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**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:** Kate Debelack, MAA; debelack@maa.org

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Letters to the editor should be addressed to Fernando Gouvêa, Colby College, Dept. of Mathematics, Waterville, ME 04901; email: 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.

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# FOCUS

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*On the cover: the passing of the scepter: former MAA president Tom Banchoff gives a symbol of authority to new president Ann Watkins. Photograph by Jackie Giles.*

### FOCUS Deadlines

	May/June	August/September	October
Editorial Copy	March 16	July 14	July 27
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## Mathematics Awareness Month 2001: “Mathematics and the Ocean”

April, as always, is Mathematics Awareness Month. This year’s program focuses on “Mathematics and the Oceans.” It will call the scientific and educational communities to explore how mathematics helps us understand the intriguing world of oceanography.

The oceans form an essential element of Earth’s life support system. From waves breaking on sandy shores to deep currents sweeping around the globe, ocean activity influences even areas remote from coastlines, by driving the Earth’s climate in partnership with atmospheric dynamics. Oceans give us food and other goods; we use them for transportation and recreation; and for millen-



*This year’s poster celebrating Math Awareness Month.*

nia they have been a source of awe and wonder. Understanding the vast range of interacting oceanic processes requires mathematical description and analysis. The key role of mathematics can be seen at all levels of ocean science. Analytical and numerically approximated solutions of the equations of fluid dynamics are crucial for models of physical behavior; statistics and signal processing lie at the heart of data collection and analysis; and mathematical control theory and inverse methods have revolutionized the study of thermodynamic and other ocean properties.

Such a large subject offers organizers of Mathematics Awareness Month activities a wide range of possibilities. As usual, supporting materials will be distributed throughout the country and will also be available online at the Math Forum. Check <http://www.mathforum.com/mam> for more information.

Mathematics Awareness Month began in 1986 as “Mathematics Awareness Week” with a proclamation from President Ronald Reagan in which he said that “to help encourage the study and utilization of mathematics, it is appropriate that all Americans be reminded of the importance of this basic branch of science to our daily lives.” The week became a full month in 1999. More information on past Mathematics Awareness activities can be found on the Math Forum at <http://www.mathforum.com/mam/past.html>. ■

## NSF Announces Mathematical Sciences Initiative

The National Science Foundation (NSF) has announced an initiative intended to increase dramatically its support of the mathematical sciences. If the initiative is funded at the level now being discussed, in six years NSF spending on the mathematical sciences will be four or five times the current budget of the Division of Mathematical Sciences (DMS), although the funds are to be spread across NSF. The National Science Board, at a meeting on October 19, 2000, formally approved the initiative. NSF director Rita Colwell has since proposed funding targets to reach \$400 to \$500 million by fiscal year 2006.

“The proposed Mathematics Initiative is a particularly effective way to further interaction across disciplines and the resulting stimulation of research and develop-

ment in all fields,” says MAA Executive Director Tina Straley. She adds that the initiative comes at particularly fortuitous time in the life of the Association, which is engaged in several projects, including MathDL, professional development workshops, and the CUPM study of the mathematics curriculum, which fit into the spirit and goals of the new program. A “white paper” by Straley in support of the initiative is available on the MAA’s website at [http://www.maa.org/policy/mathinit\\_straley.html](http://www.maa.org/policy/mathinit_straley.html). More information on the proposed mathematical sciences initiative can be found in the February issue of the *Notices of the AMS* and on the AMS web site at <http://www.ams.org/notices/200102/comm-nsf.pdf>. Rita Colwell’s November 17 speech is online at <http://www.nsf.gov/od/lpa/forum/colwell/rc001110math.htm>. ■

## MAA Announces PREP: Professional Enhancement Programs

The MAA has received almost \$1 million in funding from the NSF Division of Undergraduate Education National Dissemination Program, for a series of approximately twenty-five professional enhancement workshops to be held over a three-year period. Offerings will begin this summer.

A description of programs for summer 2001 is on page 12 this issue of FOCUS. More complete information and applications may be found on MAA Online, at <http://www.maa.org> under Professional Development.

**In FOCUS:**

**Joint Mathematics Meetings in New Orleans, January 2001**

As happens every year, this January the American Mathematical Society and the MAA held joint national meetings. This year's joint meetings brought almost 5,000 mathematicians, mathematics educators, and other interested folk to New Orleans. Lectures, special sessions, employment interviews, business and committee meetings filled the days, and no one's experience was quite like someone else's. The several articles that follow make up a composite report on the meeting and the many events that surrounded it.



*Meeting attendees browsing at the MAA's book exhibit.*

**Passing the Scepter: Thoughts from a Departing President**

*By Tom Banchoff*

As we returned from our very successful national meeting in New Orleans, the national news highlighted the upcoming inaugural and the departure of the current president from the White House. Stepping down as MAA president is not so dramatic, but it does represent a transition. Passing the scepter to Ann Watkins at the business meeting was nicely symbolic of the change of leadership. But I won't be going away very soon. According to our by-laws, I will still be on the Executive Committee for another year and on the Board of Governors for five years after that, so the responsibility remains even though the (illusion of) power is gone. At least I will now be able to vote on all the issues we discuss.

It has been a good two years, and I am happy to see how healthy and optimistic the MAA is at this time. Our national headquarters is full of activity, and publications, programs, and services are all expanding. Better than that, the general appreciation of the MAA is increasing, leading to more members and more member support.

The reports presented at our New Orleans meeting show that we have a great deal to look forward to in the coming years.



*Marcia Sward, former Executive Director of the MAA, Tom Banchoff, still MAA President at this point, and Jean Taylor, president of the Association for Women in Mathematics. Photograph by Sylvia Wiegand.*

We heard predictions that the Math Digital Library project will provide a great range of new services. We heard about the continued success of Project NExT, and similar activities in the MAA Section meetings. We welcomed a new SIGMAA special interest group and learned about proposals for more to come. We know we will hear more and more about the upcoming report from one of the MAA's premier committees, the Committee for Undergraduate Programs in Mathematics. The Conference Board of Mathematical Sciences, will present "The Mathematical Education of Teachers", sure to be a major mathematical event.

One upcoming activity deserves our special attention. I join my colleague AMS President Felix Browder in encouraging all of our MAA members to support the special initiative for mathematics proposed by the National Science Foundation. This effort brings the possibility of increasing dramatically the support for all aspects of mathematics, in particular education at the collegiate level. As reported in the February 2001 *Notices of the AMS*, the initiative emphasizes "research activities that integrate education and training, teacher preparation and development, new curricula, research on learning mathematics, and involvement of mathematicians in precollege education." It is easy to relate all of those aims to long-standing concerns of the MAA, and we all will benefit from this initiative.

In closing, I would like to thank all of those who worked so hard for the MAA over the past two years. Their effort made my job as president a very happy experience, and I am truly grateful. I wish the best to my successor, Ann Watkins, and I look forward to many more years of participating in the activities and projects of the MAA. ■

*Tom Banchoff was president of the MAA until the end of the Joint Meetings.*

## New Orleans—A Personal Perspective

By Maeve McCarthy

Every time that I attend the Joint Meetings, I am astounded by the number of mathematicians there. We are so used to meeting one another in small groups that seeing thousands of us in one place is quite amazing. This year's meeting in New Orleans was well attended. I'm sure that had as much to do with the location as the program. I have to congratulate the powers that be on their choice. They managed to provide a fascinating location without driving the cost of attendance through the roof!

Before starting this article, I pulled out my program for some inspiration. To my dismay, I discovered that although virtually all of the plenary talks are circled, I only actually made it to one of them – Peter Lax's talk on "Some topics in ap-

plied mathematics". Like many of us, I wandered from session to session throughout the week—attending a few in my field from start to finish, but mostly attending only a talk or two in any one session. I find that I learn more that way. So what did I learn this year? Well, on Wednesday I attended an interesting talk on directed reading by Nancy Neudauer. The last issue of FOCUS contained an article on getting our students to read the text, and between the article and the talk I think that I have something new to bring to my classroom. Thursday was one committee meeting after another, so it's a bit of a blur. I did attend the NSF DUE panel and learned about all sorts of funding opportunities. Friday's highpoint was the MAA session on "Outreach Programs for Women and Girls." It was great to hear

about the specifics of various programs and to learn about what works and what doesn't. My talk was on Saturday, so I only went to one session (besides my own) that day. It was a panel, organized by the MAA Committee on the Undergraduate Program in Mathematics (CUPM), on "Restructuring the mathematics bachelor degree." As a member of our department's curriculum committee, I felt that this was incredibly useful.

Overall, the meeting was very good. As usual, I came home tired—but then again, I always do! Next year's meeting in San Diego has a hard act to follow! ■

*Maeve McCarthy teaches at Murray State University. She is a member of the Editorial Board of FOCUS and MAA Online.*

## NAM Hosts Reception for New African American Mathematicians

Every year at the Joint Meetings, the National Association of Mathematicians (NAM) hosts the Granville-Browne session of presentations by recent doctoral recipients in the mathematical sciences. These presentations serve as a forum to showcase the achievements of new African American researchers in the mathematical sciences. This year's event, held on January 12 and moderated by Dr. William A. Massey of Bell Laboratories, Lucent Technologies, featured eight speakers:

Serge A. Bernard, University of Maryland College Park, "A Multivariate EWMA Approach to Monitor Process Dispersion."

Shea Burns, North Carolina State University, "Disjoint Smallest Ideals in the Two Natural Products on Beta S".

Gelonia Dent, IBM T.J. Watson Research Center-Yorktowne, "Higher Order Rep-



*Speakers of the NAM Granville-Browne session for African-American Ph.Ds. Front row (left to right): Dr. Tasha R. Inniss, Dr. Gelonia Dent, Dr. Sherry Scott, Dr. Shea Burns, Dr. Kimberly Weems. Back row (left to right): Dr. Illya V. Hicks, Dr. William A. Massey (moderator), Dr. Serge A. Bernard, Dr. Otis B. Jennings. Photograph by Dr. Jackie Giles.*

resentations for Particles Settling in a Periodic Lattice".

Illya V. Hicks, Texas A & M University, "Graph Minors and Branch Decompositions".

Tasha R. Inniss, Trinity College, "Stochastic Models for the Estimation of Airport Arrival Capacity Distributions".

Otis B. Jennings, Stanford University, "Stabilizing Queueing Networks with Setup Delays".

Sherry Scott, George Washington University, "Spectral Analysis of Fractal Noise in terms of Wiener's Generalized Harmonic Analysis and Wavelet Theory".

Kimberly Weems, National Security Agency, "Robust Estimation in Mixed Poisson Regression Models with Perturbed Random-Effects Distributions". ■

## Why Do I Attend the National Meeting?

By Randall J. Swift

“Why do I attend the national meeting?” When I was asked to write this article for FOCUS, that was the question I kept asking myself. I am a regular attendee at these January meetings, having participated in 9 out of the last 10. I firmly believe that these meetings are essential, both professionally and personally.

Let me give you a little background. The annual Joint Meetings of the AMS and MAA are these organizations’ largest gatherings of the year. This year, almost 5,000 mathematicians attended the meetings, which were held in New Orleans. The location changes each year, with a rough balance between eastern and western venues.

The meetings are full of activity. In New Orleans, there were over 1,300 talks, ranging from hour-long invited addresses to 15-minute contributed papers. There were also minicourses, where participants pursued a topic in depth over a two-day period. Many events occurred simultaneously, with often more than a dozen events to choose from. In addition, there was a large book exhibit.

The meetings begin on a Wednesday morning (running through Saturday afternoon), and I usually arrive on Tuesday night, due to my teaching schedule. By the time I deal with the hassle of the flight, taxi or shuttle ride, and hotel check-in, it is usually after midnight. This year I was lucky: it was only 11 PM when I arrived.

Almost every year, I share a hotel room with a dear friend who is also an “academic brother.” We shared our graduate school experience and had the same Ph.D. advisor, but now we live and work in different parts of the country. Certainly this reunion of old friends is a major part of the importance of the Joint Meetings. That first night, we talked about old and new times until after 2 am.

On Wednesday morning, the sessions begin at 8 am. Sometimes there are early talks that I want to attend; other times I have spoken on Wednesday morning. This year I took an excellent minicourse, offered by Gary Sherman, on cwatsets. It started bright and early and I was tired, but it was worth it.



*Ivars Peterson giving his talk on Mathematics and Art at the New Orleans Joint Mathematics Meetings.*

Over the years I have attended several minicourses, with the idea of broadening my background. Some of these have served my interests very well, others have not, but they are, in general, something that I recommend as an overall positive aspect of the meetings.

By mid-Wednesday morning, the meetings are in high gear. You are surrounded by hundreds of mathematicians, some running off to hear talks, others gathering in lively discussions. It is very easy to become overwhelmed by the experience, but it is also just as easy to feel the energy of the meetings. I find it very exciting to be part of such dynamic activity. However, I usually take a little time to just sit and watch also. There are people in attendance from all aspects of the profession. In a real sense, you are at the center of mathematics.

It doesn’t take long for me to run into someone that I know. Over the years, by attending the national meetings, I have

maintained and developed many friendships. This group of friends continues to increase in size each year, with this year being no exception. Some of these friends I see throughout the year, while others I see only at the meetings. Regardless, the sense of connection I’ve gained is a positive influence in my professional life.

Usually, a plan is made to meet for lunch or dinner. These meals are the main social events. Sometimes a party will be small—3 or 4 people. Other times, it can be unwieldy. One year, I was in a group of about twenty! The food in New Orleans is truly exceptional.

I enjoy trying local cuisine when I travel and have appreciated the food at the various meeting sites over the years. New Orleans ranks in the top of these locations. Of course, Cajun food could be found at many restaurants, but close

to the conference hotel is a wonderful place where locals dine: Mike Serio’ Po-Boy Deli. They serve inexpensive local fare, and their crawfish etouffee is outstanding. Numerous great and famous restaurants are in the French Quarter, but there are too many to list here. However, Pat O’Brien’s on Bourbon Street is one that is not to be missed.

In addition to the fine food, New Orleans has incredible music and nightlife. Most of this activity occurs around the French Quarter, with rowdy and raucous Bourbon Street at ground zero. (One should not underestimate the potent drink known as a Hurricane.)

New Orleans is also the birthplace of blues, and many attendees took advantage of this. I listened to Big Al Carson (“485 pounds of pure New Orleans Blues”), a fixture at the Funky Pirate on Bourbon Street. He and his band, The Blues Masters, are great. However, nothing compares to the Preservation Hall

Jazz Band, a remarkable New Orleans jazz tradition. Although they perform in a rather modest setting, hearing them can best be described as a simply magical experience.

In addition to the entertainment, an interesting effect of these gatherings of colleagues is that your friends will have invited someone else that they know. Sometimes I don't know these other people, but more often than not it turns out that we have crossed paths previously.

It may seem on the surface that our profession is rather large, but in reality it isn't. The well-known graph theory claim that everyone is connected within 7 relations of each other applies in this situation. From my experience, though, it takes no more than 3 relations in mathematics before you run into a common connection.

Attending the talks in your research area further reinforces these connections. Each year I have spoken in either a special or contributed paper session. This year was no exception: I gave a contributed paper on some of my recent work in stochastic processes.

At these specialized sessions there are people you will see each year. Some of them I have pursued joint research projects with, while others I only see during the meetings. Mostly, it is a warm gathering of friends sharing their current work, not the "scary" high-level research environment that it perhaps seems like from the outside. These are people who share your interests, and the talks provide a way for you to make connections that might not be there otherwise. I have developed valuable associations that help me overcome geographic and departmental research isolation by attending these talks.

This year, as in previous years, there were special sessions in a wide variety of areas of mathematics. As a probabilist, I attended the special sessions on Stochastic Analysis as well as those in Analysis on Infinite Dimensional Space. Both, in gen-

eral, were good; however, a few times these sessions ran at the same time and it was difficult to choose. This year the contributed papers in Probability were also of a particularly high note.



*Tom Banchoff, MAA President, and Manuel Berriozábal, winner of the Gung-Hu Award for Distinguished Service to Mathematics. Photograph by Sylvia Wiegand.*

As a complement to the specialized talks, the meetings also present the opportunity to attend general lectures. These invited talks are usually an hour in length and are of a broader nature. For me, it is a tradition to attend the AMS Josiah Willard Gibbs Lecture, which occurs on Wednesday evening after dinner. This makes for a very full schedule on the first day of the meetings, but the Gibbs lecture is always interesting and heavily attended. Hundreds of mathematicians sit raptly, and one gets a strong sense of belonging to a greater mathematical community. This year, Ronald Graham gave an outstanding lecture on the Steiner Problem.

There were many other invited addresses during the meeting, including a three-lecture colloquium series on varieties by János Kollár. The lecture by Eleanor Robson on reassessing the mathematical artifact known as Plimpton 322 was also very interesting for its description of the method of placing an artifact into its proper historical context. Ivars Peterson's talk on mathematics and art, with its beautiful visuals, was a definite highlight.

Panel discussions are another important aspect of the meetings. These range in

topic from how to obtain funding to issues in mathematics education. They provide a forum for dialog and the exchange of ideas that may not happen elsewhere.

This year, I had the honor of being an invited panel speaker for a Young Mathematicians' Network/ Project NExT panel on "Keeping Active in Research." I often find panel discussions useful and informative about aspects of the profession.

Spending time in the book exhibits almost guarantees that you will run into someone you know. Not only will you be able to peruse the latest texts and meet with book representatives and editors, but you will also invariably run into someone you haven't seen yet. The exhibits are really interesting for the range of companies represented. Before the meetings I always think to myself, "Hey, I have enough books so I won't buy any during the meetings." I came home with three texts this time anyway.

If you attend the meetings, I am sure you will think of even more activities that I haven't mentioned. If you don't attend, perhaps this article has given you a better idea of what goes on and will encourage your participation.

Mathematics and the mathematics profession are human endeavors. The Joint Meetings are a time to enjoy and share being a part of our wonderful profession. This is why I attend. ■

*Randall J. Swift (randall.swift@wku.edu) is associate professor of mathematics at Western Kentucky University. His research interests include nonstationary stochastic processes, probability theory and mathematical modeling. He is a co-author of A Course in Mathematical Modeling, published by the MAA. His non-mathematical interests are primarily focused on his wife and three young daughters, but, when he has the time, he enjoys science fiction, history, listening to public radio, cooking and baseball.*

## Student Research at the Joint Meetings

By Mario Martelli

Between 5 and 7.30 PM on Friday January 12, 2001, the ballroom Pontchartrain A at the Sheraton in New Orleans was a sight to be seen. A record number of 78 posters presented by more than 160 undergraduates were on display. I was sitting outside the room distributing the booklets with all of the posters' abstracts and a map of the room to a continuous stream of visitors. Herbert Medina stepped out to ask me: "Mario, have you been inside? It's incredible! Take a moment to go in and see it yourself."

I did. The long hours I had spent planning the event, finding judges to evaluate the posters, assigning each poster to three judges and to each judge four posters within the areas of expertise of the judge, and taking care of many small but important details, were paying off. The room was bursting with activity. Sixty-four experienced mathematicians, the judges, were listening intently to the explanations of enthusiastic undergraduates, who were having a ball illustrating their work and talking about their experience. Particularly remarkable was the presence of two groups. The first, composed by 8 teams and 20 students strong, was from the REU program organized by Herbert Medina and Ivelisse Rubio at the University of Puerto Rico, Humacao. It was the third time that Herbert and I had brought 8 REU teams to the poster session. The second group of five teams and 18 students was from the REU program organized by my dear friend Carlos Castillo-Chavez at Cornell University. There was also a poster by the 14-year-old undergraduate Brian Boucher from Jacksonville University. Brian was presenting a poster on research he had done



*Students and staff of the 2000 Summer Institute in Mathematics for Undergraduates (SIMU) at the University of Puerto Rico Humacao. Students from SIMU 2000 presented eight posters and the MAA student poster session in New Orleans. Photograph by Herbert Medina.*

under the supervision of Rai Sanjay and with the encouragement of his advisor Marcelle Bessman from Jacksonville University.

When the judges' evaluations were all back in my hands and I had entered them into my database, three posters stood out, having received almost perfect scores. The first was poster no. 8, *Determining Termination of ECT Induced Seizures*, by Ben Bonthuis and Kimberly Urso from Immaculata College, reporting on work done under the supervision of Jan Mastrangeli from the same institution. Poster no. 12 was on *Estimation of the Period of a Simple Continued Fraction*, by Benjamin Chan from the University of Rochester under the supervision of Robert Vaughan and M. Guysinsky from Pennsylvania State University. Finally, there was poster no. 23, *The Finite Diophantine Approximation Spectrum and Real Quadratic Number Fields*, authored by Amanda Folsom from the University of Chicago, Alexander Pekker from Stanford University, Rungporn Roengpitya and Julia Snyder from Williams College, all working under the supervision of Edward Burger from Williams College. Burger was the recipient of one of the three MAA Distinguished Teaching Awards. Congratulations, Ed for

your award and for the success of your team.

Also remarkable was the goal achieved by the students who did research under the supervision of Carlos Castillo-Chavez from Cornell University. Of the five posters presented, three were considered of exceptional quality. The first was Poster no. 11, on *A Socially Transmitted Disease: Teachers Qualification and High School Dropout Rates*, presented

by Alison Castro from the University of California, Riverside and Nicolas Crisosto from the University of California, Berkeley. Next was poster no. 33, on *The Effects of a Potential National Campaign and a VEI Type Vaccine on a HIV-1 Infected Homosexually Active Population*, presented by Emily Kaijta from Harvey Mudd College, Josè Alvarado from the University of Puerto Rico, Cayey, Oscar Hernan Estrada from the Universidad Autónoma de Ciudad Juárez and Nadia Monrose from the University of the Virgin Islands. Finally, there was Poster no. 61 on *Do We Really Have to Take All Our Medicine? Predicting the Consequences of a Large Scale Antibiotic Misuse*, presented by Fabio Sanchez from the Universidad Metropolitana, Caroline Cutting from the Massachusetts Institute of Technology, Claudia Morales from the University of Alabama in Huntsville and Deena Schmidt from the University of Akron.

Other posters recognized were Poster no. 19 by Nathan Eusko from Norwich University, Poster no. 20 by John Farina of Macalester College, Posters no. 22 and 36 by Jason Flatley and Daniel Klaus respectively, both from Claremont McKenna College, Poster no. 40 by Marco Latini from Harvey Mudd College, Poster no. 51

by Heather O'Brien and Jennifer Robinson from SUNY Potsdam, Poster no. 43 by Rebecca Lehman of Princeton University and White Chad, from the University of Missouri, Rolla, Poster no. 66 by Mili Shah from Emory University, and Poster no. 68 by Suzanne Sindi from California State University Fullerton.

Fifteen posters were recognized and won a prize of \$100 each. These prizes are *ex aequo*, that is, there is no ranking among the posters recognized. The money was offered by the Mathematical Association of America, the American Mathematical Society, the Council for Undergraduate Research, and by a private donor. I wish we had more prizes. My data base was showing a great number of posters so

close to each other in the judges' opinion that in some cases the difference between receiving the \$100 prize and not receiving it came down to half a point! All students and advisors should keep in mind that just being there was a major achievement and recognition for the students and a reason for pride for the advisor. It was a truly remarkable experience for everybody: students, advisors, judges and visitors. This event is becoming one of the central components of the national AMS-MAA meeting. The merit for this recognition goes first to our undergraduates. Thank you, kids, for your enthusiasm, knowledge and vitality, which really fired up the event. Then the merit goes to the judges and to the advisors. The judges donated their time and expertise for the

very worthy cause of evaluating the posters. The advisors, many of whom are REU program directors, worked an entire summer with their students. I also would like to thank Jim Tattersall, the MAA Associate Secretary, for his constant concern regarding the poster session. Organizing such an event was not easy and it completely absorbed all my Christmas vacation. All efforts were handsomely paid off! My friends: students, advisors, judges, and visitors I would like to see you next January for the 2002 Undergraduate Student Poster Session in San Diego! ■

*See also page 11 for information on undergraduate research activities at the Madison Mathfest.*

## What Makes the Mathematical Association of America "Tick?"

By Suzanne Sindi

I had the honor of being invited to the MAA Board of Governors meeting in New Orleans. My excitement was peppered with curiosity; other than having meetings and giving talks, I had no idea what the MAA actually did. This would be the perfect opportunity to discover what made the MAA "tick."

I woke up early and refreshed on January 9; the meeting would run from 8:30 a.m. until almost 5:00 p.m. I wasn't sure what to expect, I felt like I did when I walked into my first course in analysis.

As I walked into La Galerie 2 of the lovely New Orleans Marriott I was immediately greeted by Frank Morgan, Second Vice President. He walked with me over to the table of refreshments. I almost laughed as I recalled the relationship between mathematicians, coffee and theorems.

Then began the introductions. I met President Thomas Banchoff, whom I recalled from a television special about four-dimensional surfaces and President-Elect Ann Watkins, a fellow member of the California State University community. Throughout the room of mingling mathematicians I overheard words like Project NExT and MathDL. This was only the beginning of my acquaintance with

the multitude of activities and programs the MAA was responsible for.

President Banchoff called the meeting to order and business began. The meeting had a familial feeling. It was evident the governors were a group of long-time colleagues, good friends and people who shared a tremendous passion for mathematics. During the Treasurer's Report, the board discussed the status of memberships. Several voiced concern over reaching graduate students and new and untenured faculty. It was rather touching as the group expressed their hope that new mathematicians would be welcomed and motivated to join the MAA. By the time we broke for lunch, in addition to learning that thickness in pie charts is purely "gratuitous," I realized that outreach to new faculty and students ranked high on the MAA priority list.

Even during lunch, business continued. We were asked to discuss ways the MAA could make itself more attractive to prospective members. Perhaps because I was a student, my table focused on how to make the MAA more attractive to students. Several at my table mentioned activities conducted at section meetings. One section offered students an opportunity to submit resumes to employers and speak with professors from graduate programs they were interested in applying to. Others had a "Putnam-style" math-

ematics competition or a get together at a restaurant for munchies and interesting problems.

After lunch, we continued through the agenda. Of the many items we discussed that afternoon the one that stands out the most in my mind is the new online Mathematical Sciences Digital Library (MathDL). I couldn't believe my ears as the components of MathDL were discussed. I was amazed at this merger of mathematics and technology; I kept thinking, "I wish they had this when I started college."

The meeting closed shortly before 5:00 p.m.; impressively every page in the thick agenda was covered. Within those pages were the nuts and bolts of the MAA: their system of organization, their committees, their rules and regulations. However, what made the MAA "tick" was not to be found in those pages. Those sitting around the table, with their dedication to education, commitment to students and love of mathematics, were what made the MAA "tick." I am grateful to the Board of Governors for inviting me to attend their meeting and for sharing with me not only their passion, but also a glimpse at the future of mathematics. ■

*Suzanne Sindi is a senior at California State University, Fullerton.*

## MAA Secretary's Report

By Martha Siegel

It has been one year since the arrival of our new Executive Director, Tina Straley; it has been a year of excitement and innovation. We are planning for new association management software that will significantly change the way we handle our database and our membership services. We have welcomed our new Associate Executive Director for Programs and Services, Thomas Rishel. He and Donald Albers, Associate Executive Director for Publications and Electronic Services, will be helping Tina to run the headquarters and to gear up for this enormous change in headquarters operations. Neil Beskin, Director of Finance, and Jim Gandorf, Director of Membership, have played instrumental parts in negotiations and in establishing specifications for the new system.

We continue to do well in the grants area and are particularly pleased to announce that Tina Straley has been able to negotiate a Memorandum of Understanding for a major contribution and long-term support from the Akamai Foundation for the American Mathematics Competitions. One of the most exciting projects that we have undertaken, the Mathematics Digital Library Project, is well underway. Funded by the NSF with Lang Moore of Duke University and Gene Klotz of Swarthmore College as PIs, MathDL will be an online library of independently reviewed mathematics learning materials at the undergraduate level. It is divided into three parts: LOMA, the Library of Online Mathematics and Its Applications; JOMA, the Journal of Online Mathematics and Its Applications; and the Library of Commercial Products. JOMA has already published its first issue; to see it, go to <http://www.joma.org>.

We have been informed that an extensive Professional Development program (25 workshops over 3 years) for faculty workshops will be funded by NSF. We continue to rely on ExxonMobil Foundation funding for the activities of ARUME. Our activities in support of minorities in math-

ematics continue through Project WEL-COME, which is described elsewhere in this issue. We have received seed money for an extremely important project to be undertaken by the Committee on the Mathematical Education of Teachers following the MET report from CBMS, and our Committee on the Undergraduate Program in Mathematics continues its preparation of recommendations for mathematical sciences programs. We are very fortunate to have a dedicated and enthusiastic corps of hard workers in the Association.

### Future national meetings of the MAA

August 2-4, 2001	Madison, WI	MathFest
January 6-9, 2002	San Diego, CA	
August 1-3, 2002	Burlington, VT	MathFest
January 15-18, 2003	Baltimore, MD	
January 7-10, 2004	Phoenix, AZ	
January 12-15, 2006	San Antonio, TX	

MAA has been trying to remain responsive to the needs of new faculty. We have rededicated ourselves to service and programs for graduate students by participating in the Preparing Future Faculty program (see the January issue of FOCUS) and with TA training workshops. Many of our sections have started Section NExT programs and we were pleased to welcome the section NExTers along with the national NExT Fellows to many activities at the New Orleans meetings.

On the finance side, we seem to be in a good position and are very pleased that we have had one of our best audits. Membership retention is improving and recruitment is also strong. All bodes well for a successful 2001 for the MAA.

Our publications program is stellar, as many of you already know. Editor Fernando Gouvêa has made both FOCUS and MAA Online excellent (and beautiful) resources for the entire community.

The Board of Governors met on Tuesday, January 9 and voted to replace the Committee on Testing with a new, standing Committee on Articulation and Placement to handle the broader issue of articulation—high school to college, two-year to four-year—and placement problems facing many in the collegiate community. The Board voted to change the name of the Committee on Student Chapters to the Committee on Undergraduate Student Activities and Chapters to better reflect the scope of their work on behalf of undergraduates. The President will be appointing an ad hoc Committee on Elections at the direction of the Executive Committee to consider the timing and procedures in the election of President-Elect and the two Vice Presidents.

The Board also approved a Conflict of Financial Interest Policy suggested by our auditors, which is reprinted in this issue of FOCUS and is also

available on the web. It applies to all staff, officers, and volunteers.

The Board elected Daniel P. Maki of Indiana University to fill the unexpired term of Barbara Faires on the Audit and Budget Committees. We will have another election next year for a regular four-year term on these committees. Recall that the two people who serve on the Audit Committee are elected by the Board and are members of the Executive Committee and the Board of Governors. Jim Daniel of the University of Texas Austin, as the senior member of the committee, will now chair both Audit and Budget.

The Board set the dues for 2002 with a 3.5% increase. There is also a change in the “additional family members’ fee and in life membership dues. The Governors also approved small changes in the By-laws of the Wisconsin Section. The Task Force on Graduate Students issued a report and will be asked to continue for a few months so that we can develop a

charge for a regular standing committee on graduate students.

Robert F. Witte, recently retired from the ExxonMobil Foundation, has been elected by the Board to give the James R. C. Leitzel Lecture in Madison. As Bob is the guardian angel of Project NExT, this is a most appropriate choice.

The Executive Committee approved another SIGMAA—for Mathematicians in Business, Industry, and Government (BIG). We now have three SIGMAAs – RUME, Statistics, and BIG.

With this meeting the Board welcomed Frank Farris, the new Editor of *Mathematics Magazine*. We bid goodbye to outgoing governors: Raymond Johnson of the University of Maryland, who is being replaced by Jacqueline Giles of Houston Community College as the Governor-at-Large for Minorities and to Afton Cayford of the University of British Columbia, who is being replaced by

Grace Orzech of Queen’s University in Kingston, Ontario as the Governor-at-

member of the Audit, Budget, and Finance Committees, the Executive Committee, and the Board of Governors.

Section Governors have terms that begin July 1. Hence, for some of our section governors this has been their last Board meeting although they will continue to serve on the Board for another six months. We will be electing new Governors from those sections this spring.

**MAA Governors whose terms expire on June 30, 2001:**

Eastern Pennsylvania-Delaware	David R. Hill
Florida	Fredric J. Zerla
Illinois	Larry J. Morley
Intermountain	James W. Cannon
Iowa	Elgin H. Johnston
Louisiana-Mississippi	Stan Chadick
Maryland-DC-Virginia	Jon W. Scott
Michigan	John O. Kiltinen
North Central	Gail S. Nelson
Southern California	Barbara J. Beechler
Texas	Montie G. Monzingo

Large for Canadians. Former President Donald Kreider, after many years on the Board as Treasurer, President-Elect, President, Past-President, and former President has also retired from the Board. We will miss Barbara Faires a lot. She worked efficiently and with a deep of understanding of the budget and the complex finances of the MAA. She was chair of the Committee on Sections, an outstanding

Finally, I want to take this opportunity to thank Tom Banchoff for all he did as MAA President. He was and continues to be an outstanding spokesperson for mathematics and the Association. It has been a distinct pleasure to have worked with him over the last two years. He has guided the MAA and has helped to keep awareness of mathematics before the public, the government, and the other sciences. ■

**Call For Papers**

**Fourteenth Annual MAA Undergraduate Student Paper Sessions**

Student papers have been a traditional part of the program for the MAA summer meeting, and this year is no exception. The Fourteenth MAA Undergraduate Student Paper Sessions will take place at the MAA MathFest 2001 in Madison, WI on August 2-4, 2001.

Partial support for travel by students presenting papers will be available on a limited basis. Complete details on submission procedures and applications for travel support will be published in the April issue of FOCUS. This information will also be available on the

MAA home page at [http://www.maa.org/students/students\\_index.html](http://www.maa.org/students/students_index.html).

Students who wish to present a paper at the Madison MathFest must be nominated by a faculty advisor familiar with the work to be presented. Students who make presentations at the MathFest, and who are also members of MAA Student Chapters, are eligible for partial travel reimbursement pending support from the Exxon Educational Foundation.

To propose a paper for presentation, the student must complete a form and ob-

tain the signature of a faculty sponsor. Nomination forms are located on MAA Online under STUDENTS, or can be obtained from Dr. Charles Diminnie (see contact info below).

Students are advised to begin making plans now regarding participation. The deadline for student paper submissions is Friday, June 29, 2001. Please direct all inquiries to Dr. Charles Diminnie via email at [charles.diminnie@angelo.edu](mailto:charles.diminnie@angelo.edu) or by phone at (915) 942-2317 ext.238.

## **MAA Announces PREP: Professional Enhancement Programs**

**P**REP is a comprehensive, professional, career enhancement program that will sponsor a full range of enrichment experiences, designed to appeal to mathematicians at all career stages and interests. These will include graduate students, beginning faculty, mid-career faculty, and late-career faculty. Programs for all aspects of career enhancement are encouraged. These include programs focusing on innovative curriculum, pedagogical issues, career advancement and

change and mathematical enrichment. Especially desirable are programs that present new developments in teaching and learning, innovative approaches to leadership and career advancement, and recent mathematics research results.

All programs are expected to include a distance learning component for workshop preparation and continued networking after the on-site program. Programs using distance learning for a sig-

nificant portion of or for the complete program are particularly encouraged.

The primary audiences are college/university mathematics faculty at two-year colleges, liberal arts colleges, comprehensive universities, and research universities. Although most PREP programs are intended for faculty in the mathematical sciences, faculty from other disciplines are welcome and some programs may specifically encourage communication among mathematics faculty and those from other disciplines. ■

## **Summer 2001 Offerings Announced**

### **The Mathematical Preparation of Elementary School Teachers**

by Gregory D. Foley and Deborah A. Crocker  
May 14-18, Appalachian State University, Boone, NC

The mathematics will comprise measurement, geometry, number systems, data analysis, probability, and algebraic thinking. Included in this five-day short course will a discussion of technology, manipulative devices, problem solving, cooperative learning, and communication--all within the context of mathematics for prospective elementary school teachers.

### **Viewpoints: Mathematics and Art**

by Annalisa Crannell and Marc Frantz  
June 3-8, Franklin and Marshall College, Lancaster, PA

This intensive workshop features classroom tested activities and field trips which explore the connection between mathematics and art. The activities can be used collectively to form a full semester course, or as independent modules to enhance and enliven a wide range of courses.

### **Teaching Undergraduate Geometry**

by David Henderson and Daina Taimina  
June 11-15, Cornell University, Ithaca, NY

This workshop is intended for college and university faculty who teach (or soon will teach) undergraduate geometry courses, such as those typically attended by future or inservice teachers. The content will be the integration of geometries on plane, sphere, and other surfaces, presented through problems which emphasize the meanings in the geometry through student investigations, small group learning, and writing assignments.

### **In Search of Newton**

by Kelly Black  
July 10-13, University of New Hampshire, Durham, NH

This short course will focus on combining the calculus and

physics curricula by using studio format: journals, active learning, group learning, and projects. Participants will study updates and changes to both the physics and calculus curriculum and further examine the studio format of instruction.

### **Using Hands-on Devices to Understand Calculus Concepts**

by Steve Monk  
August 7-11, University of Washington, Seattle, WA

This workshop will examine a variety of hands-on devices along with written materials used in teaching calculus. Participants will work with these devices so that they get an idea of how such devices shift the way in which we understand calculus. They will also work together on activities for various groups in which such hands-on devices could be used in the classroom.

### **Teaching a Student-Active Data-Driven Introductory Statistics Course**

by Charlie Bertness  
May 21-25, Indiana University of Pennsylvania, Indiana, PA

The workshop is designed to help instructors to incorporate the ASA-MAA Committee on Undergraduate Statistics recommendations for an introductory statistics course. These guidelines encourage the development of thinking with the use of data and student-active learning. Topics included are the collection of data, exploratory data analysis, statistical inference and the use of statistical software. Participants will create and share web-based class materials and learn to use the web as a teaching and resource tool. We especially encourage participation from faculty at two-year institutions. ■

### **Program Proposals Sought for 2002**

Proposals for workshops for 2002 are sought. Guidelines for submitting a proposal may be found on MAA Online at <http://www.maa.org/pfdev/guidelines.html>.

## Joint Meetings News Highlights

### Ann Watkins is the New MAA President

As of the end of the Joint Meetings, President-Elect Ann Watkins is now the President of the MAA. Watkins, who teaches at the California State University in Northridge, has been an active member of the MAA for over twenty years, serving in committees, editorial boards, and councils. Following the MAA bylaws, she served as President-Elect for the last year and will now serve a two-year term as President.

### IMO 2001 is Coming Up

This year's International Mathematical Olympiad will be held in the United States, and it's shaping up to be quite an event. The Olympiad will be held in Washington, DC, with opening ceremonies on July 4, 2001. The organizers hope to use the big event to increase public awareness of and appreciation for mathematics. Plans include many mathematical activities at various levels throughout the country. For more information, visit the IMO 2001 web site at <http://imo2001.usa.unl.edu/>. We plan to include more details on IMO 2001 events in our May issue.

### Icosahedron Society Has Three New Members

Three new members were inducted into the Icosahedron Society during the Joint Meetings. Andrew Sterrett was recognized for his many contributions to the MAA. Andrew Sterrett has served the MAA in various capacities since his retirement from Denison University: as Visiting Mathematician, Interim Director of Member Services, and Editor of the Classroom Resource Materials book series. Currently he is Acquisitions Editor for MAA Books. Sterrett was cited by the Ohio Section for his work as their Governor, Secretary-Treasurer and Chair. The Microsoft Corporation, which has been a strong supporter of the American Mathematics Competitions, and the ExxonMobil Foundation, which was the major funder of Project NExT during the last eight years, were also made members of the honorary society, recognizing their generous support for MAA activities. The

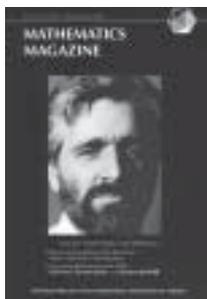
three new members join the five members inducted last summer at the founding of the Society (see our November, 2000 issue for details), which honors those who have contributed in special ways to the Association.

### The BIG SIGMAA is Now Official

The Board of Governors approved the creation of the third SIGMAA (Special Interest Group within the MAA), this one dedicated to mathematicians in Business, Industry, and Government. The BIG SIGMAA joins the SIGMAA on Research on Undergraduate Education and the SIGMAA on Statistics Education, which had been established earlier. All the SIGMAAs held special events at the January Joint Meetings.

### Mathematics Magazine Has New Editor

Frank Farris officially became the editor of *Mathematics Magazine* at the beginning of this year, replacing Paul Zorn. As is the MAA tradition, Farris had served as Editor-Elect for a year. To celebrate Zorn's five year tenure as editor, a special *Mathematics Magazine* cover was prepared. Besides featuring a photograph of Zorn, described as "Mathemeditor of the Millennium," the cover lists such articles as "There's Got to be a Zorning After," "Zorn Yesterday," "Zorn's Latest Lemma." It also announces three upcoming MAA books: *Zorn Free*, *Zorn to Dance*, and *Zorn to be Wild!* Zorn was honored at the Board of Governors meeting for doing such a great job as editor for the last five years.



### CUPM Debates the Curriculum

The Committee on the Undergraduate Program in Mathematics has continued its work to prepare new curriculum recommendations. A study document is now available on MAA Online at [http://www.maa.org/news/cupm\\_text.html](http://www.maa.org/news/cupm_text.html).

CUPM held many discussions and focus groups at the Joint Meetings with the goal of making as many people as possible aware of the discussion. To contribute to the curriculum discussion, send email to CUPM at [cupm-curric@maa.org](mailto:cupm-curric@maa.org) or hard copy to Tom Berger, Chair of CUPM, Department of Mathematics, Colby College.

### Task Force on Educational Technology

Tom Banchoff announced, at the Board of Governors meeting on January 9, the creation of a task force on educational technology. The group is to consider creating a group of MAA consultants that might serve as a resource for college and university promotion and tenure committees with respect to evaluating contributions to educational technology. With the growth of projects such as MathDL, one expects to see mathematics faculty members spending more of their time working on educational technology, and it is important that such activities receive proper credit when faculty members are evaluated. The charge of the task force is to help this happen.

### SUMMA Program News

The goals of the MAA's SUMMA (Strengthening Underrepresented Minority Mathematics Achievement) program are to increase the participation of minorities in mathematics, science and engineering and to improve the mathematical education of minorities. Project WELCOME (see page 17 in this issue) is only one of many SUMMA initiatives. Others include the Calculator Assistance Program, which supplies reconditioned calculators at an extremely low cost to schools, districts, and professional development projects (this is a joint effort with the Benjamin Banneker Association), the Archival Record, which gathers information about minority mathematicians who have PhDs in mathematics or mathematics education, and the ENACT calculator workshop for tribal college faculty and teachers at reservation schools. A national Research Experiences for Undergraduates program that will focus on underrepresented students is also being developed. The SUMMA web site is [http://www.maa.org/summa/archive/summa\\_wl.htm](http://www.maa.org/summa/archive/summa_wl.htm). ■

Short Takes

**CNN Looks at Adjunct Professors**

A report entitled “The Long Halls of Ivy: Adjunct Professors” recently appeared on the CNN web site. “How’s this for the job not of your dreams,” the report opens: “It typically requires an advanced degree, and a workweek somewhere in the 60-hour range, with work on weekends likely. The pay is low, there are no benefits, no job security. To get by, in the course of any given week, you’ll likely have to commute to several, often widely-scattered job sites. At none of those places will you have an office—or sometimes even a mailbox—to call your own.” This description of “the lowlands of higher education” applies, according to the report, to over half of all college and university professors. Check out the full report at <http://www.cnn.com/2001/CAREER/trends/01/11/adjunct/>.

**“I’d Rather Go to Math Camp”**

A new anti-drug ad has recently appeared in various magazines aimed at teenagers. The ad, sponsored by the Office of National Drug Control Policy ([ondcp@ncjrs.org](mailto:ondcp@ncjrs.org)), features a picture of a young girl. The accompanying text says “He’s super-fly. He wants your digits. But first he wants you to get high. Here’s what you say. No way, I would rather go to Math camp than smoke a joint...”

**How Do You Tell Good Research From Bad?**

The National Research Council has put together a panel to attempt to define what constitutes scientific quality in education research. The standards for research to be proposed by the panel may later be required for federally financed studies in education. The NRC hopes that the panel’s work will help to improve the credibility of education studies in general. The panel will work closely with a committee put together for similar purposes by the National Academy of Sciences. The panel is expected to report this Fall.

**CMJ Classroom Capsules has New Editor**

Warren Page has been named the new editor of the Classroom Capsules section of the *College Mathematics Journal*. The Capsules section contains short articles with new insights on topics taught in the earlier years of undergraduate mathematics. Submissions should be sent to Warren Page at 30 Amberson Avenue, Yonkers, NY 10705-3613.

**Conference on Research in Undergraduate Mathematics Education**

The sixth annual Conference on Research in Undergraduate Education will be held on September 20–23 in Chicago. Plenary speakers will include Marilyn Carlson of Arizona State University, Anna Sfar of the University of Haifa, David Tall of the University of Warwick, and Patrick Thompson of Vanderbilt University. Check out the conference web site at <http://www.math.ilstu.edu/~jfcottr/rume2001.html> for more information.

**History of Undergraduate Mathematics in America**

Part of the celebration of the bicentennial of the United States Military Academy will be a conference on the History of Undergraduate Mathematics Education in America, to be held at USMA in West Point on June 21–24. The conference will include talks on the role that West Point has played in the development of undergraduate mathematics in this country, but its focus will include everything related to the development of undergraduate mathematics education. There will be several sessions of contributed papers. Abstracts for contributed papers should be sent to [amyshell@usma.edu](mailto:amyshell@usma.edu). For more information on the conference, contact Fred Rickey at [fred-rickey@usma.edu](mailto:fred-rickey@usma.edu) or check the conference web page at <http://www.dean.usma.edu/math/RESOURCE/FACULTY/rickey/huma/huma.htm>.

**Mathematics-related Fiction Reviewed**

The December 22, 2000 issue of *Science* includes a review by David Foster Wallace of two recent novels about mathematics and mathematicians: Philibert Schogt’s *The Wild Numbers* and Apostolos Doxiadis’ *Uncle Petros and Goldbach’s Conjecture*. The review describes both novels as belonging to a new genre called “Math Melodrama,” made possible by the recent visibility of mathematics in American culture (the “geek chic” phenomenon, according to the reviewer). The review spends a great deal of energy on the difficulty of conveying mathematical ideas to the reader and wonders about the target audience for these books.

**Top Mathematics News Stories of 2000**

The last issue of *Science News* for the year 2000 included, as usual, a list of the top science news stories of the year. The top mathematics stories were:

- Ken Ono’s recent results on partition congruences
- A new theorem that may lead to a proof of Catalan’s Conjecture
- A result about unfurling crinkly polygons into convex shapes
- The proof of the local Langlands correspondence
- The proof of the double-bubble conjecture
- A verification that the Goldbach Conjecture holds for numbers up to  $4 \times 10^{14}$

Check out the *Science News* web site at <http://www.sciencenews.org> for more details.

**Workshop on Precalculus: Functions, Models And Data**

This NSF summer institute, to be held on June 24–June 30, 2001 at Dickinson College in Carlisle PA, is based on the new Workshop Precalculus materials devel-

oped by Nancy Baxter Hastings and Allan Rossman of Dickinson College. Its goal is to prepare participants to utilize the interactive teaching techniques and innovative technology that characterizes the workshop approach. It will provide them with the necessary background and support to adapt the Workshop Precalculus materials for use in their own environments. Faculty from high schools, community colleges, four-year colleges and universities are encouraged to apply. An application is available on the web at <http://calc.dickinson.edu/SummerInstitute>, or contact Joanne R. Weissman at [weissman@dickinson.edu](mailto:weissman@dickinson.edu).

### William Dunham Presents Ohio Section Summer Short Course

William Dunham will offer the 2001 Ohio Section Summer Short Course. Entitled A Mathematical Sampler: 1669–1900, the course will examine a collection of mathematical landmarks from the middle of the seventeenth through the end of the nineteenth centuries. The theorems to be considered are the original work of such towering figures as Newton, the Bernoulli brothers, Euler, Gauss, and Cantor. They come from the fields of analysis, number theory, algebra, geometry, complex variables, and the theory of sets. The course will be held at Ashland University in Ashland, Ohio June 27–June 29, 2001. Details about the course can be found at the Ohio Section web site at <http://www.maa.org/Ohio> (follow the link for Summer Short Course).

### MAA Adopts Policy on Conflict of Financial Interest

The MAA Board of Governors approved the policy on January 10, 2001. The new policy was created in response to a request from the Association's auditors and does not reflect any prior problems with conflict of interest. Besides being published in FOCUS, the policy statement has been posted online at [http://www.maa.org/aboutmaa/handbook/cfi\\_policy.html](http://www.maa.org/aboutmaa/handbook/cfi_policy.html) and made available to all MAA staff members and volunteers. See page 20-21 for full details. ■

## Prizes Awarded at the Joint Mathematics Meetings

### Alice T. Schafer Prize for Excellence in Mathematics by an Undergraduate Woman (AWM)

Jaclyn (Kohles) Anderson

### Louise Hay Award for Contributions to Mathematics Education (AWM)

Patricia D. Shure

### Albert Leon Whiteman Memorial Prize (AMS)

Thomas Hawkins

### Leroy P. Steele Prize for Mathematical Exposition (AMS)

Richard P. Stanley

### Leroy P. Steele Prize for Seminal Contribution to Research (AMS)

Leslie F. Greengard and Vladimir Rokhlin

### Leroy P. Steele Prize for Lifetime Achievement (AMS)

Harry Kestern

### Ruth Lyttle Satter Prize in Mathematics (AMS)

Karen E. Smith  
Sijue Wu

### Oswald Veblen Prize in Geometry (AMS)

Jeff Cheeger  
Yakov Eliashberg  
Michael J. Hopkins

### Levi L. Conant Prize (AMS)

Carl Pomerance

### Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student (AMS/MAA/SIAM)

Jacob Lurie  
Wai Ling Lee (Honorable Mention)

### Yueh-Gin Gung and Dr. Charles Y. Hu Award for Distinguished Service to Mathematics (MAA)

Manuel P. Berriozábal

### Chauvenet Prize (MAA)

Carolyn S. Gordon and David L. Webb

### Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics (MAA)

Edward B. Burger  
Evelyn Silvia  
Leonard F. Klosinks

### Certificates of Meritorious Service (MAA)

Carl Leinbach  
Bernard Sohmer  
Ralph W. Carr  
Kenneth A. Ross  
Joanne Peeples

### Leonard M. and Eleanor B. Blumenthal Award for the Advancement of Research in Pure Mathematics

Stephen J. Bigelow  
Elon B. Lindenstrauss

### Joint Policy Board of Mathematics Communications Award

Keith J. Devlin

#### MAA Prize Information

For more information on the MAA prizes, see <http://www.maa.org/news/janprize.html> and [http://www.maa.org/news/teaching\\_award\\_winners00.html](http://www.maa.org/news/teaching_award_winners00.html).

For more on the AMS prizes, see <http://www.ams.org/new-in-math/press>. The full prize booklet distributed at the meeting is online at <http://www.ams.org/ams/2001-prizes.pdf>.

## Project NExT Applications due April 13

Project NExT (New Experiences in Teaching) is a program for new or recent Ph.D.s in the mathematical sciences who are interested in improving the teaching and learning of undergraduate mathematics. It addresses the full range of faculty responsibilities in teaching, research, and service, and it provides professional support for new faculty as they undertake these activities. Each year, about sixty faculty members from colleges and universities throughout the country are selected to participate in a workshop preceding the MAA summer meeting, activities during MAA meetings, and an electronic discussion network. Faculty for whom the 2001-02 academic year will be the first or second year of full-time employment with significant teaching responsibilities at the college/university level are invited to apply to become Project NExT Fellows.

The first event for the 2001-02 Project NExT Fellows will be a Workshop, July 30 - August 1, 2001, just prior to the summer MAA meeting (the MathFest) in Madison, Wisconsin (August 2-4, 2001). At this Workshop and at Project NExT sessions during the MathFest, Fellows will explore and discuss issues that are of special relevance to beginning faculty, including:

- Effective strategies for teaching calculus, pre-calculus, and differential equations;
- Innovative approaches to liberal arts mathematics, statistics, and more advanced courses;

- Involving undergraduates in mathematical research;
- Alternative methods of assessing student learning;
- Perspectives from pedagogical research;
- Getting your research off to a good start and writing grant proposals;
- Balancing teaching and research.

The Fellows will also have an opportunity to meet with Fellows who began the program in previous years.

Following the Workshop, Project NExT Fellows will attend the summer MAA MathFest, August 2-4, 2001, participating in all the opportunities of that meeting, and choose among special short courses organized by Project NExT. During the following year, Project NExT Fellows will participate in:

- An electronic network that links Project NExT Fellows with one another and with distinguished teachers of mathematics;
- Special events at the Joint Mathematics Meetings in San Diego, CA, January 6-9, 2002;
- A one-day workshop in 2002 and the MAA MathFest immediately afterwards (probably in Burlington, Vermont, July 31- August 3).

There is no fee for participation in Project NExT itself, and Fellows will be provided with room and board at the Project NExT Workshop in Madison. Fellows also do not have to pay for the special short courses at the summer MathFest that are organized by Project NExT. Institutions employing the Project NExT Fellows are expected to provide all other expenses associated with the meetings, and the level of institutional support is a consideration in the application process.

Application forms were available at the Project NExT booth at the Joint Mathematics Meetings in New Orleans and can also be found on the Project NExT web page at <http://archives.math.utk.edu/projnext/>. The application deadline is April 13, 2001. For more information, contact one of the following:

- T. Christine Stevens, Director of Project NExT, Dept. of Mathematics and Mathematical Computer Science, Ritter Hall 104, Saint Louis University, 220 N. Grand Blvd., St. Louis, MO 63103 (Phone: 314-977-2436; email: [stevensc@slu.edu](mailto:stevensc@slu.edu)).
- Joseph Gallian, Co-director, Department of Mathematics and Statistics, University of Minnesota, Duluth, MN 55812 (Phone: 218-726-7576; email: [jgallian@d.umn.edu](mailto:jgallian@d.umn.edu)).
- Aparna Higgins, Co-Director, Dept. of Mathematics, University of Dayton, Dayton, OH 45469 (on sabbatical at USMA, West Point, NY 10996; Phone: 845-938-2719; email: [higgins@saber.udayton.edu](mailto:higgins@saber.udayton.edu))

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## National Research Council calls for "Overhaul" of School Mathematics

On January 23, the National Research Council released a preliminary report calling for a major overhaul of school mathematics in the United States. The report argues that getting American students to progress towards real proficiency in mathematics "requires major changes in instruction, curricula, and assessment in the nation's schools." Jenny Kilpatrick, chair of the committee who wrote the report and Regents Professor of Mathemat-

ics Education at the University of Georgia, says that "too few students leave elementary or middle school with adequate mathematical knowledge, skill, and confidence for the nation to be satisfied with the condition of school mathematics.

Simply developing speed in pencil-and-paper arithmetic may have been sufficient when their parents and grandparents were in school, but today's students need

a deeper understanding of mathematics... Improvement requires a comprehensive and sustained effort among policy-makers, administrators, teachers, university faculty, parents, and others to enhance both instruction and achievement." Pre-publication copies of *Adding It Up: Helping Children Learn Mathematics* are available from the National Academy Press. See <http://www.nap.edu> for more information. ■

## MAA's Project WELCOME

With NSF support, the MAA has launched a new project called WELCOME (Web Educators Library Collection of Mathematical Explorations). The project continues MAA involvement in three areas: educational technology, professional development, and efforts to increase the participation by members of underrepresented groups. The primary goal is to bring technology to mathematics classrooms in minority-serving institutions. Faculty from these institutions will participate in WELCOME by developing computer activities for their classes.

Project WELCOME is a successor to MAA's Interactive Math Text Project (IMTP). In that project, the goal was to explore the instructional use of mathematically rich interactive computer activities. WELCOME will use one of the IMTP software packages, Mathwright, which produces interactive computer explorations for students. These explorations are simulations, laboratory experiments, lessons, and open-ended exercises that illustrate and extend the topic of interest, in a way that encourages playful experimentation. Teachers make this possible by carefully designing environments that stimulate students to ask "what if" type questions, while providing the means for the students to answer their own questions. For students familiar with the point and click idiom of the Internet, the interaction style is so natural and immediate that it gives the impression of manipulating physical objects.

WELCOME also continues MAA involvement in faculty development, by recruiting faculty participants and training them in the use of new technology. In addition, WELCOME incorporates characteristics of Project NExT, one of the MAA's most successful and respected professional development projects. WELCOME participants, like NExT fellows, are committed to a long term involvement in the project. They agree to develop a series of computer activities for their classes over the course of a year. The year begins with a week-long workshop introducing the Mathwright software. During the workshop, each participant teams up with an

experienced Mathwright developer who will serve as a mentor over the coming year. A project web site, email discussions throughout the year, and opportunities for participation at national MAA meetings round out project activities. This range of activities carried out over at least



*James White, co-director of IMTP and the main force behind Project WELCOME.*

a year is very similar to the structure of Project NExT.

Finally, WELCOME is the latest project within the framework of SUMMA (Strengthening Underrepresented Minorities Mathematical Achievement), which was initiated in 1990 to increase the representation of minorities in the fields of mathematics, science, and engineering, and improve the mathematics education of minorities.

Project WELCOME is predicated on the belief that interactive computer explorations can be a powerful tool both for attracting students to mathematics, as well as for helping them to investigate and master mathematical ideas. Now this tool will be applied to support the goals of SUMMA.

The primary force behind the development of WELCOME is James White, co-director of IMTP, and the author of Mathwright. He explained the conceptual framework for the project in terms of an on-going development. "Project WEL-

COME is the third step in an experimental (and evolving) collaboration between technology and mathematical pedagogy. The first step, IMTP, was concerned with faculty development. The IMTP participants created interactive computer explorations with which students can investigate college level mathematics and related subjects. The second step, another NSF project, was the Library for the Interactive Study of Mathematics on the World Wide Web, It adopted the web idiom, and disseminated many of these interactive computer explorations to a broad audience at an internet web site. In this third step, we combine and focus these two strategies to address the problem of attracting and retaining minority students in the mathematical sciences."

As an African American, White draws on his own educational experiences, both as a student and as a teacher, in thinking about the goals of WELCOME. He says, "Students at HBCUs often lack access to their teachers and to first-rate libraries or other educational resources. We may now use the web to provide such resources, often developed by their teachers, in the form of interactive WorkBooks. These materials will, of course, be available to a general audience through the Project WELCOME web site at the MAA. But we expect that they will reflect the experience, understandings, and pedagogical strategies of their authors, and will therefore be a useful resource for self-paced independent study by students at these HBCUs."

The first group of WELCOME participants began their work on the project in July 2000. A second cohort will be selected this spring to participate in the 2001-2002 academic year.

More information about Project WELCOME can be found at MAA Online (the direct URL is <http://www.maa.org/summa/archive/prjwlc.htm>), or by contacting James White ([mathwrig@gte.net](mailto:mathwrig@gte.net)).

For more information about Mathwright, see articles in the *College Math Journal* (vol. 28, 2, p 140; vol. 30, 5, p 398), or visit the Mathwright website at <http://www.mathwright.com>. ■

## Dirk J. Struik: A Memoir

By Ed Rosenberg

On Friday evening, October 5, 1990, my son Steven, who teaches mathematics at Boston University, called to ask what I was doing the following Tuesday evening.

“Well,” I answered, “that’s my brother’s 70<sup>th</sup> birthday.”

“Oh,” said my son in a disappointed tone.

“However,” I added, “since there’ll be a big family celebration when his younger son gets married on Sunday, and he never did like a fuss on his birthday, there won’t be any party for him.”

“Great!” said my son, enthusiastically.

“However,” I continued, “Tuesday evening there’s a meeting of the executive committee of the MIT Club of Fairfield County [Connecticut], and I happen to be president this year. What’s up?”

The tone of disappointment was back in my son’s voice. “Well, Dirk Struik is giving a talk that evening at BU, and I remembered you’d once had him as a teacher.”

“Dirk Struik! He must be in his eighties!”

My son corrected me. “He’s ninety-six.”

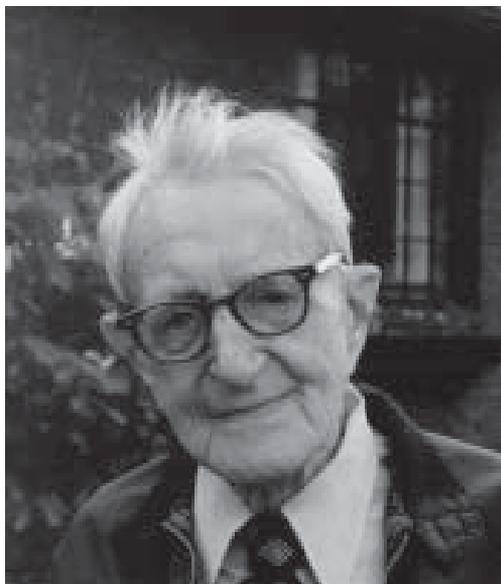
“I’ll be there!” I responded, and turned over the Club meeting to the vice-president: what else is such an officer for? My wife and I drove to the session – part of BU’s annual Symposium on the Philosophy of Science – where Steve joined us.

Professor Struik shared the dais with a few former students, who were to comment on his remarks and on him. The student who had known him longest had met him only a year and a half before I had.

That was the fall semester of 1942, when Professor Struik strode into a classroom to instruct, lead, goad, and entertain a collection of 18- and 19-year old boys/men (that section had none of the very few women in our class) in the arts of third semester calculus. Tall, almost ascetically slim, bespectacled, and always wearing a suit, Dr. Struik introduced to

most of us a Dutch accent, another linguistic vicissitude to which MIT students had to become acclimated.

From that semester, two episodes particularly stand out. The first occurred on a lovely, breezy, late October day. Our



Dirk Struik

classroom was on the first floor, in a typically high-ceilinged room with casement windows eight feet tall. It was simply too nice a day to remain indoors, so we all exited through a window onto the grass below, leaving for our teacher a large arrow on the slate board, pointing OUT.

The Professor, perhaps astonished at his empty classroom, inspected the symbol left for him, and with no hesitation clambered out the window, if not quite as nimbly as those a quarter century younger. He requested two students to fetch a portable chalkboard and another to return to the classroom for chalk and an eraser.

When the equipment arrived, he realized the breeze would blow over the chalkboard if it were set up to face us. Moving it to a less precarious position, he had us shift accordingly, and delivered an impromptu, out-of-sequence lesson on vectors, mathematically describing the effects of various angles between the

board and the prevailing wind. The audience was enthralled at this example of MIT genius at work.

The second episode was merely a comment from Professor Struik. After returning one test, he pointed out that several students had attempted to solve a problem without drawing a diagram of the physical situation described. “After all,” he added, “you wouldn’t marry a girl without even seeing a picture of her, would you?” To the best of my knowledge, none of us did.

As was true of a number of lecturers I was blessed with at MIT, only some years later, when I too had become a mathematics teacher, did I learn of a professor’s eminence. My well-thumbed paper copy of Struik’s *a concise history of mathematics* (all lower case on its cover) is dated 1948. Over the following years, I occasionally corresponded with him; his replies—in a neat, compact, European script that required determined deciphering—were always pertinent and clear: a joy.

During the McCarthy era, Dr. Struik was indicted on charges of conspiracy to teach and advocate the overthrow by force and violence... not the United States Government, but the Commonwealth of Massachusetts. (Yes, some of us secretly applauded his advocacy, if true.) The Institute, in an awkward position, decided that an indicted individual should not remain in the classroom. Until a conviction, however, it was unjust to deprive him of his living; the compromise was suspension with full pay. In time – five years of deprivation of work at MIT – the case was quashed because of a lack of evidence.

At that BU lecture in 1990, Struik held forth on a problem he said had fascinated him for years, one he was still unable to answer satisfactorily. The topic was the sociology of mathematics, the relationship between mathematics and the society in which it develops: more formally, “Multiculturalism in the History of Mathematics.” Why was there an outburst of creative mathematics during a certain period in a certain place? Conditions that

at one time and in one place coincided with mathematical invention at another time or in another place did not. Economic, political, and religious factors—among others—had to be considered.

When Dr. Struik finished his presentation, his former students spoke, appreciatively. The last mentioned several of the prominent mathematicians and scientists the Professor had studied with or known—Madam Curie, Einstein, Lawrence, Rutherford, among the better known names—and pointed out that he was but one handshake away from Riemann, who had developed the theoretical foundation of calculus.

When the evening's discussion ended, I took Steve to the dais. Thanking Dr. Struik for his presentation, I introduced myself as a student of his from 1942 and, now, also a retired teacher. "1942: oh, yes," he responded at once; "I was at MIT then."

I presented Steve as a current teacher of mathematics at BU. With the old world charm and courtesy that at once brought me back to his classroom, Dirk smiled, leaned across the table where he was sitting, congratulated my son on his position and on maintaining the tradition of teaching mathematics, and firmly shook his hand.

As we walked out of the room, I mentioned to Steve, "Now you are only two handshakes away from Riemann." Steve blanched. "Oh, my God!"

That was the last time I spoke with Dr. Struik, but not the last time I heard him. In the fall of 1994, my wife and I went to Brown University to hear him deliver his Centenary Talk. Later, we learned that Brown mathematicians had thought of having a prominent colleague deliver an address to celebrate Struik's 100<sup>th</sup> birthday. When they approached the Professor about it, he at once said he would be delighted to deliver a talk on the occasion, thus transforming the colleague into himself.

The hall was packed with an audience ranging in age from the late teens to the eighties ... at least. Younger listeners, no doubt violating local fire regulations, perched on aisle stairs.

Helped up the few steps to the stage, the Professor stood behind a rostrum to talk about mathematicians he had known. First he answered a question in

the minds of many of us: why was he at Brown for this speech, rather than MIT? Not mentioning the incident of the celebration, he explained he had learned that at Brown he would not be limited to weak tea but could have two martinis.

Captivating his audience, he drew strength from its obvious, powerful concentration. The vitality of his voice increased. As he continued, he leaned on the rostrum and shifted position; from behind it poked out one foot, clad in a white sneaker. No antique fuddy-duddy, he!

It was a remarkable performance: one hundred years old and still possessed of a mind clear and inquisitive. It was 54 years since I had first met Professor Struik; I was then a mere 72.

On October 21, 2000, this remarkable man — this inspiring, fruitful contributor to the twentieth century — reached the end of his 106 year life. My final link to him was attending, with Steven, the Memorial Service conducted at MIT on December 2 for Dirk Jan Struik and his wife of 70 years and fellow Ph.D. in mathematics, Ruth Ramler Struik, who had died on November 26, 1993, at the age of 99. For me, the service supplied closure to my 58-year relationship, tenuous as it was, to Professor Struik.

No doubt I should have known better than to fear the occasion would be sad. Not at all: it was a celebration: warm and even humorous, with appreciations of the Professor's life by friends and family, some of whom had jotted anecdotes on cards for listeners' enjoyment. Struik often attributed his longevity to three M's: mathematics, marriage, and Marxism, whose political theory he deeply believed in without accepting some of its excesses in practice.

The program opened with the singing of the "Ode to Joy"; it closed with all joining in "This Land is Your Land." In between were musical selections, poems written and read by Gary Hicks, and some twenty speakers.

From the mathematical world came scholars and former students, if no former colleagues: who was left? David Vogan, five years old when the Professor retired, admitted to now being the middle-aged Mathematics Department Chair at MIT

There were family reminiscences. One

daughter, herself gray-haired, told of the delights of her father's four P.M. sherry and of his perpetual optimism, which led him deliberately to misquote Shakespeare: "The good we do lives after us; the evil is interred with our bones." A tall, slim granddaughter in a long summer dress, sporting a dragon tattoo from shoulder to elbow, began, "This is cool!" A middle-aged grandson shared recollections of life in an illustrious family.

Several speakers recalled the Professor's political life. One mentioned the Professor's comment that, after some consideration, he had finally decided to be a rebellious professional instead of a professional rebel. Another had been Struik's legal counsel when he had been prosecuted, after his arrest and handcuffing for, as the Professor himself had put it, being a good teacher. Still another pointed out that science, which we like to think of as neutral in its search for knowledge, can be ideological in what it shuts its eyes to. Gary Hicks added that "history, like mathematics, repeats itself, especially when you flunk it."

It was a stimulating, intellectual look at many years and many aspects of mathematics, politics, and culture over an extraordinarily long and productive life. When the formal ceremonies ended, those who attended chatted and reminisced with each other and with the speakers, over refreshments ... though no martinis or sherry.

The moving service left us knowing we had been fortunate to have been touched, in one way or another, by a unique man. In communing with his memory and each other, we had been spiritually uplifted. Rays from the low sun slanted onto the tops of buildings as we walked out into a Boston December evening; we were warm. ■

*Ed Rosenberg, Emeritus Professor of Mathematics and Computer Science at Western Connecticut State University, for two years was chair of the Math Department at Community School in Tehran, Iran. He has published some 16 mathematics articles; three historical articles; one in a sports magazine; two in outdoor magazines; and for 8 years edited the Connecticut Mathematics Journal.*

## **Mathematical Association of America Conflict of Financial Interest Policy**

Passed by the Board of Governors, January 10, 2001

WHEREAS, the Board of Governors of the Mathematical Association of America (“Organization”) has consistently followed a policy of avoiding a conflict of financial interest or the appearance of such conflict on the part of the members of the Board, Volunteers and staff; and

WHEREAS, it is desirable that the policy to avoid conflicts of financial interest be clarified and spelled out in a Resolution of the Board;

NOW, THEREFORE, BE IT RESOLVED, that this Board hereby adopts the following policy with respect to possible conflicts of financial interest among the members of the Board, Volunteers and the staff of the Organization:

Service on the Board and as a Volunteer for the Organization is purely voluntary and shall not be used as a means for personal or private benefit or inurement. This provision shall not be deemed to prevent a member of the Board or a Volunteer from fairly representing his or her association with the Organization on a resume or in other personal publicity.

No member of the Board or Volunteer who is a vendor of goods or services to the Organization or is affiliated (as defined below) with any vendor of goods or services to the Organization or with a competitor of any vendor of goods or services to the Organization, shall vote on, or participate on behalf of the Organization in the administration of, any contract with such vendor.

No member of the Board or Volunteer who is a competitor of the Organization or affiliated (as defined below) with a competitor of the Organization shall vote on, or participate on behalf of the Organization in the administration of, any arrangement in which such competition exists or may exist.

No member of the Board or Volunteer who is a recipient of grants, goods or services from the Organization or is affiliated (as defined below) with a recipient of grants, goods or services from the

Organization shall vote on, or participate on behalf of the Organization in the administration of, any contract or other arrangement with such recipient.

Such person shall, upon request of any member of the Board or committee, leave any meeting for the period of time the Board or committee is discussing any arrangement with which he or she has an affiliation.

No member of the staff of the Organization shall, without previous approval of the Executive Director (or in the case of the Executive Director, the Committee on Management Evaluation and Oversight), be, or be affiliated with, either a vendor to, or recipient of grants, goods or services from, the Organization.

No individual or entity with which a member of the Board, a Volunteer or staff is affiliated shall receive any special consideration by the Board or staff. There shall be no variation in the procedures for processing grants to or contracts with such affiliated entities or individuals, except that additional scrutiny may be applied to such consideration, and the Organization shall follow such procedures as are necessary or appropriate to assure that the transaction does not constitute an “excess benefit transaction” under the Internal Revenue Code.

A Volunteer shall include any person, other than a member of the Board of Governors, who serves as officer, editor, committee member, or section officer of the Organization, and any principal investigator on a grant or contract administered by the Organization.

A person shall be deemed to be affiliated with an entity if the person

- (a) serves as a member of a governing body of the entity,
- (b) serves as an officer or employee of the entity,
- (c) has a material economic relationship with such entity, or
- (d) if the person’s spouse, parent, sibling, child, or member of the immediate household, holds such a position or has such a relationship.

A person shall be deemed to be affiliated with an individual if such individual is a spouse, parent, sibling, child, or member of the immediate household of such individual or has a material economic relationship with such individual.

Where a member of the Board or a Volunteer is unsure whether a conflict or affiliation exists, he or she shall disclose the relevant facts to the Secretary (to the Treasurer in the case of the Secretary). Where a member of the staff is unsure whether a conflict or affiliation exists, he or she shall disclose the relevant facts to the Executive Director (to the Committee on Management Evaluation and Oversight in the case of the Executive Director). The member of the Board, the Volunteer or staff shall abide by the decision so rendered as to the existence or non-existence of a conflict or affiliation.

Nothing in this policy shall prevent a member of the Board who is or is affiliated with a recipient of grants, goods or services from the Organization from participating in discussions or decisions relating to the scope or quality of grants, goods or services provided generally to such recipient and other persons similarly situated.

Each member of the Board, Volunteer or staff shall advise the Secretary (the Executive Director in the case of staff, the Committee on Management Evaluation and Oversight in the case of the Executive Director, and the Treasurer in the case of the Secretary) of any conflict or potential conflict of interest when such person becomes aware of any such relationship that has not previously been disclosed.

Upon approval of this Resolution, a copy of the resolution shall be sent to each staff member, Board member, and Volunteer and shall be posted on MAA ONLINE. Subsequently, this resolution shall be included in the staff manual given to all employees and provided to all Board Members and Volunteers. As part of their annual review all staff members will be asked to update their conflict of interest forms. Similarly, all Board members will be reminded of this policy during an annual meeting of the Board. ■

## The Curriculum Foundations Workshop in Physics

By Guy Emery

How best to teach undergraduates has for some time been an important question for many portions of the physics community. The American Association of Physics Teachers (AAPT) has been actively working on the undergraduate curriculum since its founding in the 1930s through committees, meetings, local outreach efforts, and its monthly *American Journal of Physics* (AJP). Sputnik stimulated a number of programs. The American Physical Society (APS) established a Forum on Physics Education that has become influential and signals the involvement of the research community. An Introductory University Physics Program, funded by NSF, has resulted in several innovative and well-tested course syllabi and texts. Much of the recent activity has been built on the results of the rapidly growing area of physics education research, which now has its own supplement to the AJP. Among the current mantras of the field are:

“It doesn’t matter how well I teach, what matters is how much the student learns,”

“Start from where the student is,” and

“Really try to understand what is in the mind of the student.”

It was in this context that a ten-member physics panel gathered for the first Curriculum Foundations workshop, at Bowdoin College, on October 28-31, 1999. The panel had a vigorous discussion, and in the end found significant areas of agreement on most of the topics on the agenda. To give a sense of the results we reproduce below selected excerpts from the panel’s report. (The full report can be obtained at <http://academic.bowdoin.edu/math/faculty/barker/dissemination/>)

“For success in introductory physics, we believe that it is most important for students to be able to think operationally within the context of a few fundamental mathematical concepts. ... [T]he most important factor is that students gain enough active understanding that they are able to think through and solve a wide variety of problems involving the fundamental concepts in a wide variety of contexts.”

“Conceptual understanding of basic mathematical principles ... is more important than esoteric computational skill. However, *basic* computational skill is crucial.”

“Mathematics instruction is worthwhile not only in developing problem solving skills but also in exposing students to ‘how a mathematician sees the world.’ In the words of workshop participant Tony French, “Mathematics has a point of view, a rigor, that we value but wouldn’t attempt and can’t afford in the introductory physics classroom.”

“Courses should cover fewer topics and place increased emphasis on increasing the confidence and competence that students have with the most fundamental topics.”

“There was significant agreement regarding the topics needed by students taking introductory physics courses. There was also significant agreement about the priorities among these topics. This is summarized in the table below.

“Technology should not have a major effect on what mathematics is learned in the first two years. Computers are most helpful for visualization, and for handling problems that are otherwise impracticable. Most instructors of introductory physics are not using symbolic manipulation packages. Spending time in mathematics courses teaching students to use such programs does not directly help in introductory physics courses. However, knowledge of such software is helpful once students enter upper level physics courses.”

“The impact of mathematics teaching reform on the performance of students in physics courses has not yet made itself felt. However, there is great potential synergism between mathematics education reform and physics education reform.”

Workshop participant Ernst Breitenberger made a strong encapsulating statement: “The learning of physics depends less directly than one might think on previous learning in mathematics. We just want students who can think. The ability to actively think is the most important thing students need to get from mathematics education.” ■

*Guy Emery, who is Professor of Physics Emeritus at Bowdoin College, was the local organizer for the CF Workshop in Physics at Bowdoin College. He spoke about the workshop at the CRAFTY panel on the Curriculum Foundations Project at the New Orleans meetings in January.*

What’s Important for Physics Students	
Priority	Topics
Highest	Behavior of Simple Functions Derivatives of Simple Functions Integrals of Simple Functions
Middle	Limiting cases Differential Equations Maximum/Minimum Problems Line and Surface Integrals Vector Operations
Lowest	Series and Sequences Polar and Other Coordinate Systems

**Spring Section Meetings**

**ALLEGHENY MOUNTAIN**

April 6-7, 2001–Penn State Altoona  
Altoona, PA

**EASTERN PA & DELAWARE**

April 21, 2001–Bloomsburg University  
Bloomsburg, PA

**ILLINOIS**

March 22-24, 2001 - University of Illinois at  
Urbana- Champaign, Urbana, IL

**INDIANA**

March 23-24, 2001 - University of India-  
napolis, Indianapolis, IN

**INTERMOUNTAIN**

April 5-7, 2001–Ricks College  
Rexburg, ID

**IOWA**

April 6-7, 2001–Drake University  
Des Moines, IA

**KANSAS**

March 30-31, 2001–Emporia State  
University, Emporia, KS

**KENTUCKY**

April 6-7, 2001–University of Kentucky  
Lexington, KY

**LOUISIANA-MISSISSIPPI**

March 23-24, 2001–University of Missis-  
sippi, Oxford, MS

**MD-DC-VA**

April 20-21, 2001–Virginia Military Institute  
Lexington, VA

**METRO. NEW YORK**

May 5, 2001–Webb Institute  
Glen Cove, NY

**MICHIGAN**

April 27-28, 2001–Hope College  
Holland, MI

**MISSOURI**

April 6-7, 2001–University of Missouri-  
Rolla  
Rolla, MO

**NEBRASKA-SOUTHEAST SOUTH DAKOTA**

March 30-31, 2001–Doane College  
Crete, NE

**NEW JERSEY**

April 21, 2001 - Rowan University,  
Glassboro, NJ

**NORTH CENTRAL**

April 6-7, 2001 –Gustavus Adolphus College  
St. Peter, MN

**NORTHEASTERN**

June 8-9,2001 - Norwich University  
Northfield, VT

**OHIO**

March 23-24, 2001–Bowling Green State  
University, Bowling Green, OH

**OKLAHOMA-ARKANSAS**

March 30-31, 2001–Oklahoma Christian  
University, Oklahoma City, OK

**PACIFIC NORTHWEST**

April 7, 2001–Seattle Pacific University  
Seattle, WA

**ROCKY MOUNTAIN**

April, 20-21, 2001–Western State College  
Gunnison, CO

**SOUTHEASTERN**

March 30-31, 2001–Huntingdon College  
Montgomery, AL

**SOUTHERN CALIFORNIA**

March 17, 2001–California State University  
Fullerton, CA

**SOUTHWESTERN**

April 6-7, 2001–New Mexico State Univer-  
sity, Las Cruces, NM

**SEAWAY**

April 6-7, 2001–SUNY at Binghamton  
Binghamton, NY

**TEXAS**

March 29-31, 2001–University of Houston-  
Clear Lake, Houston, TX

**WISCONSIN**

April 20-21, 2001–St. Norbert College  
De Pere, WI

**Looking for a Speaker?  
Some Online Resources**

People who are asked to find speakers for a meeting of one of the Sections of the MAA often wonder where to go. Several new resources are now available on MAA Online that can help with this task.

First of all, there is a list of national officers of the Association that are willing to speak at meetings at <http://www.maa.org/sections/speaker.html>. Second, one can turn to the Project NEXt Speaker Exchange, which lists NEXtTers that are willing to give talks. This list is organized by state, and each potential speaker provides the titles and levels of possible talks. You can find this information at <http://www.sienahs.edu/~trick/next/>.

Finally, there is a new site, located at <http://www.ship.edu/~deensl/maa/speakerReport.cgi>, which is designed to allow meeting organizers to pool their information and help each other. The page allows meeting organizers to enter information about speakers at their meetings and also gives access to a list of recent speakers at the various Sections.

All of this should help Section Meeting organizers continue to put together the exciting programs that have characterized such meetings throughout the Association. ■

**National Meetings**

MathFest  
Madison, WI  
August 2-4, 2001

Joint Mathematics Meetings  
San Diego, CA  
January 6-9, 2002

MathFest  
Burlington, Vermont  
August 1-3, 2002

Joint Mathematics Meetings  
Baltimore, Maryland  
January 15-18, 2003