

Contents

THE NEWSLETTER OF THE MATHEMATICAL ASSOCIATION OF AMERICA

FOCUS

FOCUS is published by the Mathematical Association of America in January, February, March, April, May/June, August/September, October, November, and December.

Editor: Fernando Gouvêa; Colby College; fgouvea@colby.edu

Managing Editor: Carol Baxter; MAA; cbaxter@maa.org

Senior Writer: Harry Waldman; MAA; hwaldman@maa.org

Please address advertising inquiries to: Frank Peterson, ads@catalystcom.com

President: Ann E. Watkins, California State University, Northridge

President-Elect: Ronald L. Graham

First Vice-President: Carl C. Cowen

Second Vice-President: Joseph A. Gallian

Secretary: Martha J. Siegel

Associate Secretary: James J. Tattersall

Treasurer: John W. Kenelly

Executive Director: Tina H. Straley

Associate Executive Director and Director of Publications and Electronic Services: Donald J. Albers

FOCUS Editorial Board: Gerald Alexanderson; Donna Beers; J. Kevin Colligan; Ed Dubinsky; Bill Hawkins; Dan Kalman; Peter Renz; Annie Selden; Jon Scott; Ravi Vakil.

Letters to the editor should be addressed to Fernando Gouvêa, Colby College, Dept. of Mathematics, Waterville, ME 04901, or by email to fgouvea@colby.edu.

Subscription and membership questions should be directed to the MAA Customer Service Center, 800-331-1622; e-mail: maahq@maa.org; (301) 617-7800 (outside U.S. and Canada); fax: (301) 206-9789.

Copyright © 2002 by the Mathematical Association of America (Incorporated). Educational institutions may reproduce articles for their own use, but not for sale, provided that the following citation is used: "Reprinted with permission of FOCUS, the newsletter of the Mathematical Association of America (Incorporated)."

Periodicals postage paid at Washington, DC and additional mailing offices.

Postmaster: Send address changes to FOCUS, Mathematical Association of America, P.O. Box 90973, Washington, DC 20090-0973.

ISSN: 0731-2040; Printed in the United States of America.

Joint MAA-AMS Invited Addresses and
Joint Sessions 4

86th Annual Meeting of the MAA 5-17

109th Annual Meeting of the AMS 17-19

Activities of Other Organizations 20-21

Social Events 22-23

Other Events of Interest 23

Advanced Registration 26

Hotel Accommodations 26

Miscellaneous 27

Schedule of Events 28

Employment Opportunities 34

Photographs of Baltimore courtesy of the Baltimore Area
Convention and Visitors Association.

President's Invitation

Come to Our Winter Meeting in Baltimore

This winter's Joint Mathematics Meeting with the American Mathematical Society will be held January 15 through 18 at the Baltimore Convention Center. The convention hotels are located in Baltimore's festive Inner Harbor area.

The Mathematical Program

The 86th annual meeting of the MAA, organized by Associate Secretary Jim Tattersall, features invited speakers David Fowler, Paul Sally, Joe Silverman, Richard Tapia, Robin Wilson, and Donna Beers. Speakers invited jointly by the MAA and AMS are Noam Elkies and Ed Scheinerman. Joint sessions will be held on a wide range of topics; you can find a list on page 5. The topic of the MAA's short course is Mathematics in the Ancient World and the AMS short course will be on Public-Key Cryptography.

Be sure to sign up in time for your choice of the MAA's 16 minicourses, presented by an all-star team. Topics range from Teaching a Course in the History of Mathematics (Fred Rickey and Victor Katz) to Using and Adapting Online Materials (David Smith and friends) and even Mathematical Finance (Walter Stromquist). (Is there anyone out there who doesn't want to know more about portfolio optimization to maximize return and minimize risk? See pages 6-9.

The program will have 26 contributed paper sessions on just about every topic you can think of and more. The list is on pages 9-10. Other sessions that are back by popular demand include the presentations by the Haimo teaching awards winners Judith Grabiner, Ranjan Roy, and Paul Zeitz, the joint prize session, and the MAA business meeting. At the business meeting, I will officially pass the presidential scepter to Ron Graham and gracefully fade away as MAA past-president.

The MAA's new special interest groups (environmental mathematics; history of mathematics; statistics; research in undergraduate mathematics education; business, industry, and government) have contributed substantially to the program, with an especially strong strand in the history of mathematics.

Program for Students

Mario Martelli will again organize the extremely popular undergraduate student poster session. Other activities specifically for students include the MAA student lecture, which will be given by Donna Beers, a session on using the Employment Center, a hospitality center organized by Richard and Araceli Neal, and a reception for graduate students.

Activities of Our Sister Organizations

Many other organizations also have contributed to the program or are having receptions or other social events. These include ASL, AWM, NAM, PME, RMMC, SIAM, YMN, MER, and

ASA. (If you are the first person to send me an email claiming that you know what all of these letters stand for —no fair looking them up—you will win a copy of *The Random Walks of George Pólya*.)



O, Say Can You Sigh-see?

I know what you're thinking: "The program looks pretty spectacular, but Baltimore? In the winter?" Actually, Baltimore is a lovely, compact, and inexpensive place for a meeting, especially if food is what you are looking for. Harborplace, just a block from the Convention Center, has a great variety of restaurants, many featuring Chesapeake Bay cuisine (think crabcakes). The Baltimore Visitor's Association proudly points out that Baltimore not only is the home of Fort McHenry, the Maryland Science Center, and the National Aquarium, but has the first monument erected in honor of Edgar Allan Poe! And did you know that Baltimore's World Trade Center is the world's tallest five-sided building?

In recent years, the MAA has met twice in Baltimore and both times it has been sunny and mild. In fact, the average daily high in Baltimore for January 15, the day the meeting begins, is 41°F and once it reached 78°F. (Okay, so that was in 1932.) Further, the average rainfall for January 15 is only .1 inch! When you check out the hotel prices and how easy it is to get there, you will appreciate Baltimore even more.

Plan Ahead for Phoenix in 2004

Planning is now underway for the Joint Mathematics Meetings in Phoenix, Arizona, January 7-10, 2004, where the average daily high on January 7 is 65°F. If you would like to organize a contributed paper session, the deadline to submit your proposal is December 31, 2002. If you would like to propose a new minicourse, the deadline is December 2. For more information, go to MAA Online and click on MAA Meetings.

I hope to see you in Baltimore on January 15! We will have a great time.

Ann Watkins
MAA President

86th Annual Meeting of the MAA

MAA invited ADDRESSES



SOME COMMENTS ON EARLY GREEK MATHEMATICS

David H. Fowler, University of Warwick
Wednesday, 3:20 p.m.

IS TEACHING ABOUT MATHEMATICS THE SAME AS TEACHING MATHEMATICS?

Paul J. Sally, Jr., University of Chicago
Saturday, 10:05 a.m.



THE UBIQUITY OF ELLIPTIC CURVES

Joseph H. Silverman
Brown University
Saturday, 9:00 a.m.

SOME MATHEMATICAL INSIGHTS INTO CAR AND BICYCLE RACING

Richard A. Tapia, Rice University
Thursday, 10:05 a.m.



FOUR COLORS SUFFICE: A HISTORY AND PROOF OF THE FOUR-COLOR PROBLEM

Robin Wilson, The Open University
Wednesday, 2:15 p.m.

PRESENTATIONS BY TEACHING AWARD RECIPIENTS

Friday, 2:30 p.m. -4:00 p.m.

Winners of the Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching will give presentations on the secrets of their success.



Judith Grabiner, left, and Paul Zeitz, right, are two of the Haimo award winners presenting talks in Baltimore. Not shown: Ranjan Roy, the third winner.

MAA mini COURSES

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. If the only reason for registering for the Joint Meetings is to gain admission to a minicourse, please make a notation on your registration form. If the minicourse is fully subscribed or cancelled, a full refund of the Joint Meetings advance registration fee (otherwise subject to the 50% rule) will be made. The MAA reserves the right to cancel any minicourse that is undersubscribed.

MINICOURSE #1

TEACHING INTRODUCTORY STATISTICS USING A WORKSHOP APPROACH

Organized by James H. Albert

Bowling Green State University

Part A: Wednesday, 9:00 a.m. to 11:00 a.m.

Part B: Friday, 9:00 a.m. to 11:00 a.m.

This minicourse will help instructors teach introductory statistics conforming to recent ASA/MAA recommendations to emphasize statistical thinking with an increased emphasis on data and concepts and with fewer recipes. A workshop approach will be illustrated where students explore topics in data analysis, probability, and inference by means of directed activities in the classroom. Traditional and Bayesian methods will be compared from the viewpoint of communicating basic tenants of statistical inference. The use of Fathom and web-based software will be illustrated, and a student survey project will be described as a useful method of assessing the student's learning of statistics. No previous computer experience is necessary to attend this minicourse. Cost is \$90; enrollment limit is 30.

MINICOURSE #2

JAVA APPLETS IN TEACHING MATHEMATICS

Organized by Joe Yanik, Emporia State University, and David M. Strong, Pepperdine University

Part A: Wednesday, 2:15 p.m. to 4:15 p.m.

Part B: Friday, 1:00 p.m. to 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 \$90; enrollment limit is 30.

MINICOURSE #3

OPTIMIZATION OF TECHNOLOGY IN THE GEOMETRY CLASSROOM

Organized by Subhash C. Saxena

Coastal Carolina University

Part A: Wednesday, 4:30 p.m. to 6:30 p.m.

Part B: Friday, 3:15 p.m. to 5:15 p.m.

The latest version of “Dynamic Geometry Software” empowers us to teach a lot more geometry in an enhanced pedagogical environment, especially topics like affine transformations. This minicourse will provide hands-on experience to participants in the optimal use of technology in diverse college geometry classrooms. We will discuss plane isometries, dilations, affine transformations, equiareal transformations, inversions, and various custom tools; and time permitting, non-Euclidean models and fractals. An abbreviated guide will be available to participants. Cost is \$90; enrollment limit is 30.

MINICOURSE #4

VISUAL LINEAR ALGEBRA

Organized by Eugene A. Herman, Grinnell College; Michael D. Pepe, Seattle Central Community College; and Eric P. Schulz, Walla Walla Community College

Part A: Thursday, 8:00 a.m. to 10:00 a.m.

Part B: Saturday, 9:00 a.m. to 11:00 a.m.

This minicourse will introduce participants to a new, visual approach to teaching linear algebra. The primary objective is to create a dynamic learning environment in which students are actively engaged in learning the central concepts of linear algebra. Course materials cover the entire first course in linear algebra; they stress the development of visualization skills to acquire strong geometric intuition. Participants will have the option of working with the materials in Maple, Mathematica, or webMathematica. Cost is \$90; enrollment limit is 30.

MINICOURSE #5

USING AND ADAPTING ONLINE MATERIALS

Organized by David A. Smith and Lang Moore, Duke University; Douglas E. Ensley, Shippensburg University; and Franklin A. Wattenberg, U. S. Military Academy

Part A: Thursday, 10:15 a.m. to 12:15 p.m.

Part B: Saturday, 1:00 p.m. to 3:00 p.m.

The minicourse will begin with a short survey of useful mathematical sites, with emphasis on materials available in the Mathematical Sciences Digital Library (MathDL). This will be followed by a brief introduction/review of the basics of HTML. Then we will show how to use and adapt a new set of tools developed by MathDL to create short online learning activities. Cost is \$90; enrollment limit is 30.

MINICOURSE #6

WEBWORK, AN INTERNET-BASED SYSTEM FOR GENERATING AND DELIVERING HOMEWORK PROBLEMS TO STUDENTS

Organized by Arnold K. Pizer, Michael E. Gage, and Vicki Roth, University of Rochester

Part A: Thursday, 1:00 p.m. to 3:00 p.m.

Part B: Saturday, 3:15 p.m. to 5:15 p.m.

This minicourse introduces participants to WeBWorK, a freely available web-based homework system that comes with an extensive library of problems. WeBWorK won the ICTCM Award for Excellence and Innovation with the Use of Technology in Collegiate Mathematics. Supported by grants from the NSF, WeBWorK has already been adopted by many colleges and universities. Participants will actively participate in using WeBWorK and writing WeBWorK problems. Readers can learn more about WeBWorK by connecting to <http://www.math.rochester.edu/webwork>. Cost is \$90; enrollment limit is 30.

MINICOURSE #7

THE MATHEMATICS OF PRESIDENTIAL AND OTHER ELECTIONS

Organized by Steven J. Brams, New York University

Part A: Wednesday, 9:00 a.m. to 11:00 a.m.

Part B: Friday, 9:00 a.m. to 11:00 a.m.

This course will emphasize modeling presidential campaigns and elections and, more generally, the theoretical problems underlying voting and social choices. Topics will include modeling position-taking in two-candidate and multicandidate races, bandwagon and underdog effects in primaries, voting power in the Electoral College, and election reforms like approval voting. Cost is \$60; enrollment limit is 50.

MINICOURSE #8

MATHEMATICAL FINANCE

Organized by Walter R. Stromquist

Part A: Wednesday, 2:15 p.m. to 4:15 p.m.

Part B: Friday, 1:00 p.m. to 3:00 p.m.

We will examine market price statistics to test the validity of the “standard model” for stock prices (Geometric Brownian Motion). We will then cover two main ideas of modern finance: portfolio optimization and option valuation. Portfolio optimization means allocating a fixed investment fund among instruments (such as stocks) in order to maximize return and

MAA mini COURSES

minimize risk. Option valuation includes the well-known Black-Scholes formula, and we will show how the technique is extended to oil field valuation. The presenter will draw on practical examples from his consulting experience. Cost is \$60; enrollment limit is 50.

MINICOURSE #9

FAIR ENOUGH? MATHEMATICS OF EQUITY

Organized by John C. Maceli and Stanley E. Seltzer
Ithaca College

Part A: Wednesday, 4:30 p.m. to 6:30 p.m.

Part B: Friday, 3:15 p.m. to 5:15 p.m.

Topics of fairness make terrific subject matter for a contemporary mathematics course. This minicourse introduces some fairness topics—apportionment, voting power, elections, fair allocation and equity, the Census—with the goals of helping participants learn about these topics, see and use activities that support a course in fairness, and prepare to teach such a course. We will provide sample activities, projects, and a list of resources, including original papers accessible to undergraduates. Active participation is expected. Cost is \$60; enrollment limit is 50.

MINICOURSE #10

TURNING A NONSCIENCE OR DEVELOPMENTAL COURSE INTO A CAPSTONE MATHEMATICAL EXPERIENCE

Organized by James T. Sandefur, Georgetown University, and Rosalie A. Dance, University of the Virgin Islands

Part A: Thursday, 9:00 a.m. to 11:00 a.m.

Part B: Saturday, 9:00 a.m. to 11:00 a.m.

Many college freshmen struggle with mathematics without realizing that the mathematics is either useful or important. In this minicourse, participants learn to introduce interesting applications with high algebraic content into precalculus and intermediate algebra courses and courses with titles like “Excursions in Mathematics”. We will discuss how to 1) identify and revise appropriate investigations, 2) present investigations to students with a variety of needs, and 3) use technology appropriately. We will use investigations set in high interest contexts (e.g., protection of a local natural resource) or issues of social importance (e.g., teenage binge drinking). Cost is \$60; enrollment limit is 50.

MINICOURSE #11

SYMMETRY FOR ALL

Organized by George Baloglou, SUNY at Oswego

Part A: Thursday, 1:00 p.m. to 3:00 p.m.

Part B: Saturday, 1:00 p.m. to 3:00 p.m.

We offer an elementary, strictly geometrical approach to wallpaper patterns. Two-colored patterns provide opportunities for both mathematical exploration and artistic creativity, while compositions of isometries are investigated in the context of multicolored tilings. This low-tech minicourse parallels a general education course developed at SUNY at Oswego over the last ten years. Participants will actually go through the group-work

labs that introduce new topics in class and will receive additional materials sufficient for creating a similar course. Cost is \$60; enrollment limit is 50.

MINICOURSE #12

GETTING STUDENTS INVOLVED IN UNDERGRADUATE RESEARCH

Organized by Aparna W Higgins, The University of Dayton, and Joseph A. Gallian, University of Minnesota, Duluth

Part A: Wednesday, 9:00 a.m. to 11:00 a.m.

Part B: Friday, 9:00 a.m. to 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 of research in summer programs and research that can be conducted during the academic year will be presented. 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

INCORPORATING DISCRETE MATHEMATICS IN THE PREPARATION OF K-12 MATHEMATICS TEACHERS

Organized by Lolina Alvarez, New Mexico State University

Part A: Wednesday, 2:15 p.m. to 4:15 p.m.

Part B: Friday, 1:00 p.m. to 3:00 p.m.

More than a fixed set of topics, discrete mathematics is a way of thinking that deals with important and interesting problems in contemporary mathematics. We will start by picking up some simple situations from art, biology, computer science, social psychology, just to name a few. We will expose, at different levels of sophistication, the mathematics related to each situation. We will emphasize the interplay between mathematical content and methods of teaching and learning. Each course participant will receive a collection of materials, including an extensive list of resources. Cost is \$60; enrollment limit is 50.

MINICOURSE #14

TEACHING A COURSE IN THE HISTORY OF MATHEMATICS

Organized by V. Frederick Rickey, U. S. Military Academy, and Victor J. Katz, University of the District of Columbia

Part A: Wednesday, 4:30 p.m. to 6:30 p.m.

Part B: Friday, 4:30 p.m. to 6:30 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 #15

REAL FUN EXPLORING BASIC MATHEMATICS

Organized by **Shawnee L. McMurrin and Robert G. Stein**,
California State University, San Bernardino

Part A: Thursday, 9:00 a.m. to 11:00 a.m.

Part B: Saturday, 9:00 a.m. to 11:00 a.m.

Intended for college instructors wishing to enhance math courses for preservice teachers, this course models teaching mathematical content using methods that carry over to schools. The course shows how to take discovery learning beyond isolated activities to build basic skills. Lessons, on topics central to the K8 curriculum, are open ended, encouraging deep involvement. Participants will get new ideas and establish mathematical connections that make for a rich experience. Cost is \$60; enrollment limit is 50.

MINICOURSE #16

CWATSETS: A RESEARCH EXPERIENCE FOR
UNDERGRADUATES

Organized by **Gary J. Sherman**

Rose-Hulman Institute of Technology

Part A: Thursday, 1:00 p.m. to 3:00 p.m.

Part B: Saturday, 1:00 p.m. to 3:00 p.m.

Cwatsets are group-like subsets of binary n -space with surprising algebraic and combinatorial properties whose applications range from statistics to graph theory. We will survey the evolving undergraduate-driven theory of cwatsets, present an extensive inventory of research questions suitable for undergraduates and their teachers, and discuss cwatsets as a capstone topic for a discrete mathematics or abstract algebra course. Participants will receive a packet of technical reports, papers, examples, and questions. See <http://www.rose-hulman.edu/~sherman/Cwatsets> for more details. Cost is \$60; enrollment limit is 50.

MAA contributed & invited paper SESSIONS

See the complete descriptions and instructions on how to participate in these sessions beginning on page 24 in the May/June issue of FOCUS or at http://www.ams.org/amsmtgs/2074_maacontrib.html. Please note that the days and times listed are tentative.

INNOVATIVE USES OF THE WORLD WIDE WEB IN TEACHING MATHEMATICS

Brian E. Smith, McGill University; Marcelle Bessman, Jacksonville University; Marcia P. Birken, Rochester Institute of Technology; Thomas E. Leathrum, Jacksonville State University; David M. Strong, Pepperdine University; and Joe Yanik, Emporia State University.

Wednesday morning and Thursday afternoon

CLASSROOM DEMONSTRATIONS AND COURSE PROJECTS THAT MAKE A DIFFERENCE

David R. Hill, Temple University; Sarah L. Mabrouk, Framingham State College; and Lila F. Roberts, Georgia Southern University

Wednesday morning and Thursday afternoon

THE HISTORY OF MATHEMATICS IN THE AMERICAS

Amy E. Shell-Gellasch, U. S. Military Academy; and Daniel E. Otero, Xavier University

Wednesday morning

GETTING STUDENTS TO DISCUSS AND TO WRITE ABOUT MATHEMATICS

Sarah L. Mabrouk, Framingham State College

Wednesday afternoon

QUANTITATIVE LITERACY IN PRACTICE: WHAT IS IT AND WHAT WORKS?

Richard A. Gillman, Valparaiso University

Wednesday afternoon

ENVIRONMENTAL MATHEMATICS IN THE CLASSROOM

Karen D. Bolinger, Clarion University, and Ben Fusaro, Florida State University

Wednesday afternoon

INCORPORATING HISTORY OF MATHEMATICS IN THE MATHEMATICS CLASSROOM

Victor J. Katz, University of the District of Columbia; Edith Prentice Mendez, Sonoma State University; and Eisso J. Atzema, University of Maine

Thursday morning

HELPING STUDENTS GIVE EFFECTIVE MATHEMATICS PRESENTATIONS

Suzanne Dorée, Augsburg College, and Thomas Linton, Central College

Thursday morning

MATHEMATICS EXPERIENCES IN BUSINESS, INDUSTRY, AND GOVERNMENT

Philip E. Gustafson, Mesa State College

Thursday morning

APPLICATIONS OF ABSTRACT ALGEBRA

Robert E. Lewand, Goucher College; and George Mackiw, Loyola College, Maryland

Thursday morning

86th Annual Meeting of the MAA

THE SPECIAL INTEREST GROUP OF THE MAA ON RESEARCH IN UNDERGRADUATE MATHEMATICS EDUCATION

James F. Cottrill, Illinois State University, and Anne E. Brown, Indiana University South Bend
Friday and Saturday mornings

BEST STATISTICS PROJECTS/ACTIVITIES

Carolyn K. Cuff, Westminster College, and Mary M. Sullivan, Rhode Island College
Friday and Saturday mornings

RETHINKING THE COURSES BELOW CALCULUS

Mary Robinson, University of New Mexico, Valencia Campus; Sheldon P. Gordon, SUNY at Farmingdale; Florence S. Gordon, New York Institute of Technology; and Arlene H. Kleinstein, SUNY at Farmingdale
Friday and Saturday mornings

ASSESSMENT OF STUDENT LEARNING: MODELS AND METHODOLOGY

Jay A. Malmstrom, Oklahoma City Community College; Linda Martin, Albuquerque-TVI; and Mercedes A. McGowen, William Rainey Harper College
Friday and Saturday mornings

INITIATING AND SUSTAINING UNDERGRADUATE RESEARCH PROJECTS AND PROGRAMS

James A. Davis, University of Richmond; Suzanne M. Lenhart, University of Tennessee; and Daniel J. Schaal, South Dakota State University
Thursday afternoon

ENCOURAGING UNDERREPRESENTED GROUPS OF STUDENTS IN MATH CONTESTS

Harold B. Reiter, University of North Carolina Charlotte; Ruth G. Favro, Lawrence Technological University; David M. Wells, Pennsylvania State University; Susan Schwartz Wildstrom, Walt Whitman High School; and Jeff J. Dodd, Jacksonville State University
Friday afternoon

STRATEGIES FOR INCREASING THE DIVERSITY OF STUDENTS IN MATHEMATICS

Marjorie Enneking, Portland State University; Wade Ellis, West Valley College; William Hawkins, SUMMA; Robert E. Megginson, University of Michigan; Kenneth C. Millett, University of California, Santa Barbara; and William Y. Velez, University of Arizona
Friday morning

MATHEMATICAL MODELING IN AND OUT OF THE CLASSROOM

Brian J. Winkel, U. S. Military Academy; Tanya L. Leise, Rose-Hulman Institute of Technology; and Amy E. Radunskaya, Pomona College
Friday afternoon

PHILOSOPHY OF MATHEMATICS

Bonnie Gold, Monmouth University
Friday afternoon

INTEGRATING UNDERGRADUATE RESEARCH WITH THE MATHEMATICS CURRICULUM

David Brown and Osman Yurekli, Ithaca College
Friday afternoon

COURSES AND PROJECTS ADDRESSING THE SHORTAGE OF K-12 TEACHERS

Harel Barzilai, Salisbury University; Maria G. Fung, Western Oregon University; and Jay M. Jahangiri, Kent State University
Saturday afternoon

CREATIVE VISUALIZATION LABS

Sarah J. Greenwald, Appalachian State University; Catherine A. Gorini, Maharishi University of Management; and Mary L. Platt, Salem State College
Saturday afternoon

LINKING MATHEMATICS WITH OTHER DISCIPLINES

Stephanie A. Fitchett and Blake Mellor, Honors College, Florida Atlantic University; and Gavin P. LaRose, University of Michigan
Saturday afternoon

MATHEMATICAL CONNECTIONS IN ART, MUSIC, AND SCIENCE

John M. Sullivan, University of Illinois at Urbana-Champaign; Douglas E. Norton, Villanova University; and Reza Sarhangi, Towson University
Saturday afternoon

COMPUTATION MATHEMATICS IN LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS

Richard J. Marchand, SUNY at Fredonia; Elias Deeba, University of Houston-Downtown; and Timothy J. McDevitt, Millersville University
Saturday afternoon

GENERAL CONTRIBUTED PAPER SESSION

Michael A. Jones, Montclair State University; Jill Dietz, St. Olaf College; Steven M. Hetzler, Salisbury University; and Shawnee L. McMurrin, California State University at San Bernardino
Wednesday, Thursday, Friday, and Saturday mornings

TRUTH IN USING THE HISTORY OF MATHEMATICS IN TEACHING MATHEMATICS

Organized by Victor J. Katz, University of the District of Columbia, and Eisso J. Atzema, University of Maine
Wednesday, 5:15 p.m.-6:45 p.m.

The history of mathematics has long been accepted as a scholarly activity for its own sake. Increasingly, historical research is called upon by a wide variety of professionals within the mathematical community to serve a broad range of agendas. This panel aims to assess this development by opening up a dialogue between the history of mathematics community and the users of history. Questions to be discussed include, but are not limited to, the following: What resources in history do the users of history of mathematics use and why? Specifically, what is the attraction of myth and legend for those who use history? Is it reasonable to expect that all users use state-of-the-art research in history? Should the history of mathematics community be more accommodating toward the users of history of mathematics? What should the role of myth and legend be in the community's own teaching of the history of mathematics? Panelists include Joseph W. Dauben, City University of New York; Fernando Q. Gouvêa, Colby College; and Anthony V. Piccolino, Montclair State University. The session is sponsored by the MAA History of Mathematics SIGMAA.

REFLECTIONS ON THE CONFERENCE TO IMPROVE COLLEGE ALGEBRA

Organized by Donald B. Small, U.S. Military Academy
Wednesday, 9:00 a.m.-10:20 a.m.

Traditional college algebra is not working. That was the strong consensus of the participants in the National Conference to Improve College Algebra held at the U.S. Military Academy. This conclusion was based on the high FDW rates, outdated curriculum, small percentage of students who eventually take Calculus I, and the negative impact these courses have on student perceptions of mathematics. In order to make college algebra work, the participants recommended refocusing the courses on the needs of other disciplines, society, and the workplace. In particular, they recommended revising college algebra courses to be real-world problem-based and to include modeling with power and exponential functions, systems of equations, graphing, and difference equations. They also strongly emphasized communication skills, small group projects, and appropriate use of technology to enhance conceptual understanding, visualization, and inquiry as well as computation. Panelists include John C. Maceli, Ithaca College; Philip H. Mahler, Middlesex Community College; Alexander H. Fluellen, Clark Atlanta University; and Norma M. Agras, Miami-Dade Community College. The panel will be moderated by Bernard L. Madison, University of Arkansas, and is sponsored by the MAA CUPM Subcommittee on Curriculum Reform Across the First Two Years (CRAFTY).

THE IMPACT OF TECHNOLOGY IN CALCULUS

COURSES ON LONG-TERM STUDENT PERFORMANCE AND EMPLOYMENT

Organized by Susan L. Ganter, Clemson University, and Jack Bookman, Duke University
Wednesday, 2:15 p.m.-3:35 p.m.

More than ten years after the funding of the first NSF calculus reform projects, there is very little consensus about the degree to which these efforts, and particularly technology, have succeeded in improving the postcalculus achievement of the participating students. This panel will address this issue by discussing a multi-institutional project that is collecting data for the purpose of: (1) comparing the performance of reform and traditional calculus students in courses beyond calculus; (2) examining students prior to graduation from college to determine these students' fundamental notions of calculus; (3) determining the extent to which potential employers value the ideals supported by calculus reform efforts; and, (4) training a group of on-site evaluators capable of developing and sustaining a viable evaluation plan on multiple campuses beyond this project.

Panelists include Betsy Darken, University of Tennessee at Chattanooga; Elton Graves, Rose-Hulman Institute of Technology; Glenn W. Ledder, University of Nebraska; Howard L. Penn, U.S. Naval Academy; and Debra L. Wood, University of Arizona. The panel is sponsored by the MAA Committee on the Undergraduate Program in Mathematics (CUPM) and the MAA CUPM Subcommittee on Curriculum Reform Across the First Two Years (CRAFTY).

AN OVERVIEW OF INTERVIEWS

Organized by Dov N. Chelst, DeVry College of Technology, and John A. Vano, University of Wisconsin
Wednesday, 2:15 p.m.-3:35 p.m.

This will be a useful session for those going through the Employment Center for the first time.

EXPANDING YOUR RESEARCH HORIZONS

Organized by Jennifer Hontz, Meredith College, and Philip K. Hotchkiss, Westfield State College
Wednesday, 3:30 p.m.-5:00 p.m.

Changing research agendas can be a daunting task. How do you enter into a new field of research? What strategies might be useful for learning about a new field? The panelists will offer their experience and expertise on how one might successfully change research agendas. These speakers include active mathematicians who are working in different research areas as well as representatives from DIMACS and MSRI. This session was organized by the 1994-98 Project NExT Fellows to address issues of concern to faculty who have four to ten years of teaching experience. Panelists include John W. Emert, Ball State University; Rochelle Leibowitz, DIMACS; and Neil Portnoy, California State University, Chico. Sponsored by MAA Project NExT.

DOCTORATES IN MATHEMATICS EDUCATION:

WHY THE SHORTAGE? WHERE DO THEY GO? WHAT DO THEY DO?

Organized by Robert E. Reys, University of Missouri-Columbia, and Robert Glasgow, Southwest Baptist University

Wednesday, 3:45 p.m.-4:45 p.m.

There is an acute shortage of doctorates in mathematics education. One of the reasons is that people completing doctorates in mathematics education pursue many different career options. Some of these options and career directions taken by recent graduates will be presented. Time will be allowed for interaction with participants attending the session.

SMALL GROUP PROJECTS IN COLLEGE ALGEBRA

Organized by Donald B. Small, U.S. Military Academy

Wednesday, 3:45 p.m.-5:05 p.m.

The movement to improve college algebra has focused on revising both content and pedagogy to address the needs of other disciplines, society, and the workplace. The issue of incorporating small group projects is central to revising college algebra courses. Faculty in partner disciplines as well as employers look to mathematics to provide students with experience working in small groups. Assessment, time involvement, faculty development, and objectives are some of the issues that will be discussed. Panelists include Laurette B. Foster, Prairie View A&M University; Richard D. West, Francis Marion College; Paul Dirks, Miami-Dade Community College; and Regina D. Aragon, Eastern New Mexico University. The session will be moderated by Kathleen Snook, U.S. Military Academy and COMAP, and is sponsored by the MAA CUPM Subcommittee on Curriculum Reform Across the First Two Years (CRAFTY).

A WORKSHOP ON STUDENT WRITING: A HANDS-ON APPROACH

Organized by Mary Ellen Foley, Louisiana State University in Shreveport; Kirk E. Weller, Bethel College; Douglas Kurtz, New Mexico State University; and Ahmed I. Zayed, DePaul University

Wednesday, 4:30 p.m.-6:30 p.m.

This session will introduce and elaborate on the main points of employing writing assignments in mathematics classes. These points include creating appropriate assignments, effectively communicating instructors' expectations, and assessing students' work. The audience will have an opportunity to practice these ideas with sample assignments and student papers. The session is sponsored by the MAA Committee on the Teaching of Undergraduate Mathematics (CTUM).

WRITING AND PUBLISHING EXPOSITORY ARTICLES ABOUT MATHEMATICS

Organized by T. Christine Stevens, St. Louis University; Joseph A. Gallian, University of Minnesota Duluth; and Aparna W. Higgins, University of Dayton

Thursday, 8:30 a.m.-10:00 a.m.

The panelists will provide advice about writing and publishing

expository articles in mathematics. They will discuss how to identify suitable topics, how to organize and write such articles, and how to choose a suitable journal. The panelists include experienced authors of expository articles and current or former editors of MAA or AMS publications. Panelists include Edward G. Dunne, AMS; Deanna B. Haunsperger, Carleton College; Martha J. Siegel, Towson University; and Francis E. Su, Harvey Mudd College.

UNDERGRADUATE PROGRAMS AND COURSES IN THE MATHEMATICAL SCIENCES: A CUPM CURRICULUM GUIDE

Organized by Harriet S. Pollatsek, Mount Holyoke College, and Susanna S. Epp, DePaul University

Thursday, 9:00 a.m.-10:20 a.m.

The MAA Committee on the Undergraduate Program in Mathematics (CUPM) periodically reviews its curricular recommendations for college and university departments and revises them as needed to fit new circumstances. "Undergraduate Programs and Courses in the Mathematical Sciences: A CUPM Curriculum Guide" will appear in the fall of 2003; it will be the first guide explicitly to address the needs of nonmajors as well as majors.

Panelists will describe the latest draft of the Curriculum Guide, and there will be an opportunity for comments and questions from the audience. The chief writer of this draft is Barry Cipra, working under the direction of CUPM. This draft is also informed by the Curriculum Foundations Project of CRAFTY, as well as work on the first college course, on quantitative literacy, and on the mathematical preparation of teachers. After revisions prompted by MathFest 2002 discussion, a near-final draft Curriculum Guide will circulate widely in 2002-2003, with a final version slated for publication in fall 2003. CUPM and the MAA acknowledge funding from the NSF and the CCHE in support of the writing, production and distribution of the new Curriculum Guide. Consult www.maa.org/news/cupm.html for past interim reports and drafts, as well as the most recent version. Panelists include Susan L. Ganter, Clemson University; William E. Haver, Virginia Commonwealth University; Harriet S. Pollatsek, and Susanna S. Epp.

The session is sponsored by the MAA Committee on the Undergraduate Program in Mathematics (CUPM).

SAMPLE MATHEMATICS LESSONS INTEGRATING ENVIRONMENTAL ISSUES

Organized by Patricia Clark Kenschaft, Montclair State University

Thursday 9:00 a.m.-10:20 a.m.

Three authors of mathematics texts that integrate environmental issues into their writing will present sample lessons from their creative work. These lessons will illustrate how mathematics can be taught more effectively while, at the same time, exploring environmental challenges that can be better understood and remedied by using mathematics. Panelists include Greg A. Langkamp, Quantitative Environmental Learning Project and

Seattle Central Community College; Martin E. Walter, University of Colorado at Boulder; and Nancy E. Zumoff, Kennesaw State University. The session is sponsored by the MAA Committee on Mathematics and the Environment.

NSF FUNDING OPPORTUNITIES FOR LEARNING AND TEACHING IN THE MATHEMATICAL SCIENCES

Organized by Elizabeth J. Teles and Lee L. Zia, NSF/Division of Undergraduate Education; and James H. Lightbourne, NSF/Division of Graduate Education

Thursday, 9:00 a.m.-10:20 a.m.

The NSF Division of Undergraduate Education and sister NSF divisions offer a variety of grant programs to 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.

FIRST COLLEGE-LEVEL MATHEMATICS COURSES

Organized by Donald B. Small, U.S. Military Academy; Sarah Bush, Wiley College; and Dorothy Hunter, Huston-Tillotson College

Thursday, 9:00 a.m.-11:00 a.m.

The majority of students enrolled in mathematics are enrolled in “first year” courses: algebra, college algebra, college algebra and trig, elementary statistics, finite mathematics, liberal arts mathematics, elementary modeling, precalculus, etc. There is a growing movement to refocus these courses on the needs of partner disciplines, society, and the workplace. Problem solving (in the modeling sense), appropriate use of technology, small group projects, real-world problems, elementary data analysis, development of communication skills, and student-centered pedagogy characterize these new approaches to first year courses. Several of these new approaches will be displayed at this poster session. Applications should be submitted to Don Small, don-small@usma.edu, by December 10, 2002. The session is sponsored by the MAA Committee on the Undergraduate Program in Mathematics (CUPM).

HOW CAN PLACEMENT TESTING BE IMPROVED?

Organized by Susan L. Forman, Bronx Community College (CUNY), and Bernard L. Madison, University of Arkansas

Thursday, 10:45 a.m.-12:05 p.m.

Criticism of college placement tests has increased significantly in recent years, focusing mostly on the lack of alignment with curricula and pedagogy of school mathematics. Some of this criticism is based on differences between what students learn in school mathematics and what mathematical knowledge and skills are necessary for success in first college mathematics courses. Other criticism is rooted in differing visions of what students should know and be able to do. Beyond these tensions lie differences in the backgrounds of entering students; for example, some come directly from high school and others have

been away from school and college for several years. Panelists from high schools, two-year colleges, and four-year colleges will discuss these criticisms and ways to make college mathematics placement tests better understood and more effective. Panelists include Judy E. Ackerman, Montgomery College, AMATYC President Elect; Judy Marwick, Morton College; Johnny W. Lott, University of Montana, NCTM President Elect; Susan L. Forman, and Bernard L. Madison.

THE NATURE OF MATHEMATICS KNOWLEDGE AND KNOWLEDGE OF MATHEMATICS LEARNING NEEDED BY SECONDARY SCHOOL MATHEMATICS TEACHERS IN AN ERA OF TECHNOLOGY AND REFORM-ORIENTED CURRICULA

Organized by M. Kathleen Heid, The Pennsylvania State University

Thursday, 10:45 a.m.-12:05 p.m.

The CBMS MET Report along with recent research and surveys have pointed out the need to know more about what mathematics high school teachers need to function effectively with reform-oriented curricula. Several projects are underway creating materials that address these needs. One such project is centered at Berkeley and the University of Chicago on creating materials that examine problems, concepts, and results of high school mathematics in depth and from a more advanced point of view. The Mid-Atlantic Center for Mathematics Teaching and Learning is investigating and developing ways to deepen understandings that prospective and practicing high school mathematics teachers have of the mathematics featured in emerging high school mathematics curricula. Making Mathematical Connections in Programs for Prospective Teachers at the University of New Hampshire is providing prospective teachers the opportunity to make connections between prior knowledge and future tasks and to enable them to construct new mathematical and pedagogical knowledge. Panelists include Karen J. Graham, University of New Hampshire; Walter Seaman, University of Iowa; Richard J. Stanley, University of California Berkeley; Zalman P. Usiskin, University of Chicago; Skip Wilson, Virginia Polytechnic Institute and State University; James T. Fey, University of Maryland; and M. Kathleen Heid. The session is sponsored by the MAA Committee on the Mathematical Education of Teachers (COMET).

KEEPING THE PLATTERS SPINNING: EFFECTIVE TIME MANAGEMENT

Organized by Karrolyne Fogel, California Lutheran University, and J. Lyn Miller, Slippery Rock University

Thursday, 10:45 a.m.-12:05 p.m.

You have papers to grade, three classes to prepare, the committee needs your feedback on the proposal, and you wanted to submit your new result to a journal. Meanwhile five students are knocking on your door for help. Sometimes it just seems like there are not enough hours in the day. This panel discussion will focus on ways to negotiate the maze of teaching, service, and research to become successful, competent, and remain sane. The session is cosponsored by Project NExT and the Young Mathematicians' Network.

HOW TO ASSESS A MATHEMATICS PROGRAM

Organized by Mary D. Shepherd, Northwest Missouri State University

Thursday, 1:00 p.m.-2:30 p.m.

Many universities/colleges and, thus, individual departments are faced with the prospect of implementing assessment plans to assess student learning and really do not know where to start. In the undergraduate mathematics community for the past ten years local, regional, and national efforts have been underway to assist faculty in developing assessment programs to assess student learning and to improve the undergraduate major (outcomes assessment). All the panelists have been involved with assessment at some level and will discuss a number of the ongoing initiatives, provide a few ideas as to what makes for a good assessment program, and describe some of their own experiences. This session was organized by the 1994-1998 Project NExT Fellows to address issues of concern to faculty who have four to ten years of teaching experience. Panelists include Michael Button, The Master's College; Bernard L. Madison, University of Arkansas; William A. Marion, Jr., Valparaiso University; William Martin, North Dakota State University; and Barbara M. Moskal, Colorado School of Mines. Sponsored by MAA Project NExT.

INTEGRATING CALCULUS, PRECALCULUS, AND ALGEBRA

Organized by Laura A Taalman, James Madison University
Thursday, 1:00 p.m.-2:20 p.m.

Many students enter college with insufficient algebra and pre-calculus backgrounds to succeed in college calculus, regardless of whether or not they have had a high school calculus course. These students are unlikely to enroll in precalculus courses in college if they have already taken calculus, and those that do take a precalculus course to prepare for calculus are often unsuccessful in making the jump between the two courses. One solution is to offer a two-semester course that combines first-semester calculus with precalculus and algebra material. Such combined, or "integrated", courses are currently being offered or developed at many institutions around the country. Integrated calculus courses can be effective in a "traditional" or a "reform" setting, as well as for lower-level "business" calculus and upper-level "majors" calculus courses. This session brings together a diverse group of people who have developed (or are planning to develop) integrated or combined calculus courses. Panelists include Nancy Baxter Hastings, Dickinson College; Robert P. Hostetler, Pennsylvania State University Erie, The Behrend College; Dennis C. Ebersole, Northampton Community College; Robin J. Gottlieb, Harvard University; Jack Bookman, Duke University; and Laura A. Taalman.

SUCCESSFUL STRATEGIES FOR IMPLEMENTING A TEXAS-STYLE (MODIFIED MOORE METHOD) COURSE

Organized by W. Ted Mahavier, Lamar University, and James P. Ochoa, Hardin-Simmons University

Thursday, 1:00 p.m.-2:20 p.m.

Panelists will discuss the mechanics of implementing a Texas-style (Moore method) mathematics course. Topics will include gaining administrative support, developing materials, class goals and objectives, a typical day in the classroom, and how to measure the success of such a course. The information should be useful to anyone interested in using the method for the first time as well as experienced Texas-style instructors. Panelists include E. Lee May, Salisbury University; David McRae, Woodberry Forest School; G. Edgar Parker, James Madison University; and Shing S. So, Central Missouri University.

IMPROVING GRADUATE EDUCATION: LESSONS LEARNED ON WHAT WORKS

Organized by James H. Lightbourne and Deborah F. Lockhart, NSF

Thursday 1:00 p.m.-2:20 p.m.

The purpose of this session is to identify approaches that are proving effective to recruit and retain students for graduate study, improve various aspects of graduate education, and, specifically, improve preparation for academic and nonacademic positions. Panelists will provide lessons learned in NSF-funded projects at their institution. Information will also be provided about activities in graduate education being conducted by national organizations and the resources they have available. NSF staff will provide information about funding opportunities.

MAA PROJECT NEXT AND YMN POSTER SESSION

Organized by Kenneth A. Ross, University of Oregon, and Kevin E. Charlwood, Washburn University

Thursday, 2:00 p.m.-4:00 p.m.

We encourage exhibits from new or recent Ph.D.s in the mathematical sciences or from those still pursuing graduate study. Applications should be submitted to Kevin Charlwood, zzcharlw@washburn.edu, or Ken Ross, ross@math.uoregon.edu, by December 10, 2002.

THE ROLE OF LOGIC IN LEARNING TO WRITE PROOFS

Organized by Jeff L. Hirst, Appalachian State University, and Daniel Velleman, Amherst College

Thursday, 2:45 p.m.-4:05 p.m.

The session will address the role of mathematical logic in learning to write mathematical proofs. Questions that pertain to this topic include: Should mathematical logic be a significant topic in transition and bridge courses? What topics in mathematical logic should be included in proof writing courses? How should logic topics be presented? How can logic be linked to other mathematical topics? What role can technology play in this setting? How do students use logical training in proof writing? The session will consist of four short presentations followed by periods for discussion, questions, and panel interaction. Participants include Susanna S. Epp, DePaul University; Connie M. Campbell, Millsaps College; Jeff L. Hirst and Daniel Velle-

man. Sponsored by the MAA and the Association for Symbolic Logic.

SESSION FOR CHAIRS

Organized by Daniel Maki, Indiana University and Catherine M. Murphy, Purdue University Calumet

Thursday, 2:45 p.m.-4:05 p.m.

This session will feature a presentation by the attorney Michael Anselmi.

THE HISTORY OF CURRICULAR CHANGE: LINEAR ALGEBRA 1950-2000

Organized by Walter J. Meyer, Adelphi University; Jack Winn, SUNY at Farmingdale; and Joseph Malkevitch, York College (CUNY)

Thursday, 3:00 p.m.-4:20 p.m.

Some curricular innovations catch on and some do not. We have little way of judging in advance. We might be wiser in our efforts if there were a better history of curricular changes. Linear algebra is a good subject for study because it has undergone many changes in the last half-century: splitting off from abstract algebra, becoming more applied, moving down to freshman and sophomore levels, adding technology, etc. Subjects for discussion may include: the reasons for the changes just mentioned, the changing relation of "linear algebra" to "matrix theory", the role of internal versus external influences, the relation to "theory of equations". Panelists will be curricular leaders who lived through these changes, which are mostly undocumented. The aim is to stimulate recollection and discussion, rather than to be definitive. Besides being of interest for curriculum innovators, this will provide useful raw material for students of the history of curriculum. Panelists include Philip J. Davis, Brown University; Harold M. Ewards, NYU-Courant Institute; Carl C. Cowen, Purdue University; and Kenneth M. Hoffman and Gilbert Strang, Massachusetts Institute of Technology. The session is sponsored by the History of Mathematics SIGMAA.

EINE KLEINE (MATHEMATISCHE) NACHTMUSIK

Presented by Erich Neuwirth, University of Vienna

Thursday, 7:30 p.m.-9:00 p.m.

Mathematical principles of musical tuning systems will be demonstrated, beginning with simple frequency ratios for musical intervals known to the Greeks. Pythagorean mean tone and well-tempered scales with accompanying melodies and chords will be constructed on the piano. A few different pieces by well-known composers will be performed to show the connection between the mathematical and physical aspects of the problem. How much the musical expression of a piece of music changes when played in different tunings will be demonstrated.

IMPROVING THE PERSISTENCE OF WOMEN IN GRADUATE SCHOOL

Organized by Ruth Favro, Lawrence Technological Univer-

ity; Kristen Moore, University of Michigan; and Sarah-Marie Belcastro, Xavier University

Friday, 9:00 a.m.-10:20 a.m.

Case studies of women's positive and negative experiences in graduate school will be presented and discussed by a panel of representatives from mathematics departments with a successful history of retention of underrepresented groups. In addition, the panel will discuss factors that influence retention and attrition of women in mathematics Ph.D. programs, as well as a general model for the successful apprenticeship of graduate students. Panelists include Raymond Johnson, University of Maryland, who will moderate the panel; Abbe Herzig, Rutgers University; Ivelisse Rubio, University of Puerto Rico; and Judy Walker, University of Nebraska. The session is sponsored by the MAA Committee on the Participation of Women.

PROPOSAL WRITING WORKSHOP FOR GRANT APPLICATIONS TO THE NSF DIVISION OF UNDERGRADUATE EDUCATION

Organized by Elizabeth J. Teles and Lee L. Zia, NSF/Division of Undergraduate Education

Friday, 9:00 a.m.-10:20 a.m.

Presenters will describe the general NSF grant proposal process and consider particular details relevant to programs in the Division of Undergraduate Education. Attendees of this session will have an opportunity to read sample proposals and take part in a "mock" panel review of proposals.

SPECIAL PROGRAMS TO ENCOURAGE YOUNG WOMEN IN MATHEMATICS

Organized by Elizabeth G. Yanik, Emporia State University, and Kathleen A. Sullivan, Seattle University

Friday, 9:00 a.m.-11:00 a.m.

This poster session is designed to highlight special programs which have been developed to encourage young women to maintain an interest and commitment to succeeding in mathematics. These programs might include such activities as after school clubs, weekend activities, mentoring opportunities with women professionals, summer camps, etc. Poster presentations should convey information such as recruitment strategies, a typical schedule of events of the program, program financial support, and methods used for assessment. We encourage everyone involved offering outreach programs to consider making a submission. Exhibitors are asked to submit to the organizer a one-page abstract describing the subject of the poster presentation. Applications should be submitted to Betsy Yanik, yanikeli@emporia.edu, by December 10, 2002. The session is sponsored by the MAA Women and Mathematics Network.

UNDERGRADUATE SEMINARS IN MATHEMATICS

Organized by Jed Herman, University of St. Thomas, and Hieu D. Nguyen, Rowan University

Friday, 1:00 p.m.-2:30 p.m.

This panel session will focus on issues that faculty face when teaching a mathematics seminar course for the first time and how faculty can use such a course to enhance their teaching skills and further their research. This includes the preparation and expectations that are involved in teaching such a course and the personal rewards and possible drawbacks. There will be a panel discussion during the first half of the session followed by small group discussions led by panelists during the second half. The session was organized by the 1994-1998 Project NExT Fellows to address issues of concern to faculty who have four to ten years of teaching experience. Panelists include William P. Abrams, Longwood College; Karen D. Bolinger, Clarion University; Philip K. Hotchkiss, Westfield State College; and Daniel L. King, Sarah Lawrence College. Sponsored by MAA Project NExT.

MATHEMATICS EDUCATORS, COMPUTER SCIENCE EDUCATORS: WORKING TOGETHER

Organized by William A. Marion, Valparaiso University
Friday, 1:00 p.m.-2:20 p.m.

Two recent reports have provided the impetus for undergraduate mathematics and computer science educators to initiate a dialogue concerning the mathematical preparation of computer science majors: the Curriculum Foundations Project (CFP) of CUPM and the ACM/IEEE Computing Curricular 2001 Guidelines (CC2001). In both, the importance to computer science majors of receiving a strong grounding in discrete mathematics early in their four-year program is stressed.

The purpose of this panel is to promote an open exchange of information between mathematicians and computer scientists and to broaden the opportunity to participate in ongoing discussions out of which will come the CUPM curriculum recommendations for programs in the mathematical sciences. Panelists include William H. Barker, Bowdoin College; Susanna S. Epp, DePaul University; Peter B. Henderson, Butler University; and Henry M. Walker, Grinnell College. Of the panelists, Barker, Epp, Henderson, and Marion have participated at some level in the CFP, and Marion and Walker have been involved in crafting the mathematics recommendations in the CC2001 Report. William Marion will moderate the panel. The session is sponsored by the MAA Committee on the Undergraduate Program in Mathematics (CUPM) and the Mathematics Across the Disciplines Subcommittee of the Committee on Professional Development and of CUPM.

NCATE AND THE MATHEMATICS COMMUNITY

Organized by Judith Covington, LSU-Shreveport and Marilyn Hala, NCTM
Friday, 2:00 p.m.-3:20 p.m.

The purpose of this session is to get feedback from the mathematics community on the proposed new mathematics guidelines from NCATE (National Council for Accreditation of Teacher Education Programs). We will discuss the new changes and seek feedback from the audience. Panelists include Francis "Skip"

Fennell, Western Maryland College; Judy O'Neal, North Georgia College & State University; and Connie Schrock, Emporia State University. The panel is sponsored by the MAA Committee on the Mathematical Education of Teachers (COMET) and the National Council of Teachers of Mathematics (NCTM).

PROJECTS SUPPORTED BY THE NSF DIVISION OF UNDERGRADUATE EDUCATION

Organized by Jon W. Scott, Montgomery Community College

Friday, 1:00 p.m.-3:00 p.m.

This poster session will feature principal investigators (PIs) presenting progress and outcomes from various NSF funded projects in the Division of Undergraduate Education. The poster session format will permit ample opportunity for attendees to engage in small group discussions with the PIs and to network with each other.

SIGMAA ON RESEARCH ON UNDERGRADUATE MATHEMATICS EDUCATION BUSINESS MEETING

Organized by Anne E. Brown, Indiana University South Bend

Friday, 4:00 p.m.-6:00 p.m.

This SIGMAA is a group formed for mathematics educators and professional mathematicians interested in research on undergraduate mathematics education. There will be welcoming comments, the business meeting, the election of officers, and an invited address by Rina Zazkis of Simon Fraser University exemplifying research on undergraduate mathematics education.

INFORMAL SESSION ON ACTUARIAL EDUCATION

Organized by Krzysztof M. Ostaszewski, Illinois State University

Friday, 5:00 p.m.-7:00 p.m.

This informal session sponsored by the Actuarial Faculty Forum provides an opportunity for those involved in actuarial education, interested in it, or curious about it, to get together to discuss common concerns such as the major changes in the actuarial exam systems that will have just taken place.

SIGMAA ON STATISTICS EDUCATION, 2003 BUSINESS MEETING, AND LECTURE

Organized by Mary Sullivan, Rhode Island College
Thursday, 6:00 p.m.-8:00 p.m.

The SIGMAA for Statistics Education will hold its third annual business meeting, including an invited talk. After some necessary formalities, we will hear the chair's report and results of the fall elections and discuss new business. Topics of discussion will include outreach, membership services, and suggestions from the membership related to statistics education.

RETHINKING THE COURSES BELOW CALCULUS

Organized by Sheldon P. Gordon, SUNY at Farmingdale
Saturday, 9:00 a.m.-10:20 a.m.

In the past year, four important invited conferences have taken place to rethink each of the entry level mathematics experiences below calculus—college algebra, precalculus, quantitative literacy, and the needs of the quantitative disciplines. Subsequently, key individuals from each of the four conferences came together to identify the common elements in the four movements and to plan for a national initiative to rethink all the courses at this level. In this session, panelists will provide an overview of each of the four special conferences and discuss the results and recommendations for the different courses that emerged from the conferences. They will also indicate the commonalities among the three movements, as well as any significant differences, and the action plan for future activities. Panelists include Nancy Baxter Hastings, Dickinson College; Susan L. Ganter, Clemson University; and Mercedes A. McGowen, William Rainey Harper College. The session is sponsored by the MAA Committee for Curriculum Renewal Across the First Two Years (CRAFTY) and the MAA Task Force on the First College Level Mathematics Course.

THE INTERSECTION OF THE LIFE SCIENCES, MATHEMATICAL SCIENCES, AND COMPUTER SCIENCE: IMPLICATIONS FOR THE UNDERGRADUATE CURRICULUM

Organized by Elizabeth J. Teles and Lee L. Zia, NSF/Division of Undergraduate Education
Saturday, 9:00 a.m.-10:20 a.m.

This panel will feature an interdisciplinary group of faculty and NSF staff who will discuss the emerging opportunities and challenges associated with new curriculum models that lie at the intersection of the life sciences, mathematical sciences, and computer science. Possible future NSF programmatic directions will also be presented.

FORGING RELATIONSHIPS BETWEEN PROFESSIONAL ORGANIZATIONS TO IMPROVE MATHEMATICS TEACHING AND LEARNING FROM KINDERGARTEN THROUGH GRADUATE SCHOOL

Organized by Johnny W. Lott, University of Montana, President of NCTM, and James M. Rubillo, NCTM
Saturday, 1:00 p.m.-2:20 p.m.

There are various professional societies related to mathematics: MAA, AMS, AMATYC, NCTM, and AWM to name a few. While these organizations may serve a diverse group of individuals, they all share many common goals which include: ensuring a high quality mathematics education that will prepare students for daily life as well as the scientific and technical community; increasing public support and appreciation for mathematics; and supporting the professional development of those involved in mathematics and mathematics education. This interactive session will offer ideas and ways we can all work together through coordinated and collaborative efforts to achieve our goals.

OPEN DISCUSSION ON FIRST COLLEGE-LEVEL MATHEMATICS COURSES

Organized by Donald B. Small, U.S. Military Academy
Saturday, 1:00 p.m.-2:20 p.m.

The panelists will reflect on the work of the MAA's Task Force on First Year College Level Courses, and then the moderator will open the floor for discussion. Approximately 70% of college students enrolled in mathematics courses are enrolled in first year courses. Discussion is invited on both content and pedagogical issues, on the role of technology for teaching and learning, and on the purpose of these courses. Panelists include Mercedes A. McGowen, William Harper Rainey College, and Sheldon P. Gordon, SUNY at Farmingdale. The session will be moderated by Donald B. Small and is sponsored by the MAA Committee on the Undergraduate program in Mathematics (CUPM).

THE STATE OF STATISTICS EDUCATION

Organized by Mary M. Sullivan, Rhode Island College
Saturday, 2:45 p.m.-4:05 p.m.

This panel will address the current state of statistics education as it affects statistics courses on the college level. Efforts over the past ten years to encourage faculty who teach the introductory statistics course have resulted in courses that are more interactive. As a consequence of NCTM's "Principles and Standards for School Mathematics" published in 2000, statistics has a greater presence in the K12 curriculum. Recently published curriculum materials suitable for K12 embody many activity-based learning ideas of concepts contained in the first course. College level introductory course instructors may find that their students have previously studied many topics contained in their first course.

Panelists will address how K12 mathematics curriculum changes affect college introductory statistics courses, the introduction of a calculus-based data analysis course, and the increased prominence of assessment. Panelists include Gail F. Burrill, MSEB; Allan J. Rossman, California Polytechnic State University, San Luis Obispo; and Joan Garfield, University of Minnesota. Thomas L. Moore, Grinnell College, will be the moderator. The panel is sponsored by the SIGMAA on Statistics Education.

SUMMA SPECIAL PRESENTATION

Organized by William A. Hawkins, Jr., MAA and the University of the District of Columbia
Saturday, 2:45 p.m.-4:05 p.m.

Presenters will discuss their enrichment programs for precollege or college students. The session will be moderated by William A. Hawkins, Jr., director of the SUMMA Program and is sponsored by the MAA SUMMA (Strengthening Underrepresented Minority Mathematics Achievement) Program and the MAA Committee on Minority Participation in Mathematics. There will be ample time for discussion.

MAA student ACTIVITIES

STUDENT LECTURE

WHAT DRIVES MATHEMATICS AND WHERE IS MATHEMATICS DRIVING INNOVATION?

Donna L. Beers, Simmons College
Friday, 1:00 p.m.



UNDERGRADUATE STUDENT POSTER SESSION

Organized by Mario U. Martelli, Claremont McKenna College
Friday, 4:00 p.m.-6:30 p.m.

Send title and an abstract (not more than one half-page) to Mario Martelli by e-mail at martelli@mckenna.edu or by regular mail to Mathematics Department, Claremont McKenna College, Claremont CA 91711 by December 6, 2002. Include author's name, address, phone number, e-mail, affiliation, and name and affiliation of the faculty advisor. Notification of acceptance will be e-mailed two weeks after the abstract has been received. Apply early! Space is limited.

The session is restricted to undergraduates and first-year graduate students submitting posters on work done while undergraduates. Posters' content should not be purely expository. The best posters will be awarded a monetary prize with funds provided by the MAA, AMS, AWM, and CUR. Tri-fold, self-standing 48" x 36" tabletop posters will be provided. Additional material or equipment is the responsibility of each presenter. The session is sponsored by the CUPM Committee and the Committee on Student Chapters of the MAA.

Other student opportunities appear under the "Social Events" section.

MAA MEETINGS

BOARD OF GOVERNORS, TUESDAY,

8:30 a.m.-4:00 p.m.

SECTION OFFICERS, WEDNESDAY,

4:30 p.m.-6:30 p.m.

BUSINESS MEETING, SATURDAY,

11:10 a.m.-11:40 a.m.

JOINT PME AND MAA STUDENT CHAPTER ADVISORS' BREAKFAST

Organized by Robert S. Smith, Miami University; Richard Neal, University of Oklahoma; and Jean B. Chan, Sonoma State University
Friday, 7:00 a.m.-8:00 a.m.

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

MAA short COURSE

MATHEMATICS IN THE ANCIENT WORLD

Organized by V. Frederick Rickey, U. S. Military Academy
Monday and Tuesday, January 13 and 14

Nearly everyone who has taken an interest in the history of mathematics becomes fascinated with some facet of ancient mathematics. But only a few have the mathematical preparation, historical sensitivities, and linguistic skills to do original work. The speakers at this short course will give an expository survey of their special area of ancient mathematics. They will discuss some areas of current research, point out open questions, and provide guidelines to help you delve into the expository and research literature. Those of you who have taught history of mathematics will undoubtedly learn that some of what you read in older literature has been superseded by modern scholarship. Thus you will have much to carry back to your classroom.

Speakers and their talks include Eleanor Robson, The Oriental Institute, All Souls College, Oxford University, Mesopotamian Mathematics; Will Noel, The Walters Art Museum, The Archimedes Palimpsest and Its Restoration; Reviel Netz, Department of Classics, Stanford University, Archimedes; Kim Plofker, Department of the History of Mathematics, Brown University, Mathematics in India.; Joseph W. Dauben, Herbert H Lehman College (CUNY), Mathematics in China; and Len Berggren, Simon Fraser University, Islamic Mathematics.

Please note that 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/2074_registration.html. Advance registration fees are \$125/member; \$175/nonmember; and \$50/student, unemployed, emeritus. On-site registration fees are \$140/member; \$190/nonmember; and \$60/student, unemployed, emeritus.



AMS invited ADDRESSES

AMS COLLOQUIUM LECTURES SPECTRA OF HYPERBOLIC SURFACES AND APPLICATIONS

Peter Sarnak, Courant Institute and Princeton University
Wednesday, Thursday, and Friday, 1:00 p.m.

AMS JOSIAH WILLARD GIBBS LECTURE THE SHAPE OF OBJECTS IN TWO AND THREE DIMENSIONS: MATHEMATICS MEETS COMPUTER VISION

David B. Mumford, Brown University
Wednesday, 8:30 p.m.

TITLE TO BE ANNOUNCED

Weinan E, Princeton University
Thursday, 3:20 p.m.

DIMER MODEL AND GEOMETRY

Andrei Okounkov, University of California Berkeley
Thursday, 2:15 p.m.

PARTIAL HYPERBOLICITY

Charles C. Pugh, University of California Berkeley
Wednesday, 10:05 a.m.

EFFICIENT ALGORITHMS FOR FINDING A RANDOM NEEDLE IN A COMBINATORIAL HAYSTACK

Dana Randall, Georgia Institute of Technology
Friday, 9:00 a.m.

MOTIVIC HOMOTOPY THEORY

Vladimir Voevodsky, Institute for Advanced Study
Friday, 10:05 a.m.

AMS special SESSIONS

ADVANCES IN SPHERICAL DESIGNS AND CODES

Béla Bajnok, Gettysburg College, and Neil J. A. Sloane, AT&T Shannon Labs
Wednesday and Thursday mornings and afternoons

ALGEBRAIC TOPOLOGY BASED ON KNOTS

Mark E. Kidwell, U.S. Naval Academy, and Jozef H. Przytycki and Yongwu Rong, The George Washington University
Friday and Saturday mornings and afternoons

ALGEBRAS, ACTIONS, AND ALGORITHMS

Edward S. Letzter and Martin Lorenz, Temple University

Wednesday and Thursday mornings and Wednesday afternoon

BANACH SPACE THEORY AND CONVEX GEOMETRY

Teck-Cheong Lim, Mason University, and Mikhail Ostrovskii, The Catholic University of America
Thursday and Friday afternoons and Friday morning

C*-EXTENSIONS AND CLASSIFICATIONS OF C*-ALGEBRAS

Shuang Zhang, University of Cincinnati, and Huaxin Lin, University of Oregon
Friday and Saturday afternoons and Saturday morning

COMPUTATIONAL ALGEBRAIC AND ANALYTIC GEOMETRY FOR LOW-DIMENSIONAL VARIETIES

Mika K. Seppälä, Florida State University, and Emil J. Volcheck, Baltimore, Maryland
Thursday and Friday afternoons and Friday morning

DISCRETE DYNAMICS AND DIFFERENCE EQUATIONS

Saber N. Elaydi, Trinity University, and Gerasimos Ladas, University of Rhode Island
Friday and Saturday mornings and Saturday afternoon

DISCRETE MODELS

Cris Moore, University of New Mexico and Santa Fe Institute, and Dana Randall, Georgia Institute of Technology
Wednesday and Thursday mornings and afternoons

DYNAMICS, PHYSICS, AND PROBABILITY: THE WORK OF THE 2002 NEMMERS PRIZE WINNER, YAKOV SINAI

John M. Franks and Jeff Xia, Northwestern University
Wednesday afternoon

HIGHLIGHTS OF RECENT WORKSHOPS HELD BY THE BOARD ON MATHEMATICAL SCIENCES AND THEIR APPLICATIONS

David Eisenbud, Mathematical Sciences Research Institute, and Scott T. Weidman, National Research Council
Thursday afternoon

HOMOTOPY THEORY

Kristine Baxter Bauer, J. Michael Boardman, Nitu Kitchloo, Jean-Pierre Meyer, Jack Morava, and W. Stephen Wilson, Johns Hopkins University
Friday and Saturday mornings and afternoons

INVERSE PROBLEMS AND SAMPLING THEORY IN SIGNAL ANALYSIS

109th Annual Meeting of the AMS

M. Zuhair Nashed, University of Delaware
Thursday and Friday afternoons and Thursday morning

MATHEMATICAL CURRENT EVENTS: EXPOSITORY REPORTS

David Eisenbud, Mathematical Sciences Research Institute
Friday afternoon

MODULAR FORMS, ELLIPTIC CURVES, AND RELATED TOPICS

**Cristina M. Ballantine and Sharon M. Frechette, College of
the Holy Cross, and Holly J. Rosson, St. Mary's College of
Maryland**

Thursday afternoon and Friday and Saturday mornings

NONSTANDARD MODELS OF ARITHMETIC AND SET THEORY

**Ali Enayat, American University, and Roman Kossak, CUNY
Graduate Center**

Wednesday and Thursday afternoons and Wednesday
morning

OPERATOR ALGEBRAS, QUANTIZATION, AND NONCOMMUTATIVE GEOMETRY: A CENTEN- NIAL CELEBRATION IN HONOR OF J. V. NEU- MANN AND M. H. STONE

**Robert S. Doran, Texas Christian University, and Richard V.
Kadison, University of Pennsylvania**

Wednesday and Thursday mornings and afternoons

PRIMES AND KNOTS

**Jack Morava, Johns Hopkins University, Stavros Garoufalidis,
Georgia Institute of Technology, and Masanori Morishita,
Kanazawa University**

Wednesday and Thursday mornings and afternoons

QUANTUM COMPUTATION AND INFORMATION: MATHEMATICAL CHALLENGES

**Samuel J. Lomonaco, Jr., University of Maryland Baltimore
County, Howard E. Brandt, Army Research Laboratory, and
Louis H. Kauffman, University of Illinois at Chicago**

Wednesday and Thursday mornings and afternoons

RECENT ADVANCES IN RIEMANNIAN AND LORENTZIAN GEOMETRIES

**Krishan L. Duggal, University of Windsor, and Ramesh
Sharma, University of New Haven**

Wednesday and Thursday mornings and Wednesday after-
noon

SPECIAL FUNCTIONS AND Q-SERIES

Mourad E. H. Ismail, University of South Florida

Wednesday and Thursday mornings and Wednesday after-
noon

STOCHASTIC AND MULTISCALE PROBLEMS IN THE SCIENCES

**Weinan E, Princeton University, Shiyi Chen, Johns Hopkins
University, and Eric Vanden-Eijnden, New York University-
Courant Institute**

Friday and Saturday mornings and afternoons

THE MANY LIVES OF LATTICE THEORY AND THE THEORY OF ORDERED SETS, WITH CONNECTIONS TO COMBINATORICS

**Jonathan D. Farley, University of Oxford, and Stefan E.
Schmidt and Alex J. Pogel, New Mexico State University**

Friday and Saturday afternoons and Saturday morning

WAVELETS, FRAMES, AND OPERATOR THE- ORY

**Christopher Heil, Georgia Institute of Technology, Palle
Jorgensen, University of Iowa, and David Larson, Texas
A&M University**

Friday and Saturday mornings and 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. Send a blank message to abs-submit@ams.org and type help as the subject to see your electronic options. The deadline for these abstracts is October 1, 2002.



other AMS SESSIONS

WHO WANTS TO BE A MATHEMATICIAN?

Organized by Michael A. Breen and Annette W. Emerson, AMS, and William T. Butterworth, Barat College
Thursday, 10:00 a.m.-11:00 a.m.

Come watch ten of the Baltimore area's top high school students as they have the chance to compete for cash and prizes by answering questions about mathematics. There is no partial credit to agonize over, and the top prize is \$2000. Contestants can ask for help from the audience, so the more people in the audience who know mathematics, the better it is for the contestants. You are invited to come and take part in this educational and fun presentation.

COMMITTEE ON THE PROFESSION PRESENTATION

Wednesday, 4:30 p.m.-6:00 p.m.

COMMITTEE ON SCIENCE POLICY PANEL DISCUSSION

Friday, 2:30 p.m.-4:00 p.m.

COMMITTEE ON EDUCATION PANEL DISCUSSION

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 receives the service offered by the committee in the most effective manner, it should be in the hands of the secretary by December 16, 2002.

AMS short COURSE

This two-day course on Public-Key Cryptography is organized by Daniel B. Lieman, University of Georgia, and takes place on Monday and Tuesday, January 13 and 14. Please see the complete article on the meeting website (follow the links through www.ams.org/amsmtgs/2074_intro.html). Talks include Public-key and symmetric-key cryptography; Cryptography in the real world today; Towards faster cryptosystems; and Attacks. There are separate registration fees to participate. See the fee schedule on

other AMS EVENTS

COUNCIL MEETING

Tuesday, 1:00 p.m.-6:00 p.m.

BUSINESS MEETING

Saturday, 11:45 a.m.-12:15 p.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



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 Women in Mathematics

TWENTY-THIRD ANNUAL EMMY NOETHER LECTURE

Jean E. Taylor, Rutgers University
Five Little Crystals and How They Grew
Thursday, 9:00 a.m.-9:50 a.m.

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

MATHEMATICS EDUCATORS AND MATHEMATICIANS WORKING TOGETHER

Organized by Bettye Anne Case, Florida State University; Suzanne M. Lenhart, University of Tennessee; and Elizabeth G. Yanik, Emporia State University
Wednesday, 4:00 p.m.-5:00 p.m.

This panel will include mathematics educators and mathematicians. The idea for this forum has been developed by the National Council of Teachers of Mathematics affiliate, Women and Mathematics Education, and the AWM. The discussion will address how mathematics educators and mathematicians can collaborate to assist each other and to improve mathematics teaching at all levels. Panelists include Deborah Loewenberg Ball, University of Michigan; Hyman Bass, University of Michigan; Karen Dee Michalowicz, The Langley School (McLean, VA); and Edith Prentice Mendez, Sonoma State University. At the conclusion of the panel discussion, AWM will recognize the Alice T. Schafer prizewinner, runner-up, and honorable mention honorees. Note that formal prizewinner announcements are made at the Joint Prize Session on Monday afternoon (see the AWM inclusion in the "Joint Sessions" section at the beginning of this announcement).

BUSINESS MEETING

Wednesday, 5:00 p.m.-5:30 p.m.

WORKSHOP

Saturday, 8:30 a.m.-5:00 p.m.

With funding from the Office of Naval Research and the National Science Foundation (pending final funding approval), 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 have been selected in advance of this workshop to present their research. The selected graduate students will present posters, and the recent Ph.D.s will give 20-minute talks. Travel funds are provided to the twenty selected presenters. The workshop will also include a panel discussion on issues of career development and a luncheon. Participants will

have the opportunity to meet with other women mathematicians at all stages of their careers. 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 the associated meetings. The deadline for applications for presenting and funding has expired. Inquiries regarding future workshops may be made to AWM by telephone: 301-405-7892, by e-mail: awm@math.umd.edu, or by visiting <http://www.awm-math.org/>.

AWM seeks volunteers to lead discussion groups and to act as mentors for workshop participants. If you are interested in volunteering, please contact the AWM office.

RECEPTION

Wednesday, 9:30 p.m.-11:00 p.m.

See the listing in the "Social Events" section of this announcement.

Association for Symbolic Logic (ASL)

This two-day program on Friday and Saturday will include Invited Addresses and sessions of contributed papers. See also the Special Sessions jointly sponsored by the ASL in the "Joint Special Sessions" section, as well as a presentation jointly sponsored with MAA on Thursday afternoon (see the listing in the

National Association of Mathematicians

GRANVILLE-BROWN-HAYNES SESSION OF PRESENTATIONS BY RECENT DOCTORAL RECIPIENTS IN THE MATHEMATICAL SCIENCES

Tuesday, 2:15 p.m.-4:00 p.m.

COX-TALBOT ADDRESS

To be given Friday after the banquet; speaker and title to be announced.

PANEL DISCUSSION

Saturday, 9:00 a.m.-9:50 a.m.

BUSINESS MEETING

Saturday, 10:00 a.m.-10:50 a.m.

CLAYTOR-WOODARD LECTURE

Wednesday, 1:00 p.m.

Speaker and title to be announced.

See details about the banquet on Friday 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

Pi Mu Epsilon (PME)

Council Meeting

Friday, 8:00 a.m.-11:00 a.m.

Rocky Mountain Mathematics Consortium

Board of Directors Meeting

Friday, 2:15 p.m.-4:10 p.m.

Society for Industrial & Applied Mathematics (SIAM)

This two-day program on Wednesday and Thursday will include an Invited Address and minisymposia. The Invited Address will be given by John A. Burns, Virginia Polytechnic Institute and State University, title to be announced, at 11:10 a.m. on Thursday. Minisymposia and their organizers include:

LIFE SCIENCES

Tim Elston, North Carolina State University and the University of North Carolina at Chapel Hill

Wednesday morning

OPTIMIZATION

Ariela Sofer, George Mason University

Wednesday morning

STABILITY OF NONLINEAR DISPERSIVE WAVES

Robert L. Pego, University of Maryland

Wednesday and Thursday afternoons

MATHEMATICAL PROBLEMS IN IMAGE ANALYSIS

John Goutsias, Johns Hopkins University

Thursday morning

DYNAMICAL SYSTEMS

Yury Grabovsky, Temple University

Young Mathematicians Network (YMN)

YOUNG MATHEMATICIANS NETWORK (YMN)

CONCERNS OF YOUNG MATHEMATICIANS: A TOWN MEETING

Organized by Kevin E. Charlwood, Washburn University
Wednesday, 7:15 p.m.-8:15 p.m.

This panel discussion will focus on the current primary concerns of young mathematicians, with emphasis on audience participation.

Also see details about the poster session (Thursday afternoon) and a panel discussion (Thursday morning at 10:45 a.m.) co-sponsored by YMN under the Other MAA Sessions section.

American Statistical Association (ASA)

ANCILLARY CONFERENCE

A two-day course will be offered January 13 and 14 preceding the Joint Mathematics Meetings in Baltimore. Visit the Learn-STAT site at <http://www.amstat.org/education/learnstat.html> for more details as they are developed. Inquiries can be directed to learnstat@amstat.org.

It is strongly recommended that for any event requiring a ticket, tickets should be purchased through advance registration. Only a very limited number of tickets, if any, will be available for sale on site. If you must cancel your participation in a ticketed event, you may request a 50% refund by returning your ticket(s) to the Mathematics Meetings Service Bureau (MMSB) by December 30. 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.

STUDENT HOSPITALITY CENTER

Organized by Richard Neal, University of Oklahoma
Wednesday-Friday, 9:00 a.m. -5:00 p.m.
and Saturday, 9:00 a.m.-3:00 p.m.

WORSHIP SERVICE

Organized by the Association of Christians in the Mathematical Sciences (ACMS)
Wednesday, 7:00 a.m.

The ACMS will sponsor a non-denominational Christian worship service in a place to be determined by the meeting staff.

GRADUATE STUDENT RECEPTION

Organized by Betty Mayfield, Hood College, and Shawnee McMurrin, California State University, San Bernardino
Wednesday, 5:00 p.m.-6:00 p.m.

Mathematicians representing a wide range of disciplines will join interested graduate students at an informal reception. Complimentary food and beverages will be served. NOTE: This event is only for students who sign up on the Advance Registration/Housing Form.

MATHEMATICAL REVIEWS RECEPTION

Friday, 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. The prize in an exhibit booth contest will be awarded.

MATHEMATICAL SCIENCES INSTITUTES RECEPTION

Wednesday, 5:30 p.m.-7:30 p.m.

RECEPTION FOR FIRST-TIME PARTICIPANTS

Wednesday, 6:00 p.m.-7:00 p.m.

The MAA Committee on Membership and the AMS are cosponsoring this social hour. All participants (especially first-timers) are encouraged to come and meet some old-timers and pick up a few tips on how to survive the environment of a large meeting. Refreshments will be served.

DINNER TO HONOR AWM'S NOETHER LECTURER

All participants are invited.

Wednesday evening

A sign-up sheet for those interested will be located at the AWM table in the exhibit area and also at the AWM panel discussion.

AWM RECEPTION

Wednesday, 9:30 p.m.

There is an open reception after the AMS Gibbs Lecture. This has been a popular, well-attended event in the past.

ACMS DINNER

Organized by the Association of Christians in the Mathematical Sciences

Thursday, 6:15 p.m.

The ACMS will host a dinner on Thursday evening. People interested in attending should plan to meet at the message boards at 6:15 p.m. to walk over to the restaurant. Wayne Roberts from Macalester College will be the guest speaker.

LEHIGH UNIVERSITY RECEPTION

Thursday, 5:45 p.m.-7:00 p.m.

All friends and graduates of the Lehigh Mathematics Department are invited.

NEW MEXICO STATE UNIVERSITY MATHEMATICS ASSOCIATION

Thursday, 6:00 p.m.-7:00 p.m.

Alumni, current and former faculty, and friends of New Mexico State University are invited to this reception sponsored by the NMSU-MATH Association.

ASSOCIATION OF LESBIAN, GAY, BISEXUAL, AND TRANSGENDERED MATHEMATICIANS RECEPTION

Thursday, 6:00 p.m.-7:00 p.m.

All are welcome to attend this open reception. Last year's event, the first ever on site, was very successful.

MER BANQUET

Thursday, 6:30 p.m.-8:30 p.m.

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 Thursday 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 \$42 each, including tax and gratuity.

KNITTING CIRCLE

Thursday, 8:15 p.m.-9:45 p.m.

Bring a project (knitting/crochet/tatting/beading/etc.) and chat with other mathematical crafters.

RECEPTION FOR MATHEMATICIANS IN BUSINESS, INDUSTRY, AND GOVERNMENT

Organized by Philip E. Gustafson, Mesa State College

Friday, 5:00 p.m.-6:00 p.m.

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.

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN DEPARTMENT OF MATHEMATICS RECEPTION

Friday 5:15 p.m.-7:15 p.m.

NAM BANQUET

Friday, 5:30 p.m.-8:00 p.m.

The National Association of Mathematicians will host a banquet on Friday evening. A cash bar reception will be held at 5:30 p.m., and dinner will be served at 6:00 p.m. Tickets are \$45 each, including tax and gratuity.

MAA PROJECT NEXT RECEPTION

Friday, 8:30 p.m.-10:30 p.m.

All MAA Project NExT national and Section NExT Fellows, consultants, and other friends of MAA Project NExT are invited.

AMS BANQUET

Saturday evening

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 begin with a cash bar reception at 6:30 p.m. and dinner at 7:30 p.m. Tickets are \$45, including tax and gratuity.

Mathematical Sciences Employment CENTER

Those wishing to participate in the Mathematical Sciences Employment Center should read carefully the important article about the Center at www.ams.org/emp-reg/.

Book Sales and EXHIBITS

All participants are encouraged to visit the book, education media, and software exhibits from noon to 5:30 p.m. on Wednesday, 9:30 a.m. to 5:30 p.m. on Thursday and Friday, and 9:00 a.m. to noon on Saturday. 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 will be asked to display their meetings badge or acknowledgment of advance registration from the Mathematics Meetings Service Bureau (MMSB) in order to enter the exhibit area.

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. 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.



Advanced Registration

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 15 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, it is strongly suggested that advance registrants from Canada choose to 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 \$5 replacement fee will be charged for programs and badges that are mailed but not taken to Baltimore. Acknowledgments of registrations will be sent by e-mail to the e-mail addresses given on the Advance Registration/Housing Form. If you do not wish your registration acknowledged by e-mail, please mark the appropriate box on the form.

E-MAIL ADVANCE REGISTRATION

This service is available for advance registration and housing arrangements by requesting the forms via e-mail from meetreg-request@ams.org or by visiting http://www.ams.org/amsmtgs/2074_reghsg.html. VISA, MasterCard, Discover, and American Express are the only methods of payment which can be accepted for e-mail advance registration, and charges to credit cards will be made in U.S. funds. Completed e-mail 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 online at http://www.ams.org/amsmtgs/2074_reghsg1.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 10 (the deadline for refunds for banquet tickets is December 30) will receive a 50% refund of fees paid. No refunds will be issued after this date.

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

Persons who qualify for emeritus membership in either the Society or the Association. The emeritus status refers to 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, 2003, 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 of 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. If a registrant should arrive too late in the day to pick up his/her badge, he/she may show the acknowledgment of advance registration received from the MMSB as proof of registration.

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

JOINT MATHEMATICS MEETINGS REGISTRATION FEES

	by Dec. 19	at meeting
Member of AMS, ASL, Canadian Mathematical Society, MAA, SIAM	\$190	\$247
Emeritus Member of AMS, MAA; Graduate Student; Unemployed; Librarian; High School Teacher; Developing Countries Special Rate	\$35	\$45
Undergraduate Student	\$20	\$26
Temporarily Employed	\$150	\$172
Nonmember	\$295	\$383
High School Student	\$2	\$5
Nonmathematician Guest	\$5	\$5
One-Day Nonmember	n/a	\$211
One-Day Member of AMS, ASL, CMS, MAA, SIAM	n/a	\$136
MAA Minicourses		
Minicourses #7-16	\$60	\$60*
Minicourses #1-6	\$90	\$90*
*if space is available		
MAA Short Course		
MAA Member	\$125	\$140
Nonmember	\$175	\$190
Student/Unemployed/Emeritus	\$50	\$60
AMS Short Course		
Member of AMS or MAA	\$80	\$100
Nonmember	\$110	\$130
Student/Unemployed/Emeritus	\$35	\$50
Employment Center		
Employer (first table)	\$220	\$300
Employer (each additional table)	\$65	\$100
Employer Posting Fee	\$50	N/A
Applicants (all services)	\$40	\$75
Applicants (Winter List & message center only)	\$20	\$20

For each invalid check or credit card transaction that results in an insufficient payment for registration or housing, a \$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 e-mail message to abs-submit@ams.org; include the number 983 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 three separate advance registration deadlines, each with its own advantages and benefits.

EMPLOYMENT CENTER

Advance registration (inclusion in the Winter Lists)

October 25

EARLY MEETINGS ADVANCE REGISTRATION
(room lottery)

November 1

ORDINARY MEETINGS ADVANCE REGISTRATION
(hotel reservations, materials mailed)

November 15

FINAL MEETINGS ADVANCE REGISTRATION

(advance registration, Short Courses, Employment Center, MAA Minicourses, banquets)

December 19

EMPLOYMENT CENTER ADVANCE REGISTRATION

Applicant and employer forms must be received by October 25 in order to appear in the publications distributed to all participants. For detailed information on the Employment Center, see the separate article at www.ams.org/emp-reg/.

Early Advance Registration: Those who register by the early deadline of November 1 will be included in a random drawing to select winners of complimentary hotel rooms in Baltimore. 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 25. So register early! (See the list of the winners in San Diego on the hotel page.) Also, applicant and employer forms must be received by November 1 in order to be reproduced in the Winter Lists for the Employment Center.

Ordinary Advance Registration: Those who register after November 1 and by the ordinary deadline of November 15 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 15 and by the final deadline of December 19 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 19 deadline is firm; any forms received after that date will be returned and full refunds issued. Please come to the registration desk in Hall A of the Baltimore Convention Center to register on site.

HOTEL RESERVATIONS

Participants should be aware that the MAA and AMS 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 29. 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 after guests have checked into their rooms. Participants should 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.



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.) 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 e-mail 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. Unfortunately no audio-visual equipment can be provided for committee meetings or other meetings or gatherings not on the scientific program.

CHILDCARE

Many hotels will provide recommendations for in-room child-care for guests through their concierge or front desks. Call as early as possible for the best service, and at least one day in advance. Arrangements represent a contractual agreement between each individual and the child-care provider. The Joint Meetings assumes no responsibility for the services rendered.

E-MAIL SERVICES

Limited e-mail 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 \$55 (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 MAA-AMS Joint Meetings Committee, as are all arrangements for Joint Mathematics Meetings.

LOCAL INFORMATION

See <http://www.baltimore.org/index2.htm> 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 e-mail 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 Wednesday, 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 14 through 18 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.

TRAVEL

Baltimore is on Eastern Standard Time. The Baltimore-Washington International Airport (BWI) is located ten miles south of the city and is served by all major airlines.

Official airlines for the meetings are US Airways and Southwest Airlines. 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 MAA and AMS 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.

The following specially negotiated rates are available only for these meetings and exclusively to mathematicians and their families for the period January 10-21, 2003. Other restrictions/discounts may apply, and seats are limited.

Schedule of Events

MONDAY JANUARY 13, 2003

- 9:00 a.m.-5:00 p.m. MAA Short Course on Mathematics in the Ancient World
- 9:00 a.m.-5:00 p.m. AMS Short Course on Public-Key Cryptography

TUESDAY JANUARY 14, 2003

- 8:30 a.m.-4:00 p.m. MAA Board of Governors
- 9:00 a.m.-5:00 p.m. MAA Short Course on Mathematics in the Ancient World
- 9:00 a.m.-5:00 p.m. AMS Short Course on Public-Key Cryptography
- 1:00 p.m.-6:00 p.m. AMS Council
- 3:00 p.m.-7:00 p.m. Joint Meetings Registration

WEDNESDAY JANUARY 15, 2003

- 7:00 a.m. ACMS Worship Service
- 7:30 a.m.-4:00 p.m. Joint Meetings Registration
- 7:30 a.m.-5:00 p.m. Employment Center
- 8:00 a.m.-10:55 a.m. MAA-AMS-MER Special Session on Mathematics and Education Reform, I
- 8:00 a.m.-10:55 a.m. AMS-SIAM Special Session on Dynamical Systems and Oceanography, I
- 8:00 a.m.-10:55 a.m. AMS-ASL Special Session on Interactions Between Logic, Group Theory and Computer Science, I
- 8:00 a.m.-10:55 a.m. AMS-ASL Special Session on Computability and Models, I

AMS SPECIAL SESSIONS

- 8:00 a.m.-10:55 a.m. Advances in Spherical Designs and Codes, I
- 8:00 a.m.-10:55 a.m. Algebras, Actions, and Algorithms, I
- 8:00 a.m.-10:55 a.m. Quantum Computation and Information, I
- 8:00 a.m.-10:55 a.m. Discrete Models, I
- 8:00 a.m.-10:55 a.m. Recent Advances in Riemannian and Lorentzian Geometries, I
- 8:00 a.m.-10:55 a.m. Primes and Knots, I
- 8:00 a.m.-10:55 a.m. Operator Algebras, Quantization, and Noncommutative Geometry: A Centennial Celebration in Honor of J. V. Neumann and M. H. Stone, I
- 8:00 a.m.-10:55 a.m. Special Functions and q-Series, I
- 8:00 a.m.-10:55 a.m. Nonstandard Models of Arithmetic and Set Theory, I

SIAM MINISYMPOSIUM

- 8:00 a.m.-10:55 a.m. Life Sciences
- 8:00 a.m.-10:55 a.m. Optimization

MAA CONTRIBUTED PAPER SESSIONS

- 8:00 a.m.-10:55 a.m. Innovative Use of the World Wide Web in Teaching Mathematics, I
- 8:00 a.m.-10:55 a.m. Classroom Demonstrations and Course Projects that Make a Difference, I
- 8:00 a.m.-10:55 a.m. The History of Mathematics in the Americas
- 8:00 a.m.-10:55 a.m. General Contributed Paper Session, I
- 9:00 a.m.-11:00 a.m. MAA Minicourse #12: Part A Getting Students Involved in Undergraduate Research
- 9:00 a.m.-11:00 a.m. MAA Minicourse #1: Part A Teaching Introductory Statistics Using a Workshop Approach
- 9:00 a.m.-11:00 a.m. MAA Minicourse #7: Part A The Mathematics of Presidential and Other Elections
- 9:00 a.m.-10:20 a.m. MAA History of Mathematics SIGMAA Panel Discussion Truth in Using the History of Mathematics in Teaching Mathematics
- 9:00 a.m.-10:20 a.m. MAA CUPM Subcommittee on Curriculum Reform Across the First Two Years Panel Discussion Reflections on the Conference to Improve College Algebra
- 10:05 a.m.-10:55 a.m. AMS Invited Address Charles C. Pugh Partial Hyperbolicity
- 11:10 a.m.-12:00 p.m. MAA-AMS Invited Address Edward R. Scheinerman Discrete Mathematics and Mechanical Engineering
- 12:00 p.m.-5:00 p.m. Exhibits and Book Sales
- 1:00 p.m.-2:00 p.m. AMS Colloquium Lectures: Lecture I Peter Sarnak Spectra of Hyperbolic Surfaces and Applications, I
- 2:15 p.m.-3:05 p.m. MAA Invited Address Robin Wilson Four Colors Suffice: A History and Proof of the Four-Color Problem
- 2:15 p.m.-3:35 p.m. MAA-CUPM- CRAFTY Panel Discussion The Impact of Technology in Calculus Courses on Long-Term Student Performance and Employment

2:15 p.m.-3:35 p.m.	MAA Special Presentation An Overview of Interviews	2:15 p.m.-6:05 p.m.	Discrete Models, II
2:15 p.m.-4:15 p.m.	MAA Minicourse #13: Part A Incorporating Discrete Mathematics in the Preparation of K-12 Mathematics Teachers	2:15 p.m.-6:05 p.m.	Recent Advances in Riemannian and Lorentzian Geometries, II
2:15 p.m.-4:15 p.m.	MAA Minicourse #2: Part A Java Applets in Teaching Mathematics	2:15 p.m.-6:05 p.m.	Primes and Knots, II
2:15 p.m.-4:15 p.m.	MAA Minicourse #8: Part A Mathematical Finance	2:15 p.m.-6:05 p.m.	Operator Algebras, Quantization, and Noncommutative Geometry: A Centennial Celebration in Honor of J. V. Neumann and M. H. Stone, II
2:15 p.m.-4:15 p.m.	MAA-AMS Joint Committee on Teaching Assistants and Part-Time Instructors Poster Session Implementing Preparation and Development Programs for College Mathematics Instructors	2:15 p.m.-6:00 p.m.	Special Functions and q-Series, II
2:15 p.m.-6:00 p.m.	AMS Sessions for Contributed Papers	2:15 p.m.-6:00 p.m.	Dynamics, Physics, and Probability: The Work of the 2002 Nemmers Prize Winner, Yakov Sinai
2:15 p.m.-6:00 p.m.	SIAM Minisymposium on the Stability of Nonlinear Dispersive Waves, I	2:15 p.m.-6:05 p.m.	Nonstandard Models of Arithmetic and Set Theory, II
2:15 p.m.-6:05 p.m.	MAA-AMS-MER Special Session on Mathematics and Education Reform, II	MAA CONTRIBUTED PAPER SESSIONS	
2:15 p.m.-6:05 p.m.	AMS-SIAM Special Session on Dynamical Systems and Oceanography, II	2:15 p.m.-6:00 p.m.	Getting Students to Discuss and to Write About Mathematics
2:15 p.m.-6:05 p.m.	AMS-ASL Special Session on Interac- tions Between Logic, Group Theory and Computer Science, II	2:15 p.m.-6:00 p.m.	Quantitative Literacy in Practice: What Is it and What Works?
2:15 p.m.-6:05 p.m.	AMS-ASL Special Session on Comput- ability and Models, II	2:15 p.m.-6:00 p.m.	Environmental Mathematics in the Classroom
2:15 p.m.-6:05 p.m.	AMS Special Session on Advances in Spherical Designs and Codes, II	4:30 p.m.-6:30 p.m.	MAA Minicourse #14: Part A Teaching a Course in the History of Mathematics
3:20 p.m.-4:10 p.m.	MAA Invited Address David H. Fowler Some Comments on Early Greek Mathematics	4:30 p.m.-6:30 p.m.	MAA Minicourse #3: Part A Optimization of Technology in the Geometry Classroom
3:30 p.m.-5:00 p.m.	MAA Project NExT Panel Discussion Expanding Your Research Horizons	4:30 p.m.-6:30 p.m.	MAA Minicourse #9: Part A Fair enough? Mathematics of equity
3:45 p.m.-4:45 p.m.	MAA Special Presentation Doctorates in Mathematics Education: Why the Shortage? Where Do They Go? What Do They Do?	4:30 p.m.-6:00 p.m.	AMS Committee on the Profession Presentation
4:00 p.m.-5:20 p.m.	MAA-CUPM-CRAFTY Panel Discussion Small Group Projects in College Algebra	4:30 p.m.-6:30 p.m.	MAA Committee on the Teaching of Undergraduate Mathematics Workshop Student Writing: A Hands-on-Approach
4:00 p.m.-5:00 p.m.	AWM Panel Discussion Mathematics Educators and Mathematicians Working Together	4:30 p.m.-6:30 p.m.	MAA Section Officers
		5:00 p.m.-6:00 p.m.	Graduate Student Reception
		5:00 p.m.-5:30 p.m.	AWM Business Meeting
		5:30 p.m.-7:30 p.m.	Mathematical Sciences Institutes Reception
		6:00 p.m.-7:00 p.m.	Reception for First-Time Participants
		7:15 p.m.-8:15 p.m.	Young Mathematicians Network Town Meeting
		8:30 p.m.-9:30 p.m.	AMS Josiah Willard Gibbs Lecture David B. Mumford The Shape of Objects in Two and Three Dimensions: Mathematics Meets Computer Vision
		9:30 p.m.-11:00 p.m.	AWM Reception
AMS SPECIAL SESSIONS			
2:15 p.m.-6:05 p.m.	Algebras, Actions, and Algorithms, II		
2:15 p.m.-6:05 p.m.	Quantum Computation and Information, II		

Schedule of Events

THURSDAY JANUARY 16, 2003

7:00 a.m.-7:00 p.m.	Employment Center
7:30 a.m.-4:00 p.m.	Joint Meetings Registration
8:00 a.m.-10:00 a.m.	MAA Minicourse #4: Part A Visual Linear Algebra
8:00 a.m.-12:00 p.m.	MAA-AMS-MER Special Session on Mathematics and Education Reform, III
8:00 a.m.-12:00 p.m.	AMS-SIAM Special Session on Dynamical Systems and Oceanography, III
8:00 a.m.-12:00 p.m.	AMS-ASL Special Session on Interac- tions Between Logic, Group Theory and Computer Science, III
8:00 a.m.-12:00 p.m.	AMS-ASL Special Session on Computability and Models, III

AMS SPECIAL SESSIONS

8:00 a.m.-12:00 p.m.	Advances in Spherical Designs and Codes, III
8:00 a.m.-12:00 p.m.	Algebras, Actions, and Algorithms, III
8:00 a.m.-12:00 p.m.	Quantum Computation and Information, III
8:00 a.m.-12:00 p.m.	Discrete Models, III
8:00 a.m.-12:00 p.m.	Recent Advances in Riemannian and Lorentzian Geometries, III
8:00 a.m.-12:00 p.m.	Primes and Knots, III
8:00 a.m.-12:00 p.m.	Operator Algebras, Quantization, and Noncommutative Geometry: A Centennial Celebration in Honor of J. V. Neumann and M. H. Stone, III
8:00 a.m.-12:00 p.m.	Special Functions and q-Series, III
8:00 a.m.-12:00 p.m.	Inverse Problems and Sampling Theory in Signal Analysis, I

SIAM MINISYMPOSIUM

8:00 a.m.-12:00 p.m.	Mathematical Problems in Image Analysis
8:00 a.m.-12:00 p.m.	Dynamical Systems

MAA CONTRIBUTED PAPER SESSIONS

8:00 a.m.-12:00 p.m.	Incorporating History of Mathematics in the Mathematics Classroom
8:00 a.m.-12:00 p.m.	Helping Students Give Effective Mathematics Presentations
8:00 a.m.-12:00 p.m.	Mathematics Experiences in Business, Industry, and Government
8:00 a.m.-12:00 p.m.	Applications of Abstract Algebra
8:00 a.m.-12:00 p.m.	General Contributed Paper Session, II
8:00 a.m.-12:00 p.m.	AMS Sessions for Contributed Papers

8:30 a.m.-10:00 a.m.	MAA Project NExT Panel Discussion Writing and Publishing Expository Articles About Mathematics
9:00 a.m.-9:50 a.m.	AWM Emmy Noether Lecture Jean E. Taylor Five Little Crystals and How They Grew
9:00 a.m.-11:00 a.m.	MAA Minicourse #10: Part A Turning a Nonscience or Developmental Course Into a Capstone Mathematical Experience
9:00 a.m.-11:00 a.m.	MAA Minicourse #15: Part A Real Fun Exploring Basic Mathematics
9:00 a.m.-10:20 a.m.	MAA Committee on Mathematics and the Environment Panel Discussion Sample Mathematics Lessons Integrating Environmental Issues
9:00 a.m.-10:20 a.m.	MAA Panel Discussion NSF Funding Opportunities for Learning and Teaching in the Mathematical Sciences
9:00 a.m.-10:20 a.m.	MAA CUPM Panel Discussion Undergraduate Programs and Courses in the Mathematical Sciences: A CUPM Curriculum Guide
9:00 a.m.-11:00 a.m.	MAA CUPM Poster Session First College Level Mathematics Courses
9:30 a.m.-5:30 p.m.	Exhibits and Book Sales
10:00 a.m.-11:00 a.m.	AMS Special Presentation Who Wants to be a Mathematician?
10:05 a.m.-10:55 a.m.	MAA Invited Address Richard A. Tapia Some Mathematical Insights Into Car and Bicycle Racing
10:15 a.m.-12:15 p.m.	MAA MINICOURSE #5: PART A Using and Adapting Online Materials
10:45 a.m.-12:05 p.m.	MAA Project NExT-Young Mathemati- cians Network Panel Discussion Keeping the Platters Spinning: Effective Time Management
10:45 a.m.-12:05 p.m.	MAA Panel Discussion How Can Placement Testing be Improved?
10:45 a.m.-12:05 p.m.	MAA Committee on the Mathematical Education of Teachers Panel Discussion The Nature of Mathematics Knowledge and Knowledge of Mathematics Learn- ing Needed by Secondary School Mathematics Teachers in an Era of Technology
11:10 a.m.-12:00 p.m.	SIAM Invited Address
1:00 p.m.-2:00 p.m.	AMS Colloquium Lectures: Lecture II Peter Sarnak Spectra of Hyperbolic Surfaces and Applications, II

- 1:00 p.m.-4:10 p.m. MAA-AMS-MER Special Session on Mathematics and Education Reform, IV
- 1:00 p.m.-4:10 p.m. AMS-SIAM Special Session on Dynamical Systems and Oceanography, IV
- 1:00 p.m.-3:00 p.m. MAA Minicourse #11: Part A Symmetry for All
- 1:00 p.m.-3:00 p.m. MAA Minicourse #16: Part A Cwatsets: A Research Experience for Undergraduates
- 1:00 p.m.-3:00 p.m. MAA Minicourse #6: Part A WeBWoRK, An Internet-Based System for Generating and Delivering Homework Problems to Students

SIAM MINISYMPOSIUM

- 1:00 p.m.-4:10 p.m. The Stability of Nonlinear Dispersive Waves, II
- 1:00 p.m.-4:10 p.m. AMS Sessions for Contributed Papers
- 1:00 p.m.-2:20 p.m. MAA Panel Discussion Improving Graduate Education: Lesson Learned on What Works.
- 1:00 p.m.-2:20 p.m. MAA Panel Discussion Successful Strategies for Implementing a Texas-Style (modified Moore Method) Course
- 1:00 p.m.-2:30 p.m. MAA Project NExT Panel Discussion How to Assess a Mathematics Program
- 1:00 p.m.-2:20 p.m. MAA Panel Discussion Integrating Calculus, Precalculus, and Algebra

AMS SPECIAL SESSIONS

- 1:00 p.m.-4:10 p.m. Advances in Spherical Designs and Codes, IV
- 1:00 p.m.-4:10 p.m. Highlights of Recent Workshops Held by the Board on Mathematical Sciences and Their Applications
- 1:00 p.m.-4:10 p.m. Quantum Computations and Information: Mathematical Challenges IV
- 1:00 p.m.-4:10 p.m. Computational Algebraic and Analytic Geometry for Low-Dimensional Varieties, I
- 1:00 p.m.-4:10 p.m. Modular Forms, Elliptic Curves, and Related Topics, I
- 1:00 p.m.-4:10 p.m. Discrete Models, IV
- 1:00 p.m.-4:10 p.m. Banach Space Theory and Convex Geometry, I
- 1:00 p.m.-4:10 p.m. Primes and Knots, IV
- 1:00 p.m.-4:10 p.m. Operator Algebras, Quantization, and Noncommutative Geometry: A Centennial Celebration in Honor of J.V. Neumann and M. H. Stone, IV

- 1:00 p.m.-4:10 p.m. Nonstandard Models of Arithmetic and Set Theory, III
- 1:00 p.m.-4:10 p.m. Inverse Problems and Sampling Theory in Signal Analysis, II

MAA CONTRIBUTED PAPER SESSIONS

- 1:00 p.m.-4:10 p.m. Innovative Use of the World Wide Web in Teaching Mathematics, II
- 1:00 p.m.-4:10 p.m. Classroom Demonstrations and Course Projects that Make a Difference, II
- 1:00 p.m.-4:10 p.m. Initiating and Sustaining Undergraduate Research Projects and Programs
- 2:00 p.m.-4:00 p.m. MAA Project NExT-Young Mathematicians Network Poster Session
- 2:15 p.m.-3:05 p.m. AMS Invited Address **Andrei Okounkov** Dimer Model and Geometry
- 2:45 p.m.-4:05 p.m. MAA-ASL Panel Discussion The Role of Logic in Learning to Write Proofs
- 3:00 p.m.-4:20 p.m. MAA History of Mathematics SIGMAA Panel Discussion The History of Curricular Change: Linear Algebra 1950—2000
- 3:20 p.m.-4:10 p.m. AMS Invited Address **Weinan E** Title to be announced
- 4:25 p.m.-6:30 p.m. MAA-AMS Joint Prize Session and Reception
- 5:45 p.m.-7:00 p.m. Lehigh University Reception
- 6:00 p.m.-8:00 p.m. SIGMAA on Statistics Education 2003 Business Meeting and Lecture
- 6:00 p.m.-8:00 p.m. and Reception Association of Gay, Lesbian, Bisexual Transgendered Mathematicians
- 6:00 p.m.-7:00 p.m. New Mexico State University Mathematics Association Reception
- 6:15 p.m. ACMS Dinner
- 6:30 p.m.-9:30 p.m. MER Banquet
- 7:30 p.m.-9:00 p.m. MAA Special Presentation Eine Klein (Mathematische) Nachtmusik
- 8:15 p.m.-9:45 p.m. Knitting Network

Schedule of Events

FRIDAY JANUARY 17, 2003

7:00 a.m.-8:00 a.m. PME and MAA Student Chapter Advisors' Breakfast

7:00 a.m.-7:30 p.m. Employment Center

7:30 a.m.-4:00 p.m. Joint Meetings Registration

8:00 a.m.-10:55 a.m. MAA-AMS-SIAM Special Session on Research in Mathematics by Undergraduates, I

8:00 a.m.-10:55 a.m. MAA-AMS Special Session on The History of Mathematics, I

AMS SPECIAL SESSIONS

8:00 a.m.-10:55 a.m. Stochastic and Multiscale Problems in the Sciences, I

8:00 a.m.-10:55 a.m. Wavelets, Frames and Operator Theory, I

8:00 a.m.-10:55 a.m. Discrete Dynamics and Difference Equations, I

8:00 a.m.-10:55 a.m. Homotopy Theory, I

8:00 a.m.-10:55 a.m. Algebraic Topology Based on Knots, I

8:00 a.m.-10:55 a.m. Computational Algebraic and Analytic Geometry for Low-Dimensional Varieties, II

8:00 a.m.-10:55 a.m. Modular Forms, Elliptic Curves, and Related Topics, II

8:00 a.m.-10:55 a.m. Banach Space Theory and Convex Geometry, II

MAA CONTRIBUTED PAPER SESSIONS

8:00 a.m.-10:55 a.m. Best Statistics Projects/Activities, I

8:00 a.m.-10:55 a.m. Rethinking the Courses Below Calculus, I

8:00 a.m.-10:55 a.m. Assessment of Student Learning: Models and Methodology, I

8:00 a.m.-10:55 a.m. Strategies for Increasing the Diversity of Students in Mathematics

8:00 a.m.-10:55 a.m. SIGMAA on Research in Undergraduate Mathematics Education, I

8:00 a.m.-10:55 a.m. MAA General Contributed Paper Session, III

8:00 a.m.-10:55 a.m. AMS Sessions for Contributed Papers

8:00 a.m.-5:00 p.m. ASL Invited Addresses and Contributed Papers

8:00 a.m.-11:00 a.m. PME Council

9:00 a.m.-9:50 a.m. AMS Invited Address
Dana Randall
Efficient Algorithms for Finding a Random Needle in a Combinatorial Haystack

9:00 a.m.-11:00 a.m. MAA Minicourse #12: Part B

Getting Students Involved in Undergraduate Research

9:00 a.m.-11:00 a.m. MAA Minicourse #1: Part B
Teaching Introductory Statistics Using a Workshop Approach

9:00 a.m.-11:00 a.m. MAA Minicourse #7: Part B
The Mathematics of Presidential and Other Elections

9:00 a.m.-10:20 a.m. MAA Committee on the Participation of Women Special Presentation
Improving the Persistence of Women in Graduate School

9:00 a.m.-10:20 a.m. MAA Special Presentation Proposal Writing Workshop for Grant Applications to the NSF Division of Undergraduate Education

9:00 a.m.-11:00 a.m. MAA Women and Mathematics Network Poster Session
Special Programs to Encourage Young Women in Mathematics

9:30 a.m.-5:30 p.m. Exhibits and Book Sales

10:05 a.m.-10:55 a.m. AMS Invited Address
Vladimir Voevodsky
Motivic Homotopy Theory

11:10 a.m.-12:00 p.m. MAA-AMS Invited Address
Noam D. Elkies
Some Novel Uses of Lattice Reduction

1:00 p.m.-2:00 p.m. AMS Colloquium Lectures: Lecture III
Peter Sarnak
Spectra of Hyperbolic Surfaces and Applications, III

1:00 p.m.-1:50 p.m. MAA Student Lecture
Donna L. Beers
What Drives Mathematics and Where is Mathematics Driving Innovation?

1:00 p.m.-5:00 p.m. MAA-AMS-SIAM Special Session on Research in Mathematics by Undergraduates, II

1:00 p.m.-6:00 p.m. MAA-AMS Special Session on The History of Mathematics, II

1:00 p.m.-3:00 p.m. MAA Minicourse #13: Part B
Incorporating Discrete Mathematics in the Preparation of K-12 Mathematics Teachers

1:00 p.m.-3:00 p.m. MAA Minicourse #2: Part B
Java Applets in Teaching Mathematics

1:00 p.m.-3:00 p.m. MAA Minicourse #8: Part B
Mathematical Finance

1:00 p.m.-3:00 p.m. MAA Poster Session on Projects

Supported by the NSF Division of Undergraduate Education

AMS SPECIAL SESSIONS

- 1:00 p.m.-6:00 p.m. Stochastic and Multiscale Problems in the Sciences, II
- 1:00 p.m.-6:00 p.m. Wavelets, Frames and Operator Theory, II
- 1:00 p.m.-6:00 p.m. The Many Lives of Lattice Theory and the Theory of Ordered Sets, with Connections to Combinatorics, I
- 1:00 p.m.-6:00 p.m. C*-Extensions and Classifications of C*-Algebras, I
- 1:00 p.m.-6:00 p.m. Homotopy Theory, II
- 1:00 p.m.-6:00 p.m. Algebraic Topology Based on Knots, II
- 1:00 p.m.-6:00 p.m. Computational Algebraic and Analytic Geometry for Low-Dimensional Varieties, III
- 1:00 p.m.-6:00 p.m. Banach Space Theory and Convex Geometry, III
- 1:00 p.m.-6:00 p.m. Mathematical Current Events: Expository Reports
- 1:00 p.m.-6:00 p.m. Inverse Problems and Sampling Theory in Signal Analysis, III

MAA CONTRIBUTED PAPER SESSIONS

- 1:00 p.m.-3:30 p.m. Encouraging Underrepresented Groups of Students in Math Contests
- 1:00 p.m.-3:30 p.m. Mathematical Modeling In and Out of the Classroom
- 1:00 p.m.-3:30 p.m. Philosophy of Mathematics
- 1:00 p.m.-3:30 p.m. Integrating Undergraduate Research with the Mathematics Curriculum
- 2:00 p.m.-3:20 p.m. NCATE and the Mathematics Community
- 1:00 p.m.-5:00 p.m. AMS Sessions for Contributed Papers
- 1:00 p.m.-2:30 p.m. MAA Project NExT Panel Discussion Undergraduate Seminars in Mathematics
- 1:00 p.m.-2:20 p.m. MAA Committee on the Undergraduate Program in Mathematics and the CUPM Subcommittee on Mathematics Across the Disciplines Panel Discussion Mathematics Educators, Computer Science Educators: Working Together
- 2:15 p.m.-4:00 p.m. NAM Contributed Paper Session
- 2:30 p.m.-4:00 p.m. Presentations by MAA Teaching Award Recipients
- 2:30 p.m.-4:00 p.m. AMS Committee on Science Policy Panel Discussion
- 3:15 p.m.-5:15 p.m. MAA Minicourse #9: Part B Fair Enough? Mathematics of Equity

3:15 p.m.-5:15 p.m.

MAA Minicourse #3: Part B Optimization of Technology in the Geometry Classroom

4:00 p.m.-6:30 p.m.

MAA Committee on the Undergraduate Program in Mathematics and the Common Student Chapters Undergraduate Session

mittee
Poster

4:00 p.m.-6:00 p.m.

SIGMAA on Research on Undergraduate Mathematics Education Business Meeting and Invited Address by Rina Zazkis

4:20 p.m.-5:10 p.m.

MAA Science Policy-AMS Committee on Science Policy Committee Government Speaker

4:30 p.m.-6:30 p.m.

MAA Minicourse #14: Part B Teaching a Course in the History of Mathematics

5:00 p.m.-7:00 p.m.

MAA Informal Session on Actuarial Education

5:00 p.m.-6:00 p.m.

MAA BIG SIGMAA Reception Welcome Reception for Mathematicians in Business, Industry, and Government

5:15 p.m.-7:15 p.m.
paign
tion

University of Illinois at Urbana-Champaign Department of Mathematics Reception

SATURDAY JANUARY 18, 2003

7:30 a.m.-2:30 p.m.

Joint Meetings Registration

8:00 a.m.-10:55 a.m.

MAA-AMS-SIAM Special Session on Research in Mathematics by Undergraduates, III

8:00 a.m.-10:55 a.m.

MAA-AMS Special Session on the History of Mathematics, III

8:00 a.m.-10:55 a.m.

SIGMAA on Research in Undergraduate Mathematics Education, II

8:00 a.m.-10:55 a.m.
IV

MAA General Contributed Paper Session,

8:00 a.m.-10:55 a.m.

AMS Sessions for Contributed Papers

9:00 a.m.-11:00 a.m.

MAA Minicourse #10: Part B Turning a Nonscience or Developmental Course Into a Capstone Mathematical Experience

9:00 a.m.-11:00 a.m.

MAA Minicourse #15: Part B Real Fun Exploring Basic Mathematics

9:00 a.m.-11:00 a.m.

MAA Minicourse #4: Part B Visual Linear Algebra

AMS SPECIAL SESSIONS

8:00 a.m.-10:55 a.m.

Stochastic and Multiscale Problems in the Sciences, III

8:00 a.m.-10:55 a.m.

Wavelets, Frames and Operator Theory, III

Employment Opportunities

INDIANA

FRANKLIN COLLEGE

Franklin College, a private four-year liberal arts institution, invites applications for a tenure-track assistant professor of mathematics position beginning August 2003. Position requires teaching a variety of courses at all levels in a department recognized for innovative approaches to teaching college mathematics, plus ongoing scholarly activity. PhD or ABD required. For details about the position see www.franklincollege.edu/hrweb/faculty.asp. For details about the department see www.franklincollege.edu/matweb/

MASSACHUSETTS

BENTLEY COLLEGE

Department of Mathematical Sciences
The Bentley College Mathematical Sciences Department anticipates at least one full-time tenure-track position starting in fall, 2003. Candidates must possess an earned doctorate in a mathematical discipline prior to start of employment. Those with doctoral specialties that lend themselves to interdisciplinary research and curriculum initiatives with other liberal arts and/or business departments at Bentley are especially encouraged to apply. Excellence in teaching both introductory and elective courses, as well as strong research potential, is essential. Experience in integrating technology in a mathematical sciences curriculum is also highly desirable.

Interested candidates should send a resume and arrange to have three letters of reference sent to:

Dr. Marilyn B. Durkin, Chair
Department of Mathematical Sciences
Bentley College
175 Forest Street
Waltham, MA 02452-4705
(781) 891-2702; e-mail: mdurkin@bentley.edu

For best consideration all materials should be received by November 29, 2002. Electronic submissions will not be considered.

Interviews will be conducted at the AMS/MAA Joint Meetings in Baltimore in January 2003. Please inform us if you plan to attend this conference.

Bentley College is an equal opportunity employer building strength through diversity.

WILLIAMS COLLEGE

The Williams College Department of Mathematics and Statistics invites applications for two positions in mathematics and one position in statistics, beginning fall 2003, all at the rank of assistant professor (in exceptional cases, more advanced appointments may be considered). We are seeking highly qualified

candidates who have demonstrated excellence in teaching and research, and who will have a Ph.D. by the time of appointment.

Williams College is a private, residential, highly selective liberal arts college with an undergraduate enrollment of approximately 2,000 students. The teaching load is two courses per 12-week semester and a winter term course every other January. In addition to excellence in teaching, an active and successful research program is expected.

To apply, please send a vita and have three letters of recommendation on teaching and research sent to the Hiring Committee, Department of Mathematics and Statistics, Williams College, Williamstown, MA 01267. Teaching and research statements are also welcome. Evaluations of applications will begin on or after November 25 and will continue until the positions are filled. Williams College is dedicated to providing a welcoming intellectual environment for all of its faculty, staff and students; as an EEO/AA employer, Williams especially encourages applications from women and underrepresented minorities. For more information on the Department of Mathematics and Statistics, visit <http://www.williams.edu/Mathematics>.

MONTANA

CARROLL COLLEGE

Carroll College, a Catholic, independent college of 1400 students located in the heart of the Rocky Mountains invites applications for a tenure-track faculty position beginning August 2003 in the Department of Mathematics, Engineering and Computer Science. A Ph.D. with a focus in applied mathematics or related discipline required as well as the ability to support Carroll's mission statement. Proven teaching effectiveness, integration of technology in teaching and experience in mathematical modeling of continuous phenomenon will be considered favorably. Duties include teaching a wide variety of undergraduate courses (12 hours each semester), advising students, professional development, and committee work. Teaching assignments may include numerical computing and visualization, optimization, any of the courses in our first four-semester math sequence for majors in mathematics and engineering, and/or service courses in calculus, elementary statistics, discrete dynamical systems, and pre-calculus. Opportunities exist to teach courses in engineering, science, and/or computer science depending on background and interest. Salary and rank DOQ.

To apply, send a letter of application, transcripts, curriculum vita, statement of philosophy, and contact information of at least three professional references to the Office of Human Resources, Carroll College, 1601 N. Benton Ave., Helena, MT 59625 or e-mail application materials to [Pat Shields](mailto:ps Shields@carroll.edu) (ps Shields@carroll.edu). Review of materials will

begin on November 15, 2002 and will continue until position is filled. Carroll mission statement and department and college information is available at www.carroll.edu. EOE.

NEW HAMPSHIRE

DARTMOUTH COLLEGE

John Wesley Young Research Instructorship
The John Wesley Young Instructorship is a two-year post-doctoral appointment intended for promising Ph.D.'s whose research interests overlap a department member's. Current departmental interests include areas in algebra, analysis, algebraic geometry, combinatorics, differential geometry, logic and set theory, number theory, probability, and topology. Instructors teach four ten-week courses distributed over three terms, though one of these terms in residence may be free of teaching. The assignments normally include introductory, advanced undergraduate, and graduate courses. Instructors usually teach at least one course in their own specialty. Nine-month salary of \$43,800.00 supplemented by summer research stipend of \$9,733.00 for instructors in residence for two months in summer. To be eligible for a 2003-2005 Instructorship, candidate must be able to complete all requirements for the Ph.D. degree before September, 2003. Applicants should get a copy of the application information and the required response-form at <http://www.math.dartmouth.edu/recruiting/>. Or, submit a letter of application, curriculum vitae, graduate school transcript, thesis abstract, statement of research plans and interests, and at least three, preferably four, letters of recommendation to Donna Black, Department of Mathematics, Dartmouth College, 6188 Bradley Hall, Hanover, New Hampshire 03755-3551. Applications received by January 5, 2003 receive first consideration; applications will be accepted until position is filled. Dartmouth College is committed to diversity and strongly encourages applications from women and minorities.

DARTMOUTH COLLEGE

The Department of Mathematics seeks to recruit at the senior level in Applied Mathematics with an initial appointment in the 2003-2004 academic year. The successful candidate will be acknowledged leader in his/her field with proven ability to work across disciplines and attract outside funding. Applicants with any of a wide variety of interests ranging from traditional applied fields and backgrounds, e.g. signal processing, mathematical statistics, PDE's, as well as new application areas such as informatics, quantum computing or applied algebra, are encouraged to apply. Various projects are currently funded by NSF NIH, NIMH, and DoD. Active collaborations with the medical and engineering schools, and programs in computer science and cognitive neuroscience exist. Collaborations and/or appointments in Dartmouth's M.D./Ph.D. program, as well as Dartmouth's Institute for Secure Technologies Studies, are also possible. Lab space in the new mathematics building will also be

available and future hirings in applied mathematics are anticipated

Candidates must be committed to outstanding teaching and interaction with students at all levels of undergraduate and graduate study and be willing to advance applied mathematics across campus.

To create an atmosphere supportive of research, Dartmouth offers new faculty members grants for research-related expenses, a quarter of sabbatical leave for each three academic years in residence and flexible scheduling of teaching responsibilities. The teaching responsibility in mathematics is two courses per quarter for two ten-week quarters or one course for each of two quarters and two courses for one quarter. The combination of committed colleagues and talented, responsive students encourages excellence in teaching at all levels.

To apply, a copy of the application information and required response form may be obtained online from our web site at <http://www.math.dartmouth.edu/recruiting/>. Or, send a letter of application, curriculum vitae, and a brief statement of research results and interests; and arrange four letters of reference, at least one of which specifically addresses teaching, to Donna Black, Recruiting Secretary, Department of Mathematics, Dartmouth College, 6188 Bradley Hall, Hanover, New Hampshire 03755-3551. Applications received by December 6, 2002 will receive first consideration. Dartmouth College is committed to diversity and strongly encourages applications from women and minorities. Inquiries about the progress of the selection process may be directed to Dan Rockmore, Professor of Mathematics and Computer Science, Dartmouth College, Hanover, NH 03755 or via email at Daniel.Rockmore@Dartmouth.edu.

DARTMOUTH COLLEGE

The Department of Mathematics anticipates a tenure-track opening with initial appointment in the 2003-2004 academic year. The position is an Assistant Professorship in number theory, or "applicable mathematics." The work of candidates in applicable mathematics should straddle the line of pure and applied mathematics. The successful candidate will be a researcher working in core mathematics who has a proven track record in pursuing both the theoretical development of his/her subject, as well as potential applications. Examples would include (but are not limited to) number theorists with interests in cryptography or coding theory, representation theorists who work in signal processing, combinatorialists with interests in computing, probabilists with interests in statistics, as well as more classical applied mathematicians. Various projects are currently funded by NSF and DoD. Active collaborations with the medical and engineering schools, and programs in computer science and cognitive neuroscience exist. Collaborations and/or appointments in Dartmouth's M.D./Ph.D. program, as well as Dartmouth's Institute for Secure Technologies Studies, are also possible. In

number theory, we have interests in both algebraic and analytic number theory.

Candidates for the position must be committed to outstanding teaching and interaction with students at all levels of undergraduate and graduate study, and must demonstrate an exceptional potential for research. Candidates with several years of experience should be able to give evidence of a research program that has achieved peer-recognition and which promises future research leadership in the mathematical community. Candidates who do not have this level of experience must have demonstrated the potential for future mathematical research leadership in their Ph.D. work.

To create an atmosphere supportive of research, Dartmouth offers new faculty members grants for research-related expenses, a quarter of sabbatical leave for each three academic years in residence and flexible scheduling of teaching responsibilities. The teaching responsibility in mathematics is two courses per quarter for two ten-week quarters or one course for each of two quarters and two courses for one quarter. The combination of committed colleagues and bright, responsive students encourages excellence in teaching at all levels.

To apply, get a copy of the application information and the required response-form at <http://www.math.dartmouth.edu/recruiting/>. Or, send a letter of application, curriculum vitae, and a brief statement of research results and interests; and arrange four letters of reference, at least one of which specifically addresses teaching, to Donna Black, Recruiting Secretary, Department of Mathematics, Dartmouth College, 6188 Bradley Hall, Hanover, New Hampshire 03755-3551. Applications received by January 5, 2003 will receive first consideration.

Dartmouth College is committed to Affirmative Action and encourages applications from African Americans, Asian Americans, Hispanics, Native Americans and women. Inquiries about the progress of the selection process may be directed to Dwight Lehr, Recruiting Chair.

NEW YORK

CORNELL UNIVERSITY

The Cornell University Department of Mathematics invites applications for our Teaching Program Visiting Faculty Positions beginning August 16, 2003. Two or more half-time visiting positions (any rank) for mathematics professors on sabbatical/other leaves from colleges, universities, and engineering schools. Candidates with substantial experience teaching undergraduate mathematics, and with teaching and research interests compatible with current faculty, are sought. Successful candidates are expected to pursue a program of study and/or research at Cornell. For information about these positions and application requirements, see: <http://www.math.cornell.edu/Positions/positions.html> Deadline December 1, 2002. Send application and supporting materials to Linda Clasby, Department of Mathematics, 320 Malott

Hall, Cornell University, Ithaca, NY 14853-4201. Cornell University is an Affirmative Action/Equal Opportunity Employer.

NAZARETH COLLEGE

Tenure-track position in mathematics, beginning Fall 2003. Ph.D. in mathematical sciences, demonstrated teaching excellence, commitment to innovative teaching in a collaborative environment, and use of technology in teaching required. Responsibilities include: 4 courses per semester (majors and non-majors), scholarship and service. Preference to candidates with interest in teaching applied mathematics and introductory courses in computer programming, and directing student research.

Nazareth College, a thriving, independent, co-educational, liberal arts college with 1900 undergraduates and 1200 graduate students, is minutes from downtown Rochester, noted for its cultural diversity. We seek individuals with an understanding of the benefits and importance of diversity.

Send letter of application, philosophy of teaching, curriculum vitae, transcripts, and three letters of reference to: Professor Susan Riegle, Search Committee, Nazareth College, 4245 East Avenue, Rochester, NY 14618. E-mail: smriegle@naz.edu. See: <http://www.naz.edu/dept/hr/postings/faculty.html> EOE/AA.

NORTH CAROLINA

DAVIDSON COLLEGE

The Mathematics Department anticipates an opening for a regular appointment at the Assistant Professor level to begin August 1, 2003. Consult the "Faculty Position" link at <http://www.davidson.edu/math/> for information on applying.

Davidson College is an Equal Opportunity Employer; women and minorities are encouraged to apply.

PENNSYLVANIA

LA SALLE UNIVERSITY

Department of Mathematics & Computer Science
Tenure-Track Position

La Salle University invites applications for a tenure-track position at the Assistant Professor level beginning in August 2003. A Ph.D. in mathematics is required by the commencement of the appointment. The successful candidate will possess a strong commitment to excellence in teaching and continued scholarly activity. Duties include teaching a wide variety of undergraduate courses (12 hours each semester), student advising, curriculum development, and committee work.

La Salle University is a Roman Catholic university in the tradition of the La Salle Christian Brothers and welcomes applicants from all backgrounds who can contribute to its unique educational mission. For a complete mission statement, please visit our Web