
State of AMS 2006

My annual report to the Council each year views the Society from a particular perspective, focusing on a special program or merely concentrating on a particular aspect. This year, I'd like to view the AMS in the simplest possible way—as an organization that makes money and spends it.

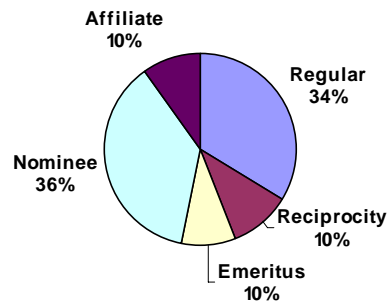
This can be misleading, of course. Societies are not merely businesses and their success cannot (and should not!) be measured by their revenue alone. But understanding the ways in which an organization derives its revenue, as well as the ways it spends it, allows one to understand the organization's values and goals.

I'll organize my report into three parts—the money we make, the money we spend, and the money we save.

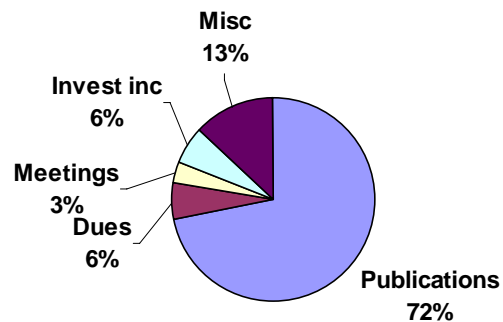
The Money We Make

When members think of the Society's revenue, the first thing they think about is dues. That's natural because members are always aware that they pay dues. Individual dues, however, make up less than 6% of the Society's revenue each year. Institutional dues make up another 3.5%, but the total is still very small (and institutional dues are less than the subscription discounts given to member institutions). Dues are an important source of revenue, but not a large one.

AMS Membership (2005)



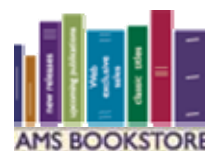
AMS Operating Revenue (2005)



Members will also think about revenue from the Society's meetings, for which the AMS charges registration fees. But revenue from meetings amounts to less than 3.5% of the total. In fact, we deliberately keep meetings revenue low because of the long-standing philosophy of the Society *not* to make money on meetings.

The major portion of our revenue (72%) comes from publishing—books, journals, and *Mathematical Reviews*.

- The book program (13% of revenue) competes well with programs of other well-known publishers of high-level mathematics. The number of new titles published was slightly higher in 2005 (89), and so were the actual number of books sold. Revenue was slightly down. We work hard to keep our prices low, which helps to keep prices of other publishers lower as well. We make a commitment to keep *every* monograph in print (we have a new print-on-demand program), and we now show more than 3,000 titles in print.
- Journals (18% of revenue) have played a key role in publications of the AMS from its founding. The Society publishes 12 in all, including translation and e-only journals. While there had been slow attrition in subscriptions for many years, in the past several we have seen that trend reverse, and the number of subscriptions has actually risen slightly. As we do for books, we have tried to keep journal prices low. As a consequence, the fraction of the Society's revenue from journals has steadily decreased, from 24% in 2000 to 18% last year. Journals remain an essential part of our scholarly heritage, however.



- *Mathematical Reviews* (nearly 39% of revenue) is really many products rather than one. The essential part consists of several databases—one made up of nearly two million items, one of all authors (uniquely identified for each item), one of all journals, and a new one of more than a million references, providing citation data that gives new insight into the mathematical literature. These have been painstakingly assembled over the past 65 years. The data is offered in several formats, although the most popular (and by far the most used) is MathSciNet. For more than ten years the Society has charged for access to Math Reviews using a novel model: Institutions pay a "data access fee" (DAF), which is their contribution to assembling the database, and then pay a separate fee for access to each particular product. The DAF is the largest portion of the cost (in 2006, \$7,320 list and \$5,856 for institutional members). By grouping institutions into consortia, we allow subscribers to share the cost of the DAF. This scheme has had some important consequences for the AMS: the number of institutions with access to



Math Reviews has more than doubled over the past ten years, and revenue from the DAF and products has risen steadily, while the "average" cost of access per institution has dropped dramatically.

A member recently wrote to me arguing that the Society should divest itself of its publishing activities because he claimed they represent a conflict of interest: The AMS depends on publishing revenue for its existence, and hence cannot take the necessary steps to change the way scholarly books and journals are published. I argue the opposite is true: *Because we depend so much on publishing for our revenue, we must take steps to change scholarly publishing. And by being a major publisher, the AMS has influenced the publishing of mathematics in many ways—lower prices, forward-thinking policies, and higher quality. Publishing is far more than making money for the AMS ... but making money is important.*

There are a number of additional sources of revenue (contributions, advertising, sale of service, short-term investments, etc.), but each is relatively modest when compared to our publications revenue. Our total revenue for 2005 was a little more than twenty-three million dollars.

The Money We Spend

It is likely not surprising that *most* of the money the AMS spends each year goes to the publication program—it is a large enterprise involving most of the 210 staff of the Society. Mathematical Reviews alone has more than 70 people working in our Ann Arbor office. We maintain our own warehouse and printing plant; we engage in marketing and promotion for journals and books; we engage in regular development cycles to update our publications website. Publishing is our largest expense category by a wide margin.

We also spend a lot of money on our meetings, which include the Joint Meeting each January (about 5,000 people), eight sectional meetings, one joint international meeting, and various workshops and conferences. As previously mentioned, the AMS tries to balance revenues and direct expenses for meetings as closely as possible. We have been successful in doing this.

Join Us out West for the Joint Mathematics Meetings



**Henry B. Gonzalez Convention Center
January 12 - 15, 2006**

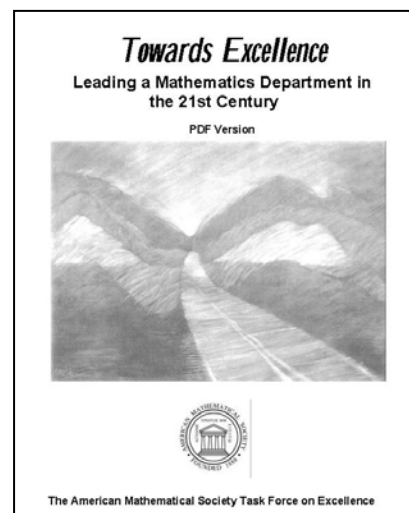


Most scientific societies would divide their other expenses into two categories, those directed at members and those directed at the scientific community as a whole. That division is hard to accomplish for the AMS, because we often blur the lines between member service and professional outreach. For example, our two member journals, the *Bulletin* and *Notices*, are major member benefits, but both journals are freely accessible to *all* mathematicians online. The AMS website has become a central way to communicate information to members, but

almost all the information is made available to all mathematicians at no cost (to them). Employment services are accessible to everyone (because restricting them to members, either individuals or institutions, seems unthinkable). Even discounts on meetings registrations are extended to people beyond our membership (because our meetings are joint). When paying dues, our members sometimes ask what they get in return, and this blurring of member benefits and professional outreach makes it hard to give a direct answer.

A list of activities on which we spend our money therefore looks like a list of *outreach*, that is, things we do for the entire mathematics community and not just for our members. It's important to keep in mind that almost every one of these things benefits members, either directly or indirectly, and hence a part of every activity is a "member benefit" as well as outreach.

Here is a list of some of that outreach, divided into categories that reflect the part of the Society most directly responsible for the activity.



Membership and Programs



This is the part of the AMS one usually thinks of when thinking about outreach. Its activities are as varied as any at the AMS, and reach nearly every part of the mathematical community. Here is a sample.

Annual Survey

The AMS surveys over 1,500 mathematics, applied mathematics, and statistics departments each year to gather information on everything from PhDs to salaries. Results are reported in the *Notices* and on the AMS website. This is a large effort, costing more than \$100,000 each year, but it provides invaluable information to mathematicians, especially young ones. The Annual Survey is cosponsored with the American Statistical Association, the Institute for Mathematical Statistics, and the Mathematical Association of America.

<http://www.ams.org/employment/surveyreports.html>

CBMS Survey

This detailed investigation of undergraduate programs in the mathematical sciences in the U.S. has been conducted every five years since 1965 under the auspices of the Conference Board on the Mathematical Sciences (CBMS), with funding provided by the NSF. The AMS became a partner in the actual conduct of this survey in 1990, held the NSF grant and provided survey infrastructure support for the 1995 survey, and is doing the same for the 2005 survey.

<http://www.ams.org/cbms/>

Assistantships and Graduate Fellowships in the Mathematical Sciences

This annual publication contains information on the graduate programs of mathematics and statistics departments in the U.S. Its purpose is to provide prospective graduate students with

a current and reliable source of basic information on graduate programs as a first step in their exploration of programs to which they might apply. A copy is provided free to every department listed in the AMS Professional Directory and is provided free to AMS members upon request. It is also available on the AMS web site.

<http://www.ams.org/employment/asst.pdf>

Employment Information in the Mathematical Sciences (EIMS)

EIMS has become a standard location for advertising academic, and some industrial, positions in mathematics. While the traditional yellow print publication still exists, most job seekers access the ads over the web. The ads are heavily browsed by mathematicians from all over the world.

<http://www.ams.org/eims/>

Employment Center

The Employment Center takes place at the Joint Meeting each year and used to be called the "employment register". It is now a centralized site for employers and job applicants to meet while at the January meetings. A sophisticated message center and optional scheduling system help with appointments, but employers use it in a variety of ways. This project is jointly "sponsored" by the American Mathematical Society, the Mathematical Association of America, and the Society for Industrial and Applied Mathematics, but it is carried out entirely by AMS staff.

<http://www.ams.org/emp-reg/>

MathJobs

This is a new service provided by the AMS in cooperation with Duke University. It is a web service that connects job applicants, employers, and reference writers in a flexible way that makes the application process easier for all. The service is free to applicants, but costs a modest fee for employers. We now have 62 employers and about 2700 applicants using the system, with more than 100,000 logins to the system during the current recruitment season.



<http://www.mathjobs.org/jobs>

Young Scholars Program

Summer programs for talented high school students played an important role in the careers of many current mathematicians. For the past seven years, the AMS has provided small grants totaling about \$80,000 each year to help such programs. Part of the money is used as scholarships, but the modest awards are largely used as seed money to obtain further funding. The Society has established the Epsilon Fund in order to endow this activity, with a goal of reaching two million dollars. We are about three-quarters of the way to meeting that goal.

<http://www.ams.org/employment/epsilon.html>

ALL GIRLS MATHS

Employment Services for Ph.D. Mathematicians

- [EIMS Job Listings](#) (post or browse)
- [Employment Center](#) (Interviewing Program)
- [AMS Coversheet](#)
- [Mathjobs](#) (automated system)
- [Advice for new Ph.D.'s](#)
- [Programs for graduate students and new Ph.D.'s](#)

REU Conference

The Society conducted a workshop on undergraduate research in 1999 with funding from the National Security Agency. This year, we will repeat that workshop, although with a broader focus (to include a variety of undergraduate research experiences). The AMS maintains a central list of all REU programs on its website at

<http://www.ams.org/employment/reu.html>

Math in Moscow Semester for Undergraduates

For the past five years, the Society has carried out this program with support from the National Science Foundation. Undergraduates (and a few graduate students) apply to spend a semester at the Independent University in Moscow, working in an intensive mathematical program designed for the very best students. It is a unique opportunity to work with some of the best mathematicians in Russia. Returning students have praised the program and commented about the profound affect on their careers.

<http://www.ams.org/employment/mimoscow.html>

Early Careers

What good is a major in mathematics? We all hear that question asked every day and to find an answer the AMS has recruited a group of mathematics departments to survey their recent graduates in order to profile their jobs after graduation. The profiles will accumulate over time, but the first batch is already posted.

<http://www.ams.org/early-careers/>

ICM Travel Grants

Since 1990, the AMS has administered NSF funding for travel support of U.S. mathematicians attending the International Congress of Mathematicians (ICM). Approximately \$250,000 in travel grants have been awarded each time through the program. The same effort is planned for ICM 2006 in Madrid, Spain. Approximately 125 - 150 awards are administered, with a portion going to recent PhDs.

<http://www.ams.org/employment/icmapp.html>

SACNAS Annual Meeting

The Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) holds lively meetings each year in which the AMS participates. The central goal of these meetings is to encourage outstanding undergraduates who show an interest in pursuing advanced degrees in science and mathematics. The AMS provides financial support for the meeting and staffs an exhibit with materials of interest to the undergraduates attending the meeting.



<http://www.ams.org/ams/sacnas2005-mtg.html>

Ky Fan China Program



Funded by a gift from Ky and Yu-Fen Fan, the AMS carries out a program to facilitate collaboration between Chinese and American researchers. The program provides grants for Chinese mathematicians (especially young ones) to visit departments in the U.S. and Canada, and for American mathematicians to visit departments in China.

<http://www.ams.org/employment/chinaexchange.html>

Book & Journal Donation Program

Mathematicians often ask about donating books and journals to departments in currency-weak countries. The largest impediment is the cost of shipping materials. Using funds donated by the Stroock Family Foundation, the AMS matches individual donations of mathematics books and journals with libraries and mathematics departments at educational institutions around the world, and reimburses donors for the cost of shipping. Work is currently underway to expand this program.

<http://www.ams.org/employment/bookdonation.html>

Affiliate Membership

For nearly twenty years, the Society has offered special memberships to all mathematicians in lower-income countries (as classified by the World Bank). This is now referred to as "affiliate membership" (it used to be called "Category-S"), and it provides such members with full benefits, except that they must choose between the *Notices* and *Bulletin* as a (print) member journal. The dues rate is \$16, which can be paid using AMS points—the equivalent of two mathematical reviews. There are more than 3,000 affiliate members. The cost of sustaining affiliate memberships is substantially more than the dues, but the Society gains a great deal from this program, and so does the community of mathematicians.

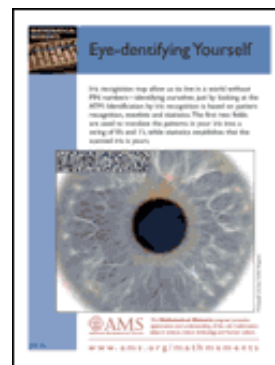
Public Awareness

The AMS created its public awareness office five years ago, and it continues to refine its operations. A large part of the work of the public awareness office is providing day-to-day publicity—cultivating contacts with the press, posting announcements (including posts to EurekaAlert), preparing releases about events at meetings and workshops. A sample of other activities includes the following.

Mathematical Moments

Mathematicians have always had a tough time convincing the public of the value of mathematics. "Moments" are one-page, brief descriptions of applications, each with a graphic to draw attention. They have a common message: Mathematical research is ongoing and important to our lives. They have been especially popular in high school classrooms and undergraduate departments. We have now produced more than 50 Moments, and we plan to translate them into multiple languages for wider distribution.

<http://www.ams.org/ams/mathmoments.html>



Math in the Media/Feature Columns

The AMS website includes two wonderful features that are unknown to many mathematicians. One is Tony Phillips' commentary on mathematics in the media, which contains insightful analysis and concise essays on mathematics of every kind. The other is a monthly column written for "those who have already discovered the joys of mathematics as well as for those who may be uncomfortable with mathematics." Column editors have included David Austin, Bill Casselman, Joe Malkevitch, Tony Phillips, and Steve Weintraub. The collection extends back to 1997, and they all make wonderful reading. It's a spectacular resource and a wonderful place to browse, for experts and novices alike.

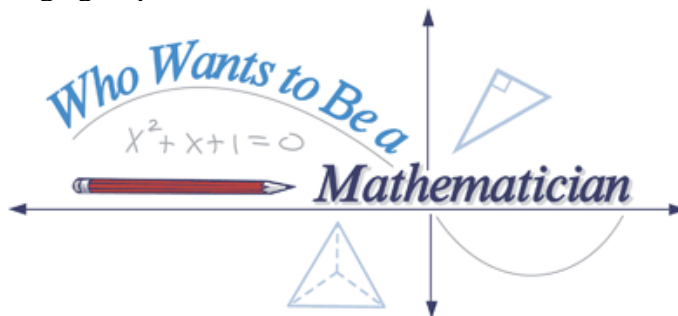
<http://www.ams.org/mathmedia/> and <http://www.ams.org/featurecolumn>



Who Wants to Be a Mathematician

The popular *Who Wants to Be a Mathematician* game show has now traveled around the country, held in high schools, college departments, and society meetings. Created by public awareness officer Mike Breen, the game is patterned (loosely) on *Who Wants to be a Millionaire*, and sparks the interest of large groups of students, who often cheer for their team mates. The game attracts students because it's light-hearted and humorous, but at the same time it reminds them that there are research mathematicians (30,000 at the AMS) who want them as future colleagues.

<http://www.ams.org/wwtbam/>



What's Happening in the Mathematical Sciences

Every two years or so, a new volume of *What's Happening* highlights some of the latest mathematical research in short essays focused on selected topics. These books are aimed at scientifically and mathematically literate audiences, but not experts. They have been popular among scientists in other disciplines.

<http://www.ams.org/featurecolumn/archive/happening.html>

Math Awareness Month

Every year since 1986, the Joint Policy Board for Mathematics (which includes four societies, including the AMS) has produced an annual celebration of mathematics centered on a particular theme. The theme for 2006 is Internet Security. The Math Awareness website contains both posters and essays for use by mathematicians.

www.mathaware.org

Headlines & Deadlines

The public awareness office gathers information of interest to the community and e-mails it regularly to

**Headlines
& Deadlines**

AMS members who subscribe to the service. This is a simple way to keep mathematicians informed about news and to remind them of important deadlines for meetings, proposals, and applications.

<http://www.ams.org/enews>

Washington Office

The most important goal of the Washington Office is to network with various groups in Washington, including Congress, the agencies, and (especially) the other scientific societies. Providing a visible presence for mathematics in these communities is critically important. But the Office also carries out a number of specific projects each year. Here is a sample of just a few.

Science Policy Forums

The annual meetings of the Committee on Science Policy and the Committee on Education take place in Washington and involve representatives from many different organizations in Washington. Mathematics department chairs are invited and frequently outnumber the committee members themselves. The give and take between mathematicians and the Washington representatives is good for both sides.

<http://www.ams.org/government>

Congressional Luncheons

For the past eight years, the Society has held an annual luncheon for congressional staff (and others). Each luncheon features a mathematician who describes in simple terms an important application of mathematics, emphasizing the connections of mathematics to all science and technology. These have been popular and effective, highlighting both mathematics and the Society.

<http://www.ams.org/government/congress-briefing-nov05.html>

Congressional Fellows

Beginning last year, the AMS now participates in the AAAS Congressional Fellows program, supporting a mathematician who serves for one year in a Congressional office. While the fellows do not specifically represent the interests of mathematics (or the AMS), they provide a special perspective for Congress about science and research. Fellows usually return to the mathematical community, providing a future resource of mathematicians knowledgeable about science policy.

<http://www.ams.org/government/congressfellowann.html>



How Mathematics Helps Predict Storm Surges

*Joannes Westerlin
Congresswoman Eddie Bernice Johnson (D-TX)
Clint Dawson*

Mass Media Fellows

For a number of years, the AMS has participated in the AAAS mass media fellows program by supporting one or two fellows each summer. Fellows are typically graduate students who work for a summer at some media outlet (a newspaper, magazine, or television station), learning about the public presentation of science. The collection of fellows is a great asset to the mathematics community, and the AMS has made good use of their talents.

<http://www.ams.org/government/massmediaann.html>

Department Chairs Workshops

Each year, the AMS conducts a day-long workshop for present or prospective department chairs. The emphasis is on practical problems—dealing with budgets, deans, and personnel, for example—and participants spend much of the time in open conversation sharing ideas. The workshops are always led by a small group of experienced chairs, who set the agenda and conduct the meeting itself.



<http://www.ams.org/government/chrsworkshop06report.html>

Coalition for National Science Funding

The CNSF is an alliance of over 100 scientific and professional societies and universities, united by a concern for the future of the nation's science, mathematics, and engineering. This coalition, chaired by Samuel Rankin, the Director of the AMS Washington office, and its primary goal is to increase the federal investment in the National Science Foundation. The AMS always participates in the annual CNSF Exhibition, which showcases the crucial role the NSF plays in meeting the nation's research and education needs. The Exhibition provides an opportunity for university researchers and educators to describe their work to leaders on Capitol Hill. This past year, Robert Lipton of Louisiana State University represented the AMS at the exhibition, highlighting his recent work on "Mathematics for Advanced Composites Technology."



Congressman Vernon Ehlers (R-MI) and Robert Lipton

This is a sample of the ways in which the AMS spends its money, on programs that bring in less money than they cost. There are many more that often go unnoticed because they are so common. The *Notices* and *Bulletin* are both member journals that people expect as a member benefit. The *Combined Membership List* and *Professional Directory* are used by mathematicians every day. Periodically updating the Mathematical Sciences Classification (MSC), maintaining the Journals Price Survey (a ten-year history of prices and page counts for roughly 300 journals), providing TeX fonts and tools—all these services we do for the community, and they are ways in which we spend our money.

The Money We Save

The AMS has two types of savings, the endowment and the reserves. Both are crucial to the Society's operations, but in different ways.

The endowment is made up of gifts to the Society, many of which were given for a specific purpose, such as a prize. The Society has added six new prizes in the past six years (the Levi Conant, Joseph L. Doob, Leonard Eisenbud, E.H. Moore, David P. Robbins, and Albert Leon

Whiteman prizes). These are all funded using annual income, which is computed as 5% of the gifts and its appreciated value.

The AMS does other things through its endowments. We award approximately eight Trjitzinsky Fellowships of \$3000 to mathematics majors each year. We give Menger awards to outstanding mathematics-related projects at the annual Intel Science Fair and help fund the judging. We award Centennial Fellowships to young mathematicians, providing full support for a year at critical points in their careers. (The Centennial Fellowships are only partially endowed and are largely funded through annual gifts from our members.)

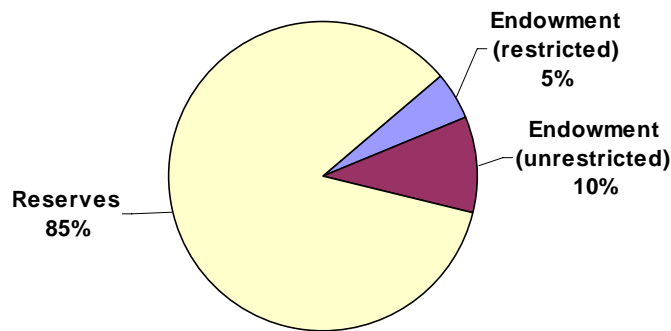


Joseph L. Doob

Not all gifts to the endowment have a specific purpose. Income from these unrestricted gifts is used for special projects each year, as designated by the Board.

The reserves of the Society represent another kind of savings—the kind that a family sets aside in case of an emergency. In the early 1980s, the AMS faced such an emergency when revenue from subscriptions suddenly plummeted. In just a few years, the Society used up all its reserves and contemplated taking out large loans. After that experience, the Board began to build reserves that would sustain the Society through future emergencies, and it set a goal of reaching three-fourths of a year's operating budget. To reach that goal, funds were set aside at regular intervals from operations, and because the investments did well during this period, the AMS reached its target ahead of schedule.

Endowment & Reserves



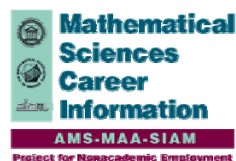
Now that reserves have grown beyond their original purpose (as an emergency fund), the Society has begun to use them as a new source of revenue. Since 2002, a portion of the reserves has been used to generate income for operations each year, by computing income as 5% of the value (like the endowment). This new revenue provides more than \$600,000 annually. While this is only 2.5% of our present revenue, it will likely become more and more important in future years. It represents a new source of income for the Society, much like income from a family's savings that has been invested wisely.

Conclusion

Viewing the operations of the Society through its finances can be misleading, of course; the AMS does more than merely earn money, spend it, and save it. But taking note of which programs produce revenue and which consume it can be a useful exercise. It helps the Society's members and leaders to recognize the scope and breadth of our activities.

It also helps to remind us that our activities are interdependent. Members of the Society are sometimes passionate about one particular aspect of the AMS, for example, meetings, publications, or advocacy. They sometimes view their own interest as the *most* important—as something that should be supported by (but not support!) the rest of the Society's programs. But the AMS would not exist for long if everything it did lost money.

A healthy society consists of many parts, all of them woven together, all supporting one another—and all of them important.



John Ewing