtsu.edu), and **Thomas L. Moore**, Grinnell College. Presenters in this session will be considered for the SIGMAA on Statistics Education's Best Contributed Paper Award.

Getting Students to Discuss and to Write about Mathematics (MAA CP H1), Thursday and Friday afternoons; **Martha Ellen Murphy Waggoner***, Simpson College (waggoner@simpson.edu); **Charlotte A. Knotts-Zides**, Wofford College; and **Harrison W. Straley**, Wheaton College.

Handheld Technology in Content and Methods Courses for Prospective Teachers with a Special Interest Strand Devoted to Teaching and Learning Geometry (MAA CP Y1), Saturday afternoon; **Charles Vonder Embse***, Central Michigan University (vonde1cb@cmich.edu); **Deborah A. Crocker**, Appalachian State University; **Gregory D. Foley**, The Liberal Arts and Science Academy of Austin at Lyndon B. Johnson High School; and **Stephen F. West**, SUNY Geneseo.

Innovative Teaching/Learning Ideas Using Technology in the Teaching of Courses before College Algebra (MAA CP J1), Friday morning; **Ed Laughbaum***, The Ohio State University (elaughba@math.ohio-state.edu), and **Mohammad H. Ahmadi**, University of Wisconsin-Whitewater.

Introductory Actuarial Science Programs (MAA CP Y7), Sunday morning; **Robert E. Buck***, Slippery Rock University (robert.buck@sru.edu).

Mathematical Connections in the Arts (MAA CP N1), Friday afternoon; **Douglas E. Norton***, Villanova University

(douglas.norton@villanova.edu); **Reza Sarhangi**, Towson University; and **Nathaniel A. Friedman**, State University of New York, Albany.

Mathematics and Popular Culture (MAA CP V1), Saturday afternoon; **Sarah J. Greenwald***, Appalachian State University (greenwaldsj@appstate.edu), and **Christopher Goff**, University of the Pacific.

Mathematics Experiences in Business, Industry, and Government (MAA CP R1), Saturday morning; **Philip E. Gustafson***, Mesa State College (pgustafs@mesastate.edu), and **Michael G. Monticino**, University of North Texas. This session is sponsored by the SIGMAA on Business, Industry and Government.

Mathematics of Chemistry (MAA CP Q1), Saturday morning; **George Rublein***, College of William and Mary (gtrubl@math.wm.edu).

Mathematics of Sports and Games (MAA CP M1), Friday afternoon; **Sean L. Forman***, Saint Joseph's University (sforman@sju.edu), and **Douglas Drinen**, Sewanee: University of the South.

Mathlets for Teaching and Learning Mathematics (MAA CP B1), Thursday and Friday mornings; **David M. Strong***, Pepperdine University (david.strong@pepperdine.edu); **Thomas E. Leathrum**, Jacksonville State University; and **Joe Yanik**, Emporia State University.

Models That Work: Building Diversity in Advanced Mathematics (MAA CP Y3), Sunday morning; **Abbe H. Herzig***, University at Albany, SUNY (aherzig@albany.edu), and **Patricia Hale**, California State Polytechnic University, Pomona. This session is jointly sponsored by the MAA Committee on the Participation of Women and the MAA Committee on the Participation of Minorities.

My Favorite Demo: Innovative Strategies for Mathematics Instructors (MAA CP U1), Saturday morning and afternoon; **David R. Hill***, Temple University (hill@math.temple.edu), and **Lila F. Roberts**, Georgia College & State University.

My Three Favorite Original Calculus Problems (MAA CP W1), Saturday afternoon; **J. D. Phillips***, Wabash College (phillipj@wabash.edu), and **Timothy J. Pennings**, Hope College.

Number-Theoretic Applications (MAA CP E1), Thursday afternoon; **Thomas Koshy***, Framingham State College (tkoshy@frc.mass.edu), and **Thomas Moore**, Bridgewater State College.

Philosophy of Mathematics (MAA CP A1), Thursday morning; **Roger A. Simons***, Rhode Island College (rsimons@ric.edu), and **Satish C. Bhatnagar**, University of Nevada. This session is sponsored by the SIGMAA for the Philosophy of Mathematics.

Post-secondary Mathematics Assessment: Needs and Challenges (MAA CP C1), Thursday morning; **Gloria S. Dion*** (gdion@ets.org), **Daryl Ezzo**, and **Luis E. Saldivia**, Educational Testing Service.

Professional Development Programs for K–12 Teachers (MAA CP D1), Thursday morning; **Zsuzsanna Szaniszlo***, Valparaiso University (zsuzsanna.szaniszlo@valpo.edu); **Laurie Burton**, Western Oregon University; **Judith L. Covington**, Lousiana State University Shreveport; and **Patricia Hale**, California State Polytechnic University, Pomona.

Research and Other Mathematical Experiences for Students outside the Classroom (MAA CP K1), Friday morning; **Kay B. Somers***, Moravian College, (mekbs01@moravian.edu); **Susan E. Morey**, Texas State University; **Sivaram K. Narayan**, Central Michigan University; and **Jody Sorensen**, Grand Valley State University. This session is organized by the MAA Committee on Undergraduate Student Activities and Chapters and by the CUPM Subcommittee on Undergraduate Research.

Research on the Teaching and Learning of Undergraduate Mathematics (MAA CP O1), Friday afternoon; **William O. Martin***, North Dakota State University (william.martin@ndsu.edu); **Barbara E. Edwards**, Oregon State University; and **Michael Oehrtman**, Arizona State University.

Strategies to Encourage Persistence in Mathematics (MAA CP Y5), Sunday morning; **David C. Carothers***, James Madison University (carothdc@jmu.edu); **Ahmed I. Zayed**, DePaul University; and **Keith E. Mellinger**, University of Mary Washington. This session is sponsored by the MAA Committee on the Teaching of Undergraduate Mathematics (CTUM).

Teaching Mathematics Courses Online (MAA CP F1), Thursday afternoon; **Kate McGivney*** (kgmcgi@ship.edu), and **Cheryl L. Olsen**, Shippensburg University.

Teaching and Assessing Modeling and Problem Solving (MAA CP G1), Thursday afternoon; **Mike Huber*** (michael.huber@usma.edu), and **Alex J. Heidenberg**, U.S. Military Academy.

Teaching Operations Research in the Undergraduate Classroom (MAA CP T1), Saturday morning; **Christopher J. Lacke***, Rowan University (lacke@rowan.edu), and **Paul E. Fishback**, Grand Valley State University.

Using History of Mathematics in Your Mathematics Courses (MAA CP I1), Friday morning; **Richard J. Jardine***, Keene State College (rjardine@keene.edu), and **Amy Shell-Gellasch**, Grafenwoer, Germany.

General Session (MAA CP Z1), Thursday, Friday, Saturday, Sunday mornings and afternoons; **Stephen Davis***, Davidson College (stdavis@davidson.edu), and **Eric Marland**, Appalachian 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 and not to this session.

Submission Procedures for MAA Contributed Papers

Send your abstract directly to the AMS (abstracts should not be sent to the organizer(s)). 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 reach the AMS by Wednesday, September 28, 2005.

The AMS will publish abstracts for the talks in the MAA sessions. Abstracts must be submitted electronically to the AMS. No knowledge of LaTeX is necessary; however, LaTeX and $\mathcal{A}\mathcal{M}\mathcal{S}$-LaTeX are the only typesetting systems that can be used if mathematics is included. The abstracts submissions page is at http://www.ams.org/cgi-bin/abstracts/

abstract.pl. Simply fill in each field as instructed.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.

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, Friday, 8:00 a.m.–10:00 a.m., chaired by **Stephen C. Carlson**, Rose-Hulman Institute of Technology.

SIGMAA on Business, Industry, and Government

Reception, Friday, 5:45 p.m.–6:45 p.m. (see the "Social Events" section).

Mathematics Experiences in Business, Industry and Government, Saturday, 8:00 a.m.–11:00 a.m. (see the "Contributed Paper Session" section).

SIGMAA on Environmental Mathematics

Environmental Modeling, Thursday, 2:15 p.m.–4:15 p.m. (see the "Invited Paper Session" section).

Business Meeting and Special Invited Presentation, Thursday, 4:15 p.m.–6:15 p.m., organized by **Ben A. Fusaro**, Florida State University. Guest lecturer **Bruce Herbert**, TAMU Geology Department, will speak on *Complex earth and environmental systems*.

SIGMAA on the History of Mathematics

Using History of Mathematics in Your Mathematics Courses, Friday, 8:00 a.m.–noon. (see the "Contributed Paper Session" section).

Annual Meeting and Guest Lecture, Friday, 6:00 p.m.–8:00 p.m., organized by **Amy Shell-Gellasch**, Grafenwoer, Germany. The annual business meeting will begin with light snacks and a cash bar. The annual invited lecture will follow the meeting. This year **Kim L. Plofker**, University of Utrecht, will speak on *History of mathematics and original sources in India: A fieldwork report*. For more information, please go to the HOM SIGMAA website, accessible from the MAA website, or contact Amy Shell-Gellasch at amy.shellgellasch@us.army.mil.

SIGMAA on the Philosophy of Mathematics

Annual Meeting, Reception, and Guest Lecture, Saturday, 6:00 p.m.–8:00 p.m., organized by **Bonnie Gold**, Monmouth University. The meeting will be chaired by **Roger A. Simons**, Rhode Island College. The guest lecture will be given by **Paul Humphreys**, University of Virginia.

SIGMAA on Quantitative Literacy

Business Meeting and Reception, Saturday, 4:00 p.m.–5:00 p.m., organized by **Caren L. Diefenderfer**, Hollins University; **Judith F. Moran**, Trinity College; and **Maura B. Mast**, University of Massachusetts Boston.

SIGMAA on Research in Undergraduate Mathematics

Research on the Teaching and Learning of Undergraduate Mathematics, Friday, 1:00 pm–4:00 pm (see the "Contributed Paper Session" section).

Business Meeting and Guest Lecturer, Friday, 5:45 p.m.–7:45 p.m., organized by **Barbara E. Edwards**, Oregon State University.

A *MAA Notes* Sampler, Sunday, 9:00 a.m.–10:20 a.m., organized by **Barbara E. Edwards**, Oregon State University, and **William O. Martin**, North Dakota State University. The panel will discuss several chapters from an upcoming *MAA Notes* volume on research in undergraduate mathematics education, with emphasis on the implications of that research in the teaching of undergraduate mathematics courses. The volume will include papers written by mathematics education researchers and by mathematicians discussing topics in the undergraduate curriculum as well as overarching issues in undergraduate mathematics education. Panelists are **Chris Rasmussen**, San Diego State University; and **Marilyn P. Carlson** and **Michael Oehrtman**, Arizona State University.

SIGMAA on Statistics

First Steps for Implementing the Recommendations of the Guidelines for Assessment and Instruction in Statistics Education (GAISE) College Report, Saturday afternoon, 1:00 p.m.–5:00 p.m. (see the "Contributed Paper Session" section).

SIGMAA on Statistics Education

Implications of the New ASA (GAISE) Guidelines for Teaching Statistics, Thursday, 8:00 a.m.–9:20 a.m., organized by **Thomas L. Moore**, Grinnell College, and **Christopher J. Lacke**, Rowan University. Participants in the Guidelines for Assessment and Instruction in Statistics Education (GAISE) project have created two reports of recommendations for introductory statistics courses (college level) and statistics education in preK–12 years. These committees were commissioned by the American Statistical Association, which recently approved the recommendations of both GAISE committees. This panel will explore implications of the college-level GAISE recommendations to how we teach introductory statistics and implications of the preK–12 GAISE recommendations to how we prepare elementary, middle grade, and secondary teachers as well as implications for college statistics teachers on serving students who enter college having studied statistics. We will hear two panelists from each GAISE committee, one of whom will discuss the history and context of the committee's work and the other of whom will discuss the current state of their recommendations within their respective domains of college-level statistics and preK–12 level statistics. Panelists will be **Robin H. Lock**, St. Lawrence University; **Roxy Peck**, California Polytechnic State University, San Luis Obispo; **Mike Perry**, Appalachian State University; and **Jessica Utts**, University of California Davis. The session will be moderated by **Carolyn K. Cuff**, Westminster College.

Requiring Statistics of Every Mathematics Major: Model Courses, Thursday, 9:30 a.m.–10:50 a.m. (see "MAA Other Sessions" section).

Business Meeting, Friday, 5:45 p.m.–7:45 p.m., organized by **Thomas L. Moore**, Grinnell College. There will be refreshments, prizes, and a chance to network with statistics educators from around the country.

SIGMAA on the Teaching of Advanced High School Mathematics

AP Calculus: Friend or Foe?, Saturday, 9:00 a.m.–10:20 a.m., organized by **Daniel J. Teague**, North Carolina School of Science and Mathematics. It is estimated that as many as 500,000 students are taking calculus in high school this year, the majority of them through an AP course. Does AP calculus serve the needs of these students for a strong foundation in mathematics or has the rush to calculus weakened the students' background in precalculus mathematics? Is AP calculus the best preparation for future mathematicians? How are we addressing the 200,000 students who have taken calculus in high school but are repeating the course in college because they either did poorly on the AP exam, or took calculus for college admissions with no expectation of advanced placement? What can the MAA community of mathematicians offer AP teachers to insure that AP calculus continues to be a friend to quality mathematics education rather than a foe? Panelists include **David M. Bressoud**, Macalaster College; **Susan Schwartz Wildstrom**, Walt Whitman High School; and **Daniel Kennedy**, The Baylor School.

WEB SIGMAA

Business Meeting and Guest Lectures, Friday, 6:00 p.m.–7:30 p.m., organized by **Murray Eisenberg**, University of Massachusetts. The guest speakers are **Thomas F. Banchoff**, Brown University, and **Douglas A. Quinney**, University of Keele.

Serious Data and Serious Tools on the Web for a Serious Problem, Saturday, 2:30 p.m.–3:50 p.m., organized by **Franklin A. Wattenberg**, U.S. Military Academy. In 1972 the authors of *Limits to Growth* said, "If present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next 100 years. The most probable result will be a rather sudden and uncontrolled decline in both population and industrial capacity." Julian Symon responded, "The material conditions of life will continue to get better for most people, in most countries, most of the time, indefinitely." Thirty-three years later the debate rages on. Besides being an important problem, this is an excellent venue for mathematical modeling. At the U.S. Military Academy this topic is a theme in the mathematics program from the first semester of the two-year core mathematics sequence through the senior-level capstone course. This session emphasizes model-building, and analyzing and using data obtained largely from the Web, rather than completed models.

Other MAA Sessions

Permanent Use of Temporary Faculty: The Status of Nonladder Faculty in Departments of Mathematics, Thursday, 8:00 a.m.–9:20 a.m., organized by **Judith L. Baxter**, University of Illinois-Chicago; **Kevin E. Charlwood**, Washburn University; and **Natasha M. Speer**, Michigan State University. Invited speakers with experience in the selection, evaluation, and retention of nonladder stream faculty in the mathematical sciences will share details of the particular institutional difficulties they face and how they solve these problems; similarly, temporary faculty will address issues from their standpoint. Invited speakers will come from a variety of institutions (Research I, four-year comprehensive, two-year colleges), and include at least one adjunct. Typical presentations might address important statistical information regarding an institution's adjunct pool, how to integrate temporary faculty into the intellectual life of a department, and strategies for survival while holding multiple part-time appointments. The session is sponsored by the Joint Committee on Teaching Assistants and Part-Time Instructors (TA/PTI).

Workshop on Training T.A.s, Thursday, 8:30 a.m.–10:55 a.m., organized by **David Manderscheid**, University of Iowa. How are T.A. training sessions set up? What are the similarities and differences between such sessions? How can case studies be used to support T.A. training? How might T.A. training compare with preparing your faculty? These issues and others will be discussed. Participants should bring T.A. training materials they might have to this interactive workshop. Panelists will include **Solomon Friedberg**, Boston College, and **Maria S. Terrell**, Cornell University. The session is sponsored by the Committee on Graduate Students

Requiring Statistics of Every Mathematics Major: Model Courses, Thursday, 9:30 a.m.–10:50 a.m., organized by **Thomas L. Moore**, Grinnell College, and **Harriet S. Pollatsek**, Mount Holyoke College. The CUPM Guide 2004 recommends that "every mathematical sciences major should study statistics or probability with an emphasis on data analysis." For many years the only course offered for credit toward the major in mathematics was a probability and mathematical statistics course that traditionally taught little, if any, data analysis. While this remains the only option at many schools, there now are courses that can serve as models of what the CUPM recommendation envisions. For this panel discussion, we have invited four innovators to speak about four such courses. This collection of courses will indicate the wide range of course topics that can fit into the CUPM recommendation. Each speaker will describe his or her course and its place within the mathematical sciences curriculum. We will leave ample time for audience discussion. Panelists will be **George W. Cobb**, Mount Holyoke College, **Robin Lock**, St. Lawrence University, **Deborah Nolan**, University of California Berkeley; and **Allan J. Rossman**, California Polytechnic State University, San Luis Obispo. The session is co-sponsored by CUPM and the SIGMAA on Statistics Education.

National Science Foundation Programs Supporting Learning and Teaching in the Mathematical Sciences,

Thursday, 9:30 a.m.–10:50 a.m., organized by **Elizabeth J. Teles**, **John R. Haddock**, and **Lee L. Zia**, NSF Division of Undergraduate Education; **John S. Bradley**, NSF Division of Elementary, Secondary and Informal Education; and **Lloyd E. Douglas**, NSF Division of Mathematical Sciences. 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. In addition, anticipated budget highlights and other new initiatives for the next fiscal year will be presented.

How to Interview for Your First Job, Thursday, 2:15 p.m.– 3:35 p.m., organized by **David C. Manderscheid**, University of Iowa. This session is aimed at Ph.D. students and at recent Ph.D.'s. An overview of the employment process will be given with ample opportunity for participants to ask questions. The emphasis will be on the portion of the employment process from interviewing through accepting an offer. Questions that will be addressed include: 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? How do you choose among competing offers? Panelists include **Sharon M. Clarke**, Pepperdine University; **James H. Freeman**, Cornell College; **David C. Manderscheid**; and **John A. Vano**, University of Wisconsin. The session is cosponsored by the MAA Committee on Graduate Students and the Young Mathematicians Network.

Advice and Admonitions for NSF Projects: What Worked, What Did Not, and What Lessons Were Learned, Thursday, 2:15 p.m.–3:35 p.m., organized by **Tingxiu Wang**, **Joe Kotowski** and **Gloria E. Liu**, Oakton Community College; and **Elizabeth J. Teles**, NSF Division of Undergraduate Education. Each year many colleges receive grants from the National Science Foundation for undergraduate projects. Project principal investigators (PIs), co-principal investigators (co-PIs), and project personnel must have successful stories, as well as failures or cautions when they implemented the projects. This session is to share their experiences. Panelists will discuss how they implemented their projects, what worked, what did not and what lessons they learned. An NSF officer will talk about grant opportunities and project management. This session specially welcomes audience participants who have implemented or are implementing NSF projects and others who are interested in applying for NSF and other grants. Panelists include **Shirley B. Gray**, California State University-Los Angeles; **Deborah Hughes-Hallett**, University of Arizona; **David A. Smith**, Duke University; **Ignatios E. Vakalis**, Capital University; **Sharon Cutler Ross**, Georgia Perimeter College; and **Philip D. Wagreich**, University of Illinois-Chicago.

You Have a Job, Now What? Professional Development Opportunities, Thursday, 3:50 p.m.–5:10 p.m., organized by **Kimberly A. Roth**, Wheeling Jesuit University; **Joshua D. Laison** Colorado College; and **Sarah Ann Stewart**, Belmont University. Once you start at a new job, it is important to keep professionally active. Panelists will discuss how to find professional development activities and the particular ones they are involved with. The session will be useful to both people starting jobs and people who hope to find one soon. The goal is to alert individuals of the wealth of opportunities available to help recent graduates in their professional development. Cosponsored by the Young Mathematicians' Network.

The Great Pi/e Debate, Thursday, 4:00 p.m.–4:45 pm, organized by **Colin C. Adams** and **Thomas Garrity**, Williams College. We will settle once and for all the burning question that has plagued mathematics from time immemorial: "Which is the more important number, e or pi?" In this gloves off no-holds-barred debate, the adversaries will use any means, legal or otherwise, to prove their point. Moderated by **Edward B. Burger**, Williams College, this event could have the historical significance of the Edict of Nantes, the Yalta conference, the Kennedy-Nixon debates, or possibly, the invention of microwave popcorn. Or perhaps not, but just in case, you don't want to miss it.

Getting Started in Mathematical Biology, Friday, 8:30 a.m.–10:00 a.m., organized by **T. Christine Stevens**, St. Louis University; **Joseph A. Gallian**, University of Minnesota Duluth; and **Aparna W. Higgins**, University of Dayton. This panel focuses on how early career faculty can get started in research in mathematical biology. The panelists will address issues such as how to switch fields and still meet tenure requirements, how to develop a new course in mathematical biology, and opportunities in mathematical biology available to visiting faculty. Panelists include **Laurie J. Heyer**, Davidson College; **Janet L. Anderson**, Hope College; **Carl C. Cowen**, Indiana University-Purdue University Indianapolis; and **Jonathan E. Rubin**, University of Pittsburgh. The session is sponsored by MAA-Project NExT.

Undergraduate Career Paths in Mathematics, Friday, 9:00 a.m.–10:20 a.m., organized by **James E. Hamblin**, Shippensburg University, and **John A. Vano**, University of Wisconsin–Madison. What good is an undergraduate mathematics degree in the job marketplace? What kinds of mathematical careers are there? What should you do now to increase your chances of getting the best job when you graduate? The panelists will discuss the various careers and options available to today's undergraduate students. Cosponsored by the Young Mathematicians' Network.

Integrating Math with Other Disciplines, Friday, 10:45 a.m.–12:05 p.m., organized by **Jenna P. Carpenter**, Louisiana Technical University. There is a growing interest in integrating mathematics content and concepts in other disciplines in an effort to enhance students' ability to grasp the inherent connections. This panel session will feature four successful NSF-funded programs that have developed modules, courses, and even entire sequences of math courses, which focus on the integration of math and a variety of other disciplines. Panelists will summarize their programs highlighting challenges and successes. This will be followed by a question and answer session to allow interested attendees the opportunity to explore how they might implement integrated learning experiences at their own institutions. Examination copies and/or handouts of project overviews, sample curricular materials, websites and other dissemination products will be made available for participants. Panelists include **Sheldon P. Gordon**,

SUNY at Farmingdale; **Gary W. Krahn**, U.S. Military Academy; **Eric S. Marland**, Appalachian State University; and **Bernd S. Schroeder**, Louisiana Technical University.

Proposal Writing Workshop for Grant Applications to the NSF Division of Undergraduate Education, Friday, 10:45 a.m.–12:05 p.m., organized by **Elizabeth J. Teles**, **John R. Haddock**, and **Lee L. Zia**, NSF Division of Undergraduate Education. 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.

Teaching a Course on Women and/or Minorities in Mathematics, Friday, 1:00 p.m.–2:20 p.m., organized by **Therese L. Bennett**, Southern Connecticut State University, and **Sarah J. Greenwald**, Appalachian State University. Courses about women and minorities in mathematics can be taught in a variety of ways. The content level ranges from including a great deal of mathematics, to critical studies of the available statistical research, to historical, sociological, and feminist perspectives. The interdisciplinary nature of these courses lends itself to offerings in mathematics, philosophy, women's studies, and education departments. In this session, panelists who have themselves created and taught such a course will discuss the content, structure, and methods of student evaluation, and will give suggestions for successful implementation. Panelists include **Sarah J. Greenwald**; **John H. Kellermeier**, Tacoma Community College; **Helen Moore**, American Institute of Mathematics; and **Bonnie J. Shulman**, Bates College. The session is cosponsored by the Association for Women in Mathematics.

Scholarship Scenarios, Friday, 1:00 p.m.–2:20 p.m., organized by **David J. Lutzer**, The College of William and Mary. By reviewing faculty handbooks of various colleges and universities, one finds that the broad areas of activities for faculty participation is often teaching, scholarship, and service instead of the more traditional triad of teaching, research, and service. This panel discussion will focus upon several models of defining scholarship. The session is sponsored by the Committee on the Profession.

Young Mathematicians' Network/MAA-Project NExT Poster Session, Friday, 2:00 p.m.-4:00 p.m., organized by **Kevin E. Charlwood**, Washburn University, and **Kenneth A. Ross**, University of Oregon. Junior mathematicians who are no more than five years beyond their Ph.D. are invited to submit abstracts for this session. The poster size will be 48" (length) by 36" (height). Posterboard and materials for posting pages on the posters will be provided on site. Applications should be submitted to Kevin E. Charlwood, kevin.charlwood@washburn.edu, or Kenneth A. Ross, ross@math.uoregon.edu, by Friday, December 9, 2005.

AMATYC's *Beyond Crossroads*: Implementing Standards-Based Mathematics Instruction, Friday, 2:30 p.m.–3:50 pm, organized by **Susan S. Wood**, J. Sargeant Reynolds Community College. A primary focus of the new *Beyond Crossroads* document from the American Mathematical Association of Two-Year Colleges (AMATYC) is implementation. A new set of implementation standards in *Beyond Crossroads* builds on the standards for intellectual development, content, and pedagogy from the 1995 *Crossroads* to guide the professional practice of mathematics faculty. The implementation standards address: student learning and the learning environment, assessment of student learning, curriculum and program development, instructional strategies, and professionalism. Throughout the review, response, and revision cycles of the various drafts of *Beyond Crossroads* (in which MAA has played a significant role), the theme of embracing change by faculty, departments, and institutions has emerged. This theme is key to implementing standards for the teaching and learning of mathematics. At this session, panelists will discuss standards-based mathematics teaching, implementing the standards, and the change process. Connections will be made between *Beyond Crossroads* and the *CUPM Curriculum Guide*. Panelists include **Susan S. Wood**; **Richelle M. Blair**, Lakeland Community College; **Kathy A. Mowers**, Owensboro Community and Technical College; and **William E. Haver**, Virginia Commonwealth University.

What Business Looks for in New Hires, Friday, 2:30 p.m.–3:50 p.m., organized by **Donald B. Small**, U.S. Military Academy. The city of San Antonio recognized that college algebra was a key barrier to residents obtaining a college degree. (City-wide, approximately 55% of the college and university students either fail or withdraw from college algebra.) In 2003, at the urging of the Economic Council, the mayor of San Antonio formed a San Antonio College Algebra Consortium with representatives from the city's nine colleges/universities. The goal was to set goals and priorities for college algebra courses to increase student success. An outgrowth of this effort was the establishment of Project BRIDGE (Bringing together Resources from Industry, Development, Government, and Education) to build and sustain dialogue between the business and education communities toward improving the mathematics and science education for the city's emerging work force. The panelists, business/community participants in San Antonio's Project BRIDGE, will discuss the mathematical skills and attitudes that are important to their businesses, e.g., problem solving, communications, willingness to take risks, ability to learn on their own, and comfort in facing new situations. Panelists include **Anthony Edwards**, San Antonio City Public Service, Vice President of Community Programs; **Sandra Martinez**, Kelly Aviation Center; **Steve Bryant**, Zachry Construction Company; and **Frances Gonzalez**, Assistant City Manager of the City of San Antonio.

Current Issues in Actuarial Education, Friday, 5:45 p.m.–7:15 p.m., orgnized by **Bettye Anne Case** and **Steve P. Paris**, Florida State University, and **Matthew J. Hassett,** Arizona State University. Several actuaries and actuarial educators will speak. In addition to information about helping students meet the requirements of the new 2005 exams, there will be information about accreditation considerations followed by a question session. Refreshments will be provided.

Session for Chairs: Building Bridges, Saturday, 9:00 a.m.–10:20 a.m., organized by **Catherine M. Murphy**, Purdue University Calumet, and **Daniel P. Maki**, Indiana

University. Building interdisciplinary programs/courses requires knowledge of the needs of the partner disciplines. The Curriculum Foundations Project, Voices of the Partner Disciplines, provides significant amounts of such information. **Susan L. Ganter**, Clemson University, and **William E. Haver**, Virginia Commonwealth University, will talk to chairs about ways to use such information at the local level and about a new initiative to expand the project to social science disciplines.

Electronic Homework Systems, Saturday, 9:00 a.m.–10:20 a.m., organized by **Michael D. Hvidsten**, Gustavus Adolphus College, and **Bruce W. Yoshiwara**, Los Angeles Pierce College. Panelists will discuss the current state and the possible future of various electronic homework grading systems, including Drill, WeBWorK, MapleTA, and MyMathLab. Topics of discussion will include costs, hardware/software requirements, course management, authoring of new problems, and standards for exercise databases. Panelists include **Irene Doo**, Austin Community College; **Vadim V. Ponomarenko**, Trinity University; **Amelia Taylor**, St. Olaf College; and **John W. Jones**, Arizona State University. The session is sponsored by the Committee on Technologies in Mathematics Education.

Transitioning into Graduate School, Saturday, 9:00 a.m.–10:20 a.m., organized by **Dov N. Chelst**, DeVry University, and **Heather Ames Lewis**, Nazareth College. Entering graduate school can be an exciting time but it can also be difficult. You may know many of your fellow students, only a few, or none at all. You may be unsure what classes to take, how the classes will be run, and what you need to do to keep up. You may have an advisor in mind, or you may have no idea and not even be sure when you should start looking. This panel discussion will look at what you can expect when you start graduate school and what you can do to make the change from undergraduate to graduate student as smooth as possible. Cosponsored by the Young Mathematicians' Network.

Special Mathematical Outreach Programs, Saturday, 9:00 a.m.–11:00 a.m., organized by **Elizabeth G. Yanik**, Emporia State University; **Jennifer Hontz**, Meredith College; and **Kathleen A. Sullivan**, Seattle University. This poster session is designed to highlight successful programs which encourage underrepresented populations in mathematics. It is expected that posters representing a wide variety of programs will be displayed. Possible programming formats include after-school clubs, special conferences, mentoring programs, and summer camps. Recipients of Tensor Foundation grants as well as the NSF's Research on Gender in Science and Engineering grantees might be particularly interested in sending in a poster proposal. Those who are in the process of constructing an outreach program are also welcome to submit a poster proposal. Applications should be submitted to Betsy Yanik, yanikeli@emporia.edu, by Tuesday, December 5, 2005.

Mathematics and Biology 2010: Building Connections, Saturday, 1:00 p.m.–2:20 p.m., organized by **Elton Graves**, Rose-Hulman Institute of Technology, and **John R. Birge**, University of Chicago. This session will consist of a panel discussion by two sets of innovators who have worked to integrate courses in mathematics and biology. The session is intended to help mathematicians and biologists find ways to interact and create courses which meet the needs of both biology and mathematics undergraduate students. Each group of panelists will present ideas they have developed and used to integrate the two fields of study. An extended question and answer period will follow the presentations to allow ample time for attendees to ask questions and discuss the ideas presented by the panelists. We strongly encourage mathematicians to invite their biologist colleagues to attend this session. Panelists include **John R. Jungck**, Beloit College; **Lisette de Pillis** and **Steve Adolph**, Harvey Mudd College; and **Daniel P. Maki,** Indiana University.

Topics of Ethics in Mathematics, Saturday, 1:00 p.m.–2:20 p.m., organized by **Brian Birgen**, Wartburg College; **Karrolyne Fogel**, California Lutheran University; and **Walter Whiteley**, York University. Increasingly, mathematics departments in colleges and universities are tasked with introducing students to ethical issues in our profession. At the same time, mathematicians are increasingly working in interdisciplinary teams, where professional ethics are an essential aspect of the work. Yet when pressed, many mathematicians and mathematics educators refer only to issues of plagiarism and the use of mathematics in military situations. This panel discussion aims to start a conversation about a larger collection of ethical issues concerning the professional lives of mathematicians and the use of mathematics. Panelist include **Mariah Birgen**, Wartburg College; **Lee Lorch**, York University; and **Walter Whiteley**.

Algebra at Various Levels: How Does It Differ? Saturday, 1:00 p.m.–2:20 p.m., organized by **Bernard L. Madison**, University of Arkansas, and **Susan L. Forman**, CUNY Bronx Community College. The study of algebra occurs throughout U.S. education, from elementary school through graduate school. In particular, several courses in algebra span the high school to college years, and enrollments in these courses constitute a major fraction of all enrollments in U.S. secondary and collegiate education. In addition to this large presence, student difficulties with school and college algebra and the uncertain role of technology have prompted increased scrutiny of why and how algebra is taught. This session, sponsored by the MAA Committee on Articulation and Placement (CAP) and led by a panel representing K–12 schools and two- and four-year colleges, will explore how and why algebra differs at the various levels in school and college. Panelists include **Bonnie Gold**, CAP member, Monmouth University; **Cathy L. Seeley**, NCTM President, University of Texas at Austin; **Bernard L. Madison**, CAP chair; **Sheldon P. Gordon**, CAP member, SUNY at Farmingdale.

Projects Supported by the NSF Division of Undergraduate Education, Saturday, 1:00 p.m.–3:00 p.m., organized by **Jon W. Scott**, Montgomery Community College. This 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.

Mathematical Circles: A Demonstration, Saturday, 2:30 p.m.–4:50 p.m., organized by **Zsuzsanna Szaniszlo**, Valparaiso University. Gifted and talented students are in need of mathematics programs geared to their level and curiosity. In order to attract these students to the profession mathematicians have to take a leading role in developing and organizing such programs. This session is aimed at popularizing the practice of mathematical circles to the community. In mathematical circles interested middle school or high school students learn about topics not traditionally covered in the classroom. The gatherings are lively discussions of mathematical ideas, where the students discover new areas of mathematics. These high-quality programs could be easily duplicated all over the country. This session will be a demonstration of such a program. Local high school students will participate in a discussion lead by **Paul A. Zeitz,** University of San Francisco. The demonstration will last for about 90 minutes; a discussion, and question and answer session will follow. Panelists include **Paul A. Zeitz** and **Zsuzsanna Szaniszlo**.

Mathematicians Involved in School Mathematics, Saturday, 2:30 pm.–3:50 p.m., organized by **Roger E. Howe**, Yale University, and **Alan C. Tucker**, SUNY Stony Brook. This panel discussion by prominent activists in the field focuses on several efforts underway nationally and at the state level to involve mathematicians in school mathematics reforms. Other panelists include **Richard J. Schaar**, Texas Instruments, **R. James Milgram**, Stanford University, **Johnny W. Lott**, University of Montana.

Models for a One-Semester Course in Discrete Mathematics, Saturday, 2:30 p.m.–3:50 p.m., organized by **William A. Marion**, Valparaiso University. In June 2003 a SIGCSE Committee on the Implementation of a Discrete Mathematics Course was formed. The charge to the committee was to provide models for a one-semester course that will meet the basic needs of undergraduates in a computer science program: CC2001 Task Force Report. After preliminary discussions and surveys sent to math and computer science faculty were analyzed, the committee has developed two models: one, a math-focused model and the other, a computer science-focused model. The emphasis is on building a coherent one-semester course rather than covering all of the topics recommended in the report. Included are goals for the course, core topics covered with number of hours to be devoted to each, a sampling of appropriate textbooks, and topics to be covered elsewhere. Panelists include **William A. Marion**; **Susanna S. Epp**, DePaul University; and **Gerald W. Kruse**, Juniata College. The session is sponsored by the MAA Committee on Math Across the Disciplines.

Presentations by Teaching Award Recipients, Saturday, 2:30 p.m.–4:00 p.m., organized by MAA Secretary, **Martha J. Siegel**, Towson University, and moderated by MAA President, **Carl C. Cowen**, Indiana University Purdue University Indianapolis, MAA President. Winners of the Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching will give presentations on the secrets of their success.

Developing Standards for College Algebra, Sunday, 9:00 a.m.–10:20 a.m., organized and moderated by **Norma M. Agras**, Miami Dade College, and **William C. Bauldry**, Appalachian State University. The moderators will discuss the draft *Standards for College Algebra* that is being developed by CRAFTY. The current draft calls for an applications/modeling approach, problem solving, communication skills, and use of technology. Copies of the draft will be distributed to those in attendance. Comments, suggestions, and concerns will be solicited. The session is sponsored by the MAA CUPM Subcommittee on Curriculum Renewal Across the First Two Years (CRAFTY).

Calculus for Those Students Who Have Had Calculus, Sunday, 1:00 p.m.–2:20 p.m., organized by **Jack A. Picciuto** and **Barbra Melendez**, U.S. Military Academy. Many students arrive at college having already received credit for a year of calculus in high school. These students are potentially our best mathematics students. Through standardized testing or onsite validation methods, many of them are placed in a traditional calculus II or III or in some form of advanced/accelerated calculus. Unfortunately, due to a variety of factors, the majority of these placements do not lead students into SMET programs. Can we do better? Can we develop programs that will encourage students to expand on rather than just repeating their high school calculus backgrounds? Our panel will moderate an open dialogue of ideas on this and other related topics. Panelists include **Bernard L. Madison**, University of Arkansas; **Mike Huber**, U.S. Military Academy; **Michael Starbird**, University of Texas; and **David M. Bressoud**, McAlester College.

Evaluating Curricular Effectiveness: Judging the Quality of K–12 Mathematics Evaluations, Sunday, 1:00 p.m.–2:20 p.m., organized by **Vicki Stohl** and **David Mandel**, Mathematical Sciences Education Board, The National Academies. The Mathematical Sciences Education Board has completed a comprehensive review of evaluations of nineteen mathematics curriculum materials. An interdisciplinary committee of mathematicians, mathematics educators, and methodologists was charged to:

* Evaluate the quality of the evaluations of thirteen NSF-supported and six commercially generated mathematics curriculum materials;

* Determine whether the currently available data are sufficient for evaluating the efficacy of these materials, and if not

* Develop recommendations about the design of a project that could result in the generation of more reliable and valid data for evaluating these materials.

The committee collected almost 700 studies, reached a determination on the quality of the available evidence, identified the weaknesses in much of the current work, and advanced a framework for conducting rigorous studies and reaching scientifically valid findings. A synthesis of these findings and their implications for the field will be the focus of this symposium. Panelists include **Jere Confrey**, Committee Chair, Washington University in St. Louis; **Carlos Castillo-Chavez**, Arizona State University; and **Donald G. Saari**, University of California, Irvine. The session will be moderated by **David Mandel**.

MAA Student Research Programs, Sunday, 1:00 p.m.–2:20 p.m., organized by **William Hawkins Jr.,** MAA and University of the District of Columbia, and **Robert E. Meg-**

ginson, University of Michigan. The MAA supported small research teams of a faculty member and four minority undergraduates at twelve sites in the summer of 2005 with funds from NSF, NSA, and the Moody's Foundation. Grant recipients will give presentations about their projects and their students' work. There will be ample time for discussion and questions. More information about the MAA National Research Experience for Undergraduates Program (NREUP) can be found at `http://www.maa.org/nreup`. Sponsored by MAA-SUMMA (Strengthening Underrepresented Minority Mathematics Achievement).

Reunion of Participants in Refocused College Algebra Programs, Sunday 2:30 p.m.–3:50 p.m., organized by **Donald B. Small**, U.S. Military Academy. Participants will describe their experiences in refocusing their college algebra courses including grade results and student reactions. Participants will describe small group activities/projects they assigned and how they incorporated developing communication skills into their program. All who are interested in college algebra reform are invited to participate. Panelists include **Laurette B. Foster**, Prairie View A&M University, and **William E. Haver**, Virginia Commonwealth University. The session is sponsored by the MAA CUPM Subcommittee on Curriculum Renewal Across the First Two Years.

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 2005-06 are available at the Project NExT booth in the exhibit area. In addition, Project NExT has organized several sessions to which it invites all meeting participants.

The following sessions were organized by the 1994–2001 Project NExT Fellows to address issues of concern to faculty who have four to ten years of teaching experience.

Firefighting, Paper Trailing, and Cat Herding: Everything You Need to Know to Be an Administrator but Were Afraid to Ask, Thursday, 2:15 p.m.–3:45 p.m., organized by **Linda Braddy**, East Central University, and **Rebekah Dupont**, Augsburg College. This session focuses on issues of interest to faculty at all points of their careers who are interested in serving in administrative positions. It seeks to answer questions such as: Is it possible to be department chair and still have time for research? How does one respond to student grievances? What are some tips for dealing with conflicts among faculty? What best supports a colleague going up for tenure or promotion? What are some strategies a department chair can use to deal with the difficulties of being "caught in the middle" between the dean (and higher administration) and the faculty members in his/her department? What communication skills, political savvy, and management skills are beneficial, and how can one acquire them? We will discuss the associated challenges and rewards and provide encouragement and resources for faculty taking on these administrative roles. Panelists include **Charlotte J. Chell**, Carthage College; **Amy Cohen**, Rutgers University; **Susan C. Geller**, Texas A&M University; **Dennis M. Luciano**, Western New England College; **Mickey McDonald**, Occidental College; and **Jack Narayan**, SUNY Oswego.

The Mathematics Profession in 2016: Where Are We Going?, Friday, 1:00 p.m.–2:30 p.m., organized by **John F. Bukowski**, Juniata College; **Dale R. Buske**, St. Cloud State University; and **Kenneth L. Price**, University of Wisconsin Oshkosh. This session is intended to help relatively new faculty members prepare for their post-tenure careers by identifying some of the biggest upcoming changes and opportunities to the mathematics teaching profession. This may include topics currently receiving a lot of attention: assessment, course management systems and/or online courses, curriculum (college and high school), interdisciplinary programs, quantitative literacy courses, and use of temporary faculty. Panelists include **David M. Bressoud**, Macalester College; **Michael Starbird**, University of Texas at Austin; **Tina H. Straley**, Mathematical Association of America; and **Paul Zorn**, St. Olaf College.

Making the Most of your Sabbatical, Saturday, 9:30 a.m.–11:00 a.m., organized by **Blair F. Madore**, SUNY at Potsdam, and **Pamela B. Pierce**, College of Wooster. A good sabbatical involves careful planning, a productive period of work, and an appropriate follow up. Our panelists will share their diverse experiences with sabbaticals and answer your questions. Panelists include **Jennifer R. Galovich**, St. John's University; **Charles R. Hampton**, College of Wooster; **Judy A. Holdener,** Kenyon College; **William A. Marion**, Valparaiso University; and **Thomas Q. Sibley**, St. John's University.

See also these sessions/events cosponsored by Project NExT under "MAA Other Sessions" or the "Social Events" section:

- **Getting Started in Mathematical Biology**, Friday, 8:30 a.m.–10:00 a.m.,
- **Young Mathematicians' Network/Project NExT Poster Session**, Friday, 2:00 p.m.–4:00 p.m.,
- **Reception**, Saturday, 8:30 p.m.–10:30 p.m.,

MAA Student Activities

Marc A. Chamberland,Grinnell College, *The many faces of pi*, Saturday, 1:00 p.m. (Student Lecturer).

Undergraduate Student Poster Session, Saturday, 4:00 p.m.–6:30 p.m., organized by **Mario U. Martelli**, Claremont McKenna College, and **Diana M. Thomas**, Montclair State University. The session is reserved for undergraduates and first-year graduate students submitting posters on work done while undergraduates. Interested students can submit abstracts online at `www.maa.org/students/undergrad/poster06.html` beginning August 1. Students are encouraged to apply early.

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 to an applied problem. Purely expository posters cannot be accepted. Prizes will be awarded to the top-rated posters with funds provided by the AMS, MAA, AWM, CUR, PME and by the Moore Foundation. Trifold, self-standing 48" by 36" tabletop posterboard and mounting materials

will be provided. Additional material or equipment is the responsibility of the presenters. Questions may be directed to Diana Thomas at thomasdia@mail.montclair.edu. The session is sponsored by the CUPM Subcommittee on Undergraduate Research and the Committee on Undergraduate Student Activities and Chapters (CUSAC).

MAA Short Course

This two-day Short Course on *Experimental Mathematics in Action* is organized by **Jonathan M. Borwein**, Dalhousie University, and will take place on Tuesday and Wednesday, January 10 and 11.

The last twenty years have been witness to a fundamental shift in the way mathematics is practiced. With the continued advance of computing power and accessibility, the view that "real mathematicians don't compute" no longer has any traction for a newer generation of mathematicians that can really take advantage of computer aided research, especially given the modern computational packages such as Maple, Mathematica, and Matlab.

The goal of this course is to present a coherent variety of accessible examples of modern mathematics where intelligent computing plays a significant role and in doing so to highlight some of the key algorithms and to teach some of the key experimental approaches. The program includes the following lectures: *What is experimental mathematics?*, **Jonathan M. Borwein**; *Case Study I: Integrals and series using mathematica*, **Victor H. Moll**, Tulane University; *Algorithms for experimental mathematics, I*, **David H. Bailey**, Lawrence Berkeley National Laboratory; *Case Study II: Discrete math and number theory in Maple and C++*, **Neil J. Calkin**, Clemson University; *Case Study III: Inverse scattering on Matlab*, **D. Russell Luke**, University of Delaware; *Case Study IV: Analysis and probability on the computer*, **Roland Girgensohn**, Bundeswehr Medical Office; *Algorithms for experimental mathematics, II*, **David H. Bailey**; *Concluding examples. Putting everything together*, **Jonathan M. Borwein**,

Abstracts and program of the lectures can be found at http://www.cs.dal.ca/~jborwein/maa06.pdf.

Please note there is a separate registration fee for this short course. To register in advance, please use the Advance Registration/Housing Form found at the back of this issue, or see http://www.ams.org/amsmtgs/2095_registration.html. Advance registration fees are US$125/member; US$175/nonmember; and $50/student, unemployed, emeritus. On-site registration fees are US$140/member; US$190/nonmember; and US$60/student, unemployed, emeritus.

Other MAA Events

Board of Governors, Wednesday, 8:30 a.m.–4:00 p.m.

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

Department Chairs Liaison Breakfast Meeting, Sunday, 7:00 a.m.–8:30 a.m.

Minority Chairs Breakfast Meeting, Sunday, 7:00 a.m.–8:45 a.m.

Business Meeting, Sunday, 11:45 a.m.–12:15 p.m., organized by MAA Secretary **Martha J. Siegel**, Towson University, and moderated by MAA President **Carl C. Cowen,** Indiana University Purdue University Indianapolis.

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

Activities of Other Organizations

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 Saturday and Sunday will include sessions of contributed papers and Invited Addresses by **Douglas Cenzer**, University of Florida; **C. Ward Henson**, University of Illinois at Urbana-Champaign; **Michael C. Laskowski**, University of Maryland; **Alain Louveau**, CNRS and Université de Paris 6; **Russell Miller**, Queens College (CUNY); **Itay Neeman**, University of California Los Angeles; and **Sergei Starchenko**, University of Notre Dame. See also the Special Session jointly sponsored by the ASL on *Interdisciplinary Research Involving Analysis and Logic* in the "AMS Special Sessions" section.

Association for Women in Mathematics (AWM)

Twenty-Seventh Annual Emmy Noether Lecture, Friday, 9:00 a.m.–9:50 a.m., will be given by **Ingrid Daubechies**, Princeton University, *Mathematical results and challenges in learning theory*. Also see the Special Session of the same title jointly sponsored by the AWM and organized by **Cynthia Rudin**, Courant Institute, New York University, under the "AMS Special Sessions" heading.

A luncheon in honor of the lecturer will be held on Friday. See the "Social Events" section for details on how to participate.

Laurence Summers: One Year Later, Thursday, 3:20 p.m.–4:35 p.m., organized by **Barbara Lee Keyfitz**, Fields Institute and University of Houston. Speakers include **Richard M. Dudley**, M.I.T.; **Mary W. Gary**, American University; **Ellen E. Kirkman**, Wake Forest University; **M. Beth Ruskai**, Tufts University; **Alice Silverberg**, University of California Irvine; **Karen Uhlenbeck**, University of Texas at Austin; and others. Widely quoted remarks by the President of Harvard University in January 2004 initiated a public discussion of the status of women scientists in research universities; speakers consider aspects of the controversy that are important to the future of women in mathematics

Just before the panel discussion, AWM will recognize the Alice T. Schafer award honorees. Note that formal prizewinner announcements are made at the Joint Prize Session on Friday afternoon (see the AWM inclusion in the "Joint Sessions" section at the beginning of this announcement).

Business Meeting, Thursday, 4:40 p.m.–5:10 p.m.

Workshop, Sunday, 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 opens with a dinner on a previous evening to introduce workshoppers and mentors, and includes a panel discussion on career issues. 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, Thursday, 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, Saturday, 2:15 p.m.–4:00 p.m.

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

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

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

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

See details about the banquet on Saturday 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, Saturday, 8:00 a.m.–11:00 a.m.

Rocky Mountain Mathematics Consortium (RMMC)

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

Society for Industrial and Applied Mathematics (SIAM)

This two-day program on Thursday and Friday will include an Invited Address and six minisymposia. The Invited Address will be given by **Thanasis Fokas**, Cambridge University, *Integrability, imaging of the brain, and the Dirichlet to Newmann map,* at 11:10 a.m. on Friday.

Minisymposia and their organizers include:

Geometric Representations of Graphs, **Alice M. Dean**, Skidmore College; **Ellen Gethner**, University of Colorado at Denver, and **Joshua D. Laison**, Colorado College (Thursday afternoon)*;*

Education: Preparing Mathematics Students for Interdisciplinary Research, **William L. Briggs,** University of Colorado at Denver (Thursday afternoon);

New Transform Methods for Differential Equations, **Beatrice Pelloni,** University of Reading, UK, and **Li-yeng Sung**, University of South Carolina ((Friday afternoon);

Inverse Problems: Theory and Numerics for Novel Applications, **Heniz W. Engl**, Johannes Kepler University, and **Lothar Reichel**, Kent State University (Friday morning and afternoon);

Mathematical Neuroscience: From Experiment to Theory, **Kresimir Josic**, University of Houston (Thursday and Friday mornings); and

Numerical Solution of Partial Differential Equations and Applications to Flow in Porous Media, **Todd J. Arbogast**, University of Texas at Austin (Thursday morning).

See also the Special Sessions jointly sponsored by SIAM in the "AMS Special Sessions" section.

Young Mathematicians Network (YMN)

Concerns of Young Mathematicians: A Town Meeting, Friday, 7:30 p.m.–8:30 p.m., organized by **David Kung**, St. Mary's College of Maryland. 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 the poster session (Friday at 2:00 p.m.) and panel discussions (Thursday at 3:50 p.m., Friday at 9:00 a.m., and Saturday at 9:00 a.m.) cosponsored by YMN under the "Other MAA Sessions" section.

Others

Math on the Web, Wednesday–Saturday, various times. The problem of communicating math on the Web is really no different than communicating math via other media. Namely, authoring and displaying mathematical notation is difficult. On top of that, the Web is a dynamic medium, where users can interact with rich media documents in sophisticated ways. This introduces a whole new layer of challenges and possibilities for engaging, interactive communication between authors and readers. There will be several presentations on the exhibit hall floor throughout the meeting.

Mathematical Art Exhibit, organized by **Robert Fathauer**, Tesselations Company; **Nathaniel A. Freidman**, ISAMA and SUNY Albany; and **Reza Sarhangi**, Bridges Conference, Towson University. A popular feature at the last Joint Mathematics Meetings in Atlanta, this exhibit 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 exhibit will be open during the regular exhibit hours.

Summer Program for Women in Mathematics (SPWM), Friday, 2:00 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

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 January 2**. 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 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 Saturday, with a cash bar reception at 6:30 p.m. and dinner at 7:30 p.m. Tickets are US$46, including tax and gratuity.

Association of Christians in the Mathematical Sciences (ACMS) Reception and Banquet, Saturday, 6:00 p.m.–9:00 p.m. This annual dinner will be followed by an after-dinner talk. Tickets must be purchased by December 1; to do so, please visit `www.acmsonline.org`.

ACMS Worship Service, Sunday, 7:00 a.m.–7:50 a.m. This nondenominational service will be conducted by ACMS members and is open to all meeting participants.

Association of Lesbian, Gay, Bisexual, and Transgendered Mathematicians Reception, Friday, 6:00 p.m.–8:00 p.m. Everyone is welcome to attend this open reception. Meet some new friends or get together with some old friends. Please join us!

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

All participants are invited to a Friday **luncheon to honor AWM's Noether Lecturer, Ingrid Daubechies**. 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.

Budapest Semesters in Mathematics (BSM) Reunion, Saturday, 6:30 p.m. to 8:30 p.m. All BSM alums are invited to attend. Please stop by the BSM booth in the exhibit area for more details.

University of Chicago Department of Mathematics Alumni Reception, Friday, 6:00 p.m. to 7:00 p.m.

Claremont Colleges Reception, Friday, 6:00 p.m.–8:00 p.m. All alumni and friends of the Claremont Colleges are invited.

Reception for Graduate Students and First-Time Participants,Thursday, 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.

University of Illinois at Urbana-Champaign Department of Mathematics, Alumni Reception, Saturday, 5:00 p.m.–7:00 p.m. Everyone ever connected with the department is encouraged to get together for conversation and to hear about mathematics at UIUC.

University of Iowa Mathematics Department Reception, Friday, 5:45 p.m.–7:00 p.m. This event features snacks and a cash bar.

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

Lehigh University Reception, Friday, 5:45 p.m. to 7:00 p.m. All friends and graduates of the Lehigh Math Program are invited to attend.

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

MAA Two-Year College Reception, Friday, 5:45 p.m. to 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 Addison Wesley Longman.

***Mathematical Reviews* Reception**, Saturday, 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, Thursday, 5:30 p.m.–8:00 p.m. Participants are warmly invited to attend this open house cosponsored by several North American mathematical institutes. This popular reception precedes the AMS Josiah Willard Gibbs Lecture. Come and hear the latest about programs and research happening among the institute community.

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 Friday 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$47 each, including tax and gratuity.

Reception for Mathematicians in Business, Industry, and Government, Friday, 5:45 p.m.–6:45 p.m., organized by **Michael Monticino**, University of North Texas. This welcome reception is open to all conference participants and in particular those interested in the mathematics of business, government, and industry (BIG). The reception

will be a great opportunity to interact with BIG mathematicians and learn more about BIG mathematics. The reception is sponsored by the BIG SIGMAA.

NAM Banquet, Friday, 6:00 p.m.–9:30 p.m. The National Association of Mathematicians will host a banquet on Friday 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$48 each, including tax and gratuity.

New Mexico State University Mathematics Association Reception, Friday, 5:45 p.m.–7:30 p.m. All members and friends are invited. Please join us for refreshments and conversation.

Joint PME and MAA Student Chapter Advisors' Breakfast, Saturday, 7:00 a.m. to 8:00 a.m.

Student Hospitality Center, Thursday–Saturday, 9:00 a.m.–5:00 p.m., and Sunday, 9:00 a.m.–3:00 p.m., organized by **Richard** and **Araceli Neal**, American Society for the Communication of Mathematics. A **reception for undergraduates** will be held here on Thursday, 4:00 p.m. to 5:00 p.m.

Friends of Williams Reception, Thursday, 5:00 p.m.–6:00 p.m., organized by **Frank Morgan**, Williams College.

Other Events of Interest

AMS Information Booth: All meeting participants are invited to visit the AMS Information Booth during the meeting. 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. to 5:30 p.m. on Thursday, 9:30 a.m. to 5:30 p.m. on Friday and Saturday, and 9:00 a.m. to noon on Sunday. 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. Most major credit cards will be accepted for book sale purchases at the meetings. Also, AMS electronic products and the AMS website will be demonstrated. 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 (available at noon and 2:00 p.m. on Thursday; 9:00 a.m., noon, and 2:00 p.m. on Friday and Saturday; and 9:00 a.m. on Sunday) 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 1105 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/2095_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

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 meeting. Participants registering by November 14 will receive their badges, programs, and tickets purchased in advance by mail approximately three weeks before the meetings, unless they check the appropriate box to the contrary on the Advance Registration/Housing 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 do 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 San Antonio. 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.

Email Advance Registration: This service is available for advance registration and housing arrangements by requesting the forms via email from `meetreg-request@ams.org` or by visiting `http://www.ams.org/amsmtgs/2095_reghsg.html`. VISA, MasterCard, Discover, and American Express are the only methods of payment which can be accepted for email advance registration, and charges to credit cards will be made in U.S. funds. Completed email forms should be sent to `meetreg-submit@ams.org`. All advance registrants will receive acknowledgment of payment prior to the meetings.

Internet Advance Registration: This service is available for advance registration and housing arrangements at `http://www.ams.org/amsmtgs/2095_reghsg.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 January 6 (the deadline for refunds for

banquet tickets is January 2) will receive a 50% refund of fees paid. No refunds will be issued after this date.

Joint Mathematics Meetings Registration Fees

	by Dec. 16	at meeting
Member of AMS, ASL, Canadian Mathematical Society, MAA, SIAM	US$203	US$264
Emeritus Member of AMS, MAA; Graduate Student; Unemployed; Librarian; High School Teacher; Developing Countries Special Rate	41	51
Undergraduate Student	21	27
Temporarily Employed	163	189
Nonmember	315	409
High School Student	2	5
One-Day Member of AMS, ASL, CMS, MAA, SIAM	n/a	145
One-Day Nonmember	n/a	225
Nonmathematician Guest	15	15
MAA Minicourses		
Minicourses #1–6 (computers)	$95	$95*
Minicourse #7–16	60	60*
*if space is available		
Employment Center (please note that earlier deadlines apply for inclusion in the *Winter Lists*)		
Employer (first table, computer or self-scheduled)	US$230	US$310
Employer (each additional table, computer or self-scheduled)	80	110
Employer Posting Fee	50	N/A
Applicants (all services)	42	80
Applicants (*Winter List* & message center only)	21	21
AMS Short Course		
Member of AMS or MAA	US$87	US$118
Nonmember	115	148
Student/Unemployed/Emeritus	38	57
MAA Short Course		
MAA 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, 2006, 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 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 1014 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 26**

EARLY meetings advance registration (room lottery) **November 4**

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

FINAL meetings advance registration (advance registration, Short Courses, Employment Center, MAA Minicourses, banquets) **December 16**

Employment Center Advance Registration: Applicant and employer forms must be received by October 26 in order to appear in the publications distributed to all participants. For detailed information on the Employment Center, see the separate article on page 1105.

Early Advance Registration: Those who register by the **early** deadline of November 4 will be included in a random drawing to select winners of complimentary hotel rooms in San Antonio. Multiple occupancy is permissible. The location of rooms to be used in this lottery 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 21. So register early! (See the list of the winners from the Atlanta meetings on the hotel pages.) Also, applicant and employer forms must be received by October 26 in order to be reproduced in the *Winter Lists* for the Employment Center.

Ordinary Advance Registration: Those who register after November 4 and by the **ordinary** deadline of November 14 may use the housing services offered by the MMSB but are not eligible for the room lottery. 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 16 must pick up their badges, programs, and any tickets for social events at the meetings. Unfortunately, it is not possible to provide **final** advance registrants with housing. Please note that the **December 16 deadline is firm**; any forms received after that date will be returned and full refunds issued. Please come to the registration desk in the West Registration area on the street level of the San Antonio Convention Center.

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 22. 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 `http://www.ams.org/amsmtgs/2095_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.

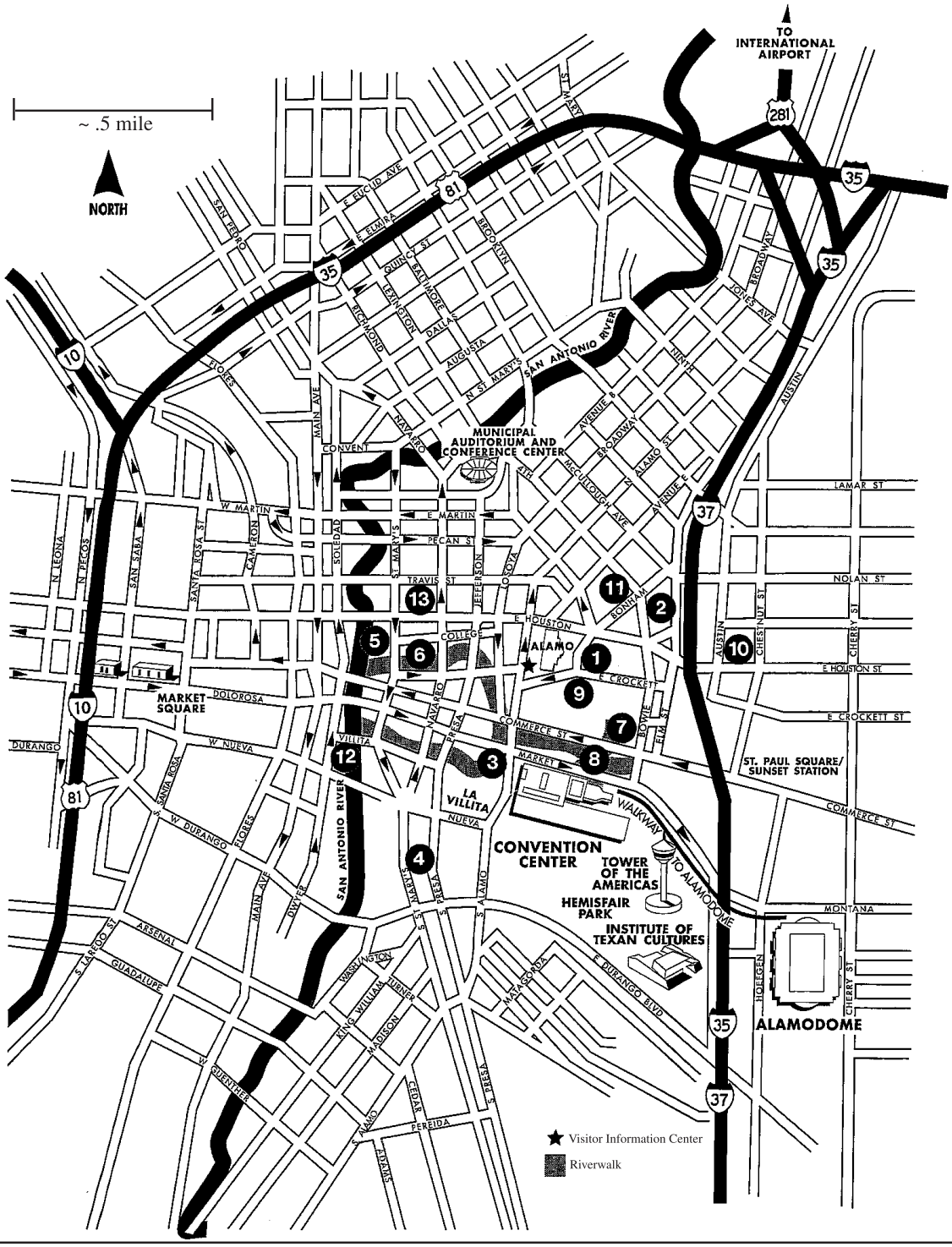
If you hold a guaranteed reservation at a hotel but are informed upon arrival that there is no room for you, there are certain things you can request the hotel do. First, they should provide for a room at another hotel in town for that evening at no charge. (You already paid for the first night when 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: Special discounted hotel room rates with the San Antonio Marriott Rivercenter, San Antonio Marriott Riverwalk, and other hotels have been negotiated for the Joint Mathematics Meetings. Your patronage of the official meeting hotels enables the AMS and the MAA to secure meeting space at a greatly reduced cost. In addition, if you make your reservations at these hotels by November 4, your name will automatically be entered into a drawing for free stays over the official meeting dates. Winners will be drawn at random from the list of reservations received by that date and notified by December 21.

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 are provided with the standard equipment and a laptop projector.) Blackboards are not available. Organizers of sessions that by their nature demand additional equipment (e.g., VCR and monitor or projection panel) 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 4.

Equipment requests made at the meetings most likely will not be granted because of budgetary restrictions.



Hotels

1. **Crockett Hotel**, 320 Bonham
2. **Hampton Inn Downtown**, 414 Bowie
3. **Hilton Palacio del Rio**, 200 S. Alamo
4. **Holiday Inn Express & Suites**, 524 S. St. Mary's
5. **Holiday Inn Riverwalk**, 217 N. St. Mary's
6. **La Mansion del Rio**, 112 College
7. **Marriott Rivercenter-Headquarters**, 101 Bowie
8. **Marriott Riverwalk-Headquarters**, 889 E. Market
9. **Menger Historic Hotel,** 204 Alamo Plaza
10. **Red Roof Downtown**, 1011 E. Houston
11. **Residence Inn by Marriott-Alamo Plaza**, 425 Bonham
12. **Riverwalk Plaza Hotel,** 100 Villita
13. **St. Anthony-A Wyndham Historic Hotel**, 300 E. Travis

How to Obtain Hotel Accommodations

Room Lottery: (See the ***How to Register in Advance*** section to learn how to qualify for this year's room lottery.) Last year's winners were Jane Claffey, Eva Curry, Christopher Dwyer, Tim Flood, Bo Green, Lila Roberts, and Emily Sprague.	**General Instructions:** Participants must register in advance in order to obtain hotel accommodations through the Mathematics Meetings Service Bureau (MMSB). Special meeting rates have been negotiated at the following hotels. These rates apply exclusively to reservations made through the MMSB. Hotels will start accepting reservations directly after **December 22,** at which time rooms and rates will be based on availability**. A higher rate will be applied to any rooms reserved directly with any of the hotels before December 22.** **To make a reservation,** please submit a completed housing section of the Advance Registration/Housing (ARH) Form (paper or electronic) with a guarantee by **November 14. Sorry, reservations cannot be taken by phone.** Participants interested in reserving suites should contact the MMSB for further information.	**Deadlines:** • Room lottery qualification: **November 4, 2005** • Reservations through MMSB: **November 14, 2005** • Changes/cancellations through MMSB: **December 7, 2005 for La Mansion December 14, 2005 for all other hotels**
Rates: • Subject to 16.75% state tax • Only certified students or unemployed mathematicians qualify for student rates. • See ARH Form for detailed rate structure of each property.	**General Information:** • Check-in 3:00 p.m./checkout 11:00 am – Hilton, Riverwalk Plaza; Check-in 4:00 pm/checkout 11:00 am – Hampton Inn, Holiday Riverwalk; Check-in 3:00 pm/checkout noon – Holiday Inn Express, La Mansion, Marriott Residence Inn, Red Roof Inn, St. Anthony; Check-in 3:30 pm/checkout noon – Crockett, Menger; Check-in 4:00 pm/checkout noon – Marriott Riverwalk, Marriott Rivercenter • **Windows do not open** in rooms unless otherwise indicated. • Children at different ages are free in existing beds only. • Limited availability of cribs, free of charge • Most hotels have a limited environmental policy regarding linens where all requests for a limited change of linens will be honored. The Holiday Inn Express, Hampton Inn, Crockett, La Mansion, and Marriott Residence Inn do not have a policy. Linens are changed every day. • Distance from hotel to Convention Center is indicated in each listing. • Airport shuttles to hotels are provided by SA TRANS located at http://www.saairportshuttle.com. • Wireless is available in some hotels; Please see descriptions below. • Some hotels will not send confirmations; Please see descriptions below. • All hotels are in acceptable compliance with ADA; however the Crockett is a historic property and is not recommended for participants with wheelchairs. The Hilton is ADA compliant but has no roll-in showers. All hotels have TTYs/TDDs text telephones on the premises or can rent them by request.	**Guarantee Requirements/Cancellation Policy:** • One night deposit by check, or • Credit cards accepted: VISA, MC, AMEX, and Diners • Riverwalk Plaza will get a pre-authorization for stay 3 – 5 days before arrival • **72-hour cancellation policy:** Crockett, Hilton, Holiday Inn Express, Holiday Riverwalk, La Mansion, Marriott Residence Inn, Menger, Riverwalk Plaza • **48-hour cancellation policy:** Hampton Inn, Red Roof Inn, Marriott Riverwalk, Marriott Rivercenter • **24-hour cancellation policy:** St. Anthony • **Please note that some hotels enforce early departure penalties; see descriptions below.**

Continued ➔

Marriott Rivercenter **(co-headquarters)** (.10 mile/1/2 block) 101 Bowie Street San Antonio, TX 78205 210-223-1000 Regular single/double – US $148 Student single/double – US $118 Restaurants; Lounge; Health Club; Indoor/outdoor heated pool; Business center; Connected to Rivercenter mall; Parking per day - $17 (self) & $23 (valet); All rooms have full amenities including data ports; Children under 18 years free; High speed internet access is available in sleeping rooms at a cost of $9.95 per day plus tax. Wireless is available in public areas and meeting rooms at a cost of $3.95 for first 15 minutes and $.25 per additional minute. Confirmations will not be sent.	**Marriott Riverwalk** **(co-headquarters)** (across the street) 711 East River Walk San Antonio, TX 78205 210-224-4555 Regular single/double – US $148 Student single/double – US $118 Restaurant; Lounge; Deli bar; Starbucks; Health Club; Indoor/outdoor heated pool; Business center; Parking per day - $17 (self) & $23 (valet); All rooms have full amenities including data ports; Rooms facing the river have balconies; Children under 18 years free; High speed internet access is available in sleeping rooms at a cost of $9.95 per day plus tax. Wireless is available in public areas and meeting rooms at a cost of $3.95 for first 15 minutes and $.25 per additional minute. Confirmations will not be sent.	**Hilton Palacio del Rio** (.20 mile/1.5 blocks/across the street from south side of Convention Center) 200 South Alamo Street San Antonio, TX 78205 210-222-1400 Single/Double – US $146 Student single/double – US $117 Restaurants; Sports bar; Fitness room; Outdoor pool; Business center; Location of the Joint Meetings' Daycare; Parking per day - $15 (self) & $28 (valet); All rooms have full amenities including data ports and refrigerators; Children under 18 years free; High speed internet access is available in sleeping rooms at a cost of $9.95 per day plus tax**;** Wireless is free in the lobby bar, Sports Bar and restaurant; **All changes to departure dates must be made at check-in to avoid a $50 penalty charge.**	**Marriott Residence Inn** (.30 mile/3 blocks) 425 Bonham Street San Antonio, TX 78205 210-212-5555 Single/Double – US $120 Student single/double – US $96 All suites; No restaurant; Complimentary full breakfast each morning; Workout Room; Outdoor pool; Parking per day - $10 (self); All rooms have full amenities including full kitchen and free high speed internet access; Windows open slightly; Children under 18 years free; Wireless is free in public areas
Riverwalk Plaza (.30 mile/3.5 blocks) 100 Villita Street San Antonio, TX 78205 210-225-1234 Single/Double – US $119 Student single/double – US $96 Restaurant; Lounge; Fitness center; Heated outdoor pool; Parking per day - $11 (self); All rooms have full amenities including refrigerators, data ports and free high speed internet access; No pay movies in rooms but 100 channels available; Some windows open; Children under 17 years free; **All changes to departure dates must be made at check-in to avoid a $25 penalty charge.**	**The Menger** (.20 mile/2 blocks) 204 Alamo Plaza San Antonio, TX 78205 210-223-4361 Single/Double – US $118 Student single/double – US $96 Restaurant; Lounge; Fitness center; Spa; Outdoor pool; Connected to several shops; Parking per day - $19 (valet only); All rooms have full amenities including data ports, free high speed internet access; Wireless available in public areas only; Some windows open; Children under 18 years free	**St. Anthony** (.40 mile/4 blocks) 300 E. Travis Street San Antonio, TX 78205 210-227-4392 Regular single – US $115 Regular double – US $125 Restaurant; Lounge; Rooftop pool; Business center; Parking per day - $15 (self) & $20 (valet); All rooms have full amenities; Children under 18 years free; Wireless high speed internet access is available in sleeping rooms at a cost of $9.95 per day plus tax. **All changes to departure dates must be made at check-in to avoid a $50 penalty charge.**	**La Mansion del Rio** (.40 mile/4 blocks) 112 College Street San Antonio, TX 78205 210-518-1000 Regular single/double - US $115 Student single/ double – US $93 Restaurant; Fitness center; Business center; Heated outdoor pool; Parking per day - $7 (self) & $25 (valet); All rooms have full amenities including data ports; Rooms with river view have balconies; Children under 18 years free; High speed internet access is available in sleeping rooms at a cost of $9.95 per day plus tax; wireless in lobby and restaurant at a cost of $9.95 per day plus tax. **All changes to departure dates must be made at check-in to avoid a $50 penalty charge.**
			Continued ➔

The Crockett (.20 mile/2 blocks/behind the Alamo) 320 Bonham Street San Antonio, TX 78205 210-225-6500 Single/Double – US $115 Student single/double – US $90 No restaurant; Free continental breakfast; Lounge; Fitness center at Menger; Outdoor pool; Parking per day - $10 (self) & $19 (valet); All rooms have full amenities including data ports and free high speed internet access; Children under 17 years free; Wireless is free in lobby area. Confirmations will not be sent.	**Holiday Inn Riverwalk** (.50 mile/5 blocks) 217 North St. Mary's Street San Antonio, TX 78205 210-224-2500 Single/Double – US $112 Student single/double – US $90 Restaurant; Lounge; Fitness room; Spa; Heated outdoor pool; Parking per day - $14 (self) & $18 (valet); All rooms have full amenities including data ports and free wireless internet access; Most rooms have balconies; Children under 18 years free; Directly on riverwalk; River barge ticket booth located on property	**Holiday Inn Express Hotel & Suites** (.30 mile/1.5 blocks) 524 South St. Mary's Street San Antonio, TX 78205 210-354-1333 Single/Double – US $109 Student single/double – US $87 All suites; No restaurant; Free continental breakfast with hot selected items each morning; Outdoor pool; Fitness center; Business center; Parking per day - $6 (self); All rooms have full amenities including data ports, kitchenettes, microwaves, mini refrigerators, and free high speed internet access; Windows open slightly; Children under 16 years free	**Hampton Inn Downtown** (.30 mile/1.5 blocks) 414 Bowie Street San Antonio, TX 78205 210-225-8500 Regular single – US $94 Regular double – US $104 No restaurant; Free continental breakfast with two hot items each morning; Business center; Fitness center; Outdoor pool; Free parking; All rooms have full amenities including data ports and free high speed internet; Some windows open; Children under 18 years free; Confirmations will not be sent.
Red Roof Inn Downtown (.40 mile/3 blocks) 1011 E. Houston Street San Antonio, TX 78205 210-229-9973 Regular single/double – US $59.99 No restaurant; Free continental breakfast each morning; Outdoor pool; Free parking; All rooms have basic amenities including data ports; Wireless high speed internet access is available in rooms at a cost of $9.95 per day plus tax (through T-Mobile); Children under 18 years free	**Attention Students** As an alternative housing choice, San Antonio International Hostel is located within a comfortable one story ranch-style building with dormitory beds, fully equipped kitchen, reading room, telephone, picnic areas and access to a large swimming pool. Private Rooms are also available within historic Bullis House Inn next door to the hostel. Private rooms are located on the third floor of the mansion. They have Cable TV, full size beds, are individually decorated and have access to hall baths and telephone on second floor. Continental breakfast is also available for an additional fee of $5.00 plus tax per person. All dorm and private room rates are subject to hotel tax. **The reception office hours are from 8:00 am to 10:00 pm. You will not be able to check in if you arrive outside of these times.** The hostel is conveniently located just off bus-route #20 to downtown. Dorm Bed: $16.70-17.83 + tax 621 Pierce Avenue at E. Grayson Street San Antonio, TX (210) 223-9426 Fax:(210) 299-1479 website: http://www.hostelz.com/display.php/2427+San+Antonio+International+Hostel Please go online or call directly for further information and reservations.		

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 http://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 12–15, 2006, 8:00 a.m. to 5:00 p.m. each day. It will be located at the Hilton Palacio del Rio in San Antonio, TX. 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 in September. The registration fee is US$25 per family (nonrefundable). Additional cost will be $8 per hour per child or $6 per hour per child for graduate students. These reduced child care rates are made possible to the meeting participant by the American Mathematical Society and the Mathematical Association of America. 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 22, 2005.

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

Cancellations must be made to KiddieCorp prior to December 22, 2005 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.

This program is being offered on an experimental basis. Its reception at this meeting will help determine the possibility of future programs.

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 Meeting participants will be available. The hours of operation will be published in the program.

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.

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 $58 (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: See www.sanantoniocvb.com or heartofsanantonio.com for information about the city.

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 401-455-4137 or by email at dms@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 Saturday, 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 12 through 15 during the hours that the desk is open. These messages will be posted on the Math 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

San Antonio is on Central Standard Time. San Antonio International Airport (SAT) www.sanantonio.gov/airport/ is located about 8.5 miles north of the San Antonio Convention Center and is served by all major airlines.

The official airline for the meetings is **Delta**. Given the volatility in airfares because of "fare wars", we cannot guarantee that these will be the lowest fares when you make your arrangements. However, 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.

Take advantage of Delta's new SimpliFares™ and enjoy the following benefits:

- No Saturday-night stay required for more flexibility;

• always affordable; realize up to 50% savings on everyday fares in the contiguous 48 states;

• change fees reduced from US$100 to US$50;

• only eight fares—less guessing and easier planning.

To make immediate reservations, call Delta at 800-221-1212 or visit www.delta.com. Be sure to reference **US738367060** as your Sky Bonus number to be recognized as a Joint Mathematics Meetings participant. Your benefits include:

• No service fees.

• 1,000 Sky Mile bonus points.

• Skip the airport lines! Check in on line and print your boarding pass within 24 hours of your flight time.

Ground Transportation from the Airport: **Taxis** are available outside the baggage claim area. The approximate fare is $20 to downtown for one person (up to four people may share a cab).

SA TRANS (shuttle service) offers airport-to-door service. Vans depart about every 15 minutes from 7:00 a.m. to 1:30 a.m. The fare to downtown is US$14 one way or US$24 round trip. Buy your ticket at ticket booth at the ground transportation section of the airport near baggage claim. For details or more information call 210-281-9900 or visit www.saairportshuttle.com (this page sometimes displays a discount coupon).

Metropolitan Transit offers city bus service from the airport to the convention center area for about US$1.10 one way (when this issue went to press).

To find the route best for you, depending upon when you arrive at the airport, visit www.viainfo.net/TripPlan/Tripplanwrapper.aspx for personal trip planning assistance and guidance. Ground transportation agents at the airport can provide schedules at curbside.

Driving directions from the airport to the convention center area: Go west on Airport Blvd. toward the airport exit. Turn right onto S. Terminal Dr., then left onto US281 north/McAllister Freeway. Merge onto US281 south on the LEFT ramp and toward Downtown San Antonio. Take the Hemisfair Plaza/Institute of Texan cultures ramp, then a slight right on to E. Commerce St.

Discounted Car Rental

Avis Rent A Car is the official car rental company for the meeting. All car rentals include unlimited free mileage and are available to renters 25 years and older. Avis offers special convention rental rates effective January 5–22, 2006:

Car Type	Daily	Weekly	Weekend Daily
Subcompact	US$43	US$176	US$27
Compact	47	186	28
Intermediate	51	203	30
Full-Size 2-Door	52	216	32
Full-Size 4-Door	55	226	33
Premium	59	236	38
Luxury, Minivan, Convertible, or Sport Utility	72	284	72

These rates are guaranteed. Return to the same rental location or additional surcharges may apply. Weekend daily rates are available from noon Thursday until 11:59 p.m. Monday. Should a lower qualifying rate become available, Avis is pleased to present a 5% discount off the lower qualifying rate or the meeting rate, whichever is lowest. Rates do not include any state or local surcharges, tax, optional coverages, or gas refueling charges. Renters must meet Avis's age, driver, and credit requirements. Reservations can be made by calling 800-331-1600 or online at www.avis.com; cite **group ID number J098887**.

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.

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 San antonio is generally mild. Normal daily maximum and minimum temperature are about 62°F to 42°F. Average precipitation in January is 1.5 inches. Visit your favorite weather site for up-to-the-minute forecasts, or see http://asp.usatoday.com/weather/CityForecast.aspx?LocationID=USATX1200&ps=L1.

Miami, Florida

Florida International University

April 1–2, 2006

Saturday – Sunday

Meeting #1015

Southeastern Section
Associate secretary: Matthew Miller
Announcement issue of *Notices*: December 2005

Program first available on AMS website: February 16, 2006
Program issue of electronic *Notices*: April 2006
Issue of *Abstracts*: Volume 27, Issue 2

Deadlines

For organizers: Expired
For consideration of contributed papers in Special Sessions: December 13, 2005
For abstracts: February 7, 2006

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

Invited Addresses

Andrea R. Nahmod, University of Massachusetts, Amherst, *Title to be announced.*

Edward Odell, University of Texas at Austin, *Title to be announced.*

Karen H. Parshall, University of Virginia, *Title to be announced.*

Michael S. Vogelius, Rutgers University, *Title to be announced.*

Special Sessions

Approximation Theory and Orthogonal Polynomials (Code: SS 5A), **Doron S. Lubinsky**, Georgia Institute of Technology, and **Edward B. Saff**, Vanderbilt University.

Commutative Algebra and Algebraic Geometry (Code: SS 1A), **Laura Ghezzi**, Florida International University, **Huy Tài Hà**, Tulane University, and **Aron Simis**, University Federal de Pernambuco.

Geometry of Riemannian Manifolds with Additional Structures (Code: SS 2A), **Tedi C. Draghici**, **Gueo V. Grantcharov**, and **Philippe Rukimbira**, Florida International University.

Harmonic Analysis and Partial Differential Equations (Code: SS 10A), **Mario Milman**, Florida Atlantic University, and **Marius Mitrea**, University of Missouri.

Invariants of Low-Dimensional Manifolds (Code: SS 9A), **Thomas G. Lennes**, Florida International University, and **Nikolai N. Saveliev**, University of Miami, Coral Gables.

Monomials and Resolutions (Code: SS 3A), **Joseph P. Brennan**, North Dakota State University, and **Heath M. Martin**, University of Central Florida.

Partial Differential Equations and Several Complex Variables (Code: SS 6A), **Shiferaw Berhanu**, Temple University, and **Hamid Meziani**, Florida International University.

Qualitative Analysis of Partial Differential Equations (Code: SS 4A), **Congming Li**, University of Colorado.

Singular Integrals, Geometric Analysis, and Free Boundary Problems (Code: SS 8A), **Laura De Carli**, Florida International University, and **Marianne Korten** and **Charles N. Moore**, Kansas State University.

Structure of Function Spaces and Applications (Code: SS 7A), **Jan Lang**, The Ohio State University, and **Osvaldo Mendez**, University of Texas at El Paso.

Notre Dame, Indiana

University of Notre Dame

April 8–9, 2006

Saturday – Sunday

Meeting #1016

Central Section
Associate secretary: Susan J. Friedlander
Announcement issue of *Notices*: December 2005
Program first available on AMS website: February 23, 2006
Program issue of electronic *Notices*: April 2006
Issue of *Abstracts*: Volume 27, Issue 2

Deadlines

For organizers: September 9, 2005
For consideration of contributed papers in Special Sessions: December 20, 2005
For abstracts: February 14, 2006

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

Invited Addresses

Douglas N. Arnold, Institute for Math and Applications, University of Minnesota, *Title to be announced.*

Béla Bollobás, University of Memphis and Cambridge University, *Inhomogeneous random graphs* (Erdős Memorial Lecture).

Steven C. Hofmann, University of Missouri, *Title to be announced.*

Michael Larsen, University of Indiana, *Title to be announced.*

Christopher M. Skinner, University of Michigan, *Title to be announced.*

Special Sessions

Combinatorial Algebraic Geometry (Code: SS 2A), **Juan C. Migliore**, University of Notre Dame, and **Uwe R. Nagel**, University of Kentucky.

Commutative Algebra (Code: SS 1A), **Alberto Corso**, University of Kentucky, **Claudia Polini**, University of Notre Dame, and **Bernd Ulrich**, Purdue University.

Developments and Applications in Differential Geometry (Code: SS 4A), **Jianguo Cao**, **Xiaobo Liu**, and **Brian Smyth**, University of Notre Dame.

Ergodic Theory (Code: SS 3A), **Nikos Frantzikinakis**, Pennsylvania State University, **Bryna R. Kra**, Northwestern University, and **Mate Wierdl**, University of Memphis.

Numerical Solutions of Polynomial Systems (Code: SS 7A), **Christopher S. Peterson**, Colorado State University, and **Andrew J. Sommese**, University of Notre Dame.

Several Complex Variables (Code: SS 6A), **Nancy K. Stanton** and **Jeffrey A. Diller**, University of Notre Dame.

Special Functions and Orthogonal Polynomials (Code: SS 5A), **Diego Dominici**, State University of New York at New Paltz.

Durham, New Hampshire

University of New Hampshire

April 22–23, 2006

Saturday – Sunday

Meeting #1017

Eastern Section
Associate secretary: Lesley M. Sibner
Announcement issue of *Notices*: January 2006
Program first available on AMS website: March 9, 2006
Program issue of electronic *Notices*: April 2006
Issue of *Abstracts*: Volume 27, Issue 2

Deadlines

For organizers: September 22, 2005
For consideration of contributed papers in Special Sessions: January 3, 2006
For abstracts: February 28, 2006
The scientific information listed below may be dated. For the latest information, see `www.ams.org/amsmtgs/sectional.html`.

Invited Addresses

Ailana M. Fraser, University of British Columbia, *Title to be announced.*

Dmitri Nikshych, University of New Hampshire, *Title to be announced.*

Florian Pop, University of Pennsylvania, *Title to be announced.*

Konstantina Trivisa, University of Maryland, College Park, *Title to be announced.*

Special Sessions

Banach Lattices, Regular Operators, and Applications (Code: SS 3A), **A. K. Kitover**, Community College of Philadelphia, **M. Orhon**, University of New Hampshire, and **A. W. Wickstead**, Queen's University of Belfast.

Banach Spaces of Analytic Functions (Code: SS 2A), **Rita A. Hibschweiler**, University of New Hampshire, and **Thomas H. MacGregor**, SUNY Albany and Bowdoin College.

Discrete and Convex Geometry (Code: SS 1A), **Daniel A. Klain**, University of Massachusetts (Lowell), **Barry R. Monson**, University of New Brunswick, and **Egon Schulte**, Northeastern University.

Hopf Algebras and Galois Module Theory (Code: SS 4A), **Timothy Kohl**, Boston University, and **Robert G. Underwood**, Auburn University Montgomery.

San Francisco, California

San Francisco State University

April 29–30, 2006

Saturday – Sunday

Meeting #1018

Western Section
Associate secretary: Michel L. Lapidus
Announcement issue of *Notices*: January 2006
Program first available on AMS website: March 16, 2006
Program issue of electronic *Notices*: April 2006
Issue of *Abstracts*: Volume 27, Issue 2

Deadlines

For organizers: September 30, 2005
For consideration of contributed papers in Special Sessions: January 10, 2006
For abstracts: March 7, 2006

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

Invited Addresses

Lincoln Chayes, University of California Los Angeles, *Title to be announced.*

C. Robin Graham, University of Washington, *Title to be announced.*

Vadim Kaloshin, California Institute of Technology, *Title to be announced.*

Benoit B. Mandelbrot, Yale University, *From pure mathematics to roughness in art.* (Einstein Public Lecture in Mathematics).

Yuval Peres, University of California Berkeley, *Title to be announced.*

Special Sessions

Elliptic Methods in Geometry (Code: SS 3A), **C. Robin Graham**, University of Washington, and **Rafe Mazzeo**, Stanford University.

Fractal Geometry: Connections to Dynamics, Geometric Measure Theory, Mathematical Physics and Number Theory (Code: SS 4A), **Michel L. Lapidus** and **Erin P. Pearse**, University of California Riverside, and **Machiel van Frankenhuysen**, Utah Valley State College.

Gröbner Bases (Code: SS 2A), **Bernd Sturmfels** and **Alexander Yong**, University of California Berkeley.

History and Philosophy of Mathematics (Code: SS 1A), **Shawnee L. McMurran**, California State University, San Bernardino, and **James J. Tattersall**, Providence College.

Homological and K-Theoretical Trends in Algebraic Combinatorics (Code: SS 6A), **Joseph Gubeladze** and **Serkan Hosten**, San Francisco State University.

Liapunov Exponents and Nonuniform Hyperbolicity (Code: SS 7A), **Anton Gorodetski** and **Vadim Kaloshin**, California Institute of Technology.

Probability and Statistical Physics (Code: SS 5A), **Marek Biskup**, University of California Los Angeles, **Noam Berger**, California Institute of Technology & University of California Los Angeles, and **Balint Virag**, University of Toronto.

Salt Lake City, Utah

University of Utah

October 7–8, 2006

Saturday – Sunday

Meeting #1019

Western Section
Associate secretary: Michel L. Lapidus
Announcement issue of *Notices*: July 2006
Program first available on AMS website: August 24, 2006
Program issue of electronic *Notices*: October 2006
Issue of *Abstracts*: Volume 27, Issue 3

Deadlines

For organizers: March 7, 2006
For consideration of contributed papers in Special Sessions: June 20, 2006
For abstracts: August 15, 2006

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

Invited Addresses

William Arveson, University of California Berkeley, *Title to be announced.*

Alexei Borodin, California Institute of Technology, *Title to be announced.*

Izabella Joanna Laba, University of British Columbia, *Title to be announced.*

Darren Long, University of California Santa Barbara, *Title to be announced.*

Special Sessions

Harmonic Analysis: Trends and Perspectives (Code: SS 1A), **Alex Iosevich**, University of Missouri, and **Michael T. Lacey**, Georgia Institute of Technology.

Cincinnati, Ohio

University of Cincinnati

October 21–22, 2006

Saturday – Sunday

Meeting #1020

Central Section
Associate secretary: Susan J. Friedlander
Announcement issue of *Notices*: July 2006
Program first available on AMS website: September 7, 2006
Program issue of electronic *Notices*: October 2006
Issue of *Abstracts*: Volume 27, Issue 3

Deadlines

For organizers: March 21, 2006
For consideration of contributed papers in Special Sessions: July 5, 2006
For abstracts: August 29, 2006

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

Invited Addresses

Suncica Canic, University of Houston, *Title to be announced.*

Bryna R. Kra, Northwestern University, *Title to be announced.*

Ezra N. Miller, University of Minnesota, *Title to be announced.*

Jon G. Wolfson, Michigan State University, *Title to be announced.*

Special Sessions

Ergodic Theory (Code: SS 1A), **Nikos Frantzikinakis**, Pennsylvania State University, **Bryna R. Kra**, Northwestern University, and **Mate Wierdl**, University of Memphis.

Storrs, Connecticut

University of Connecticut

October 28–29, 2006

Saturday – Sunday

Meeting #1021

Eastern Section
Associate secretary: Lesley M. Sibner
Announcement issue of *Notices*: July 2006
Program first available on AMS website: September 14, 2006
Program issue of electronic *Notices*: October 2006
Issue of *Abstracts*: Volume 27, Issue 4

Deadlines

For organizers: March 28, 2006
For consideration of contributed papers in Special Sessions: July 11, 2006
For abstracts: September 6, 2006

Fayetteville, Arkansas

University of Arkansas

November 3–4, 2006

Friday – Saturday

Meeting #1022

Southeastern Section
Associate secretary: Matthew Miller
Announcement issue of *Notices*: September 2006
Program first available on AMS website: September 21, 2006
Program issue of electronic *Notices*: November 2006
Issue of *Abstracts*: Volume 27, Issue 4

Deadlines

For organizers: April 3, 2006
For consideration of contributed papers in Special Sessions: July 18, 2006
For abstracts: September 12, 2006

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

Invited Addresses

Richard P. Anstee, University of British Columbia, *Title to be announced.*

Arun Ram, University of Wisconsin, *Title to be announced.*

Donald G. Saari, University of California Irvine, *Title to be announced.*

Andras Vasy, Massachusetts Institute of Technology, *Title to be announced.*

Special Sessions

Dirac Operators in Analysis and Geometry (Code: SS 1A), **John Ryan**, University of Arkansas, **Marius Mitrea**, University of Missouri, and **Mircea Martin**, Baker University.

New Orleans, Louisiana

New Orleans Marriott and Sheraton New Orleans Hotel

January 4–7, 2007

Thursday – Sunday

Meeting #1023

Joint Mathematics Meetings, including the 113th Annual Meeting of the AMS, 90th 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: Susan J. Friedlander
Announcement issue of *Notices*: October 2006
Program first available on AMS website: November 1, 2006
Program issue of electronic *Notices*: January 2007
Issue of *Abstracts*: Volume 28, Issue 1

Deadlines

For organizers: April 1, 2006
For consideration of contributed papers in Special Sessions: To be announced
For abstracts: To be announced

Davidson, North Carolina

Davidson Colege

March 3–4, 2007

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 3, 2006
For consideration of contributed papers in Special Sessions: To be announced
For abstracts: To be announced

Oxford, Ohio

Miami University

March 16–17, 2007

Friday – Saturday
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: To be announced
For consideration of contributed papers in Special Sessions: To be announced
For abstracts: To be announced

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

Special Sessions

Large Cardinals in Set Theory (Code: SS 1A), **Paul B. Larson**, Miami University, **Justin Tatch Moore**, Boisie State university, and **Ernest Schimmerling**, Carnegie Mellon university.

Tucson, Arizona

University of Arizona

April 21–22, 2007

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 21, 2006
For consideration of contributed papers in Special Sessions: To be announced
For abstracts: To be announced

San Diego, California

San Diego Convention Center

January 6–9, 2008

Sunday – Wednesday
Joint Mathematics Meetings, including the 114th Annual Meeting of the AMS, 91st 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).
Associate secretary: Michel L. Lapidus
Announcement issue of *Notices*: October 2007
Program first available on AMS website: November 1, 2007
Program issue of electronic *Notices*: January 2008
Issue of *Abstracts*: Volume 29, Issue 1

Deadlines

For organizers: April 1, 2007
For consideration of contributed papers in Special Sessions: To be announced
For abstracts: To be announced

Bloomington, Indiana

Indiana University

April 4–6, 2008

Friday – 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 4, 2007
For consideration of contributed papers in Special Sessions: To be announced
For abstracts: To be announced

Shanghai, People's Republic of China

Fudan University

December 17–21, 2008

Wednesday – Sunday
First Joint Interntional Meeting Between the AMS and the Shanghai Mathematical Society
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: To be announced
For consideration of contributed papers in Special Sessions: To be announced
For abstracts: To be announced

Washington, District of Columbia

Marriott Wardman Park Hotel and Omni Shoreham Hotel

January 7–10, 2009

Wednesday – Saturday
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).
Associate secretary: Lesley M. Sibner
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: April 1, 2008
For consideration of contributed papers in Special Sessions: To be announced
For abstracts: To be announced

San Francisco, California

Moscone Center West and the San Francisco Marriott

January 6–9, 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).
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

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).
Associate secretary: Susan J. Friedlander
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 2, 2011
For consideration of contributed papers in Special Sessions: To be announced
For abstracts: To be announced