AMERICAN MATHEMATICAL SOCIETY
EXECUTIVE COMMITTEE AND BOARD OF TRUSTEES MEETING
MAY 15-16, 2009
PROVIDENCE, RHODE ISLAND

MINUTES

A joint meeting of the Executive Committee of the Council (EC) and the Board of Trustees (BT) was held Friday and Saturday, May 15 and 16, 2009, at the AMS Headquarters in Providence, Rhode Island.

The following members of the EC were present: George E. Andrews, Sylvain E. Cappell, Ruth M. Charney, Robert J. Daverman, James G. Glimm, and Joseph H. Silverman. Craig L. Huneke was unable to attend.

All members of the BT were present: George E. Andrews, John B. Conway, John M. Franks, Eric M. Friedlander (by phone), Linda Keen, Ronald J. Stern, Karen Vogtmann, and Carol S. Wood.

Also present were the following AMS staff members: Gary G. Brownell (Deputy Executive Director), Graeme Fairweather (Executive Editor, Mathematical Reviews), Sergei Gelfand (Publisher), Ellen H. Heiser (Assistant to the Executive Director [and recording secretary]), Elizabeth A. Huber (Associate Executive Director, Publishing), Ellen J. Maycock (Associate Executive Director, Meetings and Professional Services), Donald E. McClure (Executive Director), Constance W. Pass (Chief Financial Officer), and Samuel M. Rankin (Associate Executive Director, Washington Office).

Thomas J. Blythe (Chief Information Officer) and Joanne A. O'Meara (Development Coordinator and Assistant to the Deputy Executive Director) were present on Friday evening.

President George Andrews presided over the EC and ECBT portions of the meeting (items beginning with 0, 1, or 2). Board Chair John Conway presided over the BT portion of the meeting (items beginning with 3).

Items in these minutes occur in numerical order, which is not necessarily the order in which they were discussed at the meeting.

0 CALL TO ORDER AND ANNOUNCEMENTS

0.1 Opening of the Meeting and Introductions.

President Andrews called the meeting to order and asked those present to introduce themselves.

0.2 Housekeeping Matters.

Executive Director McClure mentioned some details about the schedule and arrangements for the events that took place during this meeting.

1I EXECUTIVE COMMITTEE INFORMATION ITEMS

1I.1 Secretariat Business by Mail. Att. #1.

Minutes of Secretariat business by mail during the months December 2008 – April 2009 are attached (#1).

2 EXECUTIVE COMMITTEE AND BOARD OF TRUSTEES ACTION/DISCUSSION ITEMS

2.1 Report on Committee on Meetings and Conferences (COMC). Att. #2.

The ECBT received the attached report (#2) on the March 14, 2009 COMC meeting. The next COMC meeting will be held March 20, 2010 at the O'Hare Hilton Hotel in Chicago.

2.2 Report on Committee on the Profession (CoProf).

The ECBT was informed that CoProf held its most recent meeting on September 13, 2008, at the O'Hare Hilton Hotel in Chicago, and a report on that meeting is included in the November 2008 ECBT minutes. The 2008 Annual Report on CoProf activities was filed with the January 2009 Council and posted on the AMS website (http://www.ams.org/ams/cprof-home.html).

The Committee selected the Society's activities on human rights of mathematicians as the topic of the 2009 review. This topic was last reviewed in 2002.

The Department of Mathematics at the University of Mississippi and the Department of Statistics at North Carolina State University received CoProf's 2009 Award for Mathematics Programs that Make a Difference.

CoProf's next meeting is scheduled for September 12, 2009, at the Chicago O'Hare Hilton.

2.3 Report on Mathematical Reviews Editorial Committee (MREC).

The ECBT was informed that MREC has not met since the last ECBT meeting. At this time, there is nothing new to report. The next meeting is scheduled for October 5, 2009 in Ann Arbor.

2.4 Report on Committee on Publications (CPub).

The ECBT was informed that CPub held its most recent meeting September 12-13, 2008, at the O'Hare Hilton in Chicago. A report on that meeting is included in the November 2008 ECBT minutes. CPub's 2008 Annual Report was filed with the January 2009 Council and posted on the AMS website (http://www.ams.org/ams/cpub-home.html).

The Committee will conduct a review of the AMS Member Journals (*Bulletin*, *Notices*, and *Abstracts*) during 2009; this topic was last reviewed in 2004.

CPub's next meeting is scheduled for September 11-12, 2009, in Chicago, Illinois.

2.5 Report on Committee on Education (COE).

The ECBT was informed that COE hosted a panel discussion at the Joint Mathematics Meetings in Washington, DC entitled "The Future of School Mathematics Education." Panelists included: Scott Baldridge, Louisiana State University; Daniel Chazan, University of Maryland; Sol Garfunkul, COMAP; and Kristin Umland, University of New Mexico.

Lawrence Gray, University of Minnesota-Twin Cities, will chair COE in 2009, and the next meeting will be held October 23-24, 2009 in Washington, DC.

2.6 Report on Committee on Science Policy (CSP). Att. #3.

Ron Stern, University of California-Irvine, is the Chair of CSP again in 2009.

CSP held a session at the Joint Mathematics Meetings in Washington, DC featuring Kei Koizumi, Director of R&D Budget and Policy Program for the American Association for the Advancement of Science (AAAS), who spoke to attendees about federal support for scientific research and development in future federal budgets.

The ECBT received the attached (#3) report on the March 6-7, 2009 CSP meeting.

2.7 Washington Office Report. Att. #4.

The ECBT received the attached report (#4) on the activities of the Washington Office.

2.8 Report on Long Range Planning Committee (LRPC).

President and LRPC Chair George Andrews reported that the LRPC met on May 15, 2009. The topics discussed were a report from the President (see the next item) and the report from the Task Force on Employment Prospects (see item 2.10).

2.9 Report from the President.

President Andrews reported on the following matters that are of particular interest to him:

- **The AMS Fellows Program Proposal**: The January 2009 Council directed that a committee be appointed and charged with recommending changes to the proposal for a Fellows Program that failed to garner enough votes for passage in the 2008 election. The Chair of the Committee is Jim Glimm. President Andrews is a member of the Committee and fully supports the revisions that have been made so far and passage of an AMS Fellows Proposal. See also item 2.17.

- **"Big tent" Issues**: President Andrews would like to see cooperation among AMS, MAA, and SIAM increased, as he views this as good for all of mathematics. The three Presidents are investigating the possibility of some sort of reciprocity membership program amongst the three organizations; as a first step, they have agreed to have a survey conducted of all of their members to gauge interest in the idea and its impact on the three organizations. President Andrews is also interested in investigating the possibility of the AMS becoming involved in the MAA summer MathFest.

- **Professional and Employment Prospects for Young People**: President Andrews would like the NSF to consider changing the way it funds mathematical research to something similar to the Natural Sciences and Engineering Research Council of Canada's model which spreads its research funds widely by issuing small grants. This is unlikely to happen, so instead President Andrews is working with Don McClure and Ellen Maycock regarding the possibility of the AMS making a proposal to NSF with regard to travel grants for young people. This would be more than what the AMS has done in the past with travel grants to the ICM and the annual Joint Mathematics Meetings – these new grants would be less targeted on specific events and would provide a much larger opportunity.

  President Andrews is also very interested in the "retraining" workshop that Jim Glimm has agreed to organize for the January 2010 Joint Mathematics Meetings. He is very much concerned about the serious question of how to get people employed and anxious to do something to help. See also item 2.10.

- **Mathematics Education**: President Andrews reported on a meeting he, Don McClure, and Ellen Maycock had at AMS on May 13, 2009 with representatives from Intel, the Vermont Mathematics Initiative, and the Massachusetts Mathematics Initiative. Intel has an 80 hour program designed for people who are currently elementary school

mathematics teachers. The purpose of the program is to strengthen and deepen teachers' math content knowledge. The basic program was designed by Ken Gross of the Vermont Mathematics Initiative (http://www.uvm.edu/~vmi) and it has been rolled out in Vermont, Massachusetts, and a few other states. There is strong evidence that students taught by teachers who went through this program do substantially better in mathematics. Now Intel is interested in rolling it out nationally. President Andrews hopes to draw the attention of mathematicians to the importance of playing a substantial role in this. He has asked Ken Gross to make a presentation at the 2010 Joint Mathematics Meetings and to write an article for the *Notices.*

2.10 Report from the Task Force on Employment Prospects. Att. #5.

In late 2008, then AMS President James Glimm appointed a Task Force on Employment Prospects chaired by Linda Keen. The goal of the Task Force is to provide information and recommendations to departments, individual job seekers, and professional societies to help them with the challenges of a difficult market. The Task Force reported to the April 2009 Council.

The final report of the Task Force (Att. # 5) was presented to the ECBT by its Chair, Linda Keen.

The ECBT received and discussed the report, focusing in on part 5, "Suggestions for the longer term." There was apparent agreement that the AMS should mount a sustained effort to assist academic mathematicians to pursue non-academic careers, rather than focusing on this issue only when an employment crisis is imminent. In particular, several ECBT members voiced support for the recommendation that the "AMS should facilitate the creation within individual mathematics departments of a faculty advising role (possibly an Associate Chair in large departments) for professional placement."

2.11 2010 Journal Pages and Prices.

The ECBT approved the numbers of pages, and the BT approved the prices, for 2010 journal subscriptions as shown in the chart on the next page. The prices reflect a 0% increase over 2009 prices.

	2010 pages[1]	**2010 list prices**
*Abstracts of Papers Presented to the AMS**	780*	$144
Bulletin of the AMS	640	$457
Conformal Geometry and Dynamics	350	$25
*Current Mathematical Publications**	4,932*	$750
Journal of the AMS	1,200	$313
*Mathematical Reviews**		
Issue pages	12,582*	
Annual index pages	7,245*	
Total MR pages	19,827*	
MR Products		
Paper		$639
MR Sections		$183
Data Access Fee		$8.314
MathSciDisc		$2,200
MathSciNet		$2,200
MathSciNet & MathSciDisc		$3,066
Mathematics of Computation	2,400	$530
Memoirs of the AMS	3,800	$709
Notices of the AMS	1,550	$488
Proceedings of the AMS	4,200	$1,161
Representation Theory	500	$25
*St. Petersburg Mathematical Journal**	1,200*	$1,881
Sugaku Expositions	240	$210
*Theory of Probability and Mathematical Statistics**	324*	$719
Transactions of the AMS	6,600	$1,905
*Transactions of the Moscow Mathematical Society**	360*	$509

[1]all pages are text pages and do not include internal blanks, front and back matter.

*the numbers of pages for these journals are not completely within the staff's control, so they are currently the staff's best estimates and were included in the version of the 2010 budget presented at this meeting.

2.12 Increase in Pages for *Memoirs*. Att. #7.

In 2008 and 2009 the Board approved a temporary increase of 600 pages for the *Memoirs* in order to address a higher than normal backlog of accepted papers.

The ECBT reviewed Att. #7 and approved staff's recommendation that the temporary 600-page increase be continued at least through the 2010 publication year.

2.13 2010 Individual Member Dues.

The process for setting individual dues for year x starts in November of year x-2 when the ECBT makes a recommendation to the Council. The Council then acts on that recommendation and sends it back to the BT for final ratification.

The January 2009 Council approved the BT's recommendation that there be a $4 increase in the individual "regular" high dues for 2010. This puts the 2010 rate at $168 for regular members in the high income category. The Council also approved the BT's recommendation that the high/low dues cutoff be raised from $80,000 to $85,000.

The BT ratified the Council's decision that there be a $4 increase in the "regular" high dues rate for 2010, and that the high/low dues cutoff be raised to $85,000.

2.14 2010 Institutional Member Dues.

In response to the economic recession and its impact on the academic community the ECBT agreed not to raise dues for institutional members for 2010.

2.15 Registration Fees for the January 2010 Joint Mathematics Meetings.

The ECBT reviewed budget summaries for the January 2010 San Francisco, California Joint Meetings and exhibits. Normally the BT provides advice to the AMS members of the Joint Meetings Committee (JMC) regarding the level of the member pre-registration fee, and then the JMC sets the fee when they meet some time during the summer. But because of scheduling conflicts this year the JMC met on April 30, 2009 (prior to the ECBT meeting), and decided on a member pre-registration fee of $220 for 2010, provided there were no objections from the AMS or MAA governing bodies. The ECBT raised no objection.

2.16 Stipend and Expense Allowance for Centennial Fellowship.

The ECBT approved awarding one Centennial Fellowship for 2010-2011 in the amount of $77,000, with an expense allowance of $7,700.

2.17 Fellows Proposal Revision. Att. #25.

The ECBT was informed that the January 2009 Council directed the President to appoint a committee charged with recommending changes to the proposal for a Fellows Program, particularly with respect to the process for naming fellows.

The Fellows Program Revision Committee (George Andrews, Susan Friedlander, and James Glimm [Chair]) met on April 24, 2009. The ECBT received their revision of the proposal (Att. #25) and noted that it will be included in the January 2010 Council agenda.

2.18 2010 ABC and ECBT Meetings.

The ECBT approved the following dates and sites for 2010 ABC and ECBT meetings:

ABC	April 9, 2010 (Friday)	by conference call
ECBT	May 21-22, 2010 (Friday-Saturday)	Providence, Rhode Island
ABC	October 15, 2010 (Friday)	Providence, Rhode Island
ECBT	November 19-20, 2010 (Friday-Saturday)	Providence, Rhode Island

It was noted that the members of the ABC in 2010 will be: Andrews, Daverman, Franks, Keen, and Wood.

2C EXECUTIVE COMMITTEE AND BOARD OF TRUSTEES CONSENT ITEMS

2C.1 November 2008 ECBT Meeting.

The ECBT approved the minutes of the meeting of the Executive Committee and Board of Trustees held November 21-22, 2008, in Providence, Rhode Island, which had been distributed separately. These minutes include:

- ECBT open minutes prepared by the Secretary of the Society (http://www.ams.org/secretary/ecbt-minutes/ecbt-minutes-1108.pdf),
- ECBT "open" executive session minutes prepared by the Secretary of the Society.

See also item 3C.1.

2C.2 Minutes of ECBT Meeting by Technical Means. Att. #11.

The ECBT approved the attached minutes of the recent ECBT "meeting by technical means" (Att. #11).

2I EXECUTIVE COMMITTEE AND BOARD OF TRUSTEES INFORMATION ITEMS

2I.1 State of the AMS. Att. #28. *McCLURE*.

The Executive Director's annual report to the spring Council is attached (#28).

2I.2 Changes in Registration Fees for Conferences, Employment Center, Mathjobs, and Short Course. Att. #12.

The Executive Director is authorized to make changes in registration fees for conferences, the Employment Center and Short Courses held at the Joint Mathematics Meetings, and MathJobs.org.

Att. #12 reports the changes authorized since the last ECBT meeting.

2I.3 AMS Presence at the Annual Meeting of SACNAS. Att. #13.

The AMS has provided $5,000 toward support of the mathematics program at the annual national meetings of the Society for Advancement of Chicanos and Native Americans in Science (SACNAS). Public Awareness Officers Annette Emerson and Mike Breen represented the AMS at the most recent meeting held October 9 - 12, 2008, in Salt Lake City, Utah. There was also a session of the game, "Who Wants to be a Mathematician," that was very popular. Att. #13 is a report on the mathematically-related activities at this meeting.

SACNAS has shown itself to be highly effective at nurturing talented undergraduates from within their target communities to successful completion of graduate degrees in science and mathematics. AMS's continuing support for and presence at the SACNAS national meetings has enabled it to build strong ties within this community of scholars committed to excellence.

2I.4 Epsilon Fund Grants. Att. #14.

In 1999, the Epsilon Fund was created by the Society to provide support for the Young Scholars Program. The Program awards grants, which support student scholarships and program operating costs, to selected summer programs for mathematically talented high school students. This year, the Young Scholars Awards Committee evaluated eight applications for support from the Epsilon Fund, and recommended funding all of them in addition to the two programs that received two-years of funding last year. The members of the Committee are: David Ferguson (Chair), Irwin Kra, Sergei Tabachnikov and Jeremy Teitelbaum. A list of the programs funded for summer 2009 is attached (#14).

2I.5 Report on AAAS Meeting. Att. #15.

A report on the AMS-supported activities at the 2009 annual meeting of the American Association for the Advancement of Science (AAAS) is attached (#15).

2I.6 2009-2010 AMS Centennial Fellowships.

The AMS Centennial Fellowship Committee has announced that Antonio Montalban (University of Chicago) is the winner of the 2009 Fellowship competition. Montalban has accepted the award. The amount of this Fellowship for 2009-2010 is $75,000, with an additional expense allowance of $7,500.

2I.7 AAAS-AMS Mass Media Fellowship.

The AMS will sponsor Baldur Hedinsson as its 2009 Mass Media Fellow. Baldur is a graduate student in mathematics at Boston University and will work at the *Milwaukee Journal Sentinel* this summer.

The Mass Media Fellowship program is organized by the American Association for the Advancement of Science (AAAS) and is intended to strengthen the connections between science and the media, to improve public understanding of science, and to sharpen the ability of the fellows to communicate complex scientific issues to non-specialists. It is a 10-week summer program that places graduate and post-graduate level science, engineering and mathematics students at media organizations nationwide.

An announcement of the AMS Mass Media Fellow for 2009 will be made in the *Notices* and posted on the AMS website.

2I.8 Congressional Fellow.

The AMS has chosen Katherine D. Crowley as its 2009-2010 Congressional Fellow. Katherine earned her Ph.D. in Mathematics from Rice University after completing her thesis entitled *Discrete Morse Theory and the Geometry of Nonpositively Curved Simplicial Complexes*. She is currently working as an assistant professor of mathematics at Washington and Lee University in Lexington, Virginia.

The AMS will sponsor Katherine's fellowship through the Congressional Fellowship program administered by the American Association for the Advancement of Science (AAAS). Fellows spend a year working on the staff of a Member of Congress or a congressional committee, working as a special legislative assistant in legislative and policy areas requiring scientific and technical input.

An announcement of the new Congressional Fellow is on the AMS website and will appear in the *Notices* in a future issue.

2I.9 Report on the Information Architecture Project for the AMS Website. Att. #16.

Att. #16 contains a report on the project to develop a new Information Architecture for the AMS Website.

3 BOARD OF TRUSTEES ACTION/DISCUSSION ITEMS

3.1 Financial Review.

3.1.1 Discussion of Fiscal Reports.

The BT received and discussed various fiscal reports. Approval of the 2010 budget will be requested at the November 2009 ECBT meeting.

3.1.2 Longer-range Budget Planning.

The BT received and discussed a memo from the Chief Financial Officer on 2008 actual results and the 2010 preliminary revenue budget. The memo also included some information about revenue projections for 2011 and later years, highlighting the effect over time of the current economic conditions on spendable income from unrestricted long-term investments, as well as other factors affecting revenues.

The BT also received and discussed a report from the Executive Director focusing on the effects of the current economic conditions on the AMS (Att. #28).

3.1.3 Capital Expenditures – 2008 and 2009 Capital Purchase Plans.

Capital purchases in 2008 totaled approximately $1,046,000, of which approximately $262,000 related to 2007 capital projects completed early in 2008. The amount budgeted solely for 2008 projects was $1,222,300, of which approximately $438,300 remained unexpended. Projects deferred until 2009 include the virtual server environment (approximately $110,000), a new address printer (approximately $15,000), website content management software (approximately $20,000), overhead lighting (approximately $36,000, net of rebates from National Grid) and the final planned upgrades to Providence heating-ventilation-air conditioning equipment (approximately $60,000).

Capital purchases include $418,290 related to the financial software purchase and implementation (see item 3.7 for further information on this project).

The 2009 Capital Plan does not include the purchase of Association Management Software, as this is not expected to be placed in service until sometime in 2010, although payments and implementation will begin in 2009. See the following item regarding approval of the Board of Trustee minutes that approved this purchase.

3.1.4 Capital Expenditures - Approval of Specific Purchases. **Att. #17.**

The Board of Trustees approved the attached minutes of the meetings held by technical means regarding the following two purchases (Att. #17):

- The purchase of Association Management software – Personify from TMA Resources, for a total estimated cost of $1,052,000.

- The purchase of computing hardware and software for the virtual server computing environment project at a total estimated cost of $118,122.

3.2 Spendable Income, Operations Support Fund and Other Related Items. Att. #18.

The Society uses its long-term investments for several purposes, and for that reason it divides its investments into various funds. The following five standing items deal with those funds – additions, transfers and spending.

The description of the way in which the AMS uses its long-term investment portfolio is summarized in the diagram in Att. #18, which has labels showing how the five parts of Item 3.2 are connected to the process.

3.2.1 Addition to Operations Support Fund (OSF).

At its November meeting, the Board approved the staff recommendation that the amount owed to operations from the long-term investment portfolio at December 31, 2008 be used first to fulfill the obligation to maintain the value of true endowment funds at their original gift amount. Any remaining operating funds in the long-term investment portfolio would remain there and be officially added to the OSF. The total amount was $731,846 at December 31, 2008, of which $615,140 was used to maintain the original gift value of true endowment funds and $116,706 was added to the OSF.

At December 31, 2008 the Society's current assets totaled approximately $23,237,000 and its current liabilities totaled approximately $17,347,000, resulting in a current ratio of 1.34 to 1, and an adjusted current ratio (deferred revenue removed from both the numerator and denominator) of 2.53 to 1. It is expected that the cash inflow in the latter part of 2009 from renewals of 2010 memberships and subscriptions will be lower than previously experienced due to the continuing severe economic recession. However, the operating portfolio (money market funds, certificates of deposit and intermediate investments consisting mainly of domestic bond mutual funds) will remain well-funded throughout 2009 and 2010. It will be capable of meeting the cash flow needs of the Society in both years, including the significant planned capital acquisitions such as the association management software, and still maintain a solid base for 2011 before that year's cash inflows occur.

If $2,000,000 were transferred from operations to the long-term investment portfolio as part of the asset allocation rebalancing as of December 31, 2008, the current and adjusted current ratios would decrease to just slightly under 1 to 1 and 2 to 1, respectively. These revised ratios remain strong financial stability indicators and indicate the Society's ability to continue to operate in the normal course of its business operations. Further, the current ratio and adjusted current ratio continue to meet established operating targets.

The BT approved the Chief Financial Officer's recommendation that $2,000,000 be transferred from operations to the long-term portfolio for the account of the OSF, and be invested (equally) in the Fidelity and Vanguard Total Market domestic equity funds, per the recommendation of the Investment Committee (see item 3.5).

3.2.2 Rebalancing of Economic Stabilization and Operations Support Funds.

Under the policy adopted by the Board of Trustees at its May 2006 meeting, at the end of each fiscal year the allocated values of the Economic Stabilization Fund (ESF) and the Operations Support Fund (OSF) are rebalanced such that the ESF always equals the target balance.

The amount and direction of the rebalancing required at each year end is principally dependent upon the return on the long-term investment portfolio. The BT was informed that, because of the significant portfolio losses experienced in 2008 (29.48%), the OSF was required to transfer approximately $7,880,900 to the ESF at December 31, 2008.

3.2.3 Allocation of Operations Support Fund (OSF) Spendable Income.

The May 2001 Board of Trustees approved the following (from item 2E.5):

> *Income from reserves should be allocated to each year's budget to service and outreach programs of the Society (without specifying exactly which programs). The total amount should be approved by the May ECBT, when revenue projections for the following year are made.*

The income from the OSF for 2009 and 2010, determined according to the guidelines approved by the BT are $1,399,500 and $1,451,100, respectively. The 2009 amount had been previously approved. The small increase for 2010 initially appears odd in the face of the significant portfolio losses in 2008 and the large rebalancing transfer from the OSF to the ESF required at the end of 2008. However, the balance in the OSF at the end of 2008 is higher than it was at the end of 2004 (prior to the rebalancing requirement), which accounts for the small increase over the period. 2011 will be the first year the effects of the significant economic recession affect the spendable income from the OSF, assuming no significant recovery in portfolio value by the end of 2009.

It was noted that the balances in the OSF for the base years are not normalized for additions and withdrawals for the purpose of calculating the spendable income (as is done for the true endowment funds).

The BT approved the Chief Financial Officer's recommendation that the amount of $1,451,100 be designated as OSF spendable income for 2010.

3.2.4 Appropriation of Spendable Income from Unrestricted Endowment.

The May 2001 Board of Trustees approved the following (from item 2E.5):

> *Each year, the budgeting process will include recommendations for allocating spendable income from the Unrestricted Endowment for specific projects. The allocated income will be treated as revenue for operations, offsetting (part of) the expenses. These recommendations will be brought to the Board for approval at its November meeting in the normal budgeting process. The goal will not be to use all the income from such funds each year, but rather to use some of the income every year for the support of mathematical research and scholarship. Using such income should be a regular part of our operations rather than an exceptional situation.*

The BT was informed that the 2010 preliminary revenue budget includes the full amount that could be used this way if appropriate uses are identified and approved at the November 2009 ECBT meeting. The amounts budgeted for 2008, 2009 and 2010 are $311,000, $277,000 and $272,200, respectively.

3.2.5 Report on Changes in Appropriated Spendable Income.

The Executive Director has the authority to transfer spendable income that will not be used on an approved project to another approved project, in case additional support is needed. A report of any such changes is to be made at the next ECBT meeting.

It was reported that no such transfers had been made since the November 2008 ECBT meeting.

3.3 Accounting Change in 2008.

The Uniform Prudent Management of Institutional Funds Act (UPMIFA) became effective for District of Columbia corporations in 2008, as did the recently adopted Financial Accounting Standards Board (FASB) Staff Position (FSP) 117-1. The possible effects on the Society's financial statements of these two events were discussed at the May 2008 ECBT meeting.

Prior to the adoption of UPMIFA and the FSP, the amount classified as permanently restricted net assets in the Society's financial statements was solely the cumulative original gift amount from donors to each of the true endowment funds. It was anticipated that the combined effects of UPMIFA and the FSP would require the Society to classify as permanently restricted net assets an amount equal to the estimated purchasing power value of the original gifts, which would result in a permanently restricted net asset balance of over $10,000,000, using the average annual increases in the Consumer Price Index as the measure of purchasing power from date of

gift to December 31, 2008. This would also result in an unfunded amount (lack of sufficient long-term investments) of almost $3,000,000 at December 31, 2008.

However, classifying the purchasing power value of the true endowment funds as permanently restricted net assets is not the only interpretation available to the Society in order to remain in compliance with the legal and accounting requirements. The Society may interpret the law, absent any regulatory or case law guidance (which is the situation at hand), as requiring the maintenance of the fair value of the endowment gift as of the date of the original gift. This is the interpretation adopted by most non-for-profits in the Society's situation and is the recommendation of the Society's independent audit firm.

Under the fair value interpretation, there is no change to the way in which the Society has been accounting for permanently restricted net assets. Permanently restricted net assets continues to consist of the original gift amounts from donors to the true endowment funds, the original gift amounts of any subsequent gifts, and any additions required by the gift instruments (of which there are none for the Society's true endowment funds to date). Additionally, the requirement to maintain permanently restricted net assets at this level is retained, so that transfers from unrestricted net assets are necessary in those years when the underlying investments suffer significant losses and recently-created true endowment funds' values fall below their original gift amounts. The amounts so transferred can continue to be recovered by unrestricted net assets when the permanently restricted funds recover in value.

However, temporarily restricted net assets significantly increase under UPMIFA and FSP 117-1, as this category of net assets now includes the accretion in value over the original gift amount related to those true endowment funds whose use of income is unrestricted by the donors. This accretion had been included in unrestricted net assets under previous law and accounting guidance. The effect of this change is to increase temporarily restricted net assets, and decrease unrestricted net assets, by slightly over $5,000,000 at January 1, 2008. Use of this accretion to support operations is accomplished via Board appropriation of spendable income from these income-unrestricted true endowment funds for support of specific projects (see item 3.2.4), and will be reclassified from temporarily restricted to unrestricted net assets as the expenses are incurred via spendable income.

The fair value interpretation of UPMIFA retains the current flexibility in determining investment goals, investment allocations to meet those goals and spending rate policy to meet donors' wishes to provide support for the Society, all within the standards of prudence established in the new law.

The BT approved the Chief Financial Officer's recommendation to formally adopt the use of the fair value of the original true endowment gifts as of the date of those gifts as the Society's interpretation of the amount that must be retained in perpetuity and therefore classified as permanently restricted net assets under the version of UPMIFA as adopted by the Council of the District of Columbia, effective January 1, 2008.

3.4 Audit Committee. Att. #29.

Audit Committee Chair John Franks reported that the Committee met on May 15, 2009 with Charlene Sweeney, Senior Manager, from the auditing firm of KPMG LLP, to hear a report on the 2008 audit and to review the audited financial statements for the years ended December 31, 2008 and 2007 (drafts of these documents had been provided separately prior to the meeting to all members of the BT). Several other BT and staff members attended part of the meeting, and the Committee also met privately with Ms. Sweeney.

Upon recommendation of the Audit Committee, the BT voted to accept the draft audited financial statements for the years ended December 31, 2008 and 2007 and delegated to management final resolution of minor edits and issuance of the final statements. The final statements are attached (#29).

3.5 Investment Committee. Att. #19.

In January, the Investment Committee met by conference call to consider rebalancing the long-term investment portfolio. The minutes of that meeting are attached (#19).

The rebalancing assumed the transfer from operations of $2,000,000 (see item 3.2.1). Because that transfer required BT approval, the rebalancing was planned in two steps:

1. Rebalancing within the portfolio (now complete).
2. The transfer of $2,000,000 to be invested in domestic equities, subject to BT approval of the transfer.

The table below shows the March 2009 balances and their allocation percentages (rebalancing within the portfolio was done earlier). It also shows the $2,000,000 addition and the final adjusted allocation percentages. The contemplated addition will move everything closer to the targets except for alternatives.

	Target Allocation	Mar 2009 Balance	Mar 2009 %	Addition	Adjusted Balance	Adjusted %	Policy Ranges
Total Equities	75.00%	$34,783	72.86%	$2,000	$36,783	73.95%	65% - 85% of total
Foreign Equities	20.0% of equities	$7,108	20.44%		$7,108	19.32%	Up to 25% of equities
Fixed Income	20.00%	$11,020	23.08%		$11,020	22.15%	15% to 25% of total
Alternatives	5.00%	$1,938	4.06%		$1,938	3.90%	Up to 10% of total
Total		$47,741		$2,000	$49,741		

The Investment Committee met on May 15, 2009. The BT approved the Investment Committee's recommendation that the following rebalancing strategy be adopted:

- Frequency of rebalancing: Compliance with the portfolio's asset policy should be monitored monthly. Ordinarily, the Investment Committee shall determine necessary rebalancing actions at its regularly scheduled meetings and take appropriate actions (such actions could be a recommendation to the Board of Trustees, instructions to staff regarding internal portfolio transfers to execute, or a combination of both).
- Threshold: The portfolio should be rebalanced when total equities or fixed income falls outside of its allocation policy.
- Rebalancing target: The Investment Committee's rebalancing guidelines should be:
    - Total equities should be rebalanced to the midpoint of its allocation range (75% based on current policy).
    - Foreign equities should be rebalanced to 5% below its maximum.
    - Fixed income should be rebalanced to the midpoint of its allocation range (20% based on current policy).
    - Alternative investment should be rebalanced to 5% below its maximum.
- The rebalancing strategy should be reviewed at the same five-year interval as the asset allocation policy.

3.6 Cash Management and the Operating Portfolio. Att. #20.

The BT received the attached report (#20) summarizing the Society's cash management policies and short-term investment performance during 2008.

3.7 Report on Financial Software Implementation. Att. #21.

The BT received the attached report (#21) on the current status of the financial software implementation project.

Recent communications with Epicor were also discussed in closed executive session; see the minutes of that session prepared separately by the Secretary of the Board.

3.8 Report on Association Management Software Implementation. Att. #22.

The BT received the attached report (#22) on the project to implement the Personify association management system software at the Society.

3.9 Annual Reports on Divisions. Att. #23.

Section VI (Report on Projects and Activities) of the 2008 Operating Plan was made available to BT (and EC) members separately prior to the meeting. This final section provides a brief overview of the division, reporting on the status of certain activities that were planned for 2008 and summarizing budgetary implications.

In addition, Division Directors consulted with their liaison trustee(s) by conference call and then prepared the attached reports highlighting 2008 activities (Att. #23). The attachment also includes the current Trustee liaison assignments.

Now that the 2008 Operating Plan is complete, a copy of it is attached to the paper record copies of these minutes (Att. #30).

3.10 Meeting of the Mathematical Reviews Corporation.

In 1983, when the building that currently houses Mathematical Reviews was purchased, a Michigan non-profit corporation was formed in order to obtain exemption from local property taxes in Ann Arbor and from sales and use taxes in Michigan. In order to maintain these exemptions, the corporation ("Mathematical Reviews") must be maintained by holding an annual meeting at which the Officers and Directors of the corporation are elected.

The AMS Board of Trustees meeting was therefore temporarily adjourned, and the AMS Trustees convened as the Board of Directors of the Mathematical Reviews Corporation.

The Board of Directors of the Mathematical Reviews Corporation elected the following officers:

President of the Corporation:	John B. Conway
Treasurer of the Corporation:	John M. Franks
Secretary of the Corporation:	Karen Vogtmann
Directors of the Corporation:	George E. Andrews
	Eric Friedlander
	Ronald J. Stern
	Carol S. Wood

The meeting of the Board of Directors of the Mathematical Reviews Corporation then adjourned and the meeting of the AMS Board of Trustees reconvened.

3C BOARD OF TRUSTEES
CONSENT ITEMS

3C.1 November 2008 BT Closed Executive Session Meeting.

The BT approved the minutes of the closed executive session meeting of the Board of Trustees held November 22, 2008, in Providence, Rhode Island, which had been distributed separately.

3C.2 Procedures for the Appeals for Discounted Subscriptions.

The BT approved the continued use of the following guidelines for 2010, which staff follow in responding to appeals for discounted subscriptions:

- Minimum price for MR Data Access Fee (DAF) of $200 applicable to institutions in countries found in the two poorest categories in the World Bank country listing. Staff can provide this level of discount even if the country does not have a national DAF.
- The discounted price for MR DAF for domestic institutions would not be lower than the greater of 40% of a list price DAF or 40% of the institution's mathematical sciences serials budget, not to exceed regular list price for a DAF.
- The discounted price for MR DAF for non-domestic institutions not included in the first category above would not be lower than 40% of a DAF. To the extent possible, information about serials budgets would also be collected, and, if desired, staff would provide information on publishing activity at the institution.
- For MR derived products, allowable prices would be regular list price for paper, 50% of list for MathSciDisc (provided SilverPlatter goes along), and lowest published price for MathSciNet.
- For other AMS journals, the lowest allowable price would be marginal cost, applicable to the most desperate cases.

3C.3 Resolutions for Retirees.

The BT approved the following proclamation for the employees noted who retired in 2009:

Grace Fredkin	18 years
Judith Mosteiro	21 years
Nancy Rousseau	24 years

Be it resolved that the Trustees accept the retirement of _____ with deep appreciation for her faithful service over a period of _____ years. The Board expresses its profound gratitude for this long record of faithful service. It is through the dedication and service of its employees that the Society is able to effectively serve its members and the greater mathematical community. The Trustees offer _____ their special thanks and heartfelt good wishes for a happy and well-deserved retirement.

3I BOARD OF TRUSTEES INFORMATION ITEMS

3I.1 Change in Fringe Benefits.

The Executive Director is authorized to approve changes in benefit plans, except for those changes which would significantly enhance or degrade the Society's financial health or relations with its employees. Such changes are to be reported to the Board of Trustees as information items when appropriate.

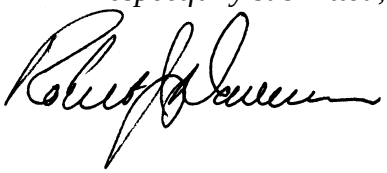
Effective March 1, 2008 the Society implemented a change in the medical plan offered to RI and DC staff. Moving from a fully-insured medical plan with a $250 deductible to a high-

deductible medical plan with the Society reimbursing participants for eligible services, enabled the Society to provide high-quality coverage while achieving significant savings for both employees and the Society. Had the Society continued with the fully-insured medical plan for 2008, premiums would have increased 11.91% for both employees and the Society. Instead employees saw a 27.31% decrease in their cost for the medical plan. When expenses for utilizing a third-party administrator (TPA) to administer the AMS Reimbursement Plan are combined with the Society's portion of the premium for the high-deductible medical plan, the cost to the Society to provide this benefit rose by only 1.28% for 2008. This is a savings of over $80,000 and in the range of the $60,000-$100,000 savings projected when the decision was made to implement the plan.

For the plan year beginning March 1, 2009, health insurance for DC and RI staff is being provided by TUFTS HealthPlan. Blue Cross/Blue Shield of Rhode Island's 2009 rates were set to increase 9.43%. The change to TUFTS resulted in a savings of 9.70% for the fully-insured high-deductible plan, with 2009 premiums decreasing 0.27% from 2008 levels. Although costs to the Society to administer the AMS Reimbursement Plan in 2009 will increase, the increase is expected to be far lower than what would have been experienced if the fully insured medical plan had been maintained. Had we not moved to the high-deductible medical plan in 2008, we would be facing a 14.77% increase for 2009 on top of the 11.91% increase for 2008.

With over a full year of detailed claims data we will be able to more closely align the plan design to meet the needs of participants and the Society while controlling the future cost of providing this benefit.

Respectfully submitted,



Robert J. Daverman, Secretary
Knoxville, Tennessee
June 2, 2009

AMERICAN MATHEMATICAL SOCIETY

312D Ayres Hall, University of Tennessee
Knoxville, TN 37996-1330 USA
Phone: 865-974-6900 Fax: 865-974-2892
www.ams.org

Robert J. Daverman, Secretary
Email: daverman@math.utk.edu

SECRETARIAT
Business by Mail
December 1, 2008

MINUTES
from the Ballot dated November 3, 2008

There were five votes cast by Robert Daverman, Susan Friedlander, Michel Lapidus, Matthew Miller and Lesley Sibner.

1. Approved electing to membership the individuals named on the list dated October 20, 2008.

2. Approved holding an Eastern Sectional AMS meeting at College of the Holy Cross, in Worcester, Massachusetts, on April 9-10, 2011.

3. Approved the minutes of the Secretariat Business by Mail from the ballot dated October 1, 2008.

Robert J. Daverman

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Email: daverman@math.utk.edu

SECRETARIAT
Business by Mail
January 2, 2009

MINUTES
from the Ballot dated December 1, 2008

There were five votes cast by Robert Daverman, Susan Friedlander, Michel Lapidus, Lesley Sibner and Matthew Miller.

1. Approved electing to membership the individuals named on the list dated November 20, 2008.

2. Approved holding an AMS Eastern Sectional Meeting at Syracuse University in Syracuse, NY, on October 2-3, 2010.

3. Approved changing the dates of the Central Sectional Meeting at the University of Notre Dame (Notre Dame, Indiana) from Sept 18-19, 2010, to October 29-31, 2010. (This will avoid an overlap with Yom Kippur.)

4. Approved JACKSON STATE UNIV, Jackson, Mississippi 39217 for Institutional membership.

5 Approved the minutes of the Secretariat Business by Mail from the ballot dated November 3, 2008.

Robert J. Daverman

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Email: daverman@math.utk.edu

SECRETARIAT
Business by Mail
February 2, 2009

MINUTES
from the Ballot dated January 2, 2009

There were five votes cast by Robert Daverman, Susan Friedlander, Michel Lapidus, Lesley Sibner and Matthew Miller.

1. Approved electing to membership the individuals named on the list dated December 20, 2008.

2. Approved co-sponsoring the First International Conference on Mathematics and Statistics, to be held March 18-21, 2010, at the American University of Sharjah (United Arab Emirates). The organizers have agreed (enthusiastically) to having an AMS representative on the Program Committee. The conference proposal is attached.

3. Approved the minutes of the Secretariat Business by Mail from the ballot dated December 1, 2008.

Robert Daverman

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AMERICAN MATHEMATICAL SOCIETY

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Robert J. Daverman, Secretary
Email: daverman@math.utk.edu

SECRETARIAT
Business by Mail
March 2, 2009

MINUTES
from the Ballot dated February 2, 2009

There were five votes cast by Robert Daverman, Susan Friedlander, Michel Lapidus, Matthew Miller and Steven Weintraub.

1. Approved electing to membership the individuals named on the list dated January 20, 2009.

2. Approved holding an AMS Council Meeting on Tuesday, 04 January 2011, at the Joint Mathematics Meetings in New Orleans.

3. Approved holding an AMS Council meeting in Chicago, Illinois, on April 24, 2010

4. Approved a proposal from the University of Iowa to hold the Central section meeting in the Spring, 2011 on Friday—Sunday, March 18-20, 2011.

5. Approved the minutes of the Secretariat Business by Mail from the ballot dated January 2, 2009.

Robert Daverman

AMS
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Email: daverman@math.utk.edu

SECRETARIAT
Business by Mail
April 1, 2009

MINUTES
from the Ballot dated March 2, 2009

There were five votes cast by Robert Daverman, Susan Friedlander, Michel Lapidus, Matthew Miller and Steven Weintraub.

1. Approved electing to membership the individuals named on the list dated February 20, 2009.

2. Approved the minutes of the Secretariat Business by Mail from the ballot dated February 2, 2009.

Robert J. Daverman

AMS Committee on Meetings and Conferences (COMC)

Highlights of 2009 Meeting (March 14, 2009)

The Committee on Meetings and Conferences (CoMC) held its annual meeting on March 14, 2004, at the AMS Headquarters in Providence, RI. Katherine St. John, chair, presided over the meeting

Introductory items. The meeting began with a round of introductions. Time was then devoted to discussing the components that play roles in AMS meetings: the Secretariat, the Meetings and Conferences Department, and CoMC. Committee members' questions were answered by the Secretary Bob Daverman, Associate Secretary Matthew Miller and AMS staff members AED Ellen Maycock, Director of Meetings Penny Pina and Conference Coordinator Donna Salter.

Report of the Secretariat. Bob Daverman gave a report on the March 13, 2009 Secretariat meeting.

- The Secretariat reviewed the International Meetings: South Korea on December 16 – 20, 2009 (considered as the 2010 meeting), and Chile in late 2010 (considered as the 2011 meeting). A Joint AMS-SMM Meeting will be held at Berkeley on June 2 – 5, 2010. The 2009 Erdős Lecture was given by Jeffrey Lagarias at the University of Illinois, Urbana-Champaign, on March 28, 2009. The next Erdős Lecture will be held at the University of Kentucky in March 2010.
- The 2009 Einstein Public Lecture was held at North Carolina State University in Raleigh, North Carolina, on April 4, 2009. The speaker was Michael Waterman. Terrance Tao has agreed to do the 2010 Lecture in Los Angeles, at the Sectional meeting to be held at UCLA October 9 – 10, 2010.
- The Secretariat requested suggestions of names for upcoming Einstein Lectures.
- The Secretariat agreed that abstracts that were determined to have been plagiarized will not be published, and the plagiarism will be reported to the author of the original article, who may or may not take action through COPE.

Report on the Subcommittee to Review Co-sponsorship of Meetings and Conferences of Other Organizations. The subcommittee, composed of Aloysius (Loek) Helminck, Michel Lapidus, Ann Trenk and Carol Wood (Chair), recommended that the AMS co-sponsorship be renamed "in cooperation with the AMS" and that the AMS post a list of guidelines about the program. CoMC approved this recommendation. The guidelines will be written by Loek Helminck, Michel Lapidus, Matt Miller and Ann Trenk, in consultation with Bob Daverman. After CoMC approves the guidelines, the proposal will be taken to the Council for consideration.

Report on the Subcommittee to Review Special Lectures, Special Projects and Short Courses. The subcommittee, composed of Skip Garibaldi, Irena Peeva, Katherine St. John, in consultation with Bob Daverman, considered the following special lectures: Colloquium Lectures and the Gibbs Lectures at the Joint Mathematics Meetings, the Erdős Lectures and the

Einstein Lectures held at Sectional meetings and the Arnold Ross Lectures held independently at science museums around the U.S. The subcommittee recommended that the AMS explore ways to videotape these special lectures, in order for them to be easily available online. There were also some specific suggestions on how to obtain more contacts for the audiences of the Arnold Ross Lectures.

The subcommittee also considered two special projects of the AMS that had not been reviewed before: the Current Events Bulletin and the game "Who Wants to be a Mathematician". The subcommittee noted that the attendance at the Current Events Bulletin was low, given that the talks should appeal to many audiences. However, CoMC recognized that this is a continuing issue at the JMM, where there are many events scheduled during the same time period. CoMC asked that the selection committee for the Current Events Bulletin be reminded of the AMS diversity policy.

Finally, the subcommittee considered the AMS Short Courses offered at the JMM. The subcommittee proposed that the AMS offer two Short Courses each year, one on an applied mathematics topic and one on a pure mathematics topic. CoMC recognized that this may not be possible, given space and financial restrictions.

CoMC accepted the report of the subcommittee.

Report on the Washington, D.C. Focus Group. Catherine Roberts, who had chaired the Focus Group at the 2009 JMM, presented the ideas that had been discussed during that breakfast. CoMC will host a Focus Group on Thursday, January 14, 2010 in San Francisco, CA. David Meredith will chair the focus group.

Washington, D.C. Questionnaire. The responses from the Washington, D.C. questionnaire were reviewed. Once again, the AMS used an electronic survey form, and sent email to all participants after the meeting with a link to the survey. Over 1600 participants responded to the survey.

Update on Mathematics Research Communities. Ellen Maycock reported that the first MRC conferences were successfully held in the summer of 2008 in Snowbird, Utah. Participants from the three conferences gathered at the 2009 Joint Mathematics Meetings and attended Special Sessions that were planned by a few of the participants. The conferences for 2009 were announced, as well as the call for organizers for summer 2010.

Retraining Workshops for Young Mathematicians. Because of the current difficult job market, young mathematicians might do well to consider employment outside of the traditional mathematical sciences in academia. George Andrews reported on such a program that is to be offered at the Fields Institute in the early summer of 2009. He asked that CoMC consider whether the AMS should offer this type of workshop, given the difficult employment market in academia. This idea generated considerable discussion among committee members. CoMC agreed that the tutorial that was planned but not offered on the day before the 2009 JMM was a good idea, and encouraged the AMS to offer the tutorial at the 2010 JMM. The committee liked

the suggestion that graduate directors should have some additional training concerning non-academic employment, and suggested using the Focus Group for Directors of Graduate Studies for this. CoMC members also suggested that the AMS consider a 2-hour "job fair" at the JMM. Staff members will investigate the feasibility of the various suggestions.

Review of Selected Activities for 2010. For the 2010 meeting, the topic to be reviewed will be the AMS conference program and institutes. Skip Garibaldi volunteered to be on the subcommittee.

2010 CoMC Meeting. The committee approved the suggested date of March 20, 2010 for its next meeting, to be held at the O'Hare Hilton Hotel in Chicago.

Ellen J. Maycock
Associate Executive Director
April 9, 2009

American Mathematical Society
Committee on Science Policy Meeting
March 6-7, 2009
Washington, DC

Summary Report

The 2009 Committee on Science Policy (CSP) meeting included discussions about getting involved in the legislative process and grassroots advocacy, the outlook for future science funding, mathematics and biomedical research, NSF-DMS budget and award information, the role of mathematics in cybersecurity, and building constructive international science partnerships.

Highlights from Presentations:

Representative Jerry McNerney (CA-11-D)
U.S. House of Representatives
Congressman McNerney gave meeting attendees information about his background in mathematics and business and about his decision to run for Congress. He encouraged all attendees to get involved in the legislative process, to forge relationships with their Congressional representatives and to work toward increasing the federal investment in science. He outlined what language resonates with elected officials and what may sway them to a particular point of view. He also encouraged support for politicians that are aligned with one's own interest.

Peter March
Director, Division of Mathematical Sciences
National Science Foundation
Peter March began by presenting budget and award information for the Division of Mathematical Sciences (DMS) over the past several years. He then summarized three new initiatives at DMS for FY2009, including: Proactive Recruitment in Introductory Science and Mathematics (PRISM), which focuses on partnerships that will attract freshmen and sophomores to STEM disciplines; CHE-DMR-DMS Solar Energy Institute (SOLAR), which is an interdisciplinary approach to solar energy; and DMS/DTRA (Defense Threat Reduction Agency) activity in data and algorithms, which will help in the detection of chemical and biological materials.

March then discussed the DMS effort to increase the number of workshops and reports that the mathematical sciences community engages in. He stressed that information from the research community must be disbursed to the wider community with enough frequency and depth as to convey an understanding of what is happening in the mathematical sciences.

March also talked about the new Administration's desire to increase the number of graduate research fellowships (GRF). He pointed out that GRFs are awarded by discipline in proportion to the number of proposals received, so the mathematics community should submit more proposals in order to reap more GRFs for the mathematical sciences.

John Whitmarsh
Special Assistant to the Director, National Institute of General Medical Science,
National Institutes of Health
John Whitmarsh first gave attendees some background information on the National Institute of Health (NIH) and the National Institute of General Medical Science (NIGMS) and then discussed how interdisciplinary teams are becoming crucial to the changing world of biological and biomedical research.

Whitmarsh discussed funding opportunities to support research in mathematical biology, including a joint NSF/NIGMS Mathematical Biology Initiative. This initiative began in 2002 and has funded over 120 investigators at a typical funding level of $1.0 to 1.5M per grant. He also gave some examples of research projects under this initiative. Other funding opportunities discussed included Investigator Initiated Research Grants (e.g. RO1s) and supplements to ongoing research projects.

Walt Polansky
Cyber Security Advisor, Advanced Scientific Computing Research,
U.S. Department of Energy
There are three major mission components at the U.S. Department of Energy (DOE): energy security, nuclear security and scientific discovery and innovation. The agency's Office of Science, which includes Advanced Scientific Computing Research (ASCR) as one of its six interdisciplinary research offices, is focused on scientific discovery and innovation.

Walt Polansky discussed the vision of ASCR, its budget and its facilities and research program strategies. He presented a snapshot of three of its major FY2008-2009 requests for proposals in Multiscale Mathematics and Optimization for Complex Systems, Petascale Tools and Next Generation Networking for Science and he talked about how ASCR is motivated by input from the research community to identify opportunities in research areas.

Cybersecurity is one subject that presents an opportunity for mathematics research particularly in three major areas: predictive modeling of large scale networks, cyber threats discovery and network dynamics.

David Weinreich
Legislative Director, Office of Rep. Bob Etheridge (NC-02-D)
David Weinreich presented his views on the outlook for science funding in the coming years. He spoke about the state of the U.S. economy, our growing debt and the host of priorities that will put significant pressure on federal budgets for years to come. As the economic crisis wears on, funding for scientific research could suffer. The recently passed economic stimulus bill (American Recovery and Reinvestment Act) brings a large influx of money into the scientific research and development arena, but it will be a challenge to sustain this level of science funding.

Weinreich also discussed how his mathematics background benefits him in his work in Congress. He went on to talk about the importance of relationship building in dealing with Members of Congress and how focused they are on the needs of their constituency.

Jeffry Phan
Legislative Assistant, Office of Senator Jeff Bingaman (NM-D)
Jeffry Phan continued the discussion on what the future holds for scientific R&D funding. He spoke of how the U.S. economic crisis is a call to action in the scientific research community to increase its level of advocacy for sustained federal research funding. He showed how the case must be made to both

budget authorizers and appropriators that investing in science will help the nation's economic recovery. He, too, talked about the importance of relationship building.

Nina Fedoroff
Science & Technology Advisor to the Secretary of State and to the Administrator of USAID
U. S. Department of State
Nina Fedoroff spoke to attendees about "science diplomacy" or the use of scientific collaborations among nations to address the common problems of the peoples of the world. For instance, agriculture is an area where modern science is essential. Genetic modification of plants has enabled the production of more efficient and abundant crop plants, and although there are many countries, including the U.S., that are hesitant to embrace these food sources, they are essential in a world with growing populations and limited resources.

Fedoroff noted that the world's food crisis is not the only area in which scientists and engineers can use their skills in the service of international diplomacy. Seemingly separate issues can create complex global problems. Building constructive global scientific partnerships will go a long way in solving these complicated problems.

Joel Parriott
Program Examiner, Science and Space Programs Branch,
White House Office of Management and Budget (OMB)
Joel Parriott's role as Program Examiner at the Office of Management and Budget gives him oversight responsibility for the National Science Foundation (NSF). He talked about the American Recovery and Reinvestment Act (ARRA) and the process by which NSF is to receive and make use of these funds. He also discussed what he believes the new Administration's top research spending priority areas will be and he advised attendees of President Obama's desire to triple the size of the Graduate Research Fellowship program as NSF.

James Rath
AMS 2008-09 Congressional Fellow
Office of Rep. Ruben Hinojosa (TX-15-D)
The current AMS Congressional Fellow, Jim Rath, discussed his background in the mathematical sciences and how he came to the fellowship program. He talked about the program itself and the orientation and training provided to fellows by the AAAS.

Rath shared his experiences as a staff member in a Congressional office citing the physical space limitations, working hours and task assignments. He also talked about the unpredictability of each day's work and how priorities can shift many times in a given day. He spoke also about Rep. Hinojosa's participation in the House Diversity and Innovation Caucus, which helps to address the under-representation of women and minorities in STEM fields.

Ron Stern
AMS Committee on Science Policy Chair
University of California, Irvine
Ron Stern reiterated some of the items brought up during the meeting: he encouraged department chairs to have their graduate students take advantage of the Graduate Fellowship Program at the NSF; he reminded attendees of the importance of looking for opportunities to publicize mathematics; and he spoke of the importance of building international scientific partnerships to address global problems.

Other Discusssion
Ron Stern led a discussion about grassroots advocacy for math and science. Ideas were shared about how to get more mathematicians involved in grassroots efforts to increase federal research funding. Graduate students were identified as a group that would be a likely source of willing participants.

Committee on Science Policy Events at the 2010 Joint Mathematics Meeting
For the 2010 Joint Mathematics Meeting, the committee will either secure a high level government speaker or hold a panel discussion on a subject to be determined.

Date of Next Meeting
The committee will next meet on March 12-13, 2010 in Washington, DC.

Submitted by Anita Benjamin
American Mathematical Society
March 31, 2009

Washington Office Report
April 9, 2009

The beginning of 2009 has been atypical as far as science appropriations go. The final appropriations bill for FY 2009 became law on March 11, 2009, almost six months after the beginning of the fiscal year. In this bill, the NSF received a budget of $6.49 billion, $395. 5 million or a 6.5 percent increase over FY 2008. The FY 2008 NSF budget included an additional $62.5 million received through the FY 2008 Stimulus Act and a $33 million dollar rescission mandated in the FY 2008 Omnibus Appropriations Act for a total FY 2008 budget of $6.0945 billion.

However, the more exciting news is the $3 billion increase the NSF received through Public Law 111-5, the Recovery and Reinvestment Act of 2009. Under this Act, signed into law on February 17, 2009, NSF received $2.5 billion for Research and Related Activities (R&RA), $2 billion, unspecified, will be dispersed throughout the research directorates. Of the remaining $500 million going to R&RA, $300 million is for major research instrumentation (MRI) and $200 million is for the academic research infrastructure program (ARI). The Major Research Equipment and Facilities Construction budget line received $400 million from the Recovery Act while the Education and Human Resources directorate received $100 million: $60 million to the Robert Noyce Teacher Scholarship Program; $25 million to the Math and Science Partnership Program; and, $15 million for Professional Science Master's Degree programs.

The Recovery Act supplements the FY 2009 budget. NSF currently has many highly rated proposals that the Agency is unable to fund. For this reason, the NSF will use the majority of the $2 billion available in R&RA for proposals that are already in house and will be reviewed and/or awarded prior to September 30, 2009. NSF will award funds from the Recovery Act using the following priorities:

- all grants issued will be standard grants with duration up to five years;
- funding new principal investigators, and high-risk and high-return research will be top priorities.

NSF will also consider funding proposals that have been declined on or after October 1, 2008. The reversal of the decision to decline will be based on the high quality of the reviews received on the initial submission and the lack of available funds at the time the original decision was made.

With the $6.49 billion received from the FY 2009 Omnibus Appropriations and the $3 billion through the Recovery Act, NSF has $9.49 billion available for FY 2009. This means that many new investigators will be funded and unless, during the next three to five years, NSF appropriated budgets grow sufficiently, the ability to fund more researchers will be lost.

The Office of Science of the Department of Energy (DOE) will receive $1.6 billion from the Recovery Act and an additional $400 million for the Advanced Research Project Agency-Energy, authorized in the America COMPETES Act passed in FY 2007. Over $800 million of

the $1.6 billion will go to Office of Science National Laboratories for a range of construction, infrastructure, equipment acquisition, and research projects. The Office of Science will spend approximately $270 million for Energy Frontier Research Centers to be awarded on a competitive basis to universities and DOE National Laboratories across the country. The Office of Science received an FY 2009 appropriation of $4.77 billion in the Omnibus Appropriations Act of 2009.

The President has already announced that his FY 2010 budget request for NSF is $7 billion dollars, an eight percent increase over FY 2009 appropriated funds. At an eight percent per year growth rate, the NSF appropriated budget will not reach the magnitude of the current FY 2009 budget ($9.49 billion) until 2014, when it would be $9.54 billion. Even though the rhetoric for funding science research is currently very strong, it is hard to predict what will happen politically over the next five years.

During the Joint Meetings held in Washington, the DC office was involved in several activities. These included CSP and COE sponsored presentations, organizing the Annual Department Chairs Workshop, a Congressional Fellows presentation and discussion, organizing a session on non-academic employment, and organizing congressional office visits on Capitol Hill.

Forty-one department chairs representing undergraduate, masters, and doctorate departments attend the Department Chairs Workshop. The Workshop leaders were Guillermo Ferreyra, Dean of Arts and Sciences, Louisiana State University; Larry Gray, former head and director of undergraduate studies, School of Mathematics, University of Minnesota; and Stephen Robinson, chair, Department of Mathematics, Wake Forest University.

The non-academic employment session involved identifying and inviting mathematicians working in business and government to lead an information session on non-academic employment. Christina Bahl, National Security Agency, William Browning, Applied Mathematics Inc., Douglas Costa, Susquehanna International Group,
Eli Donkar, Social Security Administration, Rebecca Wasyk, Metron Scientific Solutions, and David Weinreich, Professional Staff, U.S. Congress led the session. Seventeen congressional office visits were organized for twelve Joint Meetings attendees. The Washington Office scheduled the visits and developed talking points and materials to leave with the visited offices.

Washington Office director, Sam Rankin was asked by the House Commerce, Justice, Science and Related Agencies Appropriations (CJS) Subcommittee to provide testimony on NSF to the Subcommittee on March 3, 2009, at a hearing titled "The Place of NASA and the National Science Foundation in the Overall Science Enterprise." [A copy of the testimony is provided on pages 4-6 of this attachment.] Besides presenting testimony, Rankin was asked to be prepared to answer a series of questions about NSF funding and its relationship to other federal science funding agencies.

On April 2, AMS immediate past president, Jim Glimm, gave public testimony in support of NSF to the House CJS Subcommittee. His testimony was part of collaborative testimony given by the American Chemical Society, AMS, the American Physical Society, and the Federation of

American Societies for Experimental Biology. Representatives from each of these societies gave testimony in support of NSF. Sam Rankin worked with Washington representatives of the other societies to set up this collaboration and prepared the testimony given by Jim Glimm. The CJS Subcommittee seemed to take well the underlying message of the four societies: the $9.49 billion for NSF in FY 2009 is great however, if there are not sufficient budget increases for NSF year-over-year, everything gained from the Recovery Act and the FY 2009 Omnibus Appropriations will be lost.

The Coalition for National Science Funding (CNSF), chaired by Sam Rankin, held its Annual Capitol Hill Exhibition of NSF funded projects on March 24. Anita Benjamin served as director of the Exhibition and did her usual excellent job of organizing the event. The AMS sponsored the exhibit of Professor David Hiebeler of the University of Maine. Hiebeler's exhibit was titled *Modeling Outbreaks in Agricultural Systems, Human Communities and Computer Networks.*

The Exhibition drew over 285 attendees including six Members of Congress. Speaker Nancy Pelosi attended as did chair of the House Committee on Science and Technology, Bart Gordon. Nancy Pelosi gave a short speech on the value of federally supported science research. CNSF chair Sam Rankin introduced Bart Gordon who introduced Nancy Pelosi. An article on page 24 of the April 3 issue of *Science Magazine* mentions Speaker Pelosi's visit to the CNSF Exhibition and includes a picture of the Speaker, Representatives Bart Gordon and Rush Holt, NSF director Arden Bement, and Sam Rankin.

Sam Rankin served for the second year on the AAAS Energy, Environment, Agriculture and Natural Resources Science Policy Fellowship Selection Committee. This activity included reviewing applications and spending two days interviewing selected candidates.
Rankin also participated on the AAAS Mass Media Selection Committee, helping to choose candidates for this summer's fellowship experience in mass media outlets.

The AMS Washington Office organized the March 6-7 Committee on Science Policy meeting, including helping to develop the meeting agenda and handling the logistical support. The CSP report is another item in the ECBT Agenda. The DC Office also organized the process and logistics for selecting the 2009-2010 AMS Congressional Fellow. Katherine Crowley of Washington and Lee University is the 2009-2010 Fellow.

The Washington Office continues to be active in coalitions advocating for science research and education including CNSF and the Task Force for the Future of American Innovation. This year Sam Rankin has been attending monthly meetings sponsored by the Council of Graduate Schools on aspects of graduate education.

Samuel M. Rankin
Associate Executive Director
Washington Office

Testimony of
Samuel M. Rankin, III
Before the
House Commerce, Justice, Science and Related Agencies
Appropriations Subcommittee
Congressman Alan B. Mollohan, Chairman
Congressman Frank R. Wolf, Ranking Member
March 3, 2009

Thank you, Chairman Mollohan and Ranking Member Wolf for the invitation to speak to the Committee today.

The National Science Foundation (NSF) is the only federal agency that supports basic research across all fields of science and engineering and all levels of science and engineering education. Although the agency's annual budget represents approximately 4 percent of the total federal budget for research and development, it provides nearly half of the support for non-medical basic research at colleges and universities. The main source of federal support for basic research at colleges and universities in the fields of mathematics, the social sciences, non-medical biology, and computer science comes from the NSF, as well as over 40% of support in the physical sciences, engineering, and the environmental sciences. Through the directorate of Education and Human Resources, the NSF supports activities that ensure a diverse, competitive, and globally engaged science, technology, engineering, and mathematics workforce.

NSF invests over 90 percent of its budget directly to support research at colleges and universities, in all 50 states. This support reaches over 2,000 institutions and nearly 200,000 researchers, postdoctoral fellows, trainees, teachers, and students every year. NSF receives well over 44,000 grant proposals each year, making over 11,000 awards, mostly to individual investigators at colleges and universities, and other public and private institutions. Through its merit review process, NSF identifies the best ideas and the people to develop these ideas, who, through their work, advance the frontiers of knowledge in science and engineering.

There are seven research directorates at NSF. Most of the funds for research are allocated to investigators through these directorates. Research proposals are received as a response to solicitations issued by disciplinary

divisions within directorates and NSF offices or an investigator can submit an unsolicited proposal. In either case, the proposal goes through a merit review process which assesses the intellectual merit of the proposed project and the broader impacts of the project.

It is through the directorates that the science and engineering disciplinary communities have most of their interaction with NSF. In fact, over 45,000 scientists and engineers serve on merit review panels or as proposal reviewers each year, thus having direct input in setting research standards. NSF also derives input from the disciplinary communities through directorate advisory committees and committees of visitors. Advisory committees provide advice on program management and performance as well as input on the impacts of policies, programs, and activities in the disciplines that are funded through the directorate. Committees of visitors provide input on the quality and integrity of program operations and program-level technical and managerial matters pertaining to proposal decisions; and, comments on how the outputs and outcomes generated by awardees have contributed to the attainment of NSF's mission and strategic outcome goals.

This characteristic of continual interaction with the science and engineering disciplinary communities allows NSF to keep abreast of research in the disciplinary fields, understand the needs of the scientific community, and be responsive to it. Conversely, the science and engineering discipline communities believe that they are an integral part of the process in helping move U.S. research and innovation forward. This includes those investigators making the transformational discoveries to those scientists and engineers establishing the needed infrastructure that makes significant discovery possible.

Community involvement has served the NSF well over the years as research supported by the NSF has had a tremendous impact. Many new products, procedures, and methods have accrued from the NSF investments in basic research - research performed over many years and not always pre-determined toward a specific application. Society, unaware for the most part, of how basic research impacts daily life, enjoys many benefits from NSF investments. These benefits include products such as Google, the favorite internet search engine; Magnetic Resonance Imaging (MRI), used widely to detect cancer and internal tissue damage; Geographic Information Systems, used by businesses, police departments, governments, and others to

respond to natural disasters, reduce crime, and provide better services to customers; and, many others.

The NSF investments have enabled the U.S. to build a scientific infrastructure second to none, facilitated revolutionary research that pushes the frontiers of knowledge, and laid the groundwork for innovation that has been important to the U.S. economy and a high quality of life.

Report of the AMS Employment Prospects Task Force - 2009

The Task Force

Early in the fall of 2008, it became apparent that we were entering a period of economic instability that was likely to have a strong impact on publicly supported colleges and universities and be prolonged. First, state budgets reported unanticipated deficits for their current fiscal year and then investment vehicles plummeted, spreading the impact to academic institutions reliant on spendable income from endowment. It was clear that the recent good times for higher education would not continue.

In November, the ECBT discussed the prospect of a deteriorating employment market and recommended the formation of a task force to consider and make recommendations to the community to address the situation. The task force was appointed in January by AMS President James Glimm with the charge:

…to survey the extent of anticipated employment problems for young mathematicians, as may be exacerbated by recent problems in the US and world economy.

The Task Force should recommend actions that can be taken constructively by the various parties with an ability to effect changes, including recommendations to:

- *institutions traditionally employing young mathematicians,*
- *departments producing new PhDs in mathematical sciences,*
- *individuals seeking employment or soon to be seeking employment, and*
- *the AMS and other professional societies (e.g., MAA, SIAM and YMN) sharing concern for young mathematicians.*

The members appointed to the AMS Task Force on Employment were:

- Linda Keen (Chair), CUNY Lehman College and Graduate Center
- Douglas Costa, Susquehanna International Group
- Annalisa Crannell, Franklin & Marshall College
- Eli Donkar, Social Security Administration
- Moon Duchin, University of Michigan
- Melvin Hochster, University of Michigan
- Susan Loepp, Williams College, Member of AMS Committee on the Profession
- Bernd Sturmfels, University of California-Berkeley, AMS Vice President and Council Member
- James Tattersall, Providence College, Member of the AMS-MAA-SIAM Joint Committee on Employment Opportunities
- Carol Wood, Wesleyan University, Member of AMS Committee on Publications and AMS Board of Trustees

with AMS staff support from:

- Ellen Maycock, Associate Executive Director of Meetings and Professional Services
- Diane Boumenot, Professional Services Department
- Donald McClure, Executive Director

Report to Council and ECBT

There is little doubt that mathematicians are susceptible to the recent disruptions in the economy, nor that recent PhDs will face severe challenges finding jobs in the near future. As the projections below show, the number of students completing PhDs in mathematics is unlikely to change significantly from last year (if anything, the numbers will rise), while the number of academic job openings will decrease dramatically (by nearly 40%), leaving a gap between the number of academic positions available and the number of new mathematicians this year. Because new PhDs apply predominantly for academic positions, there will be many people disappointed this year.

This report addresses employment issues in mathematics in five sections. The first of these is informational:

1) What we know (preliminary data and resulting projections about the near-term job market in mathematics).

The remainder of the sections provide recommendations on how the AMS can address the effects of this (and future) economic downturns on the mathematics profession.

2) Recommendations for the short term from the AMS to academic departments that are hiring;

3) Recommendations from the AMS on broadening employment prospects for graduate students and recent graduates;

4) Recommendations regarding NSF and the stimulus package; and

5) Recommendations for the longer term.

1) Preliminary data and resulting projections about the near-term job market in mathematics.

The latest Annual Survey data are not yet available, but it seems that the number of people receiving doctoral degrees will be close to last year's number, 1378. Excluding doctoral degrees from statistics departments, there were 1061 new Ph.D.s in 2007-08. Data from the quick survey of representative departments just completed by the AMS[1] project that the total number of academic positions available for these new doctoral candidates is 918, down about 39% from last year. The responses also indicate that these students are applying primarily for academic positions. Typically (based on Annual Survey reports) more than 10% of the total population of new doctoral recipients take positions outside the U.S. and about 75% of those employed in the U.S. take academic positions.

[1] The recent task force survey contacted 68 mathematics departments in late February 2009 and collected data on recruitment, retirements and graduate students completing their doctoral degree in 2008-09. All 68 departments responded to the survey.

It is important to note that there are young mathematicians exiting postdoctoral and instructorship positions who are also candidates for the estimated 918 positions being recruited. To put the count of 918 in perspective, the 2007 Annual Survey reported 1543 academic positions open to new mathematics doctoral recipients in 2006-07.

2) Suggested recommendations from the AMS to academic departments that are hiring.

It is clear from the data above that not all current students completing PhDs and recent PhD recipients will be able to get academic jobs, and that this economic downturn will be hardest on our most vulnerable (that is, most junior) colleagues. At the date of this writing there may be little that can be done to influence individual outcomes in the current hiring season. Still, academic departments can mitigate the near-term effects of a bad job market in several ways.

First, and perhaps most important, is to maintain ethical employment practices. The mathematical community has a history of high ethical standards; the AMS should reinforce endeavors to live up to these standards so that this economic downturn does not create permanent damage to the way we hire. We should continue to encourage departments along these lines:

- Whenever possible, hire tenure-track instead of multiple, revolving-door visitors.
- Whenever possible, hire multi-year visitors instead of multiple one-year visitors.
- Whenever possible, hire a full-time visiting instructor instead of multiple adjuncts and part-time instructors.

As part of this effort, the AMS should publicize our "Policy Statement on Supportive Practices and Ethics in the Employment of Young People in the Mathematical Sciences" (see appendix A) on the employment web pages, in the *AMS Notices*, and elsewhere. (http://www.ams.org/secretary/supportivepractices.html)

Second, given the current economic climate, all departments should strongly consider extending the length of existing postdoctoral fellowships and visiting positions. When this is done, the institution and the individual are urged to explore a wider range of possibilities for the following year's job search, including more serious consideration of non-academic employment and/or employment in academic settings other than four-year colleges and universities.

Each department should be alert to the possibility of unexpected additional 'stimulus' funding within its own institution, and be prepared to argue forcefully for its allocation in support of mathematics.

Third, departments should proactively begin to advise current doctoral students of the degree of dislocation in the market for new PhDs, and that this level of dislocation is likely to continue for the next few years. At the same time, departments should assist current doctoral students in researching and contacting non-academic employers in industry and government

Indeed, the topic of non-academic employment of mathematicians was repeatedly a central focus of the task force's discussions. It is reasonable to expect the elasticity of the supply of academic jobs for

mathematicians to be relatively low and the elasticity of non-academic jobs to be relatively higher. Under that expectation, the 'solution,' if there is one at all, to the undersupply of academic jobs is most likely to come from the exploitation of non-academic ones, both in the near term and the longer term. We shall have more to say about this below.

3) Recommendations from the AMS on broadening employment prospects for graduate students and recent graduates.

As several employment task forces over the past three or four decades have noted, graduate programs tend to prepare their students for (and overwhelmingly direct students toward) academic careers in universities and four-year colleges. This narrow focus leaves mathematicians especially vulnerable to unemployment and under-employment in times of economic instability – as noted above, this year will see substantially more new PhD mathematicians graduating than there are academic jobs available in colleges and universities. Even within the framework of academic careers there are additional options, including positions at community colleges, whose hiring timetables and practices are unfamiliar to members of most graduate programs.

The AMS should assist graduate departments to be more aware and to take advantage of broader notions of mathematical careers. In particular, graduate departments need to know how to help their graduate students who might pursue non-academic or government employment. Help from the AMS might take the form of:

- flyers to advisors and graduate students, pointing them to existing resources on the web; see http://www.ams.org/employment/job-articles.html, for example;
- information sessions at the Joint Meetings, or even at regional and sectional meetings, led by mathematicians from industry;
- including non-academic advising issues in Chairs sessions;
- helping departments to link to industrial internships their students might pursue;
- making available on the web more profiles of mathematicians (and especially recent PhDs) in non-academic careers;
- helping mathematicians set up "industrial post docs;" and
- finding funding for "industrial sabbaticals" that could place academic mathematicians who advise graduate students in an industrial setting for one year.

Doctoral students and post-docs should be encouraged to take action along the following lines:

- include some applicable mathematics in their course of study. (Examples include probability, statistics, numerical methods, optimization, etc.)

- learn, in depth, a programming language widely used in industry, along with good software development practices.

- make a concerted effort to develop good communication skills: listening, oral presentation, written presentation, and good presentation of data and technical results.

- do an internship in industry or government. Observe what is used in practice and use the experience to help guide their professional development.

Academic departments should be encouraged to make it as easy as possible for students to follow the recommendations above while pursuing their degree programs. Toward this end, departments should consider:

- becoming knowledgeable about industrial and governmental career alternatives, and setting up a faculty advisor specialist, as discussed below, who would help students prepare for employment, starting in their first year.

- creating and maintaining a network of alumni, and other, contacts in industry and government.

- encouraging and facilitating programming proficiency, for example by allowing programming credits to count toward the degree.

- encouraging and facilitating internships, for example by allowing them to count for credit toward the degree.

We discuss some of these ideas in other contexts in both of the sections below.

4) Recommendations regarding NSF and the stimulus package

According to a report from Peter March to the Committee on Science Policy in early March, there is some encouraging news: the NSF has doubled its number of new postdoctoral positions from approximately 30 to approximately 60. In late March, the DMS created 30 new postdoctoral positions for recent PhD recipients who have not found employment for the coming year. These positions will be housed by and shared among the seven NSF-funded institutes. The DMS expects up to $100 million of new money from the stimulus package; that funding is designated for "new" projects (meaning "not funded by the NSF before") and needs to be obligated by October 2009. In the longer term, future funding should also triple the number of Graduate Research Fellowships. (We note that these new students entering the pipeline will need jobs when they graduate.)

This is obviously a time when the new administration wants to support technology and science. We need to make sure that the AMS (as an institution) and AMS members (as researchers at the frontiers of knowledge) keep the importance of mathematical research and the professional development of mathematicians in the minds of our legislators, the decision-makers at the NSF, and the general public.

Given the new monies available to the NSF, the AMS and its members can be instrumental in suggesting constructive uses for it. For example, the NSF-funded institutes could play a role in retraining PhD

mathematicians in non-academic areas where there are numerous employment opportunities. For instance, MBI and SAMSI could provide new and welcome leadership by offering training opportunities in biology and statistics, respectively. Such opportunities can be a winning situation for everyone, raising the general mathematical community's awareness and appreciation of the institutes, and benefiting all participants, including those that later return to a regular mathematics job in a regular mathematics department. The AMS should foster and nurture such programs.

The AMS should encourage institutions to direct stimulus money that they receive toward people in the formative stages of their careers. In addition, as described above, the AMS should pursue funding, or encourage departments to pursue funding, for initiatives that help graduate departments to link to industrial internships for graduate students and industrial sabbaticals for academic mathematicians, to create programs for employment advising, and to extend post-doctoral and visiting positions.

5) Suggestions for the longer term.

In every recent economic downturn, a task force has encouraged the AMS to assist academic mathematicians to pursue non-academic careers. Clearly, such an endeavor requires a more systematic, sustained effort on behalf of the AMS than our periodic distress calls have mustered. When jobs become more plentiful, the flow of information about alternative career tracks to degree-seekers is impeded by negative attitudes, as well as (in many cases) by faculty ignorance on the nuts and bolts of non-university job placement.

The AMS should undertake a sustained, ongoing discussion on how to make non-academic employment more of an option for mathematicians, even during times of hiring plenty: it should support systemic initiatives to train faculty advisors and to pair mathematics students with industrial pre- and post-doctoral support, perhaps with NSF encouragement and funding. The AMS might consider ways to help people apply for non-academic jobs online (for example, investigate an industrial analog of the AMS Cover Sheet or of MathJobs).

The AMS should facilitate the creation within individual mathematics departments of a faculty advising role (possibly an Associate Chair in large departments) for professional placement. As one of our task force members wrote,

> "It could be extremely useful to create a program through the AMS (perhaps funded by NSF) to train faculty members to be job placement resources for students in their departments. This program could assemble a packet of information about community college, government, and industry employment to send out to each department. (For instance: application procedures and deadlines; job security; pay; coursework or teaching experience that makes an applicant more attractive; contact information for people willing to field questions - including alumni - in each type of job.) In addition, the program could run a training weekend that a representative from each department would attend to get up to speed.

A more long-term, but nonetheless real, concern regards public cries for more "accountability" and regulation of academic institutions. The AMS should continue to train the mathematical community to be sensitive to these concerns: how do mathematicians address (or even forefend) charges that professors are not doing enough teaching because they spend too much time on esoteric research? Even in the academic community, there is widespread ignorance of the richness of mathematical research and the stunning contributions it continually makes to our society. Since crises tend to be especially hard on the vulnerable (not so much "survival of the fittest" as "extermination of the slowest"), it is especially important for departments to extol their virtues to their administrations and the public, in order that they have a continuing appreciation of mathematics as fundamental to the infrastructure of our civilization. The AMS will continue to play a vital role in helping mathematicians communicate our worth to the larger society.

Appendix A

AMS Policy Statement on Supportive Practices and Ethics in the Employment of Young People in the Mathematical Sciences

as found at http://www.ams.org/secretary/supportivepractices.html

1. Mathematics departments should make their students aware of the realities of the job market and should provide them the opportunity to prepare for a broad range of jobs in the mathematical sciences.

2. Employers have a responsibility to support the development of recent graduates, whether in temporary or potentially permanent positions, through mentoring and training in all aspects of professional life, and by integrating them into the scholarly life of the department.

3. Mathematics departments that offer temporary positions are urged to offer such positions for at least two years' duration whenever possible. When a recent graduate is hired for only one year (e.g., to replace a permanent faculty member on sabbatical), it is especially important to attend to the professional development of the person hired. Colleges and Universities have a responsibility to permanently staff departments at sufficient levels, rather than continually relying on temporary non-tenure track faculty.

4. Recent graduates should be hired at salaries commensurate with national norms. In particular, the practice of hiring recent graduates by the course at sub-standard salaries is reprehensible and exploitative.

Adopted by the Council in March 2007 so as to speak in the name of the Society

2 March 2009

Survey Results (Recruitment & Retirement)

Employment Prospects Task Force Survey, February 2009

This document presents some summary results from the survey of recruitment and retirement sent to 68 departments in February 2009. The information herein is from a snapshot of the complete survey responses received by Monday, March 2. The response rate is 100%.

This summary reports projections of counts to the full population of departments in Groups I Public, I Private, II, III, M and B according to the standard groupings of the Annual Survey. The method used to calculate the projected counts from the sample counts is described in the Endnotes.

Response Rate

Survey Group	Number Sampled	Number of Responses	Proportion of Faculty Sampled
Group I Public	10	10	0.455
Group I Private	10	10	0.387
Group II	10	10	0.242
Group III	10	10	0.162
Group M	14	14	0.103
Group B	14	14	0.038
TOTAL	68	68	

Total Recruitment, Change from 2007-08 to 2008-09, Projected Counts

Survey question: Report the number of full-time positions requiring a doctorate you have tried to fill for the 2009-2010 academic year.

Survey Group	Number Reported in February 2009	Change in Number from 07-08 to 08-09	Percentage Change from 07-08 to 08-09
Group I Public	165	-4	-2.6%
Group I Private	90	-57	-38.6%
Group II	153	-83	-35.1%
Group III	74	-62	-45.5%
Group M	184	-252	-57.8%
Group B	367	-472	-56.3%
TOTAL	1034	-930	-47.3%
I+II+III	483	-206	-29.9%
I+II+III+M	667	-458	-40.7%

2 March 2009

New Doc Recruitment, Change from 2007-08 to 2008-09, Projected Counts

Survey question: Report the number of positions reported in Question 1 that were (are) open to new doctoral recipients.

Survey Group	Number Reported in February 2009	Change in Number from 07-08 to 08-09	Percentage Change from 07-08 to 08-09
Group I Public	117	-33	-22.1%
Group I Private	39	-70	-64.3%
Group II	157	4	2.7%
Group III	74	-50	-40.0%
Group M	165	-39	-19.0%
Group B	367	-393	-51.7%
TOTAL	918	-580	-38.7%
I+II+III	387	-148	-27.7%
I+II+III+M	551	-187	-25.3%

Retirements Planned, Change from 2007-08 to 2008-09, Projected Counts

Survey question: For the period September 1, 2008 through August 31, 2009, how many full-time faculty have either retired or are expected to retire from full-time service?

Subsidiary question: Are you aware of any full-time faculty who planned to retire during the time period in Question 1 and who have decided to delay retirement? If "yes," how many?

Survey Group	Number Reported in February 2009	Change in Number from 07-08 to 08-09	Percentage Change from 07-08 to 08-09	# Delaying in Feb 09
Group I Public	29	-18	-38.1%	4
Group I Private	8	-3	-25.0%	3
Group II	21	-37	-64.3%	25
Group III	31	12	66.7%	0
Group M	87	10	12.5%	10
Group B	131	-79	-37.5%	105
TOTAL	306	-114	-27.1%	146
I+II+III	88	-45	-33.8%	32
I+II+III+M	175	-35	-16.8%	41

Free-form Comments from Respondents

Survey question: Please feel free to describe likely changes for your department in response to the anticipated downturn in employment for your Ph.D. candidates.

Survey Group I Public

We have not had any positions frozen yet, but we were asked to plan a scenario of having fewer courses, which may still result in fewer lecturer positions. We do not at this point anticipate an impact on research positions.

2 March 2009

A decrease in number of admitted grad students due to budgetary constraints. We expect them to have significantly harder times finding jobs, and some most postpone graduation for this reason.

Retirements and other departures coupled with a hiring freeze will leave some uncovered classes. We are hoping to use hire our unemployed recent PhDs to cover these classes in short term positions.

Not clear at this point. We may slightly decrease the size of the graduate program. We may support some graduate students an additional year - this is not decided yet. We do not have information about whether students are applying for academic vs. non-academic jobs.

Students will try to postpone PhD and increase times to graduation. Of course, this is counter to what we would normally want. We are employing recent PhD's in GTA positions.

The one non-tenure-track position we have is contingent on the availability of funding; it is not yet clear if we will have that funding. Funding for TA positions has been cut by 18% and may be cut further. We will increase class some sizes starting next fall (doubling calculus class size in particular), and may cut some classes. Faculty positions that become vacant during the next two years will, almost certainly, be eliminated.

The number of incoming TAs will be reduced.

Survey Group I Private

We do not currently envisage a reduction in admission of graduate students.

Zero-based growth until the economic climate changes.

This is an ongoing issue--most of our graduates (for 2009) seem to have received offers and accepted them at this point.

We used to hire some of our PhD candidates for visiting teaching positions if they couldn't find jobs elsewhere. We will not be able to do that anymore.

Survey Group II

None yet.

There appear to be few changes for this year. Perhaps a few students will delay graduation. Some effects of the recession will probably become fully visible only next year.

Over the past five years we have lost a net of 15 positions because of budget problems in the State of Florida. This severely handicaps our ability to meet both undergraduate and graduate responsibilities.

We may end up making use of our unemployed PhD graduates as part-time instructors--- we may well have a need at that level, and it is difficult to find qualified people. This is far from

ideal, since they would be working very hard for very little money, but we don't have the resources to extend their graduate support for another year.

Our college has an across-the-board cut in the TA budget - Mathematics will lose 7.5 TA's for 2009-2010.

The situation is still not determined. Deans are asked to have contingency plans for cuts up to 20%. Anything over 5% may eliminate all of our vacant positions for future hiring. I this point we just have to hope it is not near the worst-case scenario.

More students will choose to go to industry or national labs.

Survey Group III

I suspect we will have another hiring freeze next year.

None

Survey Group M

likely, but not certain, that our job search will be cancelled

We will slow the pace of replacement (3-5yr plan) and try to fill some vacancies` at senior levels.

At this stage, I feel no changes are forthcoming. This is because our class sizes were a bit high. If the enrollment drops much, then we will not hire as many adjunct instructors (not tenure-track) staff.

I expect fewer retirements over the next 5 years than otherwise, and so fewer positions for new ladder-rank faculty. Alas!

So far, no changes.

We were going to put in a request for a tenure-track position for the 2010-2011 year but are chances for such a position have diminished. We have a large percentage of older faculty who are near retirement. We are worried that when we ask for replacements in the future there will be pressure to have us use, at best, visiting positions and, at worst, more part-time instructors.

It turns out that we are not looking to hire a new faculty member this academic year. If a faculty were to resign or retire we would be able to search for a replacement, but we would not be allowed to search for a new position because of the economic situation.

One faculty member retired at the end of the 2007-2008. Our usual procedure is to hire a full-time temporary faculty member for the following academic year to cover the classes of the retired member while the hiring process is carried out. We advertised in various locations and reserved space at the Joint Math Meetings. We received more than a couple of hundred applications for the position. During the fall semester, we discovered that all hiring in our College of Arts and Sciences was put on hold. (They carefully avoided the phrase "hiring freeze.") We informed all of the applicants of the situation, canceled our reservation of an

interview table at the JMM, and are hoping for the best. We are in the unusual situation of having no one in our department on sabbatical next year, so we should be able to cover our courses. We hope we can revisit our hiring beginning next summer and fall to hire for 2010-2011.

None

Survey Group B

I have been told by several faculty that they are likely to delay retirement based on economic conditions, but they weren't planning to retire for another 2-3 years.

none at this time

Pay raises will be minimal if any; we will try to decrease the number of sections taught by increasing enrollment maximums; we will not submit plans for additional positions.

At this point in time, we have felt no impact. But that is not to say changes will not occur in the near future.

No anticipated changes.

Faculty who had planned to retire in 2011 or 2012 have changed their minds. Hiring-wise, are searches are running and almost complete, but worried about whether we will be able to hire next year.

Not yet really known. Our institution is highly tuition driven and so it remains to be seen how the downturn affects enrollment.

Reducing the number of available sections of classes Moving toward electronic delivery of instruction Cutting temporary positions Increasing faculty teaching loads

Possibly larger class sizes, so that we can make do with less faculty.

We probably won't be hiring for a few years. We almost lost two new faculty members due to lost budget. We are hopeful that we won't lose any in the next few years. After that, we will be looking to hire, budget permitting.

Delayed retirements are the biggest factor.

2 March 2009

Endnotes

Projected Counts

Within a *Survey Group*, the ratio between a projected count reported herein and the corresponding actual count for the sample is equal to the ratio within that *Survey Group* of the *Total Doctoral Faculty* (2007TDF) for that group in 2007 to the Total Doctoral Faculty In The Sampled Departments (2007TDFS) for that group in 2007.

The 2007 data are used for TDF because the analysis of the 2008 Annual Survey is still in progress.

Within Group---

$$\text{Projected Count} = (\text{Sample Count}) \times (2007TDF \div 2007TDFS)$$

There is a variation to this rule for the Group M and Group B analysis. 2008TDFS replaces 2007TDFS because the 2008 data are complete and the 2007 data are not.

Participating Departments

Group I Public

University of California, Los Angeles

University of California, San Diego

University of Illinois at Chicago

Purdue University

University of Michigan

City University of New York, Graduate Center

Ohio State University, Columbus

Pennsylvania State University

University of Washington

University of Wisconsin

Group I Private

California Institute of Technology

Northwestern University

Harvard University

Washington University

Princeton University

Columbia University

Cornell University

Rensselaer Polytechnic Institute

2 March 2009

Carnegie Mellon University

Brown University

Group II

Arizona State University

University of California, Davis

University of Florida

University of Georgia

University of Iowa

University of Kentucky

Louisiana State University, Baton Rouge

North Carolina State University, Raleigh

University of Pittsburgh, Pittsburgh

Texas A&M University

Group III

University of Alabama

University of South Florida

University of Kansas

University of Louisiana

University of Maryland, Baltimore County

University of Mississippi

University of Montana

New Jersey Institute of Technology

Bowling Green State University

University of Memphis

Group M

Florida International University

Georgia State University

Western Illinois University

Ball State University

Western Kentucky University

Boston College

University of Dayton

John Carroll University

2 March 2009

Wright State University
University of Tulsa
Millersville University
Villanova University
University of Texas-Pan American
Hampton University

Group B

Loyola Marymount University
Bradley University
University of Southern Indiana
Northern Kentucky University
Williams College
Grand Valley State University
St. Olaf College
Truman State University
Lafayette College
Providence College
Weber State University
University of Richmond
Gonzaga University
University of Wisconsin-Eau Claire

STATUS OF MEMOIRS BACKLOG
March 2009

The ECBT previously approved a proposal from staff and the *Transactions/Memoirs* editor to temporarily increase the number of pages for 2008 and 2009 from 3200 to 3800. It was suggested that the acceptance rate for new papers would decline in 2008 therefore the temporary increase would ease the backlog.

In actuality acceptance rates increased in 2008 and the page increase has had little to no effect on the backlog.

Memoirs	**2004**	**2005***	**2006**	**2007**	**2008**
Accepted papers	26	59	32	18	29
Published papers	25	26	27	22**	28
Budgeted pages	3200	3200	3200	3200	3800

* One editor submitted 17 papers in 2005, far in excess of average rates by any single editor.
**Two large papers were published in 2007 totaling 920 pages.

At this time we have approximately 11 volumes in the backlog representing 55 manuscripts. At the current acceptance and publishing rates we will only decrease the backlog to 10.9 volumes by the end of 2009.

Currently, *Memoirs* is only available in paper format, however, in 2010 we will begin offering an electronic version of the journal. The staff would like the opportunity to see the effect of electronic publishing on the *Memoirs* backlog before considering a permanent increase in pages. As an electronic publication we will begin publishing accepted papers in advance of assignment to the paper issue. Subscribers will have access to the accepted papers significantly earlier than they do now and this may alleviate the need to permanently increase the printed pages.

Beth Huber
Associate Executive Director, Publishing

Minutes

Executive Committee/Board of Trustees
American Mathematical Society
March 23, 2009

Members present: George Andrews, John B. Conway (Chair), John M. Franks, Ronald J. Stern, Karen Vogtmann, Carol S. Wood, Sylvain Cappell, Ruth Charney, Robert J. Daverman, James Glimm, Craig L. Huneke and Joseph H. Silverman.

Robert J. Daverman forwarded a proposal from the ECBT Associate Treasurer Search Committee proposing that Linda Keen be recommended to the AMS Council as the Associate Treasurer for a term beginning immediately and ending 31 January 2011.

Pursuant to the approved procedures for a meeting by technical means, Search Committee Chair John Franks initiated a call for such a meeting on Monday, March 16, 2009. The call was sent by email to the email aliases ams-execom@math.utk.edu and bt@ams.org on Wednesday, March 19, and the meeting was conducted by email. The only item on the agenda was the proposal about said appointment of Linda Keen.

The motion from the Search Committee was that the ECBT recommend to the Council that Linda Keen be appointed to the post for the indicated term. Discussion and voting were set to end on Sunday, March 22, at 8:00pm Pacific Daylight Time. By that time all members present had voted and the motion passed unanimously.

Minute prepared by Robert J. Daverman
AMS Secretary

Changes in Registration Fees for 2010

2009/10 Mathjobs.org Fees

The Executive Director has approved the following fees for 2009/10 Mathjobs.org employer registrations. The fee will be in effect from July 1, 2009 through June 30, 2010. Employers located in North America will be allowed to open regular accounts. New in 2009/10: All employers will be allowed to open advertising-only accounts. The service is free to applicants.

Employer fees:

Regular account (for up to seven ads), 12 months from date of sign up:	$500
Advertising-only account (for one ad), 12 months from date of sign up:	$250

Previous fees (for Regular accounts):	2008/09	$450
	2007/08	$400
	2006/07	$350
	2005/06	$300

2010 Short Course Fees

The Executive Director has approved the fees listed in the chart below for the 2010 Short Course in San Francisco.

Year	Name of Course	Preregister-member/non	On-site-member/non	S/U/E-prereg*	S/U/E-onsite*
2004	Trends in Optimization	$80/$100	$110/$130	$35	$50
2005	The Radon Transform and Appl. to Inverse Prob.	$85/$108	$115/140	$37	$55
2006	Modeling and Simulation of Biological Networks (actual)	$87/115	$118/148	$38	$57
2007	Aspects of Statistical Learning	$90/$120	$120/$151	$40	$60
2008	Applications of Knot theory	$94/$125	$125/$155	$42	$63
2009	Quantum Computation and Quantum Information	$96/$130	$130/$160	$44	$65
2010	**Markow Chains and Mixing Times (Tentative)**	**$98/$135**	**$132/$165**	**$46**	**$67**

*S/U/E: Student/Unemployed/Emeritus

2010 Employment Center

The fees listed in the chart below are proposed for the 2010 Employment Center in San Francisco, CA.

The Employment Center is receiving a major enhancement for January, 2010 as the AMS contracts with Boxwood Technologies to provide a completely electronic registration and interview scheduling process (by employer invitation only). The employers and applicants will benefit from:

- a broader set of searchable/sortable information
- an electronic messaging/invitation process
- online schedule keeping
- work stations in the Employment Center for employers and applicants to access the system

Most of the scheduling process will take place from home in the months leading up to the meeting, thereby making the process more predictable and easing the stress on site.

One additional change is to make tables available on site for employers who desire some anonymity. They have no need for information about applicants nor do they wish to display any information. Since more and more "short list" interviews are happening in January, this has been requested by users.

The price list, below, reflects lower prices since employers will also, now, be required to place an EIMS ad and pay a fee for that.

Note also that applicants no longer pay fees. It is standard practice to have employers pay the cost of a service like this, and the AMS is now in a position to follow that practice. This is especially appropriate right now since applicants may be less likely to get interviews in the current job climate.

ALL participants will need a meeting badge for admittance into the room. This is not a new policy, but will now be strictly enforced.

Summary of recent and proposed fees

	2007	2008	2009	**2010**
Quiet Area table (1-2 int)	235	245	250	**185**
Quiet Area table Early Reg				**145**
Second Quiet Area table	85	95	100	**85**
Committee table (3-6 int)			350	**270**
Committee table Early Reg				**230**
Second Committee table				**135**
One Table-only (no ad) (1-6 int)				**300**

2009/10 Employment Information in the Mathematical Sciences

The following fees have been set for the 2009-2010 Employment Information in the Mathematical Sciences.

The functionality of EIMS will be greatly enhanced (beginning in July, 2009) by a new arrangement with Boxwood Technology to provide a web hosting service for the ads. This service will appear to users to be housed on the AMS website. All ads will be submitted through the AMS website, and only ads submitted through the AMS website will be accessible on the site.

The Boxwood hosting arrangement offers the following advantages to users:

- Applicants may submit a resume and up to five documents for perusal by registered employers. There are never any fees for applicants.
- Ads may be freely perused by all on the web, with or without creating an applicant account.
- Employers have permanent access to their previous ads and can edit or re-post them at any time and view their history and payments.
- In the Fall, applicants and employers may mark their existing accounts for inclusion in the Employment Center, and begin to utilize the special Employment Center functions such as interview invitations and scheduling.

Note that the paper version of EIMS is no longer offered. The AMS will alert employers that if they desire a paper placement for their ad, they should also place the ad in the Notices. The Mathjobs.org service will continue to serve as a job application site for PhD mathematicians, while the new EIMS site may serve a broader audience with information only (no applications are made on EIMS).

Listing fees for July, 2009 – June, 2010:

60 day listing, unlimited size	**200**
120 day listing, unlimited size	**275**
"Featured Job" add-on	**75**

2008/09 (previous) listing fees:

	60 days	*120 days*	*180 days*
Small	160	210	260
Medium	185	235	285
Large	210	260	310

Ellen J. Maycock
Associate Executive Director
April 15, 2009

Report to the AMS on the Mathematics activities at the 2008 SACNAS conference

The success of Research Experiences for Undergraduate programs (REU) has shown a persistent need for minority undergraduate students to be exposed to areas of active research in mathematics, and in particular to enhance the opportunities available to them to present their research findings at national venues such as the SACNAS conference. Mathematics has always been a part of SACNAS and together with our partnering and sponsoring agencies and organizations such as the National Security Agency (NSA) National Science Foundation (NSF), American Mathematical Society (AMS), the Mathematical Sciences Research Institute (MSRI), Society for Industrial and Applied Mathematics (SIAM) and the American Institute of Mathematics (AIM) we continue to sponsor a coordinated effort to both increase and sustain the pipeline of underrepresented mathematicians through a strong presence at the SACNAS conference.

This year, with increased NSA funding and the continuing programmatic support of our partners for mathematics students and professionals to attend the 2008 SACNAS conference in Salt Lake City, Utah, SACNAS effectively implemented a broad range of educational, and professional and leadership development activities for undergraduate, graduate, post-doctoral and young professionals. We were able once again to provide critically important opportunities for mathematics undergraduate and graduate students and recent Ph.D.'s to establish and maintain contact with a strong network of mathematicians who, as mentors and role models, have and will support them throughout their college and university years and their professional lives. NSA funded students' oral or poster presentations, attendance at mathematics focused symposia and mini-courses further exposed students to current research in mathematics which clearly proved important for their continued interest in a mathematics career.

The 2008 SACNAS national conference offered mathematics students, postdocs and young professionals the following pre-conference and conference activities and events:

PRECONFERENCE ACTIVITIES

Mathematics Institutes Modern Mathematics Workshop

Session Description This workshop introduced research topics of upcoming Mathematics Institutes programs aiming at attracting minority mathematicians and graduate students to them. The workshop included general lectures and networking dinner on Wednesday. Thursday sessions were expository, intended for faculty, postdocs, and graduate students who may not be closely working in the topic areas.
Sponsored by: National Security Agency

Session Chair(s) and Speakers

Dr. Ivelisse Rubio, *Professor, University of Puerto Rico*
Dr. Kathleen O' Hara, *Associate Director, MSRI*
Dr. Herbert Medina *Professor, Loyola Marymount University*

Mathematics Mini-Course: The State of the Planet: How Mathematics Can Help
Session Description This mini-course described how mathematics can play a role in understanding and addressing challenges faced by our planet. It was aimed at the undergraduate level and was open to all students regardless of their majors. The topics ranged from global sustainability and resources to climate modeling.
Sponsored by: National Security Agency
Session Chair(s) and Speakers
Dr. Ricardo Cortez, *Professor, Tulane University*
Dr. Herbert Medina, *Professor, Loyola Marymount University*
Dr. Mary Lou Zeeman, *Professor, Bowdoin College*

SACNAS-International Polar Year Forum/Math Institute/Leadership Institute Lunch & Plenary Session
Session title: "Mathematics of Sea Ice to Help Predict Climate Change"
Keynote Speaker: Dr. Kenneth Golden, *Professor, University of Utah*
Sponsored by: National Security Agency

Plenary Session
Session title: "The Challenges in Quantifying Variability and Uncertainty in Global Climate Change"
Keynote Speaker: Dr. Juan Restrepo, *Professor, University of Arizona*
Sponsored by: Society for Industrial and Applied Mathematics (SIAM)

CONFERENCE ACTIVITIES
Math Scientific Symposia
Mathematical Models of . . .
Session Description This session highlighted the use of mathematical models in a variety of disciplines such as cardiac physiology, infectious diseases, chemistry and biomedicine. The goal was to present the versatility and usefulness of applied mathematics in an era of multidisciplinary approaches to problem solving.
Sponsored by: American Mathematical Society
Session Chair(s) and Speakers
Dr. Ricardo Cortez, *Professor, Tulane University*
Dr. Ivelisse Rubio, *Professor, University of Puerto Rico*
Dr. Brandilyn Stigler, *Postdoctoral Fellow, Mathematical Biosciences Institute*
Dr. Aaron Fogelson, *Professor of Mathematics, University of Utah*
Dr. Anthony Kearsely, Professor, *National Institute of Standards and Technology*
Dr. Suzanne Weeks Associate Professor, *Worcester Polytechnic Institute*

Redefining Boundaries of Mathematics Teaching for Chicano-Latino/a Youth
Session Description This symposium reported findings from several innovative research projects associated with the Center for Mathematics Education of Latinos/as (CEMELA) examining mathematics teaching in community, multi-state, and international contexts. The research highlighted the mathematical, psychological, political, cultural, and linguistic resources that support and challenge effective mathematics instruction.
Session Chair(s) and Speakers
Dr. Julia Aguirre, *Assistant Professor, University of Washington, Tacoma*
Dr. Sylvia Celedon Pattichis, *Associate Professor, University of New Mexico*
Dr. José María Menéndez, *CEMELA Fellow, University of Arizona*

Dr. Sandra Musanti, *Professor, University of New Mexico*
Dr. Maria Elena Rodriguez, *Professor, University of Guadalajara*
Dr. Rochelle Gutierrez, *Associate Professor, University of Illinois at Urbana-Champaign*

Mathematic Institutes Reception and the REU Open Forum
Session Description: This event reunited students who have participated in mathematics summer research programs. Undergraduate mathematics students were invited to hear and ask questions about students' experiences in graduate school and the REU programs in which they participated. Mathematics institutes representatives gave information about mathematics opportunities for all students. Refreshments and appetizers were served.
Sponsored by: AIM, Fields, IMA, IPAM, PCMI, MSRI, MBI, SAMSI
Session Chair(s) and Speakers
Dr. Ivelisse Rubio, *Professor, University of Puerto Rico*
Dr. Stephen Wirkus, *Associate Professor, Arizona State University*
Dr. Kathleen O' Hara, *Associate Director, MSRI*

Who Wants to Be a Mathematician?
Session Description: A fun and exciting contest for undergraduates. All contestants win prizes, with a top prize of $2,000.
Sponsored by: American Mathematical Society
Session Chair(s)
Dr. Aaron Velasco, *Associate Professor, University of Texas at El Paso*
Session Speaker(s)
Dr. Michael Breen, *Public Awareness Officer, American Mathematical Society, and Associate Professor, University of Texas at El Paso*
Dr. Bill Butterworth, *Associate Professor, DePaul University*

Promoting Excellence in Mathematics for Latina/o and Native American Students
Session Description: This session engaged dedicated mathematicians and mathematics education researchers working to promote excellence in Latina/o and Native American students. Participants shared ideas and resources; explored challenges; and developed a common agenda that can allow for future collaborations and contributions to SACNAS strategic planning.
Session Chair(s) and Speakers
Dr. Rochelle Gutierrez, *Associate Professor, University of Illinois at Urbana-Champaign*
Dr. Ricardo Cortez, *Professor, Tulane University*
Dr. Rodrigo Carramiñana, *Associate Professor, University of Illinois at Chicago*
Dr. Robert Megginson, Arthur F. Thurnau Professor, University of Michigan

Statistical Perspectives on Health Disparities in the Hispanic Population
Session Description The Hispanic population continues to grow at a high rate. An important challenge is the documented health disparities. The session discusses and critiques these disparities from a biostatistician's perspective.
Session Chair(s and Speakers:
Dr. Javier Rojo, *Professor of Statistics, Rice University*
Mr. Joe Fred Gonzalez, Jr, *Mathematical Statistician, National Center for Health Statistics, CDC*

Dr. Brisa Sanchez, *Assistant Research Professor of Biostatistics, University of Michigan*
Dr. David Shoham, *Faculty Research Scientist, Dept. of Preventive Medicine & Epidemiology, Loyola University*

Using Interactive Statistics in Teaching K-12 Science & Math
Session Description: This workshop enhanced K-12 educators' understanding of statistics and provided interactive activities to strengthen the teaching of statistics within the math and science curriculum. Teachers applied concepts in the GAISE Pre-K–12 Report (www.amstat.org/education/gaise) by exploring problems that required them to collect, organize, analyze, and draw conclusions from data.
Sponsored by: American Statistical Association
Session Chair(s) and Speakers:
Dr. Keith Crank, *Assistant Director, American Statistical Association*
Dr. Martha Aliaga, *Director of Programs, American Statistical Association*

Mathematics Student Presentations
50 of the 147 NSA sponsored students made either poster or oral presentations at the 2008 conference. SACNAS considers this opportunity to be an important feature of the conference. All student presentations are judged by at least two professionals and the judges give students helpful supportive feedback about their work and presentation style. This is an important way in which students are initiated into the world of scholarship, preparing them to present at professional conferences within their discipline in the future. We are pleased with the following participation of the NSA sponsored students:

- 50 undergraduate poster presentations
- 4 graduate oral presentations

Poster Presentation Awards (3)

- Gina Maria Pomann -- College of New Jersey (Award sponsored by SIAM)
- Alex Washburne -- University of New Mexico (Award sponsored by SIAM)
- Justin Walbeck & Timothy Clinton -- Tulane University

Oral presentation Awards (1)

- Rosalyn Rael -- University of Arizona

The overall attendance of mathematics students and professionals has been increasing and successfully maintained over the six year period of NSA and other funding support. Table 1 shows the number of conference participants funded by NSA and other sources such as the AMS that identified themselves in the area of mathematics over the last five years. The totals include student participants, postdocs, faculty, teachers and professionals and illustrate our strong commitment not only to maintaining a strong mathematics presence at the SACNAS conference, but also to increase our mathematics attendance at future conferences.

Table 1: Mathematics Representation at SACNAS Conferences

Year	Number of Total Math Students	Total Math Attendance	Location
2002	109	147	Anaheim, CA
2003	129	234	Albuquerque, NM
2004	124	249	Austin, TX
2005	164	312	Denver, CO
2006	169	276	Tampa, FL
2007	152	271	Kansas City, MO
2008	150	269	Salt Lake City, UT

Overall, the 2008 SACNAS national conference provided a broad range of highly effective educational, mentoring and networking activities that supported and served the minority scientific community at all levels of the higher education pipeline. These activities benefited all conference attendees and certainly impacted mathematics students equally included opportunities to:

- Engage via *Scientific Symposia* and *Keynote Addresses* with nationally recognized scientific and mathematic role models and mentors such as Dr. Juan Restrepo, who gave an engaging keynote address on the challenges in quantifying variability and uncertainty in global climate change—a gripping example of how mathematical techniques can be applied to significant public issues.
- Gain professional skills essential for advancement in the sciences and mathematics, including professional development workshops that focused on communication of scientific and mathematical research methods and findings.
- Receive feedback from faculty judging Poster Presentations and in the process make meaningful connections with prospective mentors.
- Make informed decisions about their professional future and to establish lasting connections with university, government agency, industry, and research organization representatives.
- Engage in structured mentoring activities such as the *MSRI Networking Lunch*, *Conversations with Scientists,* the *Mathematics Institutes Reception,* and the *REU Open Forum*, where professional scientists, mathematicians and administrators provided essential information to students at all stages of the higher education pipeline, and assisted them to develop an academic and career roadmap that will guide effectively as they navigate their way to professional success in the science and mathematics world.

FISCAL REPORT

The $5,000 of AMS sponsorship was used to fund 4 speakers for 1 session, as indicated below.

	airfare	lodging	registration	
Dr. Tony Kearsley	474.00	671.52	00.00	
Dr. Suzanne Weeks	824.59	503.64	460.00	
Dr. Brandelyn Stigler	472.00	503.64	260.00	
Dr. Aaron Fogelson	Local	Local	460.00	
TOTAL	**1,770.00**	**1,678.08**	**1,180.00**	**4,628.08**

The remainder of the funds, $371.92 were used to support registration fees for undergraduate students who had partial funding from other sources to attend the conference.

Ismana Carney, PhD
Director of Grants & Development
SACNAS
January 15, 2009

Epsilon Awards 2009

Program	**Award Amount**
Achievement in Mathematics Program Lamar University Beaumont, TX	**$7,500**
All Girls/All Math University of Nebraska Lincoln, NE	**$7,500**
Hampshire College Summer Studies in Mathematics (HCSSiM) Hampshire College Amherst, MA	**$10,000**
MathPath University of Vermont Burlington, VT	**$7,500**
Michigan Math and Science Scholars Summer Program University of Michigan Ann Arbor, MI	**$10,000**
PROMYS Boston University Boston, MA	**$12,500**
PROTaSM **(Puerto Rico Opportunities for Talented Students in Mathematics)** University of Puerto Rico, Mayagüez Mayagüez, PR	**$7,500**
Research Science Institute MIT Cambridge, MA **(**Center for Excellence in Education**)**	**$7.500**
Ross Mathematics Program The Ohio State University Columbus, OH	**$15,000**
Texas State University Honors Summer Math Camp Texas State University San Marcos, TX	**$15,000**

TOTAL = $100,000

Ellen J. Maycock
Associate Executive Director
April 17, 2009

To: Executive Committee and Board of Trustees (ECBT) of the AMS
From: Edward Aboufadel, Secretary of AAAS Section A (Mathematics)
Subject: Symposia at the 2009 AAAS Annual Meeting
Date: April 7, 2009

Overview: The AAAS Annual Meeting, considered by many to be the showcase of science, features a variety of presentation formats. In addition to more than one hundred and fifty symposia on themes of contemporary interest, there are individual topical area lectures and plenary lectures. The generous support of the AMS has been centrally important in enabling Section A to offer programs and speakers that communicate to general scientific audiences and the press (and by extension, the public at large) the nature, excitement, and usefulness of mathematics.

The 2009 meeting was held February 13 – 16, in Chicago, IL. Summarized below are Section A's six sponsored symposia and talks presented at this meeting.

1. Mathematics of Origami: From the Joys of Recreation to the Frontiers of Research
Saturday, February 14, 2009, 1:30 – 3:00 PM
Organized by: Patsy Wang-Iverson (Gabriella and Paul Rosenbaum Foundation) and Edward Aboufadel (Grand Valley State University)
Report by Warren Page

This was an interesting and well attended symposium that involved four speakers, and about 80 - 90 people throughout this session.

How a Mathematician Looks at Origami and Finds Prime Numbers, by Tamar B. Veenstra (University of the Redlands, Redlands, CA), began by showing how to divide a rectangular piece of paper into fifths or sevenths. These are special cases of the Fujimoto technique, which uses only the given paper to approximate (1/*n*)th of the paper for any odd integer *n*. In some cases, this technique produces crease lines at all multiples of 1/*n*. Veenstra related properties of foldings to prime numbers. She also showed how to construct origami boxes in the shape of a regular polygon – as, for example, a square-shaped box (using paper folded into fifths with 45 degree folds) and hexagonally-shaped box (using paper folded into sevenths with 60 degree folds).

Increasing Intersections Between Origami and Mathematics, by Thomas C. Hull (Western New England College, North Andover, MA), illustrated the mathematics used in applying origami to a variety of contexts. For example, he viewed unfolded crease patterns as a network of intersecting points, and indicated that only two colors are needed to color the regions, as contrasted with the Four-Color Problem. Another example involved using rotation matrices to produce 3-dimensional, wide-angle microscopic identification tags for soldiers. His talk concluded with an invitation to use origami as a hands-on way to explore mathematics teacher training for classroom uses.

From Flapping Birds to Space Telescopes: The Modern Science of Origami, by Robert J. Lang (Robert J. Lang Origami, Alamo, CA), began with an historical overview of origami. He described how geometric concepts led to the solution of how to fold paper into a shape with an arbitrary number and

arrangement of flaps, which he demonstrated by constructing a cockroach. Producing flaps involves using circles, which he related to circle packing problems in a square.
Some of his application involved deployable structures that need to be small for the journey and large for their employment – as, for example, airbags, a 3-meter telescope lens that opens to 100 meters, and a compressed cardiac stent that expands inside the heart.

The session's discussant, Erik Demaine (Massachussetts Institute of Technology, Cambridge, MA), described how origami related to art and sculpture. He extended the origami theme by describing foldings and hingings in different structures: reconfigurable robots; chemically-induced bond reconfigurations; magnetically linked right-angled tetrahedral and hinged blocks in which one unlinking can lead to other configurations; folded glass structures that unfold from the force of gravity. It was a nice way to conclude the session.

2. Games People Play: Challenges of Applying Mathematics and Computers to Games
Saturday, February 14, 2009, 3:30 – 5:00 PM
Organized by: Robert A. Hearn, Dartmouth College
Report by Carl Pomerance

This 90-minute symposium was organized by Robert A. Hearn, a new PhD (MIT Computer Science under Eric Demaine) at the Newcomb Institute at Dartmouth. There were three speakers, each for about 30 minutes: Elwyn Berlekamp spoke on the game go, Hearn spoke about constructing a game that cannot be solved by a computer, and Navin Bhat spoke about some real-world applications of game theory to finance and economics. At its peak there were about 100 people in the audience.

Elwyn Berlekamp is at UC Berekeley, and he also has his own company. He has spoken at MAA meetings in the Bay Area, the last time on the game of dots and boxes.
He is very well known for his collaboration with Conway and Guy on the book *Winning Ways*. Berlekamp's lecture described a little bit about go for those who were unfamiliar with it, and explained why it is so difficult for computers to play. Computers have been taught to play checkers very effectively, and finally computers have managed to beat chess masters. It took longer for chess since there are many more possible moves in chess than in checkers. Both games have the feature that it is roughly possible to tell if a certain sequence of moves is good for you or bad for you; for example, if a sequence ends with you losing an important chess piece without taking any of your opponent's pieces, it is likely a sequence to avoid.

Go is markedly different for two reasons. First, there are many more possible moves than in chess. Second, especially near the beginning of the game (where the number of possible moves is the largest), it is not easy to tell if one sequence of moves is better or worse than another. Because of this, computers have been dismal go players, with experts easily beating the programs.

Berlekamp then described a very clever way that we have tried to learn about go strategy so as to better program computers to play it. It seems that go professionals know what's good and bad,

but they can't seem to describe why and they especially rebel at trying to quantify how much better one move is than another. So Berlekamp designed a game called "coupon go" where a stack of coupons of decreasing value would be available to a player in lieu of taking a turn. All coupons taken would be added to the player's final score. So, by observing their play, Berlekamp could see for example, if a certain move was worth to that player more or less than 6.5 points (where the currently available coupon was valued at 6.5).

It turned out that this version of go has now become sort of popular with the experts and there are now coupon go tournaments in Japan. Berlekamp was also able to analyze endgame positions and put numerical values to different possible moves. He found that professionals were pretty good, but sometimes chose sub-optimal moves, and later could be convinced that they had done so. This helped gain their respect for the system. Berlekamp contrasted the Eastern holistic philosophy of sensing whether a move is good with the Western reductionist philosophy that wants to analyze and quantify everything.

Hearn began by talking about progress in computers playing go that involves using a Monte Carlo algorithm for the early stages of the game (essentially making educated random moves), and this has done a lot better. Now, with a few stones handicap, this program has beaten some pros. Hearn changed gears and asked if there could be some province of games where people would remain supreme and we would not have to worry about computers taking over. He described a game, called "port correspondence" played with labeled tiles on a finite board among several players that could be proved via Gödel incompleteness to be unsolvable by a computer. The thing is that players do not have perfect information about the state of the game, which allows for this situation to occur. The result is in a joint paper of Hearn and his former advisor, Demaine. He conjectures that another game called "rengo kriegspiel", which is a team, blindfolded version of go may also be undecidable.

Navin Bhat, formerly at U. Toronto, is now at Scotia Capital, the Canadian banking conglomerate. This last talk was perhaps the least successful in an otherwise interesting and provocative session. He spoke about a class of games called "action graph games" (AGG). An example is where to locate your coffee-shop franchise in a city where there are competitors also looking to do the same. A naive attempt to solve the game bogs down with 10 players or even fewer. With his better algorithm, he can solve games for larger *n*, say 20. Another example of where this is useful is bidding for ad spots on Google. While the topic was understandable, the talk seemed a bit too technical and dry for the audience, and some people drifted away.

3. Climate and Disease: Quantitative Insights and Interdisciplinary Challenges
Saturday, February 14, 2009, 1:30 – 3:00 PM
Organized by: Mercedes Pasqual, University of Michigan
Report by Louis J. Gross
The objective of this Symposium was to discuss recent work that analyzes the transmission dynamics and spatial spread of diseases as these are affected by climate change. The approach throughout was to link mathematical and computational models for disease with available data

and use model results to make inferences concerning epidemiology which might then be evaluated using additional data. The work presented focused on malaria, although the methods used might be applied, with suitable modification, to other insect-vector transmitted diseases. As one of the most devastating diseases in Africa today (it was noted that in the time period of the Symposium, on average over 100 children would die of malaria), a focus on this disease might assist in determining how climate change would shift the prevalence of outbreaks causing the highest mortality, and allow limited medical resources to be better utilized in space and time.

Andrew Dobson of Princeton provided a brief overview of challenges arising from the non-linearity inherent in malaria transmission as this interacts with seasonal and longer-period weather effects. A major concern is the potential for climate change to shift the spatial distribution of the disease to new areas with very large susceptible populations and little immunity. The paucity of long-term data on disease dynamics usable for building predictive models was noted as being particularly of concern due to the very limited hopes for effective vaccine development.

Christopher Thomas of Aberystwyth presented methods to provide spatial maps of malaria outbreak hazard arising from weather conditions, using interpolated data on temperature and rainfall. “Hazard” was defined in terms of the number of infected bites per person per year. He utilized IPCC models of climate to illustrate how changing weather conditions could lead to range shifts in areas suitable for malaria transmission and noted that changes in hazard occurred much more rapidly in the peripheral areas than in the fairly stable core of malaria in a portion of central Africa. New techniques using radar imaging provide potential for remote sensing to estimate mosquito breeding zones more effectively.

Mercedes Pascual of Ann Arbor noted several points of contention regarding the relative importance of climate versus drug resistance, evolving due to treatment efforts, in defining shifts in malaria outbreaks. Utilizing an extended form of an SEIR model for malaria infection in humans linked to a temperature-driven model for mosquito population abundance, she used a genetic algorithm to fit model parameters to observed cases in the 1970's, and then simulated forward in time. Comparing two cases in which the impacts of a warming trend were included or not, she noted that climate warming can explain a significant fraction of the increase in malaria incidence over the last 3 decades. Limited data on the prevalence of drug resistance makes inferences regarding its impact quite difficult.

Matt Thomas of Penn State focused on the non-linear effects of temperature fluctuations on malaria transmission arising from consideration of the components which make up R0, the basic reproductive ratio. He noted that the parasite incubation period is the most important parameter in R0 and that fluctuations of temperature within the diurnal range can have significant impact on the magnitude of R0 and thus the likelihood of an outbreak to occur. Significant errors would arise from using a mean temperature rather than accounting for fluctuations, so an R0 based on mean conditions could be misleading. This has implications for effective treatments at various mosquito life stages by reducing the evolution of resistance while still killing mosquito before the parasite has completed its incubation period.

The approximately 50 people in attendance offered a variety of interesting observations and questions following these presentations, dealing with long-term data needs, the effect of bed nets, mosquito thermo-regulation and the lack of evidence for parasite manipulation of host behavior in malaria.

4. Green, Gene, Growing Machines: The Evolutionary Shaping of Plant Form
Saturday, February 14, 2009, 8:30 – 10:00 AM
Organized by: David Baum, University of Wisconsin
Report by Edward Aboufadel

This symposium was sponsored by Section A and by Section G (Biological Sciences). The AMS, through Section A, only supported one of the speakers, as his focus was more mathematical than the other speaker. (The third speaker was absent.) About 40 people were in attendance.

Przemyslaw Prusinkiewicz is a Polish computer scientist who has advanced the idea that Fibonacci numbers in nature can be in part understood as the expression of certain algebraic constraints on free groups, specifically as certain Lindenmayer grammars. Prusinkiewicz's main work is on the modeling of plant growth through such grammars.

His talk in Chicago dealt with two questions. The first was, "What promotes and what constrains the diversity of inflorescence in forms in nature?" *Inflorescence* is a term used to describe the distribution of buds, leaves, branches and internodes in a plant. The second tied into the Darwin theme of the meeting, as Prusinkiewicz asked how mathematics could explain the underlying evolution of plants.

For those who have learned about grammars and languages, Lindenmayer grammars are a special example. To describe the growth of a plant, there are rules that look like:

$$\text{Apex} \rightarrow [\text{Apex}][\text{Bud}][\text{Leaf}][\text{Intermode}]$$

Prusinkiewicz demonstrated realistic looking "virtual plants" that can be generated from these grammar rules. He then turned to the question of evolution, in particular the adaptation of plants to the environment. Attaching a fitness calculation to the plant grammar based on the qualities of the growing season, he found that he could mathematically justify the following:

- In an environment of fixed season duration, the best strategy is to produce the highest number of branches, and to flower at the end of the growing season. In this situation, there are many panicles, which is a flower distribution seen on a plants such as the lilac.
- In an environment with variable season duration, some of the flowering needs to occur early.
- In an environment with typically short seasons but variation, there are few branches, and few survive.

As a real example of the first bullet item, tropical environments tend to be the most predictable, and the highest percentage of panicle plants, compared to other environments, occur in the tropics.

The key to the evolution of plants, then, is a struggle for existence between buds and branches, based on the environment. This struggle can be effectively modeled through Lindenmayer grammars.

5. Mathematical Biology, the New Frontier: Educating the Next Generation
Friday, February 13, 2009, 8:30 – 10:00 AM
Organized by Bonnie Shulman (Bates College)
Report by William Jaco

Speakers:

- Laurie Heyer, Davidson College, *Lost and Found: Integrating Math and Biology in the First-Year Curriculum*
- Shandelle Henson and Jim Hayward, Andrews University, *Animal behavior: A Cross-Disciplinary Approach to Mathematical Modeling in Biology*
- Raina Robeva, Sweet Briar College, *Incorporating Discrete Math into the Undergraduate Mathematical Biology Curriculum*

This Symposium addressed some of the issues of integrating the two disciplines of math and biology, with very different traditions and histories, into the curriculum and the experiences of undergraduates. Each of the speakers is deeply involved in strategies that incorporate mathematical modeling of biological phenomena into the undergraduate curriculum. A study sponsored by the National Academy of Sciences strongly encourages changes in the curricula in math and biology to better educate future generations to address the problems we will face going into the 21st century; the NAS study is published as *Math and Bio 2010* by the MAA.

Laurie Heyer, with Malcolm Campbell and Christopher Paradise, has developed materials for a course at the beginning calculus level. They assume the students have had a pre-calculus course and offer the biology-modeling course as an alternate to the regular calculus sequence. Models requiring the methods of calculus are developed as the means to introduce the techniques and uses of the calculus. They believe the course successful and are planning to extend it to multivariable calculus. Examples were given with from the materials that have been developed.

Shandelle Henson (Mathematician) and Jim Hayward (Biologists) have a summer program that takes students into the field to develop models from field observations. They focus on animal behaviors. The particular experiment presented was "loafing bird behavior" and how it might be predicted so to avoid a menace or serious conflict with human behavior. This is more a differential equation model. There was criticism of the data collection and the model being constructed to predict expected behavior.

Raina Robeva is introducing the mathematics/biology connection via discrete models. She discussed various models that can be used; expressing a view on what constituted a good or a bad model.

On average there were 35-40 in attendance.

6. The Mathematical Twists and Turns of Data Sets
Organized by Robert Ghrist, University of Pennsylvania
Friday, February 13, 2009, 10:30 AM – Noon
Report by William Jaco

Speakers:

- Shmuel Weinberger, University of Chicago, *Detecting Topological Structure*
- Gunnar Carlsson, Stanford University, *Persistence and Shape of Data*
- Robert Ghrist, University of Pennsylvania, *Integration and Aggregation of Redundant Data*

This symposium was a fascinating look at the use of algebraic topology as a tool in dealing with large, high-dimensional data sets that can be neither seen nor sensed. The data sets are parameterized by points in some high dimensional Cartesian product space (sometimes with a relevant distance function) and then explored for such global structure as number of components, homotopy invariants, singular behavior, etc.

Shmuel Weinberger opened the symposium with a general view of the topology that is involved, including precise mathematical results about detecting topological properties, pattern recognition, and methods of how one gets this information. Computation plays a big role and computational complexity is a hurdle. Background noise is always a problem; however, significant geometric/topological features can be detected within reasonable levels of noise.

Gunnar Carlson discussed an approach to discovering the geometry when one has a natural distance function to work with. He pointed out that in general the topology provides coarse discrete information; whereas, if geometry (e.g., curvature, etc) is available, then one has more quantitative information. He discussed the techniques of persistence in tracking the information and how one gains information through persistence of features when changing distances for allowable data points.

Ghrist gave a beautiful introductory-style talk setting up the problem, exhibiting with examples what one can look for and possibly detect, and laying forth the whole scheme of taking local information from large data sets and putting it together to get a global picture.

It was a great symposium but probably would have achieved a better audience reaction had the talks been given in the reverse order Ghrist, Carlson, and then Weinberger. There were nearly 60 in attendance at the first talk and this had dropped to at most 50 when Ghrist gave a beautiful introductory talk making the whole so much clearer.

Report on Information Architecture for AMS Website Project

Summary

In 2008, we engaged a consultant, Contextual Analysis (CA) of Chicago, IL, to assist us with developing an information architecture (IA) to reorganize the AMS website. The new IA is intended to make it easier for users of the website to locate information. The work with Contextual Analysis is nearly complete and we are working towards implementing the new IA. The new website is scheduled to be launched early in the third quarter of 2009. Major milestones in the project include:

Website Mission Statement (completed): On January 29, 2009, CA worked with a group of senior managers and the IA project team to develop a mission statement for the website. The Staff Executive Committee approved the mission statement. The mission statement is included below.

Website Governance Structure (completed): At the recommendation of CA and the IA project team the AMS Staff Executive Committee approved the adoption of a Website Governance Structure that includes an Executive Sponsor and an Advisory Group. The Web Advisory Group is responsible for the oversight of strategic and tactical initiatives for the website. See details of the governance structure below.

Information Architecture Schema (completed): Using an extensive, user-centered methodology, CA created a customized Information Architecture schema for the AMS that organizes and labels website content from the website user's perspective. Using the proposed IA, AMS computing staff has classified over 45,000 individual pieces of website content, making adjustments to the IA as necessary. The Web Advisory Group is scheduled to approve the IA in early May 2009.

Design Prototypes (in-progress): AMS design staff has nearly completed two web page design proposals that include features recommended by CA. The Web Advisory Group will approve a new page design in early May 2009.

Website Content (in-progress): We are in the process of preparing a set of design guidelines (writing style, image, font, and color usage, etc.) for staff that provide web content. Substantial changes to the website content will be necessary because many of the existing website pages contain only navigational links. The content updating process will run through June 2009.

Technical Development (in-progress): Many pages in the new website will be dynamically constructed from various data sources (database, text file, etc.), requiring extensive changes to the technical infrastructure. We are also enhancing our existing

content management tool to accommodate the new features of the website. Both of these efforts will continue throughout June 2009.

Project Report

The Contextual Analysis Information Architecture development process is a collaborative, user-centered methodology that provides a customized solution to address our specific goals. Below is an overview of the process CA performed:

Stakeholder Interviews: CA conducted one-on-one interviews with AMS opinion leaders to gain insight into the objectives of the American Mathematical Society website redesign project, the distinct segments of website users, the internal resources being devoted to the project, and the challenges the project may face.

Comparative Analyses: CA performed a comparative analysis of websites of three organizations similar to AMS, namely the American Chemical Society, American Physical Society and the Society for Technical Communication. The comparative analysis focused on the high-level structures of each of those websites, identifying commonalities and differences in content organization, as well as labeling for the sites' navigation systems.

Website Statistics: CA reviewed current AMS website statistics to identify basic information such as most visited pages and frequency of visits. Analysis of web stats occasionally are of limited value, as it is impossible to understand what users were looking for, or whether they even found what they came to the website to look for.

Content Audit: CA performed a detailed content audit to identify all the material currently contained in the relevant portions of the AMS website.

Sitemap of current content: CA prepared a high-level sitemap that depicting the current organization of the Society's website content organization hierarchy.

User Research and Testing: Because users often have a distinctly different view of a website's content than the creators of that content, it is important to have direct contact with users as part of the information-gathering phase of any website redesign process. CA conducted a series of one-on-one phone interviews with individuals from each previously identified audience segments. Seventeen user interviews and 11 term sorting exercises were conducted with 18 AMS.org users during the period from October 20 to November 13, 2008. As part of the hour-long interview process, CA also facilitated a card sorting exercise to learn in more detail how users group the types of information found on the AMS website. The AMS also created an online survey to validate the website user groups that were developed during the Contextual Analysis onsite visit

User Task Analysis: The complete information architecture will be validated internally by the appropriate AMS staff and will also be validated with further user testing, specifically user task analysis. Eight to ten individuals, representing the various website audience segments will be given a series of tasks to complete using a prototype of the reorganized AMS website.

Recommendations from the Process

During this process, we received several recommendations from Contextual Analysis (CA) relating to both website content and website functionality. These recommendations are the reflection of good design principles. Here is a list of the most prominent recommendations.

Content-Related Recommendations:

- Ensure access to information is task and audience based
- Adopt website labeling that is recognizable from the users perspective
- Eliminate flat navigation pages (web pages that contain only links and no "content")
- Accurately categorize content within a "user-perspective" Information Architecture structure.

Functional Recommendations:

- Ensure that global navigation appears consistently across the site
- Adopt "Most Popular" links feature consistently across the site
- Include Contextual-based LOCAL Navigation
- Implement a breadcrumb or other "you are here" location indicator
- Adopt role-based (Personas) as a complementary means of navigating content.

AMS Website Mission Statement
In Februrary2009, The Staff Executive Committee approved the following mission statement for AMS website:

The AMS website will support the mission of the AMS to further mathematical research and scholarship by:

- *facilitating the exchange of news and information between AMS and its audiences,*
- *promoting membership in the Society,*
- *promoting the Society's meetings, products, and services,*
- *supporting the business activities of the Society,*
- *supporting AMS publishing programs,*
- *promoting awareness and appreciation of mathematics and of the Society,*

- *supporting the membership and governance activities of the Society,*
- *facilitating communication among the AMS's audiences,*
- *fostering communities of individuals interested in mathematics.*

AMS Website Governance Structure

Executive Sponsor

The AMS website should have an executive sponsor who is responsible for supporting and advocating for the needs of the website, including its governance and maintenance processes. This individual consults with the Executive Director and Staff Executive Committee regarding the alignment of website initiatives with organizational direction and priorities. The executive sponsor is Gary Brownell, Deputy Executive Director.

Web Advisory Group

This group – which includes the Executive Sponsor – provides oversight for strategic and tactical initiatives regarding the website. It also provides guidance to the Web Management & Administration Group. It is a cross-organizational team that includes stakeholders from the various constituencies directly concerned with AMS.org development, including but not limited to:

- computing departments
- content authors
- executive staff

The Web Advisory Group consists of:

Don McClure , Executive Director
Gary G. Brownell, Deputy Executive Director
Elizabeth A. Huber, AED, Publishing\
Ellen J. Maycock, AED, Meetings and Professional Services Division
Tom Blythe, CIO
Gerry Loon, Director of Business and Publications Computing
Sherry O'Brien, Webmaster – Ex Officio
Annette Emerson, Public Awareness Officer
Peter Sykes, Manager of Creative Services Department

Web Management and Administration Group

This group ensures that the site has a consistent look and feel, handles website maintenance, develops and promulgates web guidelines and styles guides, and ensures that guidelines, style guides and other policies are followed. They are tasked with research and development of technologies that keep the website usable and appealing to audiences across the spectrum of the mathematical community and others who use the site, and to bring new technologies, etc. to the attention of the Web Advisory Group. Much of their work involves day-to-day workings with the website. The Web Management and Administration Group is the Business and Publications Computing Department. This group will be expanded from time to time as necessary, for example by including Creative Services staff in reviewing consistent design and branding.

Web User Group

The Web Advisory Group and the Executive Sponsor will develop a list of AMS staff that will be invited to serve on a Web User Group. This group will represent the needs of various departments across the AMS. They will develop and foster a view of the AMS website as an entity that serves the entire Society rather than the solitary departmental interests that currently exist.

Gerry Loon, Director

Business and Publication Computing

Minutes

Board of Trustees
American Mathematical Society
December 30, 2008

Members present: John B. Conway, John M. Franks, Eric M. Friedlander (Chair), James G. Glimm, Linda Keen, Donald E. McClure, Karen Vogtmann, and Carol S. Wood.

John Ewing sent information to the Board on Thursday, December 19, 2008 about the preferred proposal for purchase and implementation of new association management software for the Society. The summary information and capital request is included as Attachment 1 (memorandum from Chief Information Officer Tom Blythe discussing the bid process and analysis of bids). The detailed proposal by TMA resources was available for inspection by the Board in a secured area of the AMS website.

Pursuant to the approved procedures for a meeting by technical means, Treasurer John Franks initiated the call for such a meeting on Thursday, December 19. The call for the meeting was sent by email to the email alias on the same day and the meeting was conducted by email. There is one item on the agenda: Capital Request for Association Management Software

Board secretary Karen Vogtmann made the following motion.

> The Board of Trustees approves spending up to $1,052,000 for purchase and implementation of TMA Resources Personify association management software, as described in the December 18, 2008 memorandum from Thomas Blythe attached hereto. The amount includes $352,275 for software, $543,240 for Professional Services for Implementation, $75,000 for Hardware and System Software. It also includes a contingency of $81,485.

The motion was seconded by Don McClure. Discussion and voting were scheduled to end on Tuesday, December 30 at 12:00 noon Pacific Standard Time. By that time, all members had voted by email, and the motion was passed unanimously.

Minutes prepared by Karen Vogtmann
Secretary, Board of Trustees

AMS
AMERICAN MATHEMATICAL SOCIETY

201 Charles Street, Providence, RI 02904
Phone: 301-455-4000, Fax: 401-331-3842
www.ams.org

To: Board of Trustees
From: Thomas Blythe (CIO)
Subject: Capital Request -- Purchase and implementation of association management system software
Date: December 18, 2008

Summary

We are requesting that the Board of Trustees approve the following capital request to purchase and implement new association management system software and the hardware on which to run it. This software will replace a number of systems that were developed in-house, as well as the CHER system, which was purchased for meeting registration.

We are recommending the purchase of TMA Resources' Personify association management software. TMA Resources is the leading vendor for associations of our size and is also the vendor of choice for both MAA and SIAM. If approved, work will begin in January 2009, with an estimated "go live" date in mid-2010. We would like to begin work at this time to ensure that we can work with a TMA Resources implementation team that is available now and comes to us highly recommended by references. In addition, a starting time of January 2009 should enable us to have the system installed in time for the beginning of the 2011 membership cycle.

Total purchase and implementation costs of the project are expected to be as follows:

Software	$352,275
Professional Services for Implementation	$543,240
Hardware and System Software	$75,000
Total before contingencies	$970,515
Contingency (implementation)	$81,485
Total Estimated Maximum Cost	**$1,052,000**

Explanation of Costs

The "Software" cost of $352,275 is the actual negotiated cost of software from the vendor. This total includes three software modules, priced at $49,180, which we may choose not to implement. They modules can be returned for credit prior to the "go live" date.

The $543,240 labeled "Professional Services for Implementation" is an estimate made by TMA Resources using the information they gathered during the selection process, and following long discussions between TMA Resources and AMS.

The first phase of implementation is the "Discovery" phase. During this phase, TMA Resources will work with AMS staff to determine the best plan for meeting our requirements with their software. Discovery will identify configurations required, software customizations needed, and business processes to be modified. When the Discovery phase is complete, the remainder of the Professional Services required for implementation will be re-estimated and the AMS will be given the option to cap the implementation expenses or approve and pay for services on a time and materials basis. The current estimate is lower than the original quote based on AMS staff performing tasks that had originally been assigned to the vendor.

"Hardware and System Software" is an estimate created by AMS staff. In creating this estimate, our staff consulted with TMA Resources to get their recommendations based on our size and complexity. Information from references was also used in creating this estimate.

The $81,485 budgeted for "Contingency" is 15% of the amount budgeted for Professional Services for Implementation.

The system is scheduled to "go live" in 2010. Once the system is live, the Society will be billed for annual maintenance and support. The first year of maintenance and support will be $63,410. Depreciation will start when the system is placed in service. Assuming six months of service, depreciation for 2010 will be $105,200.

Preliminary estimates are that Information Systems Division (ISD) staff will devote eight FTE-years to the 18-month implementation, while other departments will devote four FTE-years. ISD staff will be actively involved during the entire 18 months, but other staff time will be concentrated mostly during the Discovery and testing phases of implementation.

Selection

Personify will replace our existing systems for membership processing, customer management, subscription fulfillment, order processing, item and inventory management, distribution and warehousing, committee management, development, meeting registration and housing (CHER), meeting and exhibit management, and abstract processing. With

the exception of the CHER system, all the systems being replaced were originally developed in-house between 1987 and 1991, and run on old Alpha computers using the OpenVMS operating system. The CHER system that is currently used for meeting registration and housing is no longer supported by its vendor and runs on the outdated Window NT Server operating system. While these systems have served us well for close to two decades and have been enhanced to meet AMS's changing needs, they are based on old technology and are becoming increasingly harder to modify as our needs change and new technologies become available. Because they are based on old technology, AMS staff find it difficult to train new employees to use them.

Personify was selected from a list of three software packages that we identified in 2007. The selection process included the following tasks:

- Forming a working Project Team for evaluation and selecting the Staff Executive Committee as its advisory group
- Developing a detailed project plan and schedule
- Creating a request for proposal (RFP) that included:
  - a description of the Society
  - a description of our current technical environment
  - a description of our desired technical environment
  - a list of vendor questions, including questions about its company and proposed solution
  - an extensive functional requirements grid, where the vendor could indicate how its package would fulfill our functional requirements
- Sending the RFP to three vendors: Advanced Solutions (iMIS), Aptify (Aptify), and TMA Resources (Personify)
- Holding individual two-day meetings with each of the three vendors that could be used at the vendor's discretion to present information about its company and products and to clarify needs identified in the RFP
- Developing a software demonstration script that would allow our evaluation team to evaluate key portions of the vendors' systems
- Evaluating responses to the RFP from all three vendors
- Hosting two vendors (Aptify and TMA Resources) for software demonstrations using the AMS developed script
- Performing reference calls
- Requesting price quotes for software and implementation services
- Selecting a preferred vendor (TMA Resources)
- Visiting a TMA Resources' customer site, the American Society of Civil Engineers
- Visiting TMS Resources' headquarters office

The selection of TMA Resources' Personify package was based on the following criteria:

- **Functionality:** Personify covers a vast majority of the Society's requirements. It also includes a number of functions that we currently do not require, but may need in the future.

- **Integration:** All modules are integrated into a single system, accessing a single database
- **Ease of Use:** The user interface is familiar to users, because it uses Microsoft technology
- **Data Access:** The system uses the Microsoft SQL Server database, and comes with Crystal Reports for end-user reporting and Business Objects for data analysis. The system also offers customizable, user "dashboards" that present critical data to users in a graphical format, based on their needs.
- **Flexibility:** The system offers a number of options for configuration to our needs and is highly customizable. Customizations can be preserved when upgrading to new versions in the future
- **Technology:** The software was written using Microsoft's .NET development environment for internal business use and using DOTNETNUKE for Internet use. These technologies will allow our technical staff to expand and customize the software to meet requirements that are unique to the AMS, but still maintain an upgrade path for future versions from the vendor.
- **Interfaces:** Personify offers interfaces to a number of software packages that are industry leaders in their area (e.g., Verisign for credit card processing). These interfaces greatly enhance the functional footprint of the system.
- **Regulatory Compliance:** Use of Personify will enable the Society to be compliant with the Payment Card Industry's Data Security Standard for processing and storage of credit card transactions.
- **Vendor Qualification:** Lehman Associates, an independent consulting and research company, ranks TMA Resources as the market leader for associations with budgets of $25 million or greater. TMA Resources is financially sound and has a sound technology direction.
- **Cost:** The original quotes from the vendors for software and implementation ranged from $852,525 (Aptify), to $940,000 (Advanced Solutions), to $1,094,000 (TMA Resources). A vast majority of the difference in the quotes can be attributed to the estimate for implementation services from each vendor. Based on an analysis of their strategies, information from references, and our own experience, we believe TMA Resources has the best implementation methodology and the best estimate of cost. Through negotiation and discussions, we were able to lower TMA Resources' quote for software and implementation to $895,515.

This packet also includes:

- Capital Purchase Authorization
- TMA Resources Proposal (price quote)
- TMA Resources Master Agreement (contract, currently being reviewed by our attorneys)

TMA Resources

Proposal For
The American Mathematical Society (AMS)
Revised December 12, 2008

SOFTWARE				Item #	
Personify Enterprise Suite					
Enterprise - A La Carte	System Management	Includes: Notification Services, Reports Management, Security Management, System Administration	New license	TMS700-100	$16,615
	Customer Management	Includes: Contact Management, Customer Management	New license	TMS700-105	$16,615
	Financial Management	Includes: Accounts Receivable, EFT and ACH Processing, Lockbox Processing, Multi-Company Processing, Multi-Currency	New license	TMS700-110	$16,615
	Call Center and Marketing Management	Includes: Call Center Management, Marketing and List Management, Ad Hoc Query Management	New license	TMS700-115	$16,615
	Membership Management	Includes: Membership Management	New license	TMS700-125	$16,615
	Committee Management	Includes: Committee Management	New license	TMS700-135	$16,615
	Fund Raising and Donor Management	Includes: Fund Raising and Donor Management	New license	TMS700-145	$16,615
	Meetings and Exhibition Management	Includes: Exhibition Management, Facilities Management, Meeting Management, Speaker Management	New license	TMS700-150	$16,615
	Product Order and Inventory Managemer	Includes: Miscellaneous Invoice Management	New license	TMS700-155	$16,615
	Publication and Subscription Managemer	Includes: Publication Fulfillment and Management, Subscription Audit Management ABC/BPA	New license	TMS700-160	$16,615
Base Analytics for Personify Enterprise		Business Objects Enterprise XI Premium	New license	BOE70X-100	$40,368
		Crystal XI Run-Time	New license	BOC70X-100	included
		Performance Manager	New license	BOP70X-100	included
		Web Intelligence	New license	BOW70X-100	included
		Personify Business Objects Universe for ad hoc query and operational dashboards	New license	TNV70X-100	$12,500
Personify e-Business Suite					
Personify eBusiness Base Web Modules			New license	TSS700-100	$35,000
Premium Web Module – Abstract Submission Management			New license	PAM700-100	$30,000
Single Sign-On (SSO)			New license	SSO-SOF-	$9,000
Identity Management (IM)			New license	IDM-SOF-5001	$4,500
Personify Platform and Tools					
Personify Platform Web Services/ API Library			New license	TWS700-100	$25,000
Personify Studio			New license	TAE700-100	$25,000
Interface to Group1 Postal Management Software			New license	IGP700-100	$11,500
Interface to AP and GL (from AR)			New license	IAR700-100	$11,500
Interface to Outlook			New license	AOU700-100	$15,625
Interface to Verisign/ Paypal			New license	IVS700-100	$11,500
Interface to Audit Logging - Apex SQL Studio			New license	IAA700-100	$11,500
Software TOTAL					**$409,147**
Software Discount					**$56,872**
Software TOTAL less Discount					**$352,275**
Estimated Travel Expenses					$25,000
IMPLEMENTATION SERVICES					
Software Implementation Estimates					
Implementation Services ESTIMATE					**$543,240**
Software and Services TOTAL					**$895,515**
Support/ Maintenance					
Standard - 18%		Email, phone: 8 am - 5pm, customer time zone, Mon - Fri		MNT100-100	
Support/ Maintenance TOTAL					**$63,410**

TMA Resources

Implementation Services
The American Mathematical Society (AMS)
Revised December 12, 2008

PROPOSED IMPLEMENTATION SERVICES		
Stage One: Discovery	**Est. Hrs**	**Est. Fees**
Project Initialization Review Customer Specific Requirements (e.g., RFP) Create and deliver project plan Schedule configuration service Conduct project kick-off meeting	**60**	**$9,600**
Software Installation Service Install Personify Enterprise software and 3rd party software Provide infrastructure and hardware sizing consulting Prepare and deliver installation report	**20**	**$3,200**
Configuration Analysis Service Prepare for configuration analysis service Configuration analysis service and product orientation Requirements gathering and definition Persona Overview System set-ups and review Develop and deliver workbook	**228**	**$36,480**
Fit Analysis (Gap) Service Analyze requirements not met by Personify software (gaps) Analyze Personify Enterprise requirements (including Personify Studio) Develop and deliver scope of work	**Estimate**	**$62,500**
eBusiness Integration Service Analyze Personify e-Business Analyze 3rd party interface requirements Develop and deliver scope of work		
Report Analysis Service (AMS TASK) Analyze requirements not met by Personify Enterprise reports (gaps) Develop and deliver scope of work	**NA**	**NA**
Data Conversion Analysis Service Discuss source system data and target templates Develop and deliver summary of findings, approach and assumption definition Develop and deliver scope of work	**76**	**$12,160**
General Project Management Stage 1 - General Project Management (4 hrs/wk for 30% of project duration)	**64**	**$10,240**
Sub-Total - Discovery Stage		**$134,180**
Stage Two: Design and Development		
Develop Personify Enterprise Extensions and Enhancements Create detail technical design Develop, unit test and document software component	**Estimate**	**$187,500**
Develop Personify e-Business Enhancements & 3rd Party Integration Create detail technical design Develop, unit test and document software component		
Develop Custom Personify Reports Create detail technical design Develop, unit test and document software component		
Sub-Total - Design and Development Stage		**$187,500**
Stage Three: Conversion and Testing	**Est. Hrs**	**Est. Fees**
Financial Orientation Personify Accounting Concepts Accounting set-up training and assistance Baseline reconciliation considerations	**36**	**$5,760**
Assist Customer in Completing Set-Ups		

Product set-up training and assistance Review actual set-ups with CIT Assist in completing requisite Personify configuration	60	$9,600
Mapping Assistance and Training Review data conversion templates and process	60	$9,600
Data Conversion Cycle One Validate extracted data Load and convert data Verify and deliver data	128	$17,360
Data Conversion Cycle Two (AMS TASK - TMAR to provide 40 hours of consulting support) Validate extracted data Load and convert data Verify and deliver data	40	$6,400
Data Conversion Cycle Three (if needed) Validate extracted data Load and convert data Verify and deliver data	n/a	n/a
Final Conversion Cycle (Execution in Rollout Stage) (AMS TASK - TMAR to provide 40 hours of consulting support) TMA Resources to load and convert data TMA Resources to QA and test data Deliver converted data to the customer	40	$6,400
Baseline Reconciliation Discuss and verify manual conversion of financial data Run Personify processes and reports to obtain balances Reconcile Personify balances to GL and legacy system balances	48	$7,680
End-to-End System Validation and Review Verify all production executables are installed and tested Verify customer's converted data is properly loaded and tested. Perform system integration test in customer's environment (certify for UAT)	76	$12,160
Assist User Acceptance Testing Provide test case development Provide testing support Conduct training for CIT for testing purposes on converted data (days)	80 6 days	$12,800 $15,000
Sub-Total - Conversion and Testing Stage		$102,760
Stage Four: Roll Out		**Est. Fees**
Personify End User Training Modify training material to incorporate customer specific processes **(AMS TASK - TMAR to provide 40 hours of consulting support)** Conduct end user training (days)	 10 days	$6,400 $25,000
Go-Live Support Go-live support Project review meeting	80	$12,800
Personify Month-End Support Create Month-end policy and procedures Month-end close (aprox 45 days from Go-Live date)	32	$5,120
Sub-Total - Rollout Stage		$49,320
Project Support and Training		**Est. Fees**
General Project Management Stage 2-4 - General Project Management (4 hrs/wk for 70% of project duration)	148	$23,680
Training Workshops Personify technical training (5 days) Personify Platform API programming training (2 days) Crystal Reports basic training (3 days) plus Data Analyzer training (2 days)	Attendees 2 2 2	 $6,000 $2,400 $6,000
Sub-Total - Project Support and Training		$38,080
Other Software		**Est. Fees**
SSO/IM Implementation (AMS TASK - TMAR to provide 40 hours of consulting support) SSO Implementation and Data Conversion		$6,400
Sub-Total - Other Software		$6,400
Total Professional Services Estimated Fees		$518,240

Professional Services Implementation Assumptions

GENERAL

• *The proposed implementation estimate is based on requirements contained in this RFP only. If additional requirements (or a greater understanding of a previously identified requirement) are identified during Discovery, additional implementation fees may apply.*
• The estimates above reflect services performed by multiple project team members.
• Multi-company/org services will be implemented during initial phase of Project.
• Travel related expenses will be billed to the customer at actual costs incurred.
• Hardware not included for premise (license) based solutions.
• Microsoft SQL Server software not included for premise (license) based solutions.

STAGE 1: DISCOVERY
Configuration Analysis Service
• The scope of Discovery is limited to the Personify Enterprise Core Modules and only the modules or interfaces listed.
Third Party Interfaces
• Only the standard Personify interfaces are included (services to alter the standard interfaces is not included).
Fit Analysis (Gap) Service
• Custom development estimates are based on current understanding of requirements.
Report Analysis Service
• Customer will be provided with the list of Personify Enterprise standard reports and asked to evaluate them against their specific reporting requirements.
• No report development estimates have been provided at this time.

STAGE 2: DESIGN AND DEVELOPMENT
Customization Maintenance
• Customization maintenance fees are assessed at 9% annually for TMAR supported customizations.

STAGE 3: CONVERSION AND TESTING
Setups
• Customer is primarily responsible for chart of account setups, system code setups and product setups with assistance from TMA Resources. This must be complete prior to data conversion.
Data Conversion
• Customer and TMA Resources agree on the scope for data conversion. TMA Resources has estimated the above hours for data mapping and conversion based on purchased modules and experience with similar customers. Hours subject to change and additional service requested is extra.
• Customer has adequate knowledge of legacy data to extract clean files which can be consumed by the TMA Resources data upload tool *(files which are not clean will require extra conversion cycles at an additional cost).*
• Customer is responsible for data extraction from its legacy system into TMA Resources conversion templates *(i.e., ASCII files or database tables).*
• Use of the Personify Studio to add any fields, tabs, etc. which are required for data conversion is extra.
• Identified number of data conversion cycles are included. Additional cycles will result in additional cost.
• TMA Resources and Customer will test the converted data to:
  a. Validate converted data through appropriate Personify Enterprise applications and various standard reports
  b. Verify the record counts
  c. Verify financial reconciliation if converting A/R
• Customer is responsible for reviewing error reports promptly and correcting bad data prior to the final conversion cycle.
• Customer is fully responsible for Cycle 2 and Final conversion.

STAGE 4: ROLLOUT
User Acceptance Testing Assistance/Go Live Support
• Customer is responsible for creating test cases.
• TMA Resources will provide the identified amount of User Acceptance Testing hours. Additional service requested is extra.
• TMA Resources will provide the identified amount of System Testing assistance. Additional service requested is extra.
• TMA Resources will provide the identified amount of Go Live Support assistance. Additional service requested is extra.

General Project and /Technical Mgmt

• Assumes an average of four (4) hours per week over a the duration of the project. Additional service requested or required is extra.

MINUTES OF MEETING BY TECHNICAL MEANS

BOARD OF TRUSTEES
AMERICAN MATHEMATICAL SOCIETY
MARCH 26, 2009

Members present: George Andrews, John B. Conway, John M. Franks, Eric M. Friedlander (Chair), Ronald Stern, Karen Vogtmann, and Carol S. Wood.

Don McClure sent information to the Board on Monday, March 23 about the capital request for purchase and implementation of hardware and software that will allow the AMS to move from its current physical server architecture to a virtual server environment. The summary information and capital request is included as Attachment 1 (memorandum from Shannon Reall, Manager, Systems and Operations). Memoranda detailing the rationale for choosing the three hardware and software components of the capital request and the quotation from Capital Archiving Solutions for implementing the system were available for inspection by the Board in a secured area of the AMS website.

Pursuant to the approved procedures for a meeting by technical means, Treasurer John Franks initiated the call for such a meeting on Monday, March 23. The call for the meeting was sent by email to the email alias on the same day and the meeting was conducted by email. There is one item on the agenda: Capital request for computer hardware and software to improve the Society's server environment.

Board secretary Karen Vogtmann made the following motion.

Motion: The Board of Trustees approves spending up to $118,122 for purchase and implementation of EMC storage and VMware software, as described in the March 23, 2009 memorandum from Shannon Reall attached hereto.

The motion was seconded by John Franks. Discussion and voting were scheduled to end on Thursday, March 26 at 12:00 noon Pacific Standard Time. By that time, all members had voted by email. The result of the vote was 6 votes in favor and one abstention, and the motion carried.

Minutes prepared by Karen Vogtmann
Secretary, Board of Trustees

AMS
AMERICAN MATHEMATICAL SOCIETY

P.O. Box 6248, Providence, RI 02940-6248 USA
201 Charles Street, Providence, RI 02904-2294
Phone: 401-455-4000, Fax: 401-331-3842
www.ams.org

To: Board of Trustees
From: Shannon Reall (Manager, Systems and Operations)
Date: March 23rd, 2009
Subject: Capital Request – Purchase and implementation of hardware and software for virtualization project

Summary
We are requesting that the Board of Trustees approve the following capital request to purchase and implement hardware and software that will allow us to move from our current physical server architecture to a virtual server environment. Having a virtual server environment will provide the AMS significant cost savings in the future.

There are four components required for creation of a virtual environment at the Society:

- a Storage Area Network (SAN)
- virtualization software
- high performance server computers
- professional services for implementation

We are recommending purchase of the following:

- EMCs' CLARiiON CX4-120 for the SAN
- VMware for the virtualization software
- 4 Hewlett-Packard ProLiant DL385 G5p Servers
- Professional services from Content Archiving Solutions

Content Archiving Solutions (CAS) is a Value Added Reseller (VAR) for EMC with expert knowledge in their products and in VMware. CAS will provide assistance with implementation, documentation and knowledge transfer. We have spoken with two references that praised their implementation process.

Since the creation of the virtual environment cannot be completed without all of the components, we are looking for approval for the entire purchase. In addition to creating a virtual environment in our Providence office, we have included the purchase of an additional SAN to be used for Disaster Recovery. This optional SAN would allow us to have a copy of our data in an off-site location for failover and data recovery. Our Ann Arbor office would most likely be a good location for this. CAS will be responsible for the installation at the Disaster Recovery site.

Total purchase and implementation costs for the project are expected to be as follows:

Item # (quote)	Description	Amount
1	EMC SAN: CX4 -120 with 6 TB usable capacity, iSCSI, FC, Upgrade Pair 4 FC modules, Navisphere Manager and Snapview	$35,760
7	Pair Ultraflex upgrade: +8 FC host port connections	$3,628
1	Professional Services for Providence SAN – implementation and configuration	$3,000
2	EMC DR SAN: CX4-120 with 6 TB usable capacity, iSCSI, FC, Navisphere Manager, MirrorView	$25,999
2	Professional Services for DR SAN – implementation and configuration	$3,000
11	VMware for 8 Processors and VirtualCenter	$23,235
	4 HP ProLiant DL385 G5p Servers – High Performance Model	$44,000
11	Professional Services for Implementation of VMware	$7,500
	Total hardware, software and professional services:	$146,122
	Hardware approved as part of capital request for association management system:	($28,000)
	Total for this capital request:	**$118,122**

Explanation of Costs
Costs of the EMC SANs ($39,388 and $25,999) are the actual negotiated costs for purchase through CAS. Service and support costs for the first four years will be fixed at $31,928. The $23,235 cost of VMware is the actual negotiated costs for purchase through CAS. Annual support costs for VMware are $5,809. Professional services from CAS for implementation of the entire virtual environment is a fixed quote of $13,500. The $44,000 for the HP servers is a not to exceed estimate based on recent quotes from Hewlett-Packard using an educational discount.

Project Overview
Systems and Operations is recommending re-implementation of 25 to 30 of our physical servers as virtual servers. In our environment, virtualization would provide two significant advantages. First, several virtual servers run on a single physical server reducing the amount of equipment and associated costs. Based on industry average we can expect approximately a 10:1 consolidation ratio. Second, a virtual server can be brought up on an alternate local or remote server to reduce downtime and provide disaster recovery.

Many companies these days suffer from what is called “Server Sprawl”. Server sprawl is a situation in which multiple, under-utilized servers take up more space and consume more resources than can be justified by their workload. The most common cause of server sprawl is the practice of dedicating servers to single applications to improve stability and security. This can lead to high costs and inefficiencies. Servers take up space, consume power, must be managed, maintained and upgraded periodically. The AMS has 33 physical servers in its environment of which over 75% are running at less than 30% of their CPU capacity. Implementing virtual servers would allow us to consolidate workloads onto a smaller number of more fully utilized machines.

Part of the Systems and Operations mission statement is to provide a reliable computing environment. Production processing depends on systems being available. With virtualization, we will gain hardware high availability. Our current efforts are application specific only. Most servers and services are not highly available and can take a full day to recover. None of our high availability configurations constitute a disaster recovery system.

A long-standing concern at the AMS has been the creation of a highly resilient web environment. Currently, we have a clustered server web environment, located in our Providence office. The clustered environment allows a second server to host the web site if a problem affects the first server. If both servers are down, we post a placeholder page directing MathSciNet subscribers to our mirror sites. In 2009, we will also have a mirror site available for journals. We continue to evaluate placing failover servers in Ann Arbor or in a collocation center that has redundancy for electrical grids, internet service providers, generators, fire suppression, and security. In the event of a disaster having a virtual server will provide us with a means to failover to an off-site location by just rerouting DNS. It is expected that the web environment will be addressed in the second phase of this project either later this year or in 2010 depending on availability of the Business & Publications Computing department for testing and development.

There are many other benefits that we will realize by moving to virtual servers which include:

- Reduction of downtime during server upgrades and patches
- Minimal recovery time for failed hardware
- Consistent server builds from a library of standard templates
- Improved resource management guaranteeing specific amounts of CPU, memory, I/O and network bandwidth to a server
- Real-time recovery at the Disaster Recovery site in the event of a disaster
- Reduced software dependency on specific hardware via virtualized drivers
- Monitoring and management capabilities for all servers from a single "dashboard"
- Reduced IT effort to maintain hardware and software in a development environment for testing

Cost Savings

Support costs for servers in our current environment that we expect to re-implement as virtual servers are approximately $19,888 annually. This does not include any support costs for new physical servers we would need to purchase to support projects this year if we were to continue in our same environment. Support costs for the virtual environment would be approximately $14,824 annually. This includes support for disaster recovery site equipment, which we do not currently have. Not all physical servers will be migrated to virtual servers immediately; however the reduction in support costs will be significant over time.

Other savings that would be recognized in a virtual environment include:

- Ability to scale rapidly to accommodate growth with minimal expense
- Electricity / power savings from server consolidation, plus possible voucher from National Grid as they promote the "go green" initiative
- Reducing costly downtime of production systems

This packet also includes:

- CAS price quote
- Justification for each recommended purchase

Content Archiving Solutions Quotation Prepared for:
American Mathematical Society
Storage Infrastructure for Virtualization Project

Date: 3/20/2009
For: AMS
Address: 201 Charles Street
Providence, RI, 02904
From: Fern Supawanich
Phone: 617-512-2017
Quote Number: QR-1336391-7

Item	Qty	Part Number	Part Description		Price
1		***EMC SAN: CX4-120 with 6 TB usable capacity, 3 YR Premium HW/SW Maint***		*EMC SAN:*	***$ 35,760***
		iSCSI, FiberChannel, Navisphere Manager and SnapView		*CAS PS:*	***$ 3,000***
				36 Months Maintenance	***$ 11,739***
	1	CX4-120C	CX4-120C SPE WITH SINGLE SPS	*Total RI Site*	***$ 50,499***
	2	CX4-4PDAE	4G DAE FACTORY OR FIELD INSTALL		
	1	CX4-NPS	EMC PROFESSIONAL INSTALL NOT ORDERED		
	15	CX-4G10-400	400GB 10K 4Gb FC		
	1	V-CX4-40010K	CX4 VAULT PACK 400GB 10K 4G DRIVES QTY 5		
	1	CX4-SPS	CX4-120 Optional Second SPS		
	1	C-MODEM-US	CLARIION SERVICE MODEM-US		
	2	NAVAGT-LNXKIT	NAVI AGENT LINUX MEDIA		
	1	SV4-KIT	SNAPVIEW KIT FOR CX4 FAMILY		
	1	NAV4-KIT	Navisphere Manager CX4 Media Kit		
	1	NAV4-120	NAVISPHERE MANAGER FOR THE CX4-120		
	1	SV4-120	SNAPVIEW FOR CX4-120		
	1	CX412C-KIT	CX4-120 DOCS COMMON RTU & POWERPATH		
	1	M-PRESW-001	36 MO PREMIUM SOFTWARE SUPPORT		
	1	M-PRESW-004	36 MO PREMIUM SW SUPPORT - OPEN SW		
	1	WU-PREHW-001	36 MO PREMIUM HARDWARE SUPPORT - WARR UPG		
	1	PS-CAS-CUS	Implementation and Knowledge Transfer, 6 month HealthCheck		
2		***EMC DR SAN: CX4-120 with 6 TB usable SATA capacity, 3 YR Premium HW/SW Maint***		*EMC DR SAN:*	***$ 25,999***
		iSCSI, FiberChannel, Navisphere Manager		*CAS PS:*	***$ 3,000***
		includes MirrorView -offsite replication software		*36 Months Maintenance*	***$ 11,997***
	1	CX4-120C	CX4-120C SPE WITH SINGLE SPS	*Total MI Site*	***$ 40,996***
	1	CX4-4PDAE	4G DAE FACTORY OR FIELD INSTALL		
	1	CX4-NPS	EMC PROFESSIONAL INSTALL NOT ORDERED		
	4	CX-SA07-010	1000GB 7200RPM SATA II		
	1	V-CX4-1K72K	Vault Pack CX4-120 1TB 7.2K SATA Drives, Qty 5		
	1	CX4-SPS	CX4-120 Optional Second SPS		
	1	C-MODEM-US	CLARIION SERVICE MODEM-US		
	2	NAVAGT-LNXKIT	NAVI AGENT LINUX MEDIA		
	2	MVA4-KIT	MIRRORVIEW/A KIT FOR CX4 FAMILY		
	1	NAV4-KIT	Navisphere Manager CX4 Media Kit		
	1	NAV4-120	NAVISPHERE MANAGER FOR THE CX4-120		
	2	MVA4-120	MIRRORVIEW/A FOR CX4-120		
	1	CX412C-KIT	CX4-120 DOCS COMMON RTU & POWERPATH		
	1	M-PRESW-001	36 MO PREMIUM SOFTWARE SUPPORT		
	1	M-PRESW-004	36 MO PREMIUM SW SUPPORT - OPEN SW		
	1	WU-PREHW-001	36 MO PREMIUM HARDWARE SUPPORT - WARR UPG		
	1	PS-CAS-CUS	Implementation and Knowledge Transfer, 6 month HealthCheck		
			Discounted Storage Price:		**$ 91,495**
3		Maintenance YR 4 prepaid	Prepaid Maintenance for 4th year		
			Discounted Maintenance (YR4):		**$ 8,192**
			Discounted Storage Solution Total:		**$ 99,687**

PS-CAS-CUS equivalent EMC part numbers:
PS-BAS-PMBLK
PS-BAS-SABLK
PS-BAS-4HSME
PS-BAS-MVW
Includes (1) CX Implementation in Michigan location

*Not to exceed quoted price

Notes:
Pricing is valid until March 27 2009, unless otherwise noted*
Standard EMC warranty applies unless otherwise requested
Pricing does not include any applicable taxes or freight charges.
Pricing and availability subject to change without notice
Receivable to be assigned to Avnet
Payment terms are Net 30

Content Archiving Solutions

Content Archiving Solutions Quotation Prepared for:
American Mathematical Society
Storage Infrastructure for Virtualization Project

Date: 3/20/2009
For: AMS
Address: 201 Charles Street
Providence, RI, 02904
From: Fern Supawanich
Phone: 617-512-2017
Quote Number: QR-1336391-6

Item	Qty	Part Number	Part Description		Price	
4	1	**Maintenance YR5**	**Fixed HW/SW Maintenance for (2) CX4-120 quoted -5th year**	**$**	**17,140**	*
5		***1 Tray Upgrade: (15) 1 TB SATA drives***				
	1	CX4-4PDAE	4G DAE FACTORY OR FIELD INSTALL			
	15	CX-SA07-010U	1000GB 7200RPM SATA II UPG FOR 4G DAE			
	1	PS-CAS-UPG	Implementation and Knowledge Transfer, 6 month HealthCheck			
			Discounted Price:	**$**	**26,205**	*
6		***(10) 400 GB 10K FC drives - utilizing existing Tray***				
	10	CX-4G10-400U	400GB 10K 4Gb FC UPG			
	1	PS-CAS-UPG	Implementation and Knowledge Transfer, 6 month HealthCheck			
			Discounted Price:	**$**	**13,328**	*
7		***Pair Ultraflex upgrade: +(8) FC Host port connections***				
		note: end host port configuration after upgrade will be 12 FC ports and 4 iSCSI ports				
	1	CX-M4GF-FE-U	UPGRADE PAIR 4G FC - TOTAL 8 FE PORTS			
	1	PS-CAS-UPG	Installation			
			Discounted Price:	**$**	**3,628**	*
		Clariion software add-ons (50% discounted from list price)				
		note: maintenance calculated at 15% of list price/yr				
8		***Replication Manager (GUI snapshot manager/scheduler)***				
	1	RM-KIT	REPLICATION MANAGER SERVER AND CLIENT KIT	$	-	*
	1	RM-SERVER	RM SERVER HST	$	1,149	*
	1	RM-AGENT	REPLICATION MANAGER AGENT (1 agent required per host)	$	2,529	*
	1	PS-CAS-RM	Implementation	$	3,000	
9		***Navispher Analyzer (Performance trending)***				
	1	NAVAYZ4-120	NAVISPHERE ANALYZER FOR THE CX4-120	$	2,243	*
	1	NAVAYZ4-KIT	NAVISPHERE ANALYZER CX4 MEDIA KIT	$	-	
10		***Navisphere Quality of Service Manager***				
	1	NQM4-120	NAVISPHERE QOS MANAGER FOR THE CX4-120	$	6,095	*
	1	NQM4-KIT	NAVISPHERE QOS CX4 MEDIA KIT	$	-	

PS-CAS-UPG equivalent EMC part numbers:
PS-BAS-SABLK

PS-CAS-CUS equivalent EMC part numbers:
PS-BAS-PMBLK
PS-BAS-SABLK
PS-BAS-4HSME
PS-BAS-MVW
Includes (1) CX Implementation in Michigan location

*Not to exceed quoted price

Notes:
Pricing is valid until March 27, 2009 unless otherwise noted*
Standard EMC warranty applies unless otherwise requested
Pricing does not include any applicable taxes or freight charges.
Pricing and availability subject to change without notice.
Receivable to be assigned to Avnet
Payment terms are Net 30

Content Archiving Solutions Quotation Prepared for:
American Mathematical Society
Virtualization Project

Date: 3/20/2009
For: AMS
Address: 201 Charles Street
Providence, RI, 02904
From: Fern Supawanich
Phone: 617-512-2017
Quote Number: 2063196

Item	Qty	Part Number	Part Description	Price
11		***VMWare Enterprise Acceleration Kit: 1 YR Platinum Maintenance***		
	1	VI-AK-PROMO	PROMO: 1 PROMO ACCEL KIT PER EU VI ENT ACCEL KIT FOR 8 PROCS (INCLUDES VI ENTERPRISE FOR 8 PROCESSORS, 1 VIRTUALCENTER SERVER)	$ 23,235
	1	VI-AK-P-SSS-PROMO	PLATINUM SUPPORT/SUBSCRIPTION VMWARE INFRASTRUCTURE ACCELERATION KIT FOR 8 PROCESSORS	$ 5,809
	1	PS-CAS-VMCUS	Implementation and Knowledge Transfer, 6 month HealthCheck - Statement of Work 3/20/09	$ 7,500
			Discounted VMW Solution Total:	**$ 36,544**

Notes:
Pricing is valid until March 27, 2009 unless otherwise noted with (*)
Standard EMC warranty applies unless otherwise requested
Pricing does not include any applicable taxes or freight charges.
Pricing and availability subject to change without notice
Receivable to be assigned to Avnet
Payment terms are Net 30

AMERICAN MATHEMATICAL SOCIETY

To: Board of Trustees
From: Shannon Reall
Date: March 23rd, 2009
Subject: Storage Area Network (SAN) purchase

We have selected EMC's CLARiiON CX4-120 as the SAN for our virtual environment. We are recommending the purchase of one CLARiiON CX4-120 for the Providence office and a second CX4-120 for Disaster Recovery (DR), which will most likely be located in Ann Arbor. We will set-up asynchronous replication to the DR site. It will provide an offsite location for backup of data, with zero/minimal loss, and the ability to rapidly re-sync data to the production site in Providence. In phase 2 of this project, we plan to implement our web environment on virtual servers and set up a host at the DR site to which we can automatically failover.

During the evaluation process we considered four vendors. Key points we evaluated were performance, cost, scalability, support, company reputation and ease of use. The other vendors we considered were Lefthand Networks, Netapp and SUN storage. Lefthand Networks is a newer product with expensive expansion options. The Netapp product had a similar pricing model to EMC where you pay extra for every additive module. We believe this was a comparable product to EMC's but we could not negotiate a price that made it affordable for the Society. SUN offers a very nice SAN that is technically superior to all products that we looked at with comparable pricing to EMC's product. Recent news that SUN may be bought by IBM made us reluctant to recommend purchasing SUN products.

In the past, EMC has been out of our price range, but we were able to negotiate a significant discount on the hardware making them a very viable option. We were also able to negotiate "Not to Exceed Pricing", without an expiration date, on additional licensing, expansion items and maintenance costs.

EMC leads all vendors as the storage platform of choice for VMWare. The CLARiiON CX4 Series has a multitude of features built-in that are ideal for virtual server environments and its architecture is specifically optimized for VMware. It runs at Five 9s availability meaning 99.999 percent uptime. Specific features include:

- Two storage processors for 3 GB of Memory each
- 128 host connectivity via Fibre Channel (FC) or iSCSI
- Scalability to 120 TB raw capacity
- No single point of failure
- System monitoring, remote diagnostics and call-home notifications

We spoke with four references for the EMC product line. They are all very happy with the product and cited ease of management as a key point. All of the references commented on the quality of EMC's support services.

Our quote is for two CX4-120's each with 6 TB of usable capacity. The Providence SAN will have Fiber Channel drives and licensing for SnapView. SnapView will allow us to do periodic snapshots and clones for point-in-time viewing and recovery of data. We will also upgrade to 6 Fiber Channel ports. The cost for the Providence SAN is $39,388. The DR SAN will have SATA drives and licensing for MirrorView. MirrorView will allow us to do remote replication of data. The cost for the DR SAN is $25,999. This was a planned purchase in the 2009 Operating Plan, Server Enhancements 09-1 category with a budgeted amount of $50,000. The cost of both SAN's combined is $65,387. Although this is higher than the budgeted amount, the total cost of the project is still significantly under budget. We feel strongly that we should implement the DR site now for the reasons indicated above.

AMERICAN MATHEMATICAL SOCIETY

To: Board of Trustees
From: Shannon Reall
Date: March 23rd, 2009
Subject: Virtualization Software

Summary

We are recommending the purchase of VMware virtualization software for $23,235. We will purchase the Enterprise Acceleration Kit, which includes licenses for 4 dual processor servers and a license for Virtual Center. The promotional pricing for the Enterprise Acceleration Kit is valid through the end of April and constitutes about a $2,000 savings over pricing of the individual components.

Selection

As part of the project to create a virtual server environment for the Society, the Systems and Operations department investigated virtualization software. The following products were evaluated:

- Xen
- KVM
- VMware

Xen and KVM are open source products that were evaluated during the fourth quarter of 2008. After limited testing of these products, it became clear that they would not meet our needs.

We have selected VMware as the virtualization software to implement. We believe that a commercial product provides many advantages. VMware is currently the leader in the commercial software market. This means that most software and hardware vendors support it. Both Epicor (our new accounting software) and Personify (our new association management software) have customers running in a VMware virtual environment. We feel it is important to go with a product that has been proven in the market, since our new environment will heavily rely on it.

VMware offers some important features, not found in the open source products, including:

- VirtualCenter, which delivers centralized management, operational automation, resource optimization and high availability.
- Distributed Resource Schedule, which dynamically allocates and balances resources across multiple virtual machines
- High Availability, which provides automated recovery of any applications running in a virtual machine, regardless of the underlying operating system or hardware configuration

- VMotion, which enables live migration of virtual machines disk files across storage locations while maintaining service availability

This was a planned purchase in the 2009 Operating Plan, Software 09-2 category with a budgeted amount of $20,000. Although the cost is slightly higher than the budgeted amount, the total cost of the project is still significantly under budget

AMERICAN MATHEMATICAL SOCIETY

To: Board of Trustees
From: Shannon Reall
Date: March 23rd, 2009
Subject: Virtual server hardware

We have selected the Hewlett-Packard (HP) ProLiant DL385 G5p high performance server with 2 AMD Operton quad-core processors (2.7GHz) and 32GB of RAM to support our virtualization project. These servers can be expanded up to 128GB of RAM for future growth. We have found our other HP servers to be reliable and cost effective. HP's support has been excellent. We recommend the purchase of four (4) servers at a cost not to exceed $44,000

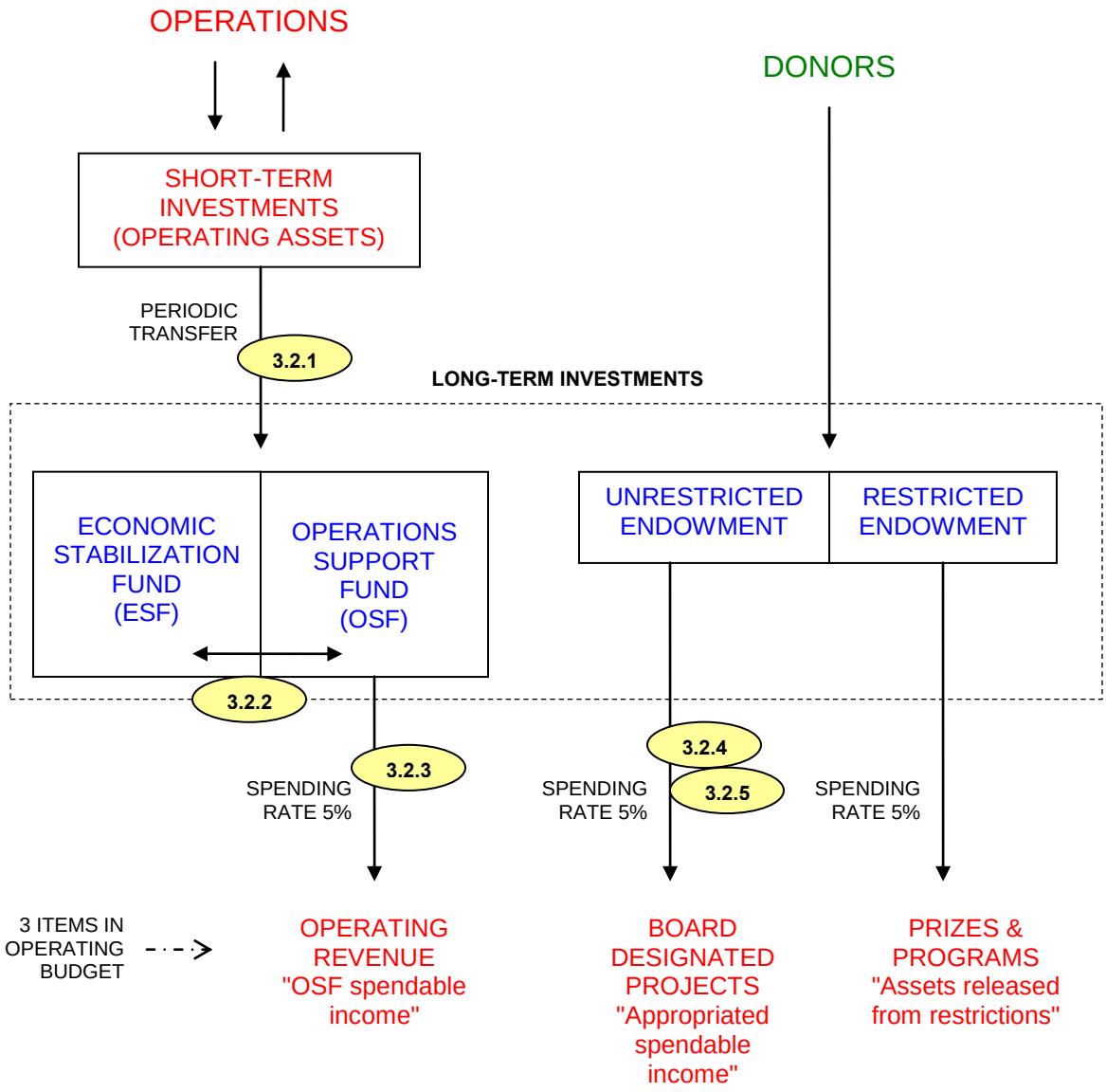
We have approximately 25 servers in our current environment that we expect to re-implement as virtual servers. In addition, we anticipate the need for up to 8 additional servers for Doc-Link (electronic document storage for Epicor) and for Personify (association management software). Content Archiving Solutions performed an assessment of our existing environment and these anticipated needs, and recommended that we purchase four (4) servers to support the virtual environment. This is consistent with industry standards that suggest an approximate 10:1 physical to virtual server consolidation ratio. Having 4 servers will allow us room for future growth in our environment.

We currently have both HP and SUN servers in our environment and compared prices and scalability of both. The SUN servers were slightly less expensive, but recent news that SUN may be bought by IBM made us reluctant to recommend purchasing SUN products.

This was a planned purchase in the 2008 Operating Plan, Server enhancements 08-1 category with a budgeted amount of $60,000. We are working with HP on a final quote for the 4 servers with our educational discount.

AMS Long-term Investments
Cliffs Notes

(*For details, see section D of Fiscal Reports*)



ESF = 75% annual operating expenses + unfunded medical liability (APBO)
OSF = remainder of quasi-endowment (spending on 3-yr rolling average)
Rebalanced annually, December 31

Values 12/31/2007:

ESF =	$21.3 M
OSF =	$40.8 M
Unrestricted =	$6.6 M
Restricted =	$3.7 M

AMERICAN MATHEMATICAL SOCIETY

To: Investment Committee
From: Gary Brownell, Connie Pass
Subject: January 27, 2009 Meeting Minutes
Date: January 30, 2009
Cc: Karen Mollohan, Don McClure

On January 27, 2009, the Investment Committee met by conference call to discuss rebalancing. Attending were John Franks, Linda Keen, Henry Laufer, Ron Stern, Don McClure, Connie Pass, and Gary Brownell.

The purpose of the meeting was to consider what action (if any) to take with respect to our fixed income balance being out of our allocation policy. As of December 31, 2008, our balances were as follows.

	December 2008 Balance	December 2008 %	Asset Allocation Policy
Total Equities	$35,142	67.5	65% - 85% of total
Foreign Equities (balance included in total equities)	6,509	18.5	Up to 25% of equities
Fixed Income	14,540	**27.9**	15% - 25% of total
Alternatives	2,352	4.5	Up to 10% of total
Total	$52,024		

The Committee considered three scenarios (doing nothing would be a 4th):
1. Rebalance fixed income to edge of range with offset to domestic equities.
2. Rebalance fixed income to center of range with offset to domestic equities.
3. Rebalance all components to center of range.

Each scenario assumed a transfer of $2,000,000 from operations, to be added to domestic equities. This transfer will require the approval of the Board of Trustees.

The Committee decided to use the third scenario and rebalance to center of each range. For this purpose, "center" means 20% of total equities for the foreign equity allocation, and 5% of the total portfolio for alternatives. The revised allocations are illustrated in the table below.

Amounts going to domestic equities should be split evenly between to the two total market funds. Amounts going to REITs should be split evenly between the two REIT funds.

For May meeting, staff should recommend a rebalancing strategy including the interval for rebalancing and the extent of rebalancing (e.g., rebalance to the middle of the range).

We should also consider how we allocate the total domestic stock market investment between Vanguard and Fidelity.

	Target Allocation	Dec 2008 Balance	Dec 2008 %	Addition	Adjusted Balance	Adjusted %	Rebalance	Final Adjusted Balance	Final Adjusted %
Total Equities	75.0%	$35,142	67.5%	$2,000	$37,142	68.7%	$3,384	$40,526	75.0%
Foreign Equities	20.0% of equities	$6,509	18.5%		$6,509	17.5%	$1,596	$8,105	20.0%
Fixed Income	20.0%	$14,540	27.9%		$14,540	26.9%	($3,733)	$10,807	20.0%
Alternatives	5.0%	$2,352	4.5%		$2,352	4.4%	$350	$2,702	5.0%
Total		$52,034			$54,034			$54,035	

AMERICAN MATHEMATICAL SOCIETY

To: Board of Trustees **Date**: April 15, 2009
From: Connie Pass, CFO
Subject: Operating Fund Portfolio Management Report

SUMMARY RETURNS

The purpose of this memorandum is to summarize the Society's cash management policies and report on the operating portfolio's investment income performance during 2008. There are no proposals for changes in authorized investment limits or additional investment vehicles presented.

Investment earnings results by type and in total and other pertinent portfolio information for 2008 and the preceding six years are as follows:

	2008	2007	2006	2005	2004	2003	2002
Money Market Funds	2.9%	5.0%	4.8%	2.8%	1.0%	0.9%	1.7%
Vanguard Fixed Income Mutual Funds;							
Short Term Corporate Bond Fund	(4.7%)	6.0%	5.1%	2.3%	2.2%	4.3%	6.0%
GNMA Fund	7.3%	7.1%	4.4%	3.4%	4.1%	2.6%	9.7%
Long Term US Treasury Fund	22.7%	9.4%	1.9%	6.8%	7.3%	2.8%	15.6%
Fidelity Floating Rate Bond Fund (12/04)	(16.5%)	2.7%	6.4%	4.2%	0.5%		
High Yield Bond Funds							(13.7%)
Vanguard Convertible Securities	(29.8%)	10.6%	13.0%	6.6%	7.2%	31.6%	(9.4%)
TIPs (April 2005)	(1.3%)	8.9%	0.9%	0.9%			
Certificates of Deposit	4.0%	5.2%	4.7%	3.1%	2.1%	2.1%	3.0%
Common Stock	(24.4%)	(1.4%)	22.4%	0.0%	0.0%	10.7%	(14.4%)
Annual total portfolio return	(0.7%)	5.8%	5.2%	3.3%	2.4%	3.7%	2.4%
AMS benchmark - Avg 6 month CD rate per Federal Reserve Bank	3.1%	5.2%	5.2%	3.7%	1.7%	1.2%	1.8%
AMS returns versus benchmark	(3.8%)	0.6%	0%	(0.4%)	0.7%	2.5%	0.6%
Wkly Average Operating Portfolio (in 000's)	$15,525	$15,459	$14,578	$15,223	$13,570	$12,357	$11,967
Annual Investment Income (in 000's)	($105)	$895	$757	$503	$332	$453	$262

At 12/31/08 operating fund investments equaled approximately $16,007,000, which is a decrease of $380,000 from the previous year. Operations provided approximately $2,465,000 in cash in 2008, which was used to acquire fixed assets and long-term investments.

The return for 2008 is a loss for the first time since the inception of the 'intermediate portfolio, and therefore significantly below the benchmark used for the operating portfolio, the average annual 6-month CD rate per the Federal Reserve Bank of Boston. With the exceptions of the two government security funds, the returns for all components

of the portfolio dropped like a large stone from the 2007 return rates. The GNMA fund stayed at about its return of 2007 and the Long Term US Treasury fund had a banner year for overall return, given the significant lowering of interest rates by the Federal Reserve and the 'flight to quality' that ensued after the pervasive nature of the economic crisis began to be realized. While lower returns were predicted in this memo last year, the precipitous drops in the Fidelity High Yield Bond and Vanguard Convertible Securities funds were not expected early in 2008. These unrealized losses occurred over the last three and a half months of the year, as in the first part of September both funds were basically breakeven for the year. The relatively low return on the certificates of deposits and money market funds could not make up for these sudden losses. As of mid-April 2009, the Vanguard bond funds are breakeven for the year and the Vanguard Convertible Securities and Fidelity Floating Rate funds have recovered slightly.

DISCUSSION

Recent History of Authorized Investment Vehicles and Limits. At the May 1996 ECBT meeting it was agreed that the Society should have as a goal an accumulation of current assets such that they exceed current liabilities. To help achieve this objective, at the May 1997 ECBT meeting a plan for the creation of an intermediate term investment portfolio was adopted. Increased limits of $1,000,000 (to $4,000,000) in our money market funds, $1,000,000 (to $2,000,000) in our Vanguard fixed income funds, and $500,000 (to $1,500,000) in Treasury Notes were approved. In addition, a $1,500,000 combined limit for other mutual funds, consisting of high yield and convertible bond funds, was established at this time. In May 2000, the limits for money market funds, fixed income funds and the high yield/convertible funds were each increased by $500,000. At the May 2002 ECBT meeting, the limit on the money market fund was increased to $5,500,000, primarily to accommodate the larger investment balance carried in the operating portfolio. In May 2004, The Board of Trustees added floating rate bond funds to the authorized investments, with an investment limit of $2,000,000. In May 2005, the Board changed the limit on money market investments to be 50% of the operating portfolio balance at any point in time.

The strategy of using an intermediate portfolio has occasionally resulted in greater volatility, but overall has generated an increase in the earnings of our operating fund investments. By shifting a portion of operating fund investments into slightly riskier investment vehicles we have, on average, increased the earnings compared to those that would have been achieved in low risk, short term investments. For 2008, the intermediate portfolio brought us an overall loss on the portfolio, but the latter third of the year saw extraordinary financial crises and government intervention to prevent the collapse of banking and other financial entities and markets not seen since the Great Depression.

Recent Portfolio Adjustments. In the latter half of 2006 and into 2007 the maturities of CDs were lengthened, as continued increases by the Fed appeared unlikely based on economic data. We made no adjustments to the portfolio in 2008, other than to seek the highest quality of the 'safe' investments when cash for investment became available in the latter part of the year. There hasn't been much from which to choose.

Changes in the Cash Management Environment. The pervasive negative effect of the subprime mortgage meltdown on fixed income and equity securities – worldwide – started in earnest in the beginning of 2008 and came to a head with the failure or near-failure of major financial institutions in the US and abroad in the last quarter of the year. The US government and other governments overseas stepped in to provide much needed liquidity, but the ensuing credit crisis has not eased much. Inflation abated in the last part of 2008, but there remain in the economy conditions that could cause it to increase, which would further jeopardize the start of any recovery. The global economic climate is eerily similar to that of the Great Depression and also the early 1970's, when stagflation arrived and it was very difficult to work the way out.

Cash Management at the AMS. The following rules govern AMS's management of cash:

1. ***Availability and Liquidity***. The placement of investments in the operating portfolio is coordinated with the Society's immediate and estimated future cash requirements, which are based on actual and projected revenue and disbursement streams. Cash needs to be available at the appropriate times to cover the operating expenses of the Society as they are incurred - payroll, payroll taxes and other withholdings, and vendor liabilities comprise the bulk of our cash needs. Adequate portfolio liquidity is the ability to turn investments readily into cash without suffering undo loss of principal.

2. ***Income***. Cash in excess of immediate operating needs should be invested so as to optimize returns. The Society has intentionally accreted such excess cash, so that the ratio of current assets to current liabilities remains at least 1.5 to 1 (after removing the deferred revenue from both the numerator and denominator, and preferably 2:1) or at least 1:1 without the deferred revenue adjustment. These ratios were 2.53 and 1.34, respectively, at December 31, 2008. These ratios are the same as they were at the end of 2007.

3. ***Preservation of principal***. Safety is of prime concern in investments of operating capital. Diversifying investment vehicles and monitoring investment maturity dates and market value fluctuations greatly reduces an investment portfolio's exposure to risk. Maximum allowable positions should be established for different types of investments.

Authorized Investments. The investment vehicles authorized by the Board of Trustees for the operating portfolio are as follows:

- ***Certificates of Deposit.*** As in prior years, a large percentage of the Society's operating investment portfolio has been invested in certificates of deposit, with a weekly balance averaging about 28% of the total portfolio during 2008.

  We generally purchase "jumbo" CD's of federally insured savings institutions and commercial banks that are assigned an acceptable safety rating by a weekly bank rating newsletter. Current investment policies limit the amount of each CD to $100,000 (exclusive of accrued interest) per S&L and $400,000 per large commercial bank. In

practice, the Society has only invested amounts up to $100,000 in any one financial institution and its affiliates. We adjust this limit when the insured amount was temporarily raised by the FDIC through 12/31/2009. There is no limit to the total amount of CDs that can be held by the operating investment portfolio.

Issuer	Banks & Savings and Loans
Risk of default	None - federally insured
Risk of market decline	None
Maximum Amount	$100,000 per bank or S&L, $400,000 in large cap banks, unlimited in total

We intentionally accumulate a large CD balance (generally for one-year terms, shorter terms are used to take advantage of rising interest rates) in order to increase the yield, even if slightly. We were able to lock in some higher rates late in 2006 and during the first half of 2007; however, the precipitous drop in interest rates in 2008 will mean much lower returns for 2009.

In the past, the Society could accumulate a portfolio between $5,000,000 and $7,000,000 with a rate differential compared to money market funds of at least 50 basis points. With smaller returns, and a sudden shift from a pattern of increase to repeated decreases, it was not possible to get this level of differential in 2008, nor will it be possible in 2009 in all likelihood. After about 50-70 CDs, there is no differential to be gained from the available issuing banks (we invest only in banks with a minimum 3.5 star rating out of 5 per Bauer Financial), so the additional administrative burden to the Society is not warranted.

- ***Treasury Bills.*** T-Bills are convenient to use when we have a large planned expenditure for a predetermined future date, such as contributions to the Economic Stabilization Fund; however, better rates are available on alternative forms of short-term operating investments. Treasury Bills have no market risk associated with them because they are backed by the full faith and credit of the US government, are issued for short durations and are highly liquid. Accordingly, there is no limit to the total amount of T-Bills we may hold in our portfolio.

Issuer	U.S. Government
Risk of default	None
Risk of market decline	None if held to maturity
Maximum Amount	Unlimited

- ***Cash and repos (repurchase agreements).*** The AMS uses a concentration account at Citizens Bank - Massachusetts into which all receipts are automatically deposited and from which all disbursements are made. Under a repurchase agreement, cash above an established minimum balance is "swept" on a daily basis and invested overnight in repurchase agreements. Under a repurchase agreement, the customer (AMS) purchases government securities and the bank agrees to "repurchase" them the following day. The rate earned on these depends on the dollar amount of the repo; it is generally very low in comparison to rates available on other investment vehicles. Interest rates on repurchase agreements have been extremely low for a number of years. Unless one is

sweeping large amounts of cash throughout the year, the interest earned does not justify the fees charged to maintain the agreement in place. The AMS has not used this investment vehicle since 1999 and it is not expected to be used in the near future.

Issuer	Citizens Bank - Massachusetts
Risk of default	Minimal
Risk of market decline	None
Maximum Amount	$1,000,000
Comments	Collateralized by US Gov't securities

- ***Money market funds.*** The Board of Trustees has authorized a maximum investment of 50% of the balance in the operating portfolio at any point in time. At the end of 2008 the balance in money markets approximated $5,781,000, or 36% of the entire portfolio, principally in Vanguard's Money Market Prime portfolio.

  Yields on the funds averaged about 2.9% for the 2008, but are under 1% as of mid April 2009 and will likely not increase significantly anytime soon. There is little risk to principal because the valuation of the initial investment is generally not subject to change because of its short-term duration. However, given the tenuous economic situation domestically, defaults could occur. It will remain to be seen if the fund managers pick up the losses in order to preserve the integrity and marketability of these vehicles with investors. The US Government has offered a program to ensure the valuation of money market funds at $1 per share, and large money market managers have signed on to the program. Balances in these funds are usually maintained only at levels needed for short-term operating needs in excess of short-term maturities, or for planned investments to be made in the near future (which avoids the administrative costs of 3 month CD's or T-bills), or to take advantage of rising interest rates, since they generally under-perform alternative authorized investment vehicles.

Issuer	Vanguard and Fidelity
Risk of default	Minimal
Risk of market decline	Very Low
Maximum Amount	50% of operating portfolio balance

- ***US Treasury Notes.*** The Board of Trustees has authorized a maximum investment of $1,500,000 in US Treasury Notes. A loss of market value may be incurred on these investments in a rising interest rate environment if funds are needed before maturity and have to be sold; however this risk is slight as the Society's liquidity is deemed extremely adequate. Treasury Notes can be an attractive investment when interest rates are expected to decline and the yield curve is fairly steep. This has not been the case in recent history.

Issuer	U.S. Government
Risk of default	None
Risk of market decline	None if held to maturity, otherwise value moves inversely to interest rate changes
Maximum Amount	$1,500,000

Comments	Best used just before interest rates decline

In April 2005, $500,000 of inflation-protected Treasury notes (TIPS), which pay a stated rate of interest, plus inflation over the period outstanding (by adjusting the principal), were purchased. These investments have no risk of default and no risk of market decline if held to maturity, which is the intent when purchased in April, 2005.

- ***Fixed Income (Bond) Mutual funds.*** The Board of Trustees has authorized a maximum investment of $2,500,000 in fixed income mutual funds (initial investment, exclusive of reinvested income and share price increases, with appropriate disclosure to Treasurers and Board), and at the end of 2008 we had $3,225,000 invested. The initial investment amount is well below the limit. All of these investments are with the Vanguard Group of Valley Forge, PA. A combination of three funds is used: the High Grade Short-Term Corporate Bond portfolio, the GNMA portfolio, and the Long-Term US Treasury portfolio.

Issuer (currently used)	The Vanguard Group
Risk of default	Minimal
Risk of market decline	The longer the maturities of underlying investments, the higher the risk.
Maximum Amount	$2,500,000
Comments	Market value will decline as interest rates rise and increase as rates fall.

Historically, most of the volatility in the Society's short-term portfolio has been the result of market valuation adjustments on these investments (they are marked to market monthly); however, gains or losses technically are not realized on these funds until they are redeemed. The GNMA fund is less affected by interest rate volatility than the Long-Term US Treasury, despite similarity in term length of the underlying securities, as these debt instruments support the housing industry.

Since these funds are different in nature, it is helpful to look at their characteristics separately, keeping in mind that the limit applies to the combined total.

Vanguard High Grade Short-Term Corporate Bond Fund:

Issuer (currently used)	The Vanguard Group
Risk of default	Low, due to quality of underlying debt instruments and borrowers
Risk of market decline investments	Low, due to short duration of underlying
Comments	Share price is relatively stable; return is determined by recent interest rates, as underlying debt is short duration
2008 return	(4.7%) with average monthly yield of 4.96%

Vanguard GNMA Fund:

Issuer (currently used)	The Vanguard Group
Risk of default	Low – while not backed by the full faith and credit of the US government, It isn't likely that the US government would allow GNMA to default on its obligations
Risk of market decline	Medium, as duration is longer
Comments	Since the GNMA obligations are linked to collateralized mortgage obligations, and mortgage rates tend to change more slowly than other long term rates, this fund is a bit less volatile when interest rates change.
2008 return	7.3%, with average monthly yield of 5.07%

Vanguard Long-Term US Treasury Fund:

Issuer (currently used)	The Vanguard Group
Risk of default	Low, as most underlying securities are US government direct issues
Risk of market decline	Highly sensitive to interest rate changes, as duration of underlying securities is long-term
Comments	This fund has caused most of the volatility in the Intermediate portfolio; staff mitigates some risk by adjusting investment amount
2008 return	22.7%, with average monthly yield of 4.17%

- ***High Yield and Convertible Bond Mutual funds.*** The Board of Trustees has authorized a maximum investment of $2,000,000 in any combination of high yield bond and convertible securities accounts. At December 31, 2008 we had $955,000 invested in these vehicles, in one convertible securities mutual fund managed by the Vanguard Group. Gains or losses technically are not realized on these funds until they are redeemed, although, for financial statement purposes, the Society records these investments at market. It is not anticipated that further investments in this group of investment vehicles will be made in the near future.

Issuer (currently used)	The Vanguard Group
Risk of default	Medium to High
Risk of market decline	Sensitive to movements in the equity markets
Maximum Amount	$2,000,000
Comments	Total returns often parallel those of equity markets
2008 Return	(24.4%)

- ***Floating Rate Income funds.*** The Board of Trustees has authorized a maximum investment of $2,000,000 in Floating Rate funds. $1,000,000 was invested in the Fidelity Floating Rate High Income Fund in December 2004. The return for 2008 was

(16.5%) with a sharp drop in NAV in the last quarter of the year.. Gains or losses technically are not realized on these funds until they are redeemed, although, for financial statement purposes, the Society records these investments at market.

Issuer	Fidelity
Risk of default	Low
Risk of market decline significantly	Low, possibly medium if economy falters
Maximum Amount	$2,000,000
Comments	The fund is expected to have a relatively stable NAV with yield providing most of the return
2008 Return	(16.5%) with average monthly yield of 7.08%

Summary of Operating Portfolio Investments, December 31, 2008.

Description	Value at 12/31/08	Current Board Limit	Excess over Limit
Money Market Funds	$5,781,214	50% of total portfolio	NA
Certificates of Deposit	4,589,000	$100,000 per inst.	NA
Treasury Notes		1,500,000	NA
Vanguard Bond Funds:			
GNMA Portfolio	1,357,350		
Short-Term Corp Bond Portfolio	1,187,047		
LT US Treasury Portfolio	680,346		
Subtotal	3,224,743	2,500,000 (1)	NA
High Yield and Convertible Funds:			
Vanguard Convertible	954,779		
Subtotal	954,779	2,000,000	NA
Floating Rate Funds:			
Fidelity Floating Rate High Inc	912,135		
Subtotal	912,135	2,000,000	NA
			NA
$500,000 Face TIPs	537,386		NA
Common Stock	8,141	Unrestricted gifts	
Total	$16,007,398		

(1) Limit is exclusive of reinvested dividends and share price increases. See discussion above.

To:	Board of Trustees
From	Constance Pass, CFO
Subject:	Financial Software Implementation Status
Date:	April 19, 2009

Summary: We went live with the Epicor Financial Suite in January 2009. There is one more module to configure before we can close any months of 2009. Additionally, standard reports have yet to be written and the electronic delivery system has not yet been established. We expect both these areas to be completed by the end of May.

Once the monthly closing is running as expected, the new Epicor Project Manager will move on to configuring Advanced Planner, our budgeting tool, and installing and configuring the royalties and Doc-Link modules. All is expected to be complete by the end of the third quarter of 2009.

Total cost of the implementation is not yet known, although the Epicor Executive in charge of this implementation stated his goal is to bring this in at the board approved amount of $225,000.

In late December 2007, the Society purchased new financial software to replace the Ross accounting system and various in-house developed systems. The software was purchased from Epicor, and includes the following modules:

> Epicor Financial Suite, which includes the General Ledger, Accounts Payable, Accounts Receivable (for miscellaneous receivables handled within the Fiscal Dept.), Purchasing, Cash Management and Reporting modules. Software for the budgeting process for the Society, Advanced Planner (a Sage Software product) was purchased to gain efficiencies in the budget process, and Advanced Allocations (a Sage Software product) was also purchased to replace the in-house developed 'FISCA' system. The in-house developed time recording system (for allocation of hours worked to projects) and the use of paper time recording systems was replaced with the STAR Projects and STAR Web Time Recorder system. This system has the capability to not only accumulate time worked on Society projects, but accumulate costs of subprojects outside the General Ledger. It can also be used to manage projects. A Royalties module was also purchased, as well as Doc-Link, a system for storing electronic documents and linking them to transactions, so we can reduce the amount of paper storage and management.

The original plan was to commence the implementation in February 2008 with a completion date (go-live) of July 1, 2008. The initial meetings with the Epicor Project Manager took place in late March, early April, with implementation work beginning in earnest in mid April. The go-live date was pushed off until August and then September. From April until the end of August, there were many times when work by AMS staff and Epicor staff had to be redone – sometimes as many as three times. The vast majority of these problems resulted from the Epicor Project Manager's lack of knowledge about the requirements of the STAR and Advanced Allocations software, such that decisions made previously and the work resulting from those decisions had to be reworked.

By mid-August AMS staff began conversations with the executive in charge of the implementation, John Farrell, about the problems with the implementation. Despite his constant reassurances regarding the cost (which was clearly running over the budgeted amount) and the Project Manager's capabilities, as well as

allegedly freeing up the schedule so that resources would be more available to us, progress pretty much came to a halt in early December with the Purchasing system functioning and the General Ledger and Accounts Payable modules minimally functioning. We were unable to test allocations in November as planned, as the knowledgeable STAR and Advanced Allocations resources from Epicor were not available to assist. We moved ahead with our drop-dead date of January 1st, and began use of the basic functionality of the Epicor Financial module for our accounting records.

In early March a letter was sent from the Executive Director to the John Farrell, which summarized our position regarding the implementation and our expectations for moving forward. Mr. Farrell visited later that month, and a new Project Manager was assigned to complete the engagement (Steve McCool). Mr. McCool has been onsite twice, for a total of about 2 days, and is currently working on evaluating the original set up of Advanced Allocations. As yet, this module is still not working and a month cannot be fully closed without it.

Although we have a new Project Manager, who does upon occasionally work remotely on our issues, there has yet to be seen a concerted effort by Epicor to put in place the knowledgeable resources we need to complete the implementation. We have no engagement blueprint or detailed plan to complete the implementation.

We were able to get STAR Web Time recorder working for the accumulation of time for cost allocations, with most staff who charge out time using the new application in January and the remainder by March (all time has been loaded for the year). We also have been able to post the time accumulated in STAR to the Star Projects module at the appropriate hourly rates.

There remain problems and issues with the General Ledger and Accounts Payable software, although none prevent us from accumulating the data properly. Reporting from the Epicor suite and Star have problems yet to be solved. The following modules have not yet been installed and/or configured to work as intended: Advanced Allocations, Advanced Planner, Royalties and DocLink.

Report on Association Management Software Implementation

Summary

In January 2009, the Board of Trustees approved the capital request for the purchase and implementation of the Personify association management software from TMA Resources (TMAR). Since then, AMS staff has been working with TMAR on the implementation process. TMAR follows a well-documented implementation process that includes the following tasks:

1. analysis of the Society's needs
2. configuration of the Personify software
3. identification of possible modifications
4. analysis of modifications
5. design and development of modifications
6. data conversion
7. system testing
8. user training
9. production support

The first four tasks are referred to as the Discovery stage. Each of these tasks requires communications between the Society and TMAR and will need to be well documented. TMAR has setup a SharePoint website that will be used for the sharing and exchange of documents with the AMS.

The initial project schedule targets production use of Personify in June 2010. The schedule will be refined after the Discovery phase has been completed, when the number and scope of modifications and conversion issues will have been identified.

TMAR's project team consists of the Director of Professional Services, a project manager, a business specialist, and a technical specialist. These four people are permanently assigned to the AMS implementation project and will call upon other resources within TMAR as necessary.

Twelve, full-day meetings are being scheduled for the first task in the implementation process. The first three of those meetings were held during the week of April 13. TMAR's analysis appears to be very thorough and the AMS staff with whom they met did an excellent job of communicating the business needs of the Society to them.

The Personify software will be installed on the new, virtual server environment recently approved by the BT. This virtual environment is expected to provide a stable, efficient environment for this software and a number of other systems. Personify software has a direct interface to the new Epicor accounting system that will allow for sharing of information between Personify and Epicor.

Project Report

TMAR's implementation process recommends that the AMS create a Core Implementation Team. The Core Implementation Team should include key decision makers from each of the major functional areas for the system to be installed. It should also include representatives from Information Systems and Finance. It is recommended that the team include people who can make decisions on how things will be done using the new system and who can understand how internal procedures can be changed to accomplish a task, rather than just recreating an old workflow in the new system. The core implementation team includes:

Tom Blythe
Diane Boumenot
Gary Brownell
Janice Clark
Christine Davis
Tom Freitas
Ellen Heiser
Carol Hill
Beth Huber
Stephen Hultquist
Gerry Loon
Cheryl Marino
Ellen Maycock
Donald McClure
Lori Melucci
Joanne O'Meara
Bill Olson
Connie Pass
Penny Pina
Donna Salter
Lori Sprague
Peter Sykes
Barbara Veznaian

TMAR's implementation methodology contains four stages:

1. Discovery
2. Design and Development
3. Configuration, Conversion & Testing
4. Roll Out

Each of the stages is described below.

Discovery

The discovery stage contains all of the analysis efforts of the project. The primary activity of this stage is for the TMA Resources Business Consultant to meet with the client's Core Implementation Team to collect the business requirements for the project. Any gap that is identified between the base functionality of Personify and the client's business requirements is captured as a "Fit Item".

The deliverables from the Discovery Stage include a Configuration Workbook, Prototype Personify Setups, Implementation Services Workbook, Implementation Statement of Work, and Implementation Project Plan. The Implementation Services workbook is

made up of four reports: a Fit Analysis Report, eBusiness Integration Analysis Report, Reports Analysis Report, and Data Conversion Analysis Report. After completion of the Discovery Stage, a refined project schedule will be developed.

Design & Development

This stage is when any approved enhancements to Personify or the eBusiness software will take place. This is also when custom reports development takes place. Development may be done by AMS staff or by TMAR. Any enhancements developed by TMAR will be subject to "In Process Reviews", where AMS staff is presented with progress towards enhancements to the system and are given the opportunity to provide feedback on the development. Deliverables from the Design and Development Stage include Detail Design Documents for each approved "Fit Item", "In Process Reviews", and the custom components ready for testing.

Configuration, Conversion & Testing

During this stage, TMAR will work with the AMS to complete the Personify system setups, convert data from the Society's existing systems to the Personify database, and test the completed application prior to the system being used in production. Although a conversion analysis has already taken place during the Discovery Stage, this stage is when detailed data conversion mapping will take place. A Technical Consultant will work with the AMS to assist us in mapping our data to the Personify conversion templates. Once the mapping is completed, the first of the conversion cycles is initiated. Other milestones during this stage include Personify User Acceptance Testing and training on Baseline Financial Reconciliation. Deliverables for this Stage include completed data conversion cycle(s) with accompanying conversion reports, Baseline Reconciliation Workbook, and a System Testing Checklist.

Roll Out

The Roll Out Stage consists of three main components: end user training, final conversion, and go live support. TMAR will work closely with the Ams to create a training plan to meet our needs, taking into consideration timing, staff size, number of modules being implemented, and method of delivery. Go live support, both on-site as well as phone support, will be scheduled and performed to successfully support our needs.

Tom Blythe, Chief Information Officer
Information Services Division

AMERICAN MATHEMATICAL SOCIETY
TRUSTEE LIAISON ASSIGNMENTS TO DIVISIONS FOR 2009

Division (Director)	**Board Liaisons**
Executive Director (McClure) Deputy Executive Director (includes Development) Human Resources	John Conway Ron Stern
Editorial (Sergei Gelfand) Acquisitions	Eric Friedlander Karen Vogtmann
Finance (Connie Pass) Facilities and Purchasing Fiscal	John Franks Associate Treasurer Karen Vogtmann
Information Services (Tom Blythe) Business and Publications Computing Systems and Operations	John Franks Eric Friedlander
Mathematical Reviews (Graeme Fairweather) Administration Associate Editors Bibliographic Services Copy Editors Reviewer Services/ Production Slavic Languages Systems Support	Associate Treasurer Carol Wood
Meetings and Professional Services (Ellen Maycock) Meetings and Conferences Membership and Programs Public Awareness	Ron Stern Carol Wood
Publishing (Beth Huber) Distribution Member and Customer Services Printing Production (includes Electronic Prepress and Creative Services) Sales Administration	Eric Friedlander Ron Stern
Washington Office (Sam Rankin)	John Conway Carol Wood

EXECUTIVE DIRECTOR DIVISION
Donald McClure, Executive Director

Two departments, Deputy Executive Director and Human Resources, report directly to the Executive Director. The Summary of 2008 Activities for each department is included here.

HUMAN RESOURCES DEPARTMENT
Highlights of 2008 Activities
Tammy Walsh, Director

During 2008 the Human Resources (HR) Department provided department heads, managers, and staff at all locations ongoing assistance and guidance related to policies, procedures, and programs. The year saw 5 staff retirements and 3 individuals unable to return to work due to long term disabilities. The resulting Society-wide turnover rate of 7.08%, although up from 2007, continued to be low in comparison to other organizations and has remained relatively consistent over the past 5 years. In 2008 we recruited to fill 23 open positions in Providence and Ann Arbor. New hires filled 15 of the positions, while 6 were filled with internal transfers. At year-end, 2 positions remained under recruitment.

In an effort to improve the accessibility of data, information, and processes to staff, HR evaluated web-based, self-service products. In December 2008 we entered into an agreement to have payroll, benefit, pay statement, and recruitment services provided through a web portal. When these electronic services become available in 2009, managers and staff will benefit from expanded access to timely, accurate HR information that will be accessible any time in paperless format.

We expanded our efforts to offer additional wellness programs to staff throughout the year and in March implemented a significant change in the delivery of medical insurance benefits for staff in the RI and DC offices. The move to a consumer driven health plan required considerable effort on the part of HR staff to assist employees as they became familiar with the new plan and the process for reimbursement of eligible medical expenses. Although this type of plan requires more work on everyone's part, it provides detailed claims data needed to assist in making appropriate decisions relative to future plan design and wellness initiatives.

Prepared April 2009

DEPUTY EXECUTIVE DIRECTOR DEPARTMENT
Highlights of 2008 Activities
Gary Brownell, Deputy Executive Director

Summary
Most of the activities planned for 2008 were accomplished. The Department's budget closed slightly over for the year at 101.67%; variance explanations appear in Section VI of the 2008 operating plan..

Highlights

Development

Development activities include cultivation of major donors, processing and acknowledging donations, preparing monthly reports on the status of donations, maintaining development pages on the AMS website, the year-end appeal, assisting donors with planned giving arrangements when necessary, and promoting the Thomas S. Fiske Society.

In 2008, Development staff made changes to the Year-end Appeal (YEA) mailing. For the first time, YEA letters were mailed to Life Members in the same way we mail to Emeritus Members. Those who were not part of the "large donor" mailing group received personalized letters even though they may not have given $100 or more within the past 10 years. We also revised the YEA giving card, making it clear what fund donors intended to support and matching the donor categories on the card with those on the Notices annual contributor list.

Records Management

The majority of Records Management (RM) functions in 2008 were on-going and routine in nature; there were a few key projects for RM. We began to focus on electronic records management (ERM); however we chose to postpone work in this area given the Society's reorganization and creation of a new Information Services (IS) Division. A roof leak over the Records Retention Room was addressed working with the Facilities & Purchasing Dept. to prevent future problems.

Business Continuity Planning

Business continuity planning efforts in 2008 continued to focus on preparedness. Following up last year's work on pandemic preparedness, we incorporated departmental Pandemic Plans into the overall Society BC plan. We also continued to promote National Preparedness Month. Activities included the update of web pages, a payroll flyer, employee correspondence, and the details of a prize drawing.

Prepared April 20, 2009

EDITIORIAL DIVISION
Highlights of 2008 Activities
Sergei Gelfand, Publisher

In their role as Acquisitions Editors, Sergei Gelfand, Ed Dunne, and Ina Mette traveled to approximately 25 various locations, attending 20 national and international meetings and visiting more than 30 mathematics departments in the US and abroad. These trips included attendance at the following: 5th European Congress of Mathematicians (Amsterdam), Park City Summer Institute, Meeting of the German Mathematical Society (DMV), Meeting of the Canadian Mathematical Society, SIAM summer meeting, Conference of Topological and Geometric Graph Theory (Paris), Symposium on Computational Geometry (College Park, MD), Joint AMS/Shanghai Mathematical Society Meeting (Shanghai), GAMM Meeting (Bremen), Conference on Hyperbolic Problems (College Park, MD), IHES 50th Anniversary Conference (New York), as well as all AMS National and Sectional meetings.

In 2008, Acquisitions Editors put forth approximately 350 new proposals to prospective authors, with about 40% of them developing into viable book projects. Notable books published and/or contracted in 2008 include:

The Algebraic and Geometric Theory of Quadratic Forms, by R. Elman, N. Karpenko, and A. Merkurjev

Quantum Mechanics for Mathematicians, by L. Takhtajan

Lessons in Geometry, by J. Hadamard

Markov Chains and Mixing Times, by D. Levin, Yu. Peres, and E. Wilmer

Structure and Randomness, by T. Tao

Combinatorial Geometry and Its Algorithmic Applications, by J. Pach and M. Sharir

Other major activities of the Editorial Division/Department in 2008 included the following:

- The software for the new peer review system, EditFlow, was purchased from Mathematical Science Publishers in late 2007. The implementation of the software was conducted in 2008, and all primary AMS journals will start using the new system in the first half of 2009.

- The new book series, Mathematical Circles Library, of K-12 books for mathematical circles was successfully launched. The first two books in the series were published at the end of 2008. Several more books in this series are planned for publication in 2009.

- The AMS purchased the rights and stock of 15 books which form the Brooks/Cole Series in Advanced Mathematics, also known as the Sally Series, from Cengage Learning, Inc. After thorough discussion and negotiation, this acquisition was finalized on October 3, 2008. The Sally Series titles were integrated into the AMS Book Program. The majority of the books (10 titles) form the basis of a new undergraduate textbook series (Pure and Applied Undergraduate Texts).

Prepared April 2009

FINANCE DIVISION
Highlights of 2008 Activities
Constance Pass, Chief Financial Officer

The Finance Division consists of the following two departments, under the Chief Financial Officer, Connie Pass.

- Facilities and Purchasing, Patricia Hickey, Manager
- Fiscal, William Olson, Controller

The majority of the functions performed by the departments comprising the Finance Division are on-going and routine in nature. However, there were several significant events and activities accomplished in 2008, often through the combined efforts of departments both inside and outside of the division. These events and activities included:

- The pruning and shaping of mature overgrown trees and the removal of diseased tress on the Providence property.
- Replacement of the roof over the south wing of the Providence Facility.
- Training and implementation of the Epicor purchasing and receiving software.
- The rebalancing of all HVAC air balancing units to improve the performance of the new HVAC control software in the Providence facility.
- Cleaning of the ductwork in the Pawtucket and Providence facilities
- Implementation of the core Epicor financial and accounting system modules

Total 2008 Finance Division costs (as of 12/31/08, first close)

	ACTUAL	BUDGET	VARIANCE	% Used
Personnel Costs	938,354	911,689	(26,665)	102.9%
Operating Costs	1,163,042	1,132,105	(30,937)	102.7%
Allocated Costs from Outside Finance	359,851	340,027	(19,824)	105.8%
Total	**2,461,247**	**2,383,821**	(77,426)	103.2%

For a more complete discussion of the Financial Software Implementation, see Item 3.7 and Att. #21.

Prepared April 19, 2009

INFORMATION SERVICES DIVISION
Highlights of 2008 Activities
Thomas Blythe, Chief Information Officer

In 2008, the Information Services Division (ISD) was created, consisting of divisional staff and the two Providence computing departments, Systems & Operations and Business & Publications Computing. The Business & Publications Computing department, also created in 2008, is a combination of the former Electronic Products Development Department and Management Information Systems Department. Because the division was created in 2008, it does not have a 2008 Operating Plan. This report consists of a narrative description of important projects and activities worked on by the division in 2008 and three detailed Section VI reports from the 2008 Operating Plans of the Systems & Operations, Electronic Products Development, and Management Information Systems departments

This year ISD led the project to select a commercial association management software package for the Society. The selection process was very thorough and included input from all major user departments. ISD recommended the purchase and implementation of the Personify association management system from TMA Resources. The Board of Trustees accepted the recommendation and authorized the purchase. The successful implementation of this software will be critical for ISD to successfully support the business activities of the Society in the future.

ISD assisted the Fiscal Department with the implementation of the new Epicor accounting software. Business & Publications Computing staff modified existing programs and databases to use the new account number format that was defined by Fiscal for Epicor. Systems & Operations staff worked with Epicor personnel to learn how to support the new system.

Both Epicor and Personify run in a Microsoft Windows Server environment. This is a new environment for our staff and we are making changes to be able to support it appropriately. In Systems and Operations, the VMS Systems Programmer and the Systems Analyst positions are transitioning to becoming Windows Server Administrators. This year they spent a significant amount of time training, researching, and developing new procedures to support this environment. Business & Publications Computing staff began training on the new development environment, Microsoft's Visual Studio .NET.

After investigating Virtual Server technology, we are convinced that this technology will be an important component in improving the availability, efficiency, and reliability of our systems. In 2009, ISD intends to begin implementation of a Virtual Server environment that will accommodate the needs of both our Windows and UNIX servers.

In the Publications area, ISD staff worked with Mathematical Science Publishers (MSP) to install and implement their Editflow software to replace Centrack as our journal peer review manuscript tracking system. "Proceedings of the AMS" is scheduled to be the first journal to move to the new system (early 2009), with other journals to follow. ISD received the new set of reference files for the Bulletin back issues (1891 – 1991) from Project Euclid, along with a completely new set of metadata files. This required a much more comprehensive installation process to replace both the existing references and the metadata, after extensive data validation.

In 2008, a great deal of work was done to improve our website. We developed a customized content management software solution that is browser-based and works seamlessly with our new framework methodology for storing, assembling, and delivering web pages on the AMS website. It provides a simple

way for non-technical staff to author, edit, and proof content and satisfies many of our objectives for managing content on the AMS website.

In addition, the Website Reorganization project was launched to "make it easier to find things on the website". "Findability" requires having a good Information Architecture; content organized in a way that makes sense from the users' perspective. Development of an Information Architecture requires unique skills and a specialized methodology. After researching several vendors, we chose a company called Contextual Analysis to assist us in developing a new Information Architecture for the AMS website. Working with Contextual Analysis, we have developed a number of recommendations related to the organization, structure, maintenance, and management of the website's content. These recommendations will be critical to the new website to be launched 2009.

Prepared April 15, 2009

MATHEMATICAL REVIEWS DIVISION
Highlights of 2008 Activities
Graeme Fairweather, Executive Editor

In 2008, the Mathematical Reviews Database (MRDB) increased by 114,689 items including 63,691 reviews. The following table offers a comparison of the number of items and the number of reviews added to the MRDB in the calendar year 2008 with the corresponding data for 2007. Digital Mathematics Library (DML) items are computer generated using bibliographic metadata harvested from digitization sites or supplied by publishers.

	2008	2007
Items added to the MRDB	114,689	91,192
Regular items	109,504	86,788
DML items	5,185	3,062
Reviews added to the MRDB	63,691	55,079

The volume of the mathematics literature continues to grow at the traditional rate of 3-4% annually. In 2008, MR added 53 new journal titles including 30 high density journals. This number is more typical than the 94 added in 2007 which was inflated as a result of a small group of publishers starting an unusually large number of new journals.

MathSciNet (MSN) now has an author profile dedicated to information associated with each MR Author ID number in the database. This information includes, when available, publications and reviews written by the author, a link to the author's Mathematics Genealogy Project listing, citation information for the author, a list of coauthors, and counts of articles published in various subject classifications. A librarians' page with links to resources in support of librarian activities has also been added to MSN. Here one finds up-to-date information about mathematics journals, instructional resources pertaining to MSN, and other AMS resources that might be of interest to librarians.

The processing of journals at MR continues to be affected by the growing number of journals that are processed from online versions. Currently, around 567 journals are being downloaded, which is a substantial increase from around 450 journals one year ago. The download manager, which was created for acquisition of electronic journals by the Bibliographic Services Department, has now been enhanced to allow editors to prescan issues online and is being adapted to permit downloading of electronic books and collections. MR now has additional permissions from a number of publishers to deliver articles to review in the form of PDF files.

In 2008, the editors continued to strive for more external reviews; the rate of "index only" items, i.e., items in the MR database without review, dropped from 20.9% in 2007 to 18.7% in 2008. The editors made considerable progress on the next version of the Mathematics Subject Classification, MSC2010, the final version of which will be released to the public in spring 2009.

Significant staff changes include the hiring of two associate editors, Milan Lukic and Michael Jones, and the transition of executive editors. The most visible physical change at MR during 2008 was the installation of cubicles in Copy Editing and Bibliographic Services.

Prepared April 2009

MEETINGS AND PROFESSIONAL SERVICES DIVISION
Highlights of 2008 Activities
Ellen Maycock, Associate Executive Director

The mission of the division is to provide professional meetings, programs, services and public awareness materials that support the continuing professional development of the membership, both individuals and institutions, and the mathematical community at large. A central theme of all the activities within this division is outreach not only to members of the profession but also to a general audience. In addition to working on many ongoing projects, staff members began to develop several new programs to support the mission of the division in 2008.

The **Meetings and Professional Services Division** functions primarily to support the three departments contained within it. However, the AED and her assistant also do a number of things independently. The first summer conferences of the Mathematics Research Communities program, funded by the National Science Foundation, were held in Snowbird, Utah, in the summer of 2008. Preparations for these 2008 conferences, as well as planning for the 2009 summer conferences and the MRC participation in the JMM occupied the AED and her assistant during 2008. Working with Professor Alan Tucker of SUNY Stony Brook, they successfully submitted a grant proposal to the National Science Foundation to study the effectiveness of online grading systems. This study is an outcome of former President James Glimm's Task Force on the First Year College Mathematics Experience.

The **Membership and Programs Department** continues to run a large number of programs for our members and for the larger mathematics community. The department designs and implements promotional efforts to our current, new and lapsed members, and has a booth at the Joint Mathematics Meetings for members. The department handles individual programs such as the Centennial Fellowship, the Young Scholars program, the Math in Moscow program, the China Exchange program, the Book and Journal Donation program, and the Trjitzinsky Memorial Awards. A variety of employment services—most notably the Employment Center at the Joint Mathematics Meetings and the ongoing Mathjobs.org electronic application service—are run by this department. The department also provides support for several AMS committees.

The Membership and Programs Department saw the expansion of several programs in 2008. The NSA Grants application and evaluation process is now conducted using an electronic program still under development. Various employment and career services have been scheduled for updating over the next three years, according to an operating plan developed in 2008. However, towards the end of 2008 those services began to show the stresses of the current unfavorable job market for mathematicians. Mathjobs.org has shown rapid growth but may level out in this climate. Membership levels were not severely impacted by the current economy but will need to be carefully watched. A Filemaker database created by department staff now tracks all mailings, materials and meeting displays and compiles promotion costs and results in regular reports to the AED.

The **Meetings and Conferences Department** continued with its ongoing support for the recurring meetings and conferences of the AMS. The Joint Mathematics Meetings, held in San Diego in 2008, was extremely successful with an attendance of 5653. The department worked on the 2009 Washington, DC meeting during most of 2008. The department provided support for the Mathematics Research Conferences (MRC) program held in Snowbird, UT. There were four sectionals held in the spring of 2008 and four in the fall of 2008. The department continued to function without a director until March 10, 2008, when Penny Pina was named Director of Meetings & Conferences. The department also underwent additional staffing changes during the second half of 2008. These staffing shifts and temporary

vacancies meant that department members shouldered more responsibilities during 2008. However, the department has functioned well as new staff members have become acclimated to their new roles and work setting. The department continues to explore how to update the computer systems that support our conferences, but any further actions were put on hold pending the purchase of the association software.

The **Public Awareness Office** maintained and expanded the programs to promote the Society and its programs and to promote mathematics. The PAO continued to run the popular *Who Wants to Be a Mathematician* games around the country, issue *Headlines & Deadlines* and *Headlines & Deadlines for Students*, and create and distribute printed materials about the Society (Annual Report, Member Newsletters, calendars, the now semi-annual series of posters promoting AMS Sectional Meetings, etc.). The PAO attended the annual AAAS, SACNAS, and SIAM meetings, added albums to Mathematical Imagery, posted many news items on the AMS home page, maintained relationships with four past Media Fellows (who contributed summaries for Math Digest) and Feature Column writers, and worked with a larger number of mathematicians regarding image permissions, podcast interviews, translations, input for the Member Newsletter, and sending materials to meetings and events at their institutions or organizations.

Among the PAO highlights in 2008 were the "AMS branding" of Mathematical Imagery, Math in the Media, Feature Column, Mathematical Moments, and Who Wants to Be a Mathematician web pages; a radical, improved re-design of the Mathematical Moments web portal; the addition of more podcasts to accompany Mathematical Moments; more translated Math Moments (in French, Polish, Hebrew, Arabic, Greek); two new posters--"Fibonacci Numbers in Nature" and *Notices* covers (for the Meet the *Notices* Editors event at JMM 2009); wider distribution of PAO printed materials via the web, in mailings, and to special events upon request; and the Math Awareness Month 2009 "Mathematics and Climate" theme poster and web pages.

The Meetings and Professional Services Division deals with activities and programs that lie at the heart of the AMS–activities and programs that directly affect all mathematicians, both members and nonmembers. So it is essential for each department in the division to be attuned to issues that are important for the mathematical community. The departments in the division initiated and continued many successful endeavors in 2008 that supported mathematicians around the world. The division now looks ahead to some tough economic times, and ponders how the AMS can continue to offer even more services with diminished resources. This will be a time to reconsider everything that we do, and to eliminate some services that are no longer especially useful or successful. We will also have to be cautious about taking on new projects that require significant resources.

Prepared March 30, 2009

PUBLISHING DIVISION
Highlights of 2008 Activities
Beth Huber, Associate Executive Director

Beth Huber met via conference call with Publishing Division trustee liaisons Eric Friedlander and Ron Stern on April 2, 2009 to review the 2008 division performance. The following summarizes this discussion.

Product Line Review (based on ABC budget reports)

JOURNALS - Subscription revenues (including late fees) resulted in a positive variance of $106,164 over budget. Over the last few years we have seen an increase in the number of subscriptions that are processed late, particularly from agents. Late payment fees resulted in over $47,000 in revenue in 2008. 2009 subscription revenue is still coming in but we are experiencing an increase in attrition as well as an increase in the rate of conversion to electronic only subscriptions. It is important to note that electronic only subscriptions are sold at a 10% discount over paper subscriptions. Some portion of the loss in revenue is offset with lower costs in printing and postage.

We are anticipating continued decline in subscriptions in 2010 as libraries adjust to lower overall budgets. There will be further discussion at the ECBT regarding a staff recommendation that we provide libraries with time to adjust to new funding levels by waiving our regular price increase on subscriptions for 2010.

Work has begun on retro digitizing the journals prior to 1996 after we received a financial commitment of about $350,000 from our mysterious donor to fund this activity. Work has begun to scope out the project which is scheduled to be completed over a multi-year period.

BOOKS - Overall Book revenue was approximately $55,000 below budget in 2008. We published 99 books in 2008, 10 less than budgeted and 1 less than we published in 2007. The mix of books included 56 monographs and 43 proceedings. Included in the monograph total were 10 books published outside of series.

The flow of new books into production also impacted overall revenues. We published 19 new books in December of 2008 which set a new record. Most of the initial revenue from these books will be recorded in 2009.

Our new European Distributor is working out really well. We moved from Oxford University Press to Eurospan in October of 2008. Eurospan and their sales force have brought new energy to the distribution efforts in the territory which has resulted in higher unit sales compared to Oxford sales over a similar period.

In October of 2008 we completed the purchase of the Books/Cole Series in Advanced Mathematics (also known as the Sally Series) from Cengage Learning. During the fourth quarter the staff worked to incorporate the series into our publishing program. The new series *AMS Pure and Applied Undergraduate Texts* is being sold well below the Brooks Cole list price, more in line with AMS text pricing. There is a high level of interest in the series and Acquisitions anticipates adding new titles to the series possibly in 2009 but definitely in 2010.

2009 revenues reflect the overall slowdown in the economy. We have had a few large one time sales which have offset sluggish sales in the first quarter. We are seeing more returns of stock than in previous years and a drop in unit sales with many of our larger accounts. It is likely that we will not make revenue 2009 budget of $3,848,487

We are currently concluding program planning for books. A great deal of the focus of the planning group has centered on improving the financial health of the book program. We have identified several areas where improvements in the foundation of the book program can help improve the overall profitability of the program.

The following summarizes some of the key activities undertaken in 2008 in the various departments of the Publishing Division.

PRODUCTION DEPARTMENT

We developed an electronic author offprint facility for one of our Sale of Service journals which we are considering expanding to AMS Journals. Some of the benefits associated with eOffprints include reduced costs associated with printing and distribution, more timely delivery, author access to a central repository of all their AMS from the AMS website and providing authors with a PDF copy of their work that can be easily posted to their institution's repository of published work by faculty. We will review this with the Committee on Publications in the fall for possible implementation with AMS journals in 2010.

The Promotions Group was combined with the Graphic Arts Group to form the Creative Services Department. The group coordinator for the Graphic Arts Group was promoted to the position of manager of the Creative Services Department. Combining the two groups enables us to obtain stronger control of the AMS brand in the market place and streamline promotional project development cycles resulting in reduced costs.

Work continued on "*EditFlow"* a new peer review tracking system we are licensing from Math Science Publishers ("MSP"). The implementation is taking considerably longer than anticipated and we cannot set a project completion date until MSP executes long overdue software modifications.

PRINTING DEPARTMENT

The age of our sheet fed presses continues to be a source of concern as well as our limited ability to produce color work. In order to address both issues we are considering retiring one of our black and white presses as well as our color press and purchasing a used color sheet fed press. We will begin the capital authorization process soon.

This appears to be a good time to locate well priced equipment in the used market. With access to capital limited due to the economic downturn there is a larger supply of used equipment which has resulted in very advantageous pricing on the type of equipment we are looking for. We anticipate being able to purchase and install a high quality used press in the range of $225,000-$250,000.

SALES ADMINISTRATION

We have launched our new Indian Editions program. Through this program we will produce and distribute specially priced editions of select AMS backlist titles to the Indian market.

The current plan calls for releasing 20 to 25 inexpensively priced titles per year, with an emphasis on the academic/textbook market. The goal of this project is to increase awareness of AMS titles in India, particularly in the academic community which hopefully will grow sales of non-Indian editions in this market. We have entered into an agreement with Universities Presses who will print the book in India and act as the exclusive distributor for the Indian editions.

MEMBER AND CUSTOMER SERVICES

We are focusing more attention on the behaviors and buying patterns of our customers during these uncertain economic times. These efforts include contacting lapsed journal subscribers in an attempt to regain subscriptions and reviewing book buying habits of individuals and commercial accounts.

The department head and supervisors of Member and Customer services have been active in the process of the selection of the new association management package. Work has begun on fine tuning how we will use the software we have purchased as well as validating data prior to migration to the new environment.

DISTRIBUTION

The distribution department allocated a considerable amount of resources to several special projects over the past year. We have taken a careful look at inventory levels on older inventories and reduced stock levels on obsolete publications including MR paper products, journals. We are also reducing the inventories held for our sale of service customers.

Over 36,000 units of backlist books have had new barcodes labels affixed to the cover. Our early publications were not barcoded which is problematic for our large retailer customers and distributors that rely on bar-codes to manage inventory. In order to avoid penalties that some accounts will soon assess we are labeling this older inventory.

Prepared April 19, 2009

WASHINGTON DIVISION
Highlights of 2008 Activities
Samuel Rankin, Associate Executive Director

The FY 2008 federal budget process for science research was a disappointment after an optimistic beginning. Ten percent increases for NSF in the House and Senate turned into an official budget with only a 2.5 percent increase over FY 2007. The AMS Washington Office uses a variety of means to affect the budget process, including collaborative efforts with other societies, organizations, coalitions.

The Washington Office continues to provide leadership for the Coalition for National Science Funding (CNSF), with Sam Rankin serving as chair and Anita Benjamin serving as director of the Annual CNSF Capitol Hill Exhibition as well as treasurer of the Coalition. CNSF now has 120 member organizations. The Exhibition continues to grow in interest as over four hundred people attended the 2008 event, including seven Members of Congress. The AMS sponsored University of Houston professor Suncica Canic. Her exhibit, "Mathematics and Cardiology: Partners for the Future" drew much interest.

The director of the DC Office continues to participate in the weekly Task Force on the Future of American Innovation meetings as well as other associated activities, and the AMS DC Offices provides financial support for some of the Task Force's projects. Besides science, engineering, and mathematics professional societies, Task Force member organizations include Intel, IBM, Tech America, Northrop Grumman, and Proctor and Gamble, to name a few. Sam Rankin also participated in the Bridging the Sciences Coalition, an organization dedicated to encouraging NIH to fund disciplines, such as the mathematical sciences, that can contribute to biomedical research.

Each year the Washington Office organizes the Annual Department Chairs Workshop held at the Joint Meetings. The 2008 Workshop had a record 54 chairs participating. Other events at the Joint Meetings organized by the DC Office included a Committee on Education panel, a session on the AMS Congressional Fellowship, and a Town Hall Meeting with Congressman Jerry McNerney.

The Washington Office continues to organize the annual meetings of the Committee on Science Policy and the Committee on Education as well as the selection process for the AMS Congressional Fellow. The FY 2008-2009 Fellow is Jim Rath from the University of Texas. Rath is spending his Fellowship in the office of Representative Ruben Hinojosa (D-TX-15). Two former AMS Fellows now have permanent positions on Capitol Hill. David Weinreich is legislative director in the office of Representative Bob Etheridge (D-NC) and Jeffry Phan is a legislative assistant in Senator Jeff Bingaman's (D-NM) office.

Sam Rankin provided Testimony at a March hearing, "The Broken Pipeline: Losing Opportunities in the Life Sciences," of the Senate Committee on Health, Education, Labor and Pensions. This committee is chaired by Senator Ted Kennedy. Rankin was part of a four person panel that included the president of Harvard. Rankin was asked to comment on the NSF and the way in which the U.S. funds science research.

In May, the Washington Office hosted a breakfast honoring the Presidential Awardees for Excellence in Mathematics Teaching as part of a week of recognition of these teachers. The DC Office has been providing support for this breakfast for several years.

In September, Doron Levy of the Department of Mathematics and the Center for Scientific Computation and Mathematical Modeling at the University of Maryland presented the Annual AMS Congressional Lunch Briefing. Professor Levy's presentation, "Can Mathematics Cure Leukemia," described the work

of his team on Chronic Myelogenous Leukemia. The 2008 briefing was the twelfth organized by the Washington Office.

During 2008 Sam Rankin served on the NSF Advisory Committee for the Government Performance and Results Act (GRPA) Performance Assessment ; the Advisory Board for the Mathematical Sciences Department of WPI; on the AAAS Energy, Environment, Agriculture & Natural Resources Science Policy Fellowship Selection Committee; and on an NSF Math and Science Partnership Proposal Review Panel. Rankin also provided the chapter analyzing federal funding for the mathematical sciences in the President's FY 2009 Budget Request for the *AAAS Annual Research and Development Report*. This analysis also appeared in the *NOTICES*.

The Washington Office remains committed to building a grassroots advocacy network and toward this goal has developed a webpage with information about holding meetings in congressional offices in the states and districts. The webpage also contains data about funding, as well as current congressional actions. In August, an email was sent to CSP and the Washington Office Contact list suggesting to the mathematicians on these lists that August was a good time to meet with congressional district and state offices. The grassroots webpage was updated with suggested talking points for these meetings.

Prepared April 15, 2009

A Proposal for a Fellows Program of the AMS

The Fellows program is created and updated by the Council of the AMS. The program below describes in general terms what a new Fellows program will look like. If approved, some details of the program may be changed by the AMS Council prior to implementation in order to address practical needs. Future Councils can make further changes, keeping in mind the intent of the membership in approving the initial program.

The goals of the Fellows Program are:

- *To create an enlarged class of mathematicians recognized by their peers as distinguished for their contributions to the profession.*
- *To honor not only the extraordinary but also the excellent.*
- *To lift the morale of the profession by providing an honor more accessible than those currently available.*
- *To make mathematicians more competitive for awards, promotion and honors when they are being compared with colleagues from other disciplines.*
- *To support the advancement of more mathematicians in leadership positions in their own institutions and in the broader society.*

I. Program (steady-state)

A. The Fellows program of the American Mathematical Society recognizes members who have made outstanding contributions to the creation, exposition, advancement, communication, and utilization of mathematics.

B. The responsibilities of Fellows are:

- To take part in the selection of new Fellows,
- To present a "public face" of excellence in mathematics, and
- To advise the President and/or the Council on *public matters* when requested.

C. All AMS members are eligible to be selected as Fellows.

D. The target number of Fellows will be determined by the AMS Council as a percentage of the number of eligible members.[1] The target percentage will be revisited by the Council at least once every ten years and may be increased or decreased in light of the history of the nomination and selection process. The intended size of each year's class of new Fellows should be set with this target size in mind.

[1] This proposal's recommendation to Council is 5% of eligible members. At present there are about 30,000 eligible members so the number of Fellows would be about 1,500.

E. Following a selection process (see below), individuals are invited to become Fellows. They may decline and they may also resign as Fellows at any time.

F. Each year all Fellows are invited to a reception at the AMS annual meeting; and the new Fellows are announced at this reception followed by a press release. New Fellows receive a certificate and their names are listed on the AMS web site. The names of new Fellows are also included in the *Notices*.

G. If they are not already Fellows, the AMS President and Secretary are made Fellows when they take office.

II. Initial Implementation

A. In the initial year of the program, all eligible AMS members who have done one or more of the following are invited to become AMS Fellows.[2]

1. Given an invited AMS address (including at joint meetings).

2. Been awarded an AMS research prize.[3]

3. Given an invited address at an International Congress of Mathematicians (ICM) or an International Congress of Industrial and Applied Mathematicians (ICIAM). [4]

B. An additional 50 Fellows are selected by a committee appointed by the President with the advice of the Executive Committee of the Council. Particular attention will be paid to selecting AMS members recognized for their contributions to education and service to the profession, and to addressing issues of diversity.

C. Any person who falls into one of the three categories above, and who is an AMS member during the year in which this program is initiated and the prior year will be invited to be a Fellow.

III. Selection Process

A. New Fellows are selected each year after a nomination process. The nomination process is carried out under the direction of the Secretary with help from the AMS staff. The procedures for nominating AMS Fellows will be available on the AMS website.

B. The Selection Committee will consist of nine members of the AMS who are also Fellows, each serving a three-year term, and with three new members appointed each year. The AMS president, in consultation with the Executive Committee of the

[2] The seeding process described in II.A would produce offers of Fellows status to approximately 800 current AMS members.

[3] These are the Birkhoff, Bôcher, Cole, Conant, Doob, Eisenbud, Fulkerson, Moore, Robbins, Satter, Steele, Veblen, Whiteman, and Weiner prizes.

[4] An invited address is one given at the invitation of the program committee.

Council, nominates the new members of the Election Committee in November of each year. At the same time, the President nominates a continuing member of the Election Committee to serve as Chair. The President's choices are approved by Council at its January meeting.

C. The Selection Committee accepts nominations for Fellows between February 1 and March 31 each year. Nominations are made by members of the AMS. A member can nominate no more than 2 nominees a year.

D. To be eligible for nomination to Fellowship, an individual must be an AMS member for the year in which he or she is nominated as well as for the prior year.

E. A nominator must supply a package with the following information on the nominee:

1. A Curriculum Vitae *of no more than five pages.*
2. A citation of fifty words or less explaining the person's accomplishments.
3. A statement of cause of 500 words or less explaining why the individual meets the criteria of Fellowship.
4. The signatures of the nominator and three additional AMS members who support the nomination, with at least two of these individuals current Fellows.

F. Any person who is nominated and is not selected a Fellow will remain an active nominee to be considered by the Selection Committee for possible selection for a further 2 years.

G. Each year the January Council provides a guideline for the number of Fellows to be selected[5]. The Selection Committee chooses Fellows from the nominations bearing in mind this guideline, diversity of every kind, and the quality and quantity of the external nominations. The Selection Committee has the discretion to make nominations to fulfill the general goals of the Fellowship.

H. In addition to the selected members, any person who fulfills the requirements of the initial implementation, and who is not already a Fellow, will be invited to become a Fellow.

I. Those members who are chosen by the Selection Committee, or who satisfy condition H, are invited by the President to become new Fellows of the AMS as of January 1 of the following year.

[5] It is anticipated that during a transition period of approximately 10 years about 75 new Fellows will be appointed each year. In the steady state of 1500, it is anticipated that about 40 new Fellows positions will occur annually due to attrition.

Report of the Executive Director

Prepared for the Council, April 18, 2009

I am focusing this report on the effects of current economic conditions on the American Mathematical Society. The topic is one of both interest and concern. It affects policy and fiscal dimensions of the Society. I think it is important to inform the Council about the effects being felt.

In my first report to the Council, I am reorienting a tradition established by John Ewing in 1997 of presenting an annual report on the *State of the AMS*. That document will still be prepared for the 2008-2009 Annual Report of the Society and for the *Notices*. The present report is more focused.

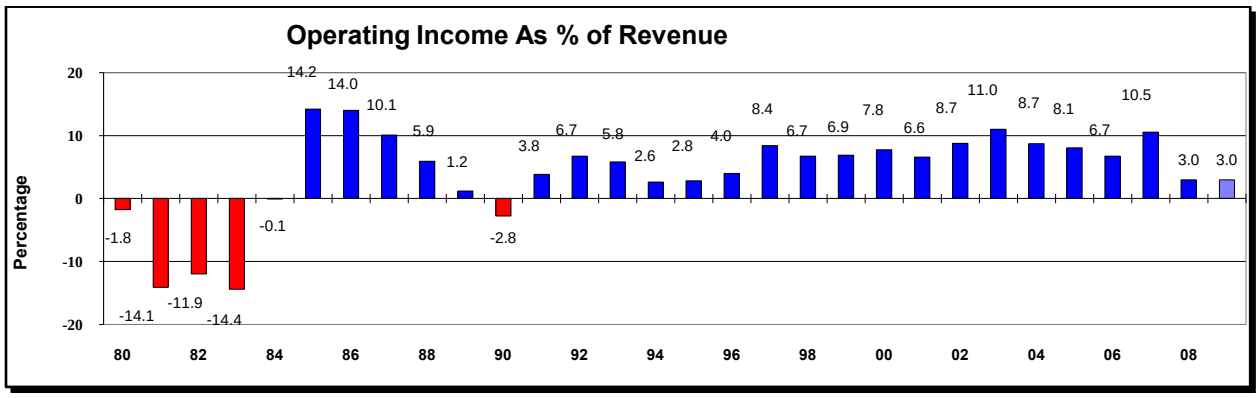
First the good news: The AMS is very well prepared for the current economic crisis. In response to very difficult economic conditions in the early 1980s, the AMS established and funded an Economic Stabilization Fund with a view towards times like the present.

Still, the current economic crisis has had negative impacts on the Society's financial condition. The long-term investment portfolio has suffered a major loss. There will be less spendable income from unrestricted endowment. The community that we serve, our members and academic institutions and libraries, are suffering major economic disruptions which in turn have an effect on AMS business operations and community services. I will address all of these points and mention some parallels with our experience from the 1980s (and later recessions).

Economic Stabilization Fund

Part of the long-term investment portfolio is designated as the Economic Stabilization Fund (ESF). This 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."[1] The reason for this action in 1980 can be discerned from the following figure showing operating income (loss) as a percent of operating revenue.

[1] May 1980 ECBT Minutes.



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.

Long-Term Investment Portfolio

The long-term investment portfolio has been severely affected by the decline of equity markets. The Society has experienced the same kind of losses which have been reported by academic institutions reliant on income from their endowments, though on our own more modest scale.

Specifically, on December 31, 2007, the long-term investment portfolio had a balance of $73.8 million. The balance on December 31, 2008 was $52.0 million reflecting a year-end loss of about 30% in 2008. The loss has a significant impact on spendable income for operations and, because of requirements for different parts of the long-term portfolio, the effect on spendable income may be greater than 30%.

Separate from the ESF is a portion of the long-term portfolio known as the Operations Support Fund (OSF). One can regard the OSF as being that portion of the portfolio in excess of (i) restricted endowment (e.g., prize funds) and (ii) the ESF. With this view, the long-term portfolio consists of three parts: restricted endowment, ESF and OSF.

In 2001, the Board authorized using spendable income from the OSF for service and outreach programs of the Society. The “spendable income” is a percentage (currently 5%) of the average balance of the OSF over a look-back period of three years.

Because of the need to maintain the ESF at its target level, the Board has provided for automatic rebalancing of the ESF and OSF at the end of each fiscal year. In 2008 this resulted in a large transfer from the OSF to the ESF. Consequently, the OSF has been reduced in two ways: (i) rebalancing transfer to the ESF and (ii) market loss. As a result of these two factors,

the OSF balance changed from about $40 million at year-end 2007 to about $20 million at year-end 2008, a decrease of about $20 million (50%).

My numbers in this paragraph are a slight oversimplification because of the look-back period for computing spendable income. But we can do this math in our heads. If the steady-state value of the OSF were $40 million, it would generate $2 million in spendable income for service and outreach programs of the Society and if the steady-state value were $20 million the OSF would generate $1 million in spendable income for service and outreach. The projected loss in income is not quite that bad because we never did reach a balance of $40 million in the "steady state." But the possible loss of revenue is significant.

The following table shows the projected levels of spendable income from the OSF if the balance of the OSF did not increase from the $20 million plateau:

Year	OSF Spendable Income
2008	1.04 million
2009	1.40 million
2010	1.45 million
2011	1.45 million
2012	1.22 million
2013	0.90 million

We could be optimists and believe that the market will rebound soon. But it is not prudent to bank on that assumption given the unprecedented magnitude of the current decline.

Further, every dollar of revenue eventually works to the benefit of service and outreach programs of the Society. A loss of $500,000 of revenue has an immediate impact on resources that are available for services and outreach. In this regard, we are also closely monitoring book sales and renewals of journal subscriptions and membership.

Impact on the Mathematics Community

Not only has the mathematics community per se but the academic community as a whole 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 50 years.[2] 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.

[2] Donald J. Boyd and Lucy Dadayan, State Revenue Report, April 2009, The Nelson A. Rockefeller Institute, SUNY Albany.

The losses suffered by institutional endowments have an impact like the one highlighted above for the 30% decline in the Society's long-term investment portfolio in 2008. There is less spendable income, less 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.

Cost cutting by institutions is likely to have some effect on attrition of journal subscriptions and on book sales. Given the typical July-to-June cycle for fiscal year budgets of academic institutions and the timing of the economic collapse, we should expect to see these effects in our FY2010 financial performance.

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.[3]

AMS Actions

The Society needs to sustain a high level of support for the mathematics community during this stressful time. We will place the highest priority on this objective.

This means, however, that we need to control our own expenses and attempt to maintain and find new sources of revenue. We have already sensitized the Society's staff to the need to think in terms of more austere budgets in the medium term and to start living by that principle today. Careful control of expenses leaves more resources available for services to the community. Some small steps to reduce expenses are easy to take, and those have already been implemented.

With regard to maintaining revenues, the Society has followed the practice of very carefully controlled small increases in subscription prices and dues. We assure the community that we

[3] Donald J. Boyd, What will happen to state budgets when the money runs out?, February 2009, The Nelson A. Rockefeller Institute of Government, SUNY Albany.

will be very sensitive to the impact on those we serve as we seek the right balance between too much and too little when adjusting prices and dues.

On a final note, my report should not be interpreted as a message of gloom and doom. Indeed, given the forethought that has been put into the growth and management of the Society's resources, I am confident that we will remain secure and continue to serve the mathematics community well during the current recession.

Don McClure

AMERICAN MATHEMATICAL SOCIETY

Financial Statements

December 31, 2008 and 2007

(With Independent Auditors' Report Thereon)

KPMG LLP
50 Kennedy Plaza
Providence, RI 02903

Independent Auditors' Report

The Board of Trustees
American Mathematical Society:

We have audited the accompanying balance sheets of the American Mathematical Society (the Society) as of December 31, 2008 and 2007, and the related statements of activities and cash flows for the years then ended. These financial statements are the responsibility of the Society's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Society's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Society as of December 31, 2008 and 2007, and the changes in its net assets and its cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

As described in note 7 to the financial statements, the Society adopted the provisions of Financial Accounting Standards Board Staff Position FAS 117-1: *Endowments of Not-For-Profit Organizations: Net Asset Classification of Funds Subject to an Enacted Version of the Uniform Prudent Management of Institutional Funds Act, and Enhanced Disclosures for all Endowment Funds,* in 2008.

KPMG LLP

May 28, 2009

AMERICAN MATHEMATICAL SOCIETY

Balance Sheets

December 31, 2008 and 2007

Assets		**2008**	**2007**
Cash and cash equivalents (note 3)	$	1,263,610	921,425
Short-term investments (notes 2 and 4)		16,007,397	16,387,716
Accounts receivable, net of allowances of $260,000		1,023,032	817,901
Deferred prepublication costs		568,308	608,723
Completed books		1,271,938	1,153,060
Prepaid expenses and deposits		1,612,107	1,323,430
Land, buildings and equipment, net (note 5)		4,532,533	4,270,952
Long-term investments (notes 2, 6 and 7)		52,202,690	74,065,208
Total assets	$	78,481,615	99,548,415
Liabilities and Net Assets			
Liabilities:			
Accounts payable and accrued expenses	$	2,902,068	2,614,560
Severance and study leave pay (note 8)		972,311	1,213,114
Deferred revenue		12,243,494	11,744,369
Postretirement benefit obligation (note 9)		4,344,865	4,079,327
Total liabilities		20,462,738	19,651,370
Net assets:			
Unrestricted:			
Undesignated		5,402,026	10,629,357
Designated (notes 7 and 10)		43,969,791	63,523,608
		49,371,817	74,152,965
Temporarily restricted (notes 7 and 11)		4,054,666	1,908,841
Permanently restricted (notes 7 and 12)		4,592,394	3,835,239
Total net assets		58,018,877	79,897,045
Total liabilities and net assets	$	78,481,615	99,548,415

See accompanying notes to financial statements.

AMERICAN MATHEMATICAL SOCIETY

Statements of Activities

Years ended December 31, 2008 and 2007

	2008	2007
Changes in unrestricted net assets:		
Operating revenue, including net assets released from restrictions (notes 1, 6, 7, and 11):		
Mathematical reviews	$ 10,230,303	9,658,217
Journals	4,707,481	4,481,903
Books	3,616,900	3,693,828
Other publications-related revenue	496,852	538,547
Dues, services, and outreach	3,774,473	3,620,377
Grants, prizes and awards	657,044	550,202
Investment earnings available for spending (notes 6 and 7)	1,039,300	1,007,069
Meetings	994,808	908,836
Short-term investment income (loss)	(105,508)	895,022
Other	147,466	161,156
Total operating revenue	25,559,119	25,515,157
Operating expenses:		
Mathematical reviews	6,569,210	6,115,797
Journals	1,668,099	1,351,788
Books	3,212,074	2,957,073
Publications indirect	923,463	955,416
Customer services, warehousing and distribution	1,739,938	1,704,588
Other publications-related expense	442,312	491,439
Membership, services and outreach	3,699,129	3,350,117
Grants, prizes and awards	796,739	754,103
Meetings	1,049,852	940,853
Governance	453,805	400,390
Member and professional services indirect	581,135	554,806
General and administrative	3,435,371	3,196,735
Other	228,556	57,384
Total operating expenses	24,799,683	22,830,489
Excess of operating revenue over operating expenses	759,436	2,684,668
Investment income (less than) in excess of investment earnings available for spending (note 6)	(20,332,683)	2,420,182
Effect of adoption of Statement of Financial Accounting Standards No. 158 (note 9)	—	750,728
Post retirement benefit-related changes other than net periodic cost (note 9)	(142,934)	—
Adjustment required under the District of Columbia's enacted version of the Uniform Prudent Management of Institutional Funds Act and the provisions of FASB Staff Position FAS 117-1 (note 7)	(5,064,967)	—
Change in unrestricted net assets	$ (24,781,148)	5,855,578

(Continued)

AMERICAN MATHEMATICAL SOCIETY

Statements of Activities

Years ended December 31, 2008 and 2007

	2008	2007
Changes in temporarily restricted net assets:		
Contributions	$ 178,340	53,952
Investment (loss) income (note 6)	(2,540,675)	200,215
Net assets released from restrictions (notes 1e and 11)	(556,807)	(310,704)
Adjustment required under the District of Columbia's enacted version of the Uniform Prudent Management of Institutional Funds Act and the provisions of FASB Staff Position FAS 117-1 (note 7)	5,064,967	—
Change in temporarily restricted net assets	2,145,825	(56,537)
Change in permanently restricted net assets:		
Contributions	757,155	157,800
Change in permanently restricted net assets	757,155	157,800
Change in net assets	(21,878,168)	5,956,841
Net assets, beginning of year	79,897,045	73,940,204
Net assets, end of year	$ 58,018,877	79,897,045

See accompanying notes to financial statements.

AMERICAN MATHEMATICAL SOCIETY

Statements of Cash Flows

Years ended December 31, 2008 and 2007

	2008	2007
Cash flows from operating activities:		
Change in net assets	$ (21,878,168)	5,956,841
Adjustments to reconcile change in net assets to net cash and cash equivalents provided by operating activities:		
Depreciation	519,748	489,098
Net realized and unrealized losses (gains) on long-term investments	24,341,301	(1,278,919)
Contributions restricted for permanent investment	(757,155)	(157,800)
Loss on disposal of equipment	—	1,351
Changes in assets and liabilities:		
Accounts receivable, net	(205,131)	(393,233)
Deferred prepublication costs	40,415	(27,954)
Completed books	(118,878)	(92,424)
Prepaid expenses and deposits	(288,677)	(151,021)
Accounts payable and accrued expenses	46,705	151,005
Deferred revenue	499,125	19,723
Postretirement benefit obligation	265,538	(627,361)
Net cash and cash equivalents provided by operating activities	2,464,823	3,889,306
Cash flows from investing activities:		
Change in short-term investments	380,319	707,864
Purchases of property and equipment	(781,329)	(1,026,727)
Sales of long-term investments	3,568,644	8,706,639
Purchases of long-term investments	(6,047,427)	(13,031,742)
Net cash and cash equivalents used in investing activities	(2,879,793)	(4,643,966)
Cash flows from financing activities:		
Contributions restricted for permanent investment	757,155	157,800
Net cash and cash equivalents provided by financing activities	757,155	157,800
Net increase (decrease) in cash and cash equivalents	342,185	(596,860)
Cash and cash equivalents at beginning of year	921,425	1,518,285
Cash and cash equivalents at end of year	$ 1,263,610	921,425

See accompanying notes to financial statements.

AMERICAN MATHEMATICAL SOCIETY

Notes to Financial Statements

December 31, 2008 and 2007

(1) Description of Business and Summary of Significant Accounting Policies

(a) Description of Business

The American Mathematical Society (the Society) was created in 1888 to further mathematical research and scholarship. It is an international membership organization, currently with over 30,000 members. The Society fulfills its mission with publications and professional programs that promote mathematical research, increase the awareness of the value of mathematical research to society and foster excellence in mathematics education.

(b) Basis of Financial Statement Presentation

The accompanying financial statements are presented on the accrual basis of accounting in accordance with U.S. generally accepted accounting principles (GAAP) and have been prepared to focus on the Society as a whole and to present balances and transactions according to the existence or absence of donor-imposed restrictions.

The preparation of the financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, and disclosures of contingent assets and liabilities, as of the dates of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Actual results could differ from those estimates.

The Society defines operating income as the net increase in unrestricted net assets derived from the activities related to the accomplishment of its mission, such as publications, programs, meetings and conferences, and member services. Investment earnings appropriated by the Board on unrestricted long-term investments are presented as an operating revenue. Any excess investment earnings (loss) is presented as a nonoperating item.

(c) Classifications of Net Assets

The Society's net assets and activities that increase or decrease net assets are classified as unrestricted, temporarily restricted, or permanently restricted.

Effective January 1, 2008, the Society adopted the provisions of Financial Accounting Standards Board (FASB) Staff Position FAS 117-1: *Endowments of Not-for-Profit Organizations*: *Net Asset Classification of Funds Subject to an Enacted Version of the Uniform Prudent Management of Institutional Funds Act, and Enhanced Disclosures for All Endowment Funds* (FSP 117-1). FSP 117-1 provides guidance on the net asset classification of donor-restricted endowment funds for a not-for-profit organization that is subject to an enacted version of the Uniform Prudent Management of Institutional Funds Act and also requires disclosures about endowment funds, including donor-restricted endowment funds and board-designated endowment funds.

(Continued)

The Society is incorporated under the laws of the District of Columbia and is therefore subject to its corporate governance laws. In late 2007 the Council of the District of Columbia adopted its version of the Uniform Prudent Management of Institutional Funds Act (DCUPMIFA), effective for the year ended December 31, 2008. As a result of this new law FSP 117-1, the Society has classified its net assets as follows in 2008:

- Permanently restricted net assets are those which must be permanently invested to provide a source of support for the activities of the Society and which are commonly referred to as endowments. Permanently restricted net assets consist of (1) the original value of gifts donated to the permanent endowment; (2) the original value of any subsequent gifts to the permanent endowment, and (3) if required, accumulations to the permanent endowment made in accordance with the terms of the applicable donor gift instrument at the time the accumulation is added to the fund.
- Temporarily restricted net assets include (1) those whose use is restricted by donor-imposed limitations which will lapse upon the passage of time, use of the asset for its intended purpose, or the meeting of other donor-imposed stipulations, and (2) any remaining portion of a true endowment fund that is not classified as permanently restricted net assets. This remaining portion of true endowment funds, if any, shall remain in temporarily restricted net assets until appropriated for expenditure by the Board in accordance with the standard of prudence prescribed by DCUPMIFA.
- Unrestricted net assets are those without any donor-imposed or other restrictions as to their use and which are available for the general operations of the Society.

Prior to 2008, the Society operated under the Uniform Management of Institutional Funds Act as enacted by the District of Columbia. Under this law, the accumulated realized and unrealized gains related to the investment of an endowment gift could be legally appropriated for expenditure by the governing body of an organization unless the applicable gift instrument indicates the donor's intention that such gains may not be expended. None of the Society's endowment gift instruments executed by donors contains such a restriction. Accordingly, the net gains on endowment gifts that contain no donor restrictions as to the use of income derived therefrom have been included in unrestricted net assets in 2007. The net gains on endowment gifts that contain donor restrictions as to the use of income derived therefrom have been included in temporarily restricted net assets in 2007.

The original amount of endowment gifts has been included in permanently restricted net assets in 2008 and 2007, as none of the gifts require subsequent accumulations.

(d) Contributions and Net Assets Released from Restrictions

The Society records as contribution revenue unconditional promises to give. All other contribution revenue is recorded as received. If the contribution is made in assets other than cash, the amount of the contribution is measured at the fair value of the asset contributed at the date the contribution or unconditional promise to give is made by the donor.

Contributions of cash and other assets are reported as temporarily restricted support if they are received with donor stipulations that limit the use of the donated asset for some specific purpose or time period and as permanently restricted support if the donated asset must be invested in perpetuity.

When a donor restriction expires, that is, when a stipulated time restriction ends or purpose restriction is accomplished, temporarily restricted net assets are reclassified to unrestricted net assets and reported in the accompanying statements of activities as net assets released from restrictions.

If a donor-imposed restriction is met for the full amount of the contribution within the year, the related revenues and expenses are recorded solely in the unrestricted net assets category in the accompanying statements of activities.

The Society receives contributed services from its members, principally as volunteer leaders in the governance structure of the Society and as volunteer members of editorial committees for the Society's various publications. The latter category of contributed services qualifies for recognition as income and expense under GAAP, as the members of the editorial committees must possess specialized skills. However, the Society has no practical way of measuring the fair value of the services received from its volunteer editorial committee members and, accordingly, no such estimate is included as revenue or expense in the accompanying financial statements.

(e) Investments

Substantially all of the Society's investments, both short term and long term, are carried at fair value, as determined by quoted market prices. Investments in mutual funds are carried at the quoted net asset value of the fund, which approximates fair value. Certain investments, such as money market funds and certificates of deposit, are carried at cost, which approximates fair value.

Under DCUPMIFA in 2008, the total return (interest, dividends, and realized and unrealized gains or losses) derived from all true endowment fund investments is recorded as investment return (loss) in temporarily restricted net assets. As the purpose restriction is met, the income derived from true endowment funds whose use of income is restricted is reclassified from temporarily restricted net assets to unrestricted net assets as net assets released from restrictions. This totaled $259,329 in 2008.

As expenditures are incurred that meet the criteria established by the Board of Trustees for the income derived from true endowment funds whose use of income is not restricted, the income is reclassified from temporarily restricted net assets to unrestricted net assets as net assets released from restrictions. This totaled $297,478 in 2008 and is included in operating revenue with earnings available for spending.

Under the laws in effect in the District of Columbia in 2007 and prior years, the total return (interest, dividends, and realized and unrealized gains or losses) derived only from permanently restricted net assets whose use of income is restricted for a specific purpose was recorded as investment return (loss) in temporarily restricted net assets. As the purpose restriction was met, the income was reclassified to unrestricted net assets as net assets released from restrictions. This totaled $310,704 in 2007.

(Continued)

As expenditures were incurred that met the criteria established by the Board of Trustees for the income derived from true endowment funds whose use of income is not restricted, the income was treated as spendable income in unrestricted net assets. This totaled $282,769 in 2007, and is included in operating income as earnings available for spending.

The Board also appropriates funds to support the membership and professional services activities of the Society. The total so appropriated was $1,039,300 in 2008 and $724,300 in 2007, and included in operating revenue as earnings available for spending.

(f) Deferred Prepublication Costs

Prepublication costs, consisting of translation, editorial, composition and proofreading costs, are deferred until publication. Upon publication, prepublication costs related to books are transferred into completed books inventory and prepublication costs related to journals are expensed to offset subscription revenue for the journals.

(g) Completed Books

Publication costs of books, consisting of paper, printing, and prepublication costs, are deferred and charged to expense as the books are sold. Completed books are recorded in the accompanying balance sheets at the lower of average cost or market.

(h) Land, Buildings, Equipment, and Accumulated Depreciation

Land, buildings, and equipment are recorded at cost less accumulated depreciation. Depreciation is provided over the estimated useful lives of the assets using straight-line or accelerated methods.

(i) Membership Journals

Members are provided certain journals at no charge as these journals are considered to be benefits of membership in the Society.

(j) Revenue Recognition

Advance collections for dues, subscriptions, and publications are deferred and generally recognized as income when the services are rendered or the publications shipped. For subscriptions to current-year journals for which all of the issues have not yet been published but for which substantially all of the costs have been incurred, the Society accrues estimated completion costs and recognizes the related revenues. For sales of books and journals, revenue is recognized upon shipment. In addition, the Society reserves for its estimate of book returns.

(k) Income Taxes

The Society is a tax-exempt organization as described in Section 501(c)(3) of the Internal Revenue Code (the Code) and is generally exempt from income taxes pursuant to Section 501(a) of the Code. Rules and regulations regarding unrelated business income tax apply to the Society, but no activities resulting in a material amount of taxes due occurred in 2008 or 2007.

(Continued)

(l) Grant Income

The Society receives various grants that are subject to audit by the grantors or their representatives. Such audits could result in requests for reimbursement for expenditures disallowed under the terms of the grant; however, management believes that these disallowances, if any, would be immaterial.

(m) Reclassifications

Certain 2007 amounts have been reclassified to conform with the 2008 presentation.

(2) Fair Value Measurements

The Society adopted FASB Statement No. 157 *Fair Value Measurement* on January 1, 2008 for fair value measurements of financial assets and financial liabilities and for fair value measurements of nonfinancial items that are recognized or disclosed at fair value in the financial statements on a recurring basis. The adoption of this standard did not have a material effect on the Society's operations or cash flows. Statement 157 establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to measurements involving significant unobservable inputs (Level 3 measurements). The three levels of the fair value hierarchy are as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the Society has the ability to access at the measurement date.
- Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3 inputs are unobservable inputs for the asset or liability.

The level in the fair value hierarchy within which a fair measurement in its entirety falls is based on the lowest level input that is significant to the fair value measurement in its entirety.

(Continued)

AMERICAN MATHEMATICAL SOCIETY

Notes to Financial Statements

December 31, 2008 and 2007

The following table presents assets that are measured at fair value on a recurring basis at December 31, 2008:

		Fair value measurements at reporting date using		
	December 31, 2008	**Quoted prices in active markets for identical assets (Level 1)**	**Significant other observable inputs (Level 2)**	**Significant unobservable inputs (Level 3)**
Assets:				
Investments:				
Short-term	$ 16,007,397	16,007,397	—	—
Long-term	52,202,690	52,202,690	—	—
Total	$ 68,210,087	68,210,087	—	—

The financial statements as of and for the year ended December 31, 2008 do not include any nonrecurring fair value measurements relating to assets or liabilities for which the Society has adopted the provisions of Statement 157.

(3) Cash and Cash Equivalents

Bank accounts, money market funds and petty cash comprise the entire cash and cash equivalents balance as of December 31, 2008 and 2007. The Society's bank accounts are federally insured to a maximum of $250,000 each. The increase in federal insurance from $100,000 per depositor to $250,000 is set to expire December 31, 2009.

(4) Short-Term Investments

Short-term investments, at fair value, consist of the following as of December 31:

	2008	**2007**
Certificates of deposit	$ 4,589,000	4,887,000
Fixed-income mutual funds	4,179,521	4,207,272
U.S. government bonds, $500,000 face value, 5-year TIPS, 0.875%, due April 15, 2010	537,386	549,552
Convertible securities mutual fund	912,135	1,299,214
Domestic corporate stock	8,141	10,769
Money market mutual funds	5,781,214	5,433,909
	$ 16,007,397	16,387,716

(Continued)

It is the Society's policy to invest no more than the federal insured limit of $100,000 in each financial institution's certificate of deposit (temporarily raised to $250,000 by a federal agency through December 31, 2009). The income derived from these investments is unrestricted and is used to support operations.

(5) Land, Buildings, and Equipment

The following comprise the Society's investments in land, buildings, and equipment as of December 31:

	2008	2007
Land and improvements	$ 462,978	464,388
Building and improvements	7,157,450	6,685,346
Furniture, equipment and software	4,339,736	4,683,163
Transportation equipment	60,694	60,094
Construction in progress	—	274,589
	12,020,858	12,167,580
Less accumulated depreciation	(7,488,325)	(7,896,628)
	$ 4,532,533	4,270,952

Progress payments for new carpeting and a new heating, ventilation and air conditioning controls system in the Providence facility and a new financial software system comprise the construction in progress at December 31, 2007. All projects were completed by the end of 2008.

(6) Long-Term Investments

The Society's long-term investments are segregated into seven separate portfolios (including mutual funds), each with its own investment manager and investment objective. The overall investment strategy is determined by the Investment Committee of the Board of Trustees and is approved by the Board of Trustees annually. The primary investment objective of the long-term investment portfolio is an average real total return (net of investment fees and the effects of consumer inflation) of at least 6% over the long term. To achieve this result, the investment portfolio is allocated approximately 75% to equity investments and 25% to fixed-income investments. The equity investments are further diversified into domestic, international, and real estate holdings. Additionally, the entire portfolio is diversified across economic sectors, geographic locations, industries, and size of investees.

(Continued)

AMERICAN MATHEMATICAL SOCIETY

Notes to Financial Statements

December 31, 2008 and 2007

The following comprise the Society's total long-term investment portfolio as of December 31:

	2008		2007	
	Fair value	**Cost**	**Fair value**	**Cost**
Cash and cash equivalents	$ 272,363	272,363	497,906	497,906
Domestic common stocks	3,443,310	4,195,563	5,165,394	4,485,961
Fixed-income mutual funds	14,539,633	15,046,536	14,901,217	14,663,732
Equity mutual funds:				
Domestic common stocks	25,085,847	33,178,076	38,734,271	31,539,653
Domestic real estate investment trusts	2,351,853	3,021,247	3,654,745	2,870,115
International common stocks	6,509,684	10,027,126	11,111,675	9,803,797
Total	$ 52,202,690	65,740,911	74,065,208	63,861,164

The investment portfolio is allocated among the three categories of net assets as of December 31 as follows:

	2008	2007
Unrestricted net assets:		
Board-designated purposes (note 8)	$ 43,969,791	63,523,608
Undesignated	—	5,064,969
Total allocated to unrestricted net assets	43,969,791	68,588,577
Total allocated to temporarily restricted net assets	3,640,505	1,641,392
Permanently restricted net assets:		
Unrestricted use of income	1,565,181	1,565,141
Restricted use of income	3,027,213	2,270,098
Total allocated to permanently restricted net assets	4,592,394	3,835,239
Total long-term investments, at fair value	$ 52,202,690	74,065,208

(Continued)

AMERICAN MATHEMATICAL SOCIETY

Notes to Financial Statements

December 31, 2008 and 2007

The following schedule summarizes the investment return and its classification in the accompanying statements of activities for the years ended December 31:

	2008	2007
Dividends and interest, net of management fees of $34,909 and $39,920, respectively	$ 2,507,243	2,348,547
Net realized and unrealized (losses) gains	(24,341,301)	1,278,919
Investment (loss) income	(21,834,058)	3,627,466
Plus investment loss (less investment income) classified as temporarily restricted	2,540,675	(200,215)
Less investment earnings available for spending (note 1(e))	(1,039,300)	(1,007,069)
Investment (loss) income (below) in excess of investment earnings available for spending	$ (20,332,683)	2,420,182

(7) Endowments

Effective January 1, 2008, the Society adopted the provisions of FASB Staff Position FAS 117-1, *Endowments of Not-for-Profit Organizations: Net Asset Classification of Funds Subject to an Enacted Version of the Uniform Prudent Management of Institutional Funds Act, and Enhanced Disclosures for All Endowment Funds* (FSP 117-1). FSP 117-1 provides guidance on the net asset classification of donor-restricted endowment funds for a not-for-profit organization that is subject to an enacted version of the Uniform Prudent Management of Institutional Funds Act and also requires disclosures about endowment funds, both donor-restricted endowment funds and board-designated endowment funds.

The Society's endowment consists of approximately 30 individual funds established for a variety of purposes, including both donor-restricted endowment funds (true endowment) and funds designated by the Board of Trustees to function as endowments. Net assets associated with endowment funds, including funds designated by the Board of Trustees to function as endowments, are classified and reported based on the existence or absence of donor-imposed restrictions.

(a) Interpretation of Relevant Law

The Board of Trustees of the Society has interpreted the version of the Uniform Prudent Management of Institutional Funds Act enacted by the Council of the District of Columbia (the Act) as requiring the preservation of the fair value of the original gift as of the gift date of the donor-restricted endowment funds absent explicit donor stipulations to the contrary. As a result of this interpretation, the Society classifies as permanently restricted net assets (a) the original value of gifts donated to the permanent endowment, (b) the original value of subsequent gifts to the permanent endowment, and (c) accumulations to the permanent endowment made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the fund.

The remaining portion of the donor-restricted endowment fund that is not classified in permanently restricted net assets is classified as temporarily restricted net assets until those amounts are appropriated for expenditure by the Society in a manner consistent with the standard of prudence

(Continued)

AMERICAN MATHEMATICAL SOCIETY

Notes to Financial Statements

December 31, 2008 and 2007

prescribed by the Act. In accordance with the Act, the Society considers the following factors in making a determination to appropriate or accumulate donor-restricted endowment funds:

1. The duration and preservation of the fund
2. The purposes of the Society and the donor-restricted endowment fund
3. General economic conditions
4. The possible effect of inflation and deflation
5. The expected total return from income and the appreciation of investments
6. Other resources of the Society
7. The investment policies of the Society

Net assets comprising true endowment funds and funds designated by the Board of Trustees to function as endowments were are follows at December 31:

	Unrestricted	Temporarily restricted	Permanently restricted	Total
2008:				
Donor-restricted endowment funds	$ (615,140)	3,472,017	4,592,394	7,449,271
Board-designated endowment funds	43,969,791	—	—	43,969,791
Total endowment net assets	$ 43,354,651	3,472,017	4,592,394	51,419,062
2007:				
Donor-restricted endowment funds	$ 5,064,967	1,397,870	3,835,239	10,298,076
Board-designated endowment funds	63,523,608	—	—	63,523,608
Total endowment net assets	$ 68,588,575	1,397,870	3,835,239	73,821,684

(Continued)

AMERICAN MATHEMATICAL SOCIETY

Notes to Financial Statements

December 31, 2008 and 2007

The following table summarizes the changes in endowment net assets for the year ended December 31, 2008:

	Unrestricted	Temporarily restricted	Permanently restricted	Total
Endowment net assets, January 1, 2008	$ 68,588,575	1,397,870	3,835,239	73,821,684
Adjustment for the effects of the change in governing law and the provisions of FSP 117-1 as of January 1, 2008	(5,064,967)	5,064,967	—	—
Adjusted endowment net assets, January 1, 2008	63,523,608	6,462,837	3,835,239	73,821,684
Donor-restricted contributions	—	—	757,155	757,155
Investment loss	(19,293,382)	(3,144,149)	—	(22,437,531)
Release of endowment assets	(1,039,300)	(461,811)	—	(1,501,111)
Additions from operations	163,725	615,140	—	778,865
Endowment net assets, December 31, 2008	$ 43,354,651	3,472,017	4,592,394	51,419,062

The following table summarizes the changes in endowment net assets for the year ended December 31, 2007:

	Unrestricted	Temporarily restricted	Permanently restricted	Total
Endowment net assets, January 1, 2007	$ 63,124,799	1,365,581	3,677,439	68,167,819
Donor-restricted contributions	—	—	157,800	157,800
Investment return	3,427,251	186,134	—	3,613,385
Release of endowment assets	(1,007,069)	(153,845)	—	(1,160,914)
Additions from operations	3,043,594	—	—	3,043,594
Endowment net assets, December 31, 2007	$ 68,588,575	1,397,870	3,835,239	73,821,684

(Continued)

(b) Funds with Deficiencies

From time to time, the fair value of assets associated with individual donor-restricted endowment funds may fall below the level that the donor or the Act requires the Society to retain as a fund of perpetual duration. Deficiencies of this nature were funded by operations and amounted to $615,140 as of December 31, 2008. These deficiencies resulted from the significant market losses on long-term investments that occurred in 2008, which occurred shortly after the investment of new permanently restricted contributions and continued appropriation for certain programs that was deemed prudent by the Board of Trustees. Subsequent gains that restore the fair value of the assets of the endowment fund to the required level will be classified as an increase in unrestricted net assets. There were no such deficiencies as of December 31, 2007.

(c) Return Objectives and Risk Parameters

The Society has adopted investment and spending policies for endowment assets that attempt to provide a predictable stream of funding to programs supported by its endowment while seeking to maintain the purchasing power of the endowment assets. Endowment assets include those assets of donor-restricted funds that the organizations must hold in perpetuity or for a donor-specified period as well as board-designated funds. Under this policy, as approved by the Board of Trustees, the endowment assets are invested in a manner that is intended to produce an average annual real rate of return of approximately 6% over the long term. Actual returns in any given year may vary from this amount.

(d) Strategies Employed for Achieving Objectives

To satisfy its long-term rate-of-return objectives, the Society relies on a total return strategy in which investment returns are achieved through both capital appreciation (realized and unrealized) and current yield (interest and dividends). The Society targets a diversified asset allocation that places emphasis on investments in equities (allocation in the portfolio between 65-85%, with foreign equities comprising no more that 25% of the equity total), fixed income securities (allocation in the portfolio between 15-25%) and alternatives (currently real estate investment trusts with an allocation in the portfolio of no more than 10%) to achieve its long-term return objectives within prudent risk constraints.

(e) Spending Policy and How the Investment Objectives Relate to Spending Policy

The Society has a policy of appropriating for distribution each year 5% of its true endowment funds' average fair value using the average of the prior 4 years' ending fair value, normalized for intervening contributions and appropriations, through the calendar year-end immediately preceding the fiscal year in which the distribution is planned. The Society has a policy of appropriating for distribution each year 5% of the Board-designated Operations Support Fund's average fair value using the average of the prior 4 years' ending fair value through the calendar year-end one year preceding the fiscal year in which the distribution is planned. In establishing these policies, the Society considered the expected return on its endowment. Accordingly, the Society expects the current spending policy to allow its endowment to maintain its purchasing power by growing at a rate, on average over time, equal to planned payouts. Additional real growth will be provided through new gifts and any excess investment return.

(Continued)

AMERICAN MATHEMATICAL SOCIETY

Notes to Financial Statements

December 31, 2008 and 2007

(8) Severance and Study Leave Pay

Certain employees of the Society receive vested rights to severance and study leave pay based upon salary and years of service. The Society provides for this obligation over the related years of the employees' service. The provision for severance and study leave pay charged to expense totaled $94,803 and $131,188 in 2008 and 2007, respectively.

(9) Pension and Retirement Benefits

(a) The Society has contributory retirement plans (the Plans) covering substantially all full-time employees. The Plans are administered by, and related assets are maintained with, Teachers Insurance and Annuity Association and College Retirement Equities Fund. The Society's retirement expenses for these Plans totaled approximately $1,173,749 and $1,122,256 in 2008 and 2007, respectively.

(b) The Society sponsors a defined benefit postretirement medical plan that covers substantially all full-time employees. Under the plan provisions, employees who retire from the Society at age 62 or older with at least 12 years of service are eligible for benefits under the plan. Plan benefits consist of health insurance coverage under a Medicare Supplement Plan and reimbursement of Medicare Part B premiums. Employees who retire before age 62 may qualify for coverage under the plan according to a longer service requirement schedule established by the Society. Spouses of eligible retirees are not covered. The plan is noncontributory and is unfunded.

In 1998, this plan was amended to include the prior service of employees previously leased from the University of Michigan as eligible service when such persons became Society employees. The resulting prior service cost of these employees is being amortized over their estimated average future service period until retirement.

Effective January 1, 2007, the plan was further amended to limit the annual benefit per retiree to $4,000 with no other limits applied to the Medicare Part B or "Medigap" insurance premiums. The amendment also limits the eligible population to retirees eligible under the prior provisions at June 30, 2006 and Society employees as of June 30, 2006. There is no provision for this maximum benefit amount to increase over time. This amendment resulted in a prior service credit of approximately $2,975,000.

The Society adopted the provisions of Statement of Financial Accounting Standards No. 158, *Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans* (SFAS 158) on December 31, 2007, whereby the recorded liability for the post-retirement health benefit obligation was adjusted to reflect the actual funded status of the plan at December 31, 2008. This adoption resulted in a decrease in the Society's liability and a corresponding increase in unrestricted net assets of $750,728 in 2007, comprised of the following:

Prior service cost not yet recognized in net periodic benefit cost	$	18,934
2007 plan amendment, prior service credit		(2,727,452)
Prior years' net losses not yet recognized in periodic benefit cost		1,957,790
Total adjustment to adopt provisions of SFAS 158	$	(750,728)

(Continued)

Net postretirement benefit cost for the years ended December 31, 2008 and 2007, respectively, consisted of the following components:

		2008	2007
Service cost	$	127,206	153,400
Interest cost		228,499	220,600
Amortization of prior service cost, pre-2007 amendment		1,722	1,722
Amortization of prior service credit, 2007 amendment		(247,980)	(247,980)
Amortization of net experience losses		103,324	118,300
Adjustment to reverse prior years' cumulative over provisions		—	(30,105)
Net post-retirement benefit cost	$	212,771	215,937

The prior service cost (credit) and net loss (gain) expected to be recognized as components of net periodic post-retirement benefit cost for the year ending December 31, 2009 are approximately $(246,000) and $103,000, respectively.

The following table reconciles the plan's funded status with the amounts presented in the Society's financial statements at December 31, 2008 and 2007:

		2008	2007
Projected post-retirement benefit obligation, beginning of the year (and funded status)	$	4,079,327	6,877,681
Service and interest cost for the year		355,705	374,000
Plan amendment, January 1, 2008		—	(2,975,431)
Benefits paid		(90,167)	(92,570)
Actuarial gain		—	(104,353)
Projected post-retirement benefit obligation, end of year	$	4,344,865	4,079,327
Net liability recognized in the balance sheet	$	4,344,865	4,079,327

The following table presents additional information relating to the plan for the years ended December 31, 2008 and 2007:

Discount rate	5.50%	5.50%
Healthcare cost trend rate assumed for next year	Not applicable	Not applicable
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	Not applicable	Not applicable
Year that the rate reaches the ultimate trend rate	Not applicable	Not applicable

(Continued)

AMERICAN MATHEMATICAL SOCIETY

Notes to Financial Statements

December 31, 2008 and 2007

The expected future benefit payments under plan provisions for the next ten years are as follows:

Year-end:	
2009	$ 100,000
2010	111,000
2011	107,000
2012	106,000
2013	110,000
2014 – 2018	580,000

(10) Designated Unrestricted Net Assets

The Board of Trustees of the Society has designated components of unrestricted net assets to support certain purposes. All such designated funds within unrestricted net assets are supported by the unrestricted portion of the long-term investment portfolio. The Economic Stabilization Fund is designated to provide support for the Society in future years should an unexpected need arise. The Operations Support Fund is designated to provide current operating support to the Society via use of a 5% spending rate applied to the three-year moving average value of the fund. The Journal Archive Fund is designated to accumulate funds to support changes that may be necessary for electronic files to be available for future use due to as-yet-unforeseen technological changes. The Epsilon Fund for Young Scholars was created by the Board of Trustees in 2000 to augment the funds in a true endowment fund that supports programs for high school mathematics students.

The following comprise the balances in these designated funds within unrestricted net assets as of December 31:

		2008	2007
Economic Stabilization Fund	$	22,879,386	21,326,742
Operations Support Fund		20,082,698	40,830,813
Journal Archive Fund		523,142	677,039
Epsilon Fund for Young Scholars		484,565	689,014
Total	$	43,969,791	63,523,608

(Continued)

AMERICAN MATHEMATICAL SOCIETY

Notes to Financial Statements

December 31, 2008 and 2007

(11) Temporarily Restricted Net Assets

Temporarily restricted net assets consist of amounts restricted by donors for the following purposes as of December 31:

		2008	2007
Restricted purpose:			
Prizes and scholarships	$	234,151	219,524
Lectures and symposia		22,972	12,434
Fellowships		148,610	105,554
Epsilon awards		54,932	32,616
Book/Journal donation project		10,493	18,049
Charitable gift annuities		22,574	105,272
Graduate student travel program		25,000	—
National Data Access Fee support		15,000	—
Other miscellaneous		48,917	17,522
Accumulated gains on true endowment gifts		3,472,017	1,397,870
Total	$	4,054,666	1,908,841

Net assets released from restrictions related to true endowment funds whose use of income is restricted by donors and other temporarily restricted funds totaled $259,329 and $310,704 in 2008 and 2007, respectively, entirely due to the accomplishment of the designated purposes. Also in 2008, assets released from restrictions related to true endowment funds whose use of income is unrestricted, but which the Board appropriates to support specific activities total $297,478.

(12) Permanently Restricted Net Assets

Permanently restricted net assets must be invested in perpetuity and are supported by the long-term investment portfolio as well as other assets of the Society. The Society has two types of these donor-restricted endowments: gifts with no donor designations as to the use of income derived there from and gifts whose donors have designated a specific purpose in the gift instrument. The 2008 balances reflect the changes required under new legal and accounting requirements.

These endowments consisted of the following at December 31:

		2008	2007
Endowment without donor designation on use of income	$	1,565,181	1,565,141
Endowment with donor designation on use of income:			
Prizes		836,028	443,780
Scholarships and fellowships		252,130	252,130
Symposia and lectures		270,000	170,000
China collaboration		366,757	366,757
Epsilon fund for young scholars		1,302,298	1,037,431
	$	4,592,394	3,835,239