It is traditional for the executive director to report annually on the State of the AMS. In my April report to the Council and May report to the Executive Committee and Board of Trustees, I focused on one topic—the impact on the Society of recent global economic events and the Society’s response to the new economic conditions. This report to the broader mathematics community focuses instead on major accomplishments of the AMS in 2008. Of course our response to current economic conditions also warrants some attention.

Overview

The end of 2008 marked an important turning point for the American Mathematical Society. John Ewing completed thirteen and a half years as executive director. He has been remarkably successful in his executive leadership of the AMS. The two major facets of the AMS, one as a professional membership organization and the other as a scientific publisher, have benefited greatly from his contributions. On behalf of the members, the broader mathematics community, and the volunteer leaders of the Society, I express a profound sentiment of gratitude for John Ewing's work on the Society's behalf.

2008 was a year with a number of notable accomplishments by the AMS in fulfilling its mission to further the interests of mathematics research and scholarship through its publication program, meetings and conferences, advocacy, and professional programs and services.

Journals

Publishing is central to the achievement of the AMS mission.

In 2006 the Executive Committee and Board of Trustees (ECBT) approved an increase in the number of pages published annually in the Society’s four primary journals by twenty percent over a two-year period. This was accomplished without an associated price increase. Total production and distribution costs increased, but in effect, the ECBT approved investing spendable income from long term investments for the improvement of one of the keystones of the Society’s mission, its research journals. The change was made only after a considerable amount of discussion about its possible impact on the scholarly quality of the journals and on the editorial functions.

The transition was completed in 2008 and has been a great success. The AMS is delivering twenty percent more research to the community at essentially the same cost to subscribers. Our journals are better and the mathematics community is the primary beneficiary.

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Number of Articles Published

Books

The goal of the book program is to be a “publisher of choice” for authors of the best research monographs and advanced mathematics texts. The book program published ninety-nine new books in 2008, including fifty-six monographs and forty-three proceedings. Consistent with its goal, the monographs included a number of notable titles, such as T. Tao’s Structure and Randomness; Markov Chains and Mixing Times by D. Levin, Yu. Peres, and E. Wilmer; and the first English edition of J. Hadamard’s Lessons in Geometry.

In October the AMS acquired a series of fifteen advanced mathematics texts, of which ten titles formed the foundation of a new series, AMS Pure and Applied Undergraduate Texts. An editorial board headed by Paul Sally...
was appointed to guide the growth of the series. This is in keeping with the AMS goal to expand the book publishing program in this new direction.

New international distribution agreements finalized in 2008 are having a positive impact on book sales in Europe and India.

Mathematical Reviews

Mathematical Reviews (MR) and its online version MathSciNet are in many ways the most important publications of the AMS, as they provide reviews and bibliographic information about virtually all new mathematics research. Together, they are an indispensable resource to research mathematicians worldwide. In 2008 the MR database and MathSciNet continued to expand and the information resources included with MathSciNet continued to be enriched.

In 2008 approximately 114,000 items were added to the database, a substantial increase over 2007. Foremost were the 64,000 actual reviews of research publications, bibliographic data for over 21,000 articles from statistics and computer science publications, and over 5,000 items were added from the ever-expanding Digital Mathematics Library (DML). The DML includes retro-digitized mathematics literature, some of which originated before MR was founded in 1940.

2008 also marked a year of transition for Mathematical Reviews. Kevin Clancey retired as executive editor in late fall. The Society celebrated his many contributions during his four years at MR, and welcomed Graeme Fairweather as the new executive editor.

Mathematics Research Communities

In June 2008 the AMS launched a new program of conferences focused on early career research mathematicians: Mathematics Research Communities (MRC). Its principle aim is to foster the formation of networks of mathematical scientists at the beginning of their careers. This goal is a distinguishing feature of MRC. The program is supported by a grant from the National Science Foundation.

Each MRC is organized by senior researchers around a topic of shared interest. One of the 2008 topics, for example, was Computational Algebra and Convexity. Postdocs and advanced graduate students are invited to apply for the program and are selected based on evaluation of their applications by senior organizers.

The main components of the MRC program are a one-week summer conference, a Special Session at the Joint Mathematics Meetings the following January, a mechanism to foster continuing Internet-based communications, and ongoing mentoring from senior colleagues. The initial summer conference is the cornerstone of the program. Within the broad goals of stimulating communication of each participant’s interests and forging connections, the format of each summer conference is left up to the organizers.

The inaugural MRC, held at the Snowbird Resort in Utah during the summer of 2008 and reconvened at the 2009 Joint Mathematics Meetings in Washington, was a great success. Both organizers and participants found the experience, including both the summer conference and subsequent Special Session, to be stimulating and fruitful.

Meetings

The MRC program highlighted above is part of the broad program of meetings and conferences run by the AMS. In 2008 there were eight sectional meetings, the January Joint Mathematics Meetings (JMM), and the December Joint International Meeting with the Shanghai Mathematical Society.

The January 2009 Joint Mathematics Meetings were held in Washington, DC. Over 5,500 individuals participated, a new attendance record. The meeting was very large by other measures as well, such as the number of Special Sessions and the number of speakers (over 2,000).

In 2008 the AMS launched an important new initiative: Travel Grants for Graduate Students to attend JMM. In its first year the program provided support for fifty-nine students to participate in the 2009 Joint Mathematics Meetings. The proposals for support were evaluated by a panel of volunteers. More than 250 proposals were received. The demand was great and the review process was necessarily selective. The reports and testimonials received from the students were extremely enthusiastic.

The travel grant program will be repeated in 2009 for the 2010 Joint Mathematics Meetings in San Francisco. We are working to expand this program to include other meetings and more participants and to try to continue it on an ongoing basis.

Young Scholars Programs and the Epsilon Fund

In 1999 the AMS established the Epsilon Fund to endow regular funding of independent Young Scholars Programs for mathematically talented high school students. For ten years, the fund has been generously supported by the membership and others in the mathematics community and it has been a development priority for the AMS. The income from the Epsilon Fund supports scholarships for individual students and operating costs of the funded programs.

In 2008 the fund reached an important milestone. Total funding, including funds from AMS unrestricted endowment designated by the Board of Trustees in 1999, reached US$2,000,000, the initial goal set in 1999. At this level the fund can sustain about $100,000 in grants each year. The attainment of the funding goal came sooner than anticipated in 1999, and is due to steady and enthusiastic support by contributors and a very generous contribution in 2008 from an anonymous donor.

The Epsilon Fund represents a program that has a major impact for a modest amount of spendable income. In 2008 ten programs were funded (including multi-year grants) and almost 600 talented students participated in the sponsored programs.

Advocacy

There are different dimensions to the Society’s advocacy efforts. The Washington Office is at the nexus of science-government interactions. It works with other organizations, often in a leadership role, as an advocate for
science and research. The Public Awareness Office is based in Providence and undertakes a broad array of activities aimed at different audiences, e.g., high school students, the media, and the general public, to foster a better understanding of mathematics and its importance.

Examples of activities of the Washington Office in 2008 include testimony before a Senate committee, and organizing events that promote research and advances supported by the National Science Foundation (NSF). Sam Rankin, director of the Washington Office, testified before the Senate Health, Education, Labor, and Pensions Committee about the lack of predictable, adequate funding for scientific research. Rankin also chairs the Coalition for National Science Funding (CNSF), an alliance of over 120 organizations united in support of increasing funding of the NSF’s research and education programs. In June 2008, as part of CNSF’s 14th annual exhibition for policy makers on Capitol Hill, the AMS sponsored an exhibit “Mathematics and Cardiology: Partners for the Future”, presented by Prof. Suncica Canic of the University of Houston. Hers was one of many presentations highlighting research made possible by NSF.

2008 marked the fourth year of support by the AMS for a Congressional Fellow through the program administered by the American Association for the Advancement of Science. In 2007–2008, the AMS sponsored Jeffry Phan, who worked as a legislative assistant in the office of Senator Jeff Bingham (NM), and in 2008–2009, we sponsored James Rath, who worked in the office of Rep. Ruben Hinojosa (TX). AMS support of this program has been highly effective in placing Ph.D. mathematicians in Congressional offices where they can play a valuable public policy role and bring a scientific/mathematical perspective to the formulation of legislation and the decision-making process in Congress: At the end of 2008 there were three Ph.D. mathematicians working in Congress who first went there as Fellows sponsored by the AMS.

Outreach

The AMS supports and participates in a number of activities that reach beyond the direct concerns of fostering mathematics research and scholarship in North America. We reach out to support mathematicians around the world and to groups beyond the community of research mathematicians. I would like to highlight recent outreach activities of the first type.

For many years the Society has coordinated a book and journal donation program that matches donors of mathematical publications with institutions and libraries in developing countries that need better collections of mathematics literature. The Society itself allocates significant resources to the shipping costs and to the administrative effort of the program. The actual costs have been partially supported by funds from donors, notably the Alan and Katherine Stroock Fund, in addition to AMS operating funds.

In 2008 the AMS started donating funds to the Visiting Lecturer Program of the U.S. National Committee for Mathematics (USNCM). The USNCM program provides productive interaction between mathematicians from the developed world and talented students in the developing world by sending mathematicians to teach intensive advanced undergraduate courses. In particular, AMS sponsored sending mathematicians to Cambodia to teach Real Analysis courses. Following our first sponsorship of the program in 2008, a generous donor underwrote ongoing sponsorship through 2013.

Also in 2008, the AMS started work to assure sponsorship of MathSciNet subscriptions for thirty departments in nineteen African countries. The impact of this program is potentially very great and the cost is by comparison very small. Through 2010 the program is funded by a donation to the AMS. The goal is to encourage departments and individuals, principally in the U.S, to sponsor subscriptions.

AMS Response to Economic Conditions

First the good news: The AMS is very well prepared for the current economic crisis. In response to very difficult economic conditions in the early 1980s, the AMS established and funded an Economic Stabilization Fund (ESF) with a view towards times like the present. The fund was established by the Board of Trustees in May 1980 “to make a funded provision for possible need of cash to finance the operation of some future year in which the Society may find itself short of cash.” At that time, the Society faced several years of operating losses through the early 1980s recession.

In later years the Board set a specific level at which the ESF is to be funded. Today it is maintained at the sum of 75% of annual operating expenses plus the current estimate of the obligation of the postretirement health benefit plan. The December 31, 2008, balance of the ESF was $22.9 million. The fully funded ESF is the basis for my claim that the AMS is very well prepared for the current economic crisis. We can draw on this fund if we need to. That contingency needs to be recognized, but it is not looming as an immediate near-term concern.

The Treasurer’s Report provides much more information about the impact of equity market losses on the Society’s long term investment portfolio.

More broadly, the mathematics community and the academic community as a whole have been severely affected by the precipitous economic decline in late 2008. There are two major effects: (1) state tax revenues have dropped sharply and (2) institutional endowments have suffered major declines because of the decline of equity markets.

The decline in sales tax revenues in the fourth quarter of 2008 was the worst in fifty years.1 This decline in revenues represented a rapid phase change; state tax revenues in the third quarter of 2008 were actually higher on average than in the corresponding quarter of 2007. The impact of the decline in state revenues immediately affected publicly supported academic institutions.

The losses suffered by institutional endowments have an impact like the one described in the Treasurer’s Report for the 30% decline in the Society’s long-term investment portfolio in 2008. There is less understandable income, less

From the AMS Secretary

revenue overall, and a need to find ways to close gaps in operating budgets.

The revenue shortfalls have resulted in salary freezes, hiring freezes, budget reductions for libraries, layoffs of limited term contract employees, reductions in operating budgets for departments, and reductions in support for graduate students and postdoctoral associates. All of these actions translate into greater importance of services and support from the AMS.

We are placing a very high priority on being responsive to the changed needs of the community. Our immediate responses include serious commitments to holding down costs of journal subscriptions and dues, attempts to be proactive in addressing the problems of the employment market for young mathematicians, advocacy for support of mathematics from government agencies and providing timely information to academic departments and the mathematics community as a whole.

The impact of the current recession on the academic research community is likely to be prolonged. In the recession of the early 1980s, it took three years for state tax revenues to return to their pre-recession level. In the recession of the early 1990s, it took almost five years for state tax revenues to return to pre-recession levels.2

The economic conditions will have a major influence on the focus of our services to the community for several years, but again, the Society is financially prepared to adapt and offer excellent programs for mathematicians.

—Donald McClure
Executive Director

About the Cover
San Francisco and the Golden Gate
The cover photograph cover shows San Francisco Bay and the city together with the Golden Gate. It was taken by David Eisenbud in the month of January, from a site very close to the Mathematical Sciences Research Institute on the hill above Berkeley.

David tells us, “December and January are the months when the air over San Francisco Bay is the clearest (at least if it’s not raining!), and the sunsets seem to me the most beautiful. The evening of this photograph was especially clear. In the foreground we see the Lawrence Hall of Science, and below it the University of California and the city of Berkeley, with brightly lit University Avenue stretching from the University down to the Bay. The old ferry pier, at the Berkeley Marina, points to Alcatraz Island, now an interesting tourist destination.

“On the left of the picture is the Bay Bridge, leading from Oakland to San Francisco. The Convention Center (where the Joint Mathematical Meetings will be held in January 2010*) is just behind the buildings on the other side of the Bay Bridge. In the middle of the photo is the well known bridge spanning the Golden Gate, connecting San Francisco on the south with the Marin Headlands on the north. Behind the Golden Gate, we can see the Farallon Islands, clearly visible even though 42 miles away. (Comparing the height of the viewpoint, the height of the bridge towers, and the apparent and actual height of the Farallons, one can compute the diameter of the earth; a puzzle postcard available from MSRI shows a photo making the heights and distances clear, and proposes a formula—see http://www.msri.org/globalview)

—Bill Casselman, Graphics Editor (notices-covers@ams.org)

*The 2010 Joint Mathematics Meetings will be held January 13–16, in San Francisco, California.