From the AMS Secretary

Report of the Executive Director, State of the AMS, 2008

When I report to the Council each spring, I try to look at the AMS from a different perspective—membership, programs, meetings, or publishing. This year, I will look at the AMS from yet another perspective—its history. Because the Society celebrates its 120th anniversary in 2008, I want to look at the Society over time and contrast what we do now with what we have done in the past. That's a big job, with only a small amount of time to accomplish it. This will therefore be a condensed history, designed more to highlight how we have changed rather than to provide a comprehensive history. If you are interested in finding out more, there are excellent resources online at

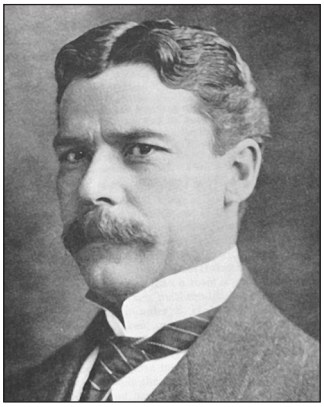
Volume I: A Semicentennial History of the American Mathematical Society, 1888—1938
`http://www.ams.org/online_bks/hmreprint/`

Volume I: A History of the Second Fifty Years, American Mathematical Society, 1939 – 1988
`http://www.ams.org/online_bks/hmpitcher/`

AMS History of Mathematics, Volume 1: A Century of Mathematics in America, Part I
`http://www.ams.org/online_bks//hmath1/`

Overview

The American Mathematical Society was founded by graduate students. In the spring of 1887, while he was in his second year as a graduate student at Columbia University, Thomas Fiske was told by one of his professors to spend some time at Cambridge University in England. He went later that year and immersed himself in mathematics. Even more than his lectures, however, he found the regular meetings of the London Mathematical Society exciting. He went with J. W. L. Glaisher, "who spent with me many evenings in heart to heart conversations … and who entertained me with gossip about scores of contemporary and earlier mathematicians." Fiske later wrote: "On my return to New York I was filled with the thought that there should be a stronger feeling of comradeship among those interested in mathematics, and I proposed to my classmates … that we should try to organize a local mathematical society."



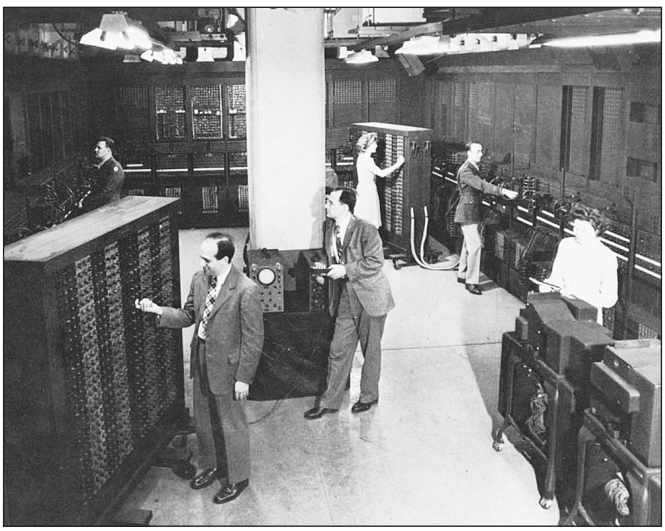
Thomas Fiske

They succeeded, and the New York Mathematical Society was formed in 1888. It grew slowly at first (by the end of 1889 it had only sixteen members), but the members held regular meetings and soon began to publish a *Bulletin*. In 1894, when it was clear that the organization was truly national in scope, the name was changed to the American Mathematical Society and the organization held its first summer meeting (in conjunction with the American Association for the Advancement of Science).

For the next thirty years, the AMS continued to grow along with American mathematics. At the turn of the century, most prominent mathematicians in America were educated in Europe. Research mathematics was not a tradition in American universities, and mathematics was often associated with more practical matters. (The second president of the Society was an actuary; the third president an astronomer.) As the new century dawned, that tradition began to change. American trained mathematicians became more visible (E. H. Moore among them) and research became more important. Birkhoff's proof of Poincaré's "last geometric theorem" greatly enhanced the reputation of American mathematics, and American mathematicians began to play a role in the international community. The Society continued to grow, expanding its

meetings and adding the *Transactions* and the Colloquium series to its publications.

Until 1923, the Council was the only governing body of the AMS. In that year, the AMS was incorporated (in the District of Columbia) and the Board of Trustees was added to look after the financial affairs of the Society. The Society headed into a quarter-century of steady operations—regular meetings, the *Bulletin* and *Transactions*, an occasional book. The depression took its toll on the AMS (revenues were flat for the decade of the 1930s) and not much changed until the war. Then, everything changed. Mathematics became important, disputes broke out between pure and applied mathematicians, and in the aftermath of the war, people recognized that science and mathematics played a new role in the country's future. There was much acrimony about pure versus applied, both during the war and afterwards. This was the time when the Society for Industrial and Applied Mathematics was formed, along with applied mathematics departments at several universities. It was a dark period for mathematics that affected attitudes for decades afterwards, and many of the wounds are still healing.



ENIAC (circa 1948).

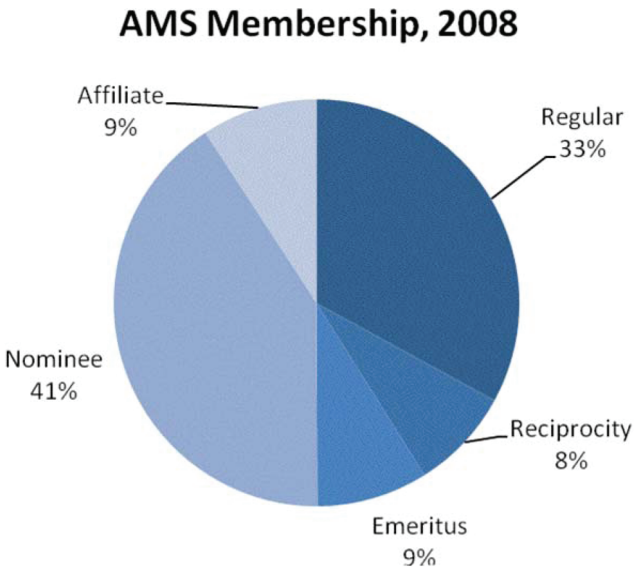
By the late 1940s, the Society had grown more complex. For its first sixty years, the secretary ran most operations of the AMS (with the treasurer and, to a lesser extent, the president). But as the budget and staff began to grow, it became clear that someone was needed to run the business. The position of executive director was created in 1949. Around this time, the Society was also forced to move its offices from New York (Columbia University), where it had been since its beginning, and it chose Providence as its new home. (Providence was the location of *Mathematical Reviews*, which now was a key part of the AMS. Its founder, Otto Neugebauer, was a faculty member at Brown University.)

During the remainder of the twentieth century, the AMS grew. It went from a staff of about ten to 215 (peaking near 250); its annual budget went from US$145,000 to US$25,000,000; and it expanded nearly everything it did—membership, meetings, outreach, education, and publications—slowly, over its second sixty years. The Society became a leading force internationally, organizing two international congresses (1950 and 1986) and reaching out to other mathematics societies around the world. It became more politically engaged (although not always in the most productive way). It promoted and developed tools ($\mathcal{A}\mathcal{M}\mathcal{S}$-TEX, AMS-fonts, and various packages) for writing mathematics in the new world of computers. It involved itself in professional issues, from employment to research funding. The AMS evolved over the second half of its life, in some ways returning to its roots.

Membership

In 2008, the AMS will have a little over 32,000 members. That overall figure is misleading, however, because there are many different categories of membership. Regular members are divided into three categories (high, low, and entry). There are more and more life and emeritus members each year. Reciprocity members (who belong to a reciprocating society and pay half-dues) make up a significant group from outside North America; so do affiliate members (from developing countries). The largest category of members is "nominee/student", which now makes up about 40% of the membership. About a third of our members are from outside North America.

We also have over 500 institutional members of the AMS. These institutions pay dues that vary with their size, and in return receive certain benefits, which include discounts on publications (often exceeding the dues) as



well as certain rights to appoint those nominee members mentioned above.

Membership wasn't always so varied. From the sixteen members in its first year, the AMS had grown only to 251 when it changed its name in 1894. It took until 1921 to exceed 1,000 members; until 1937 to exceed 2,000. For much of this time (1891–1921) the dues level was set at a steady US$5, and membership was essentially undifferentiated with just a single category. Then, in the next two decades, dues began to rise and membership became more complicated. The AMS added reciprocity members (beginning with our parent, the London Mathematical Society) and life memberships were created. By 1937, dues had risen to US$9, and while the number of reciprocity members was small (52), it was clearly growing. Institutional memberships were created around this time as well.

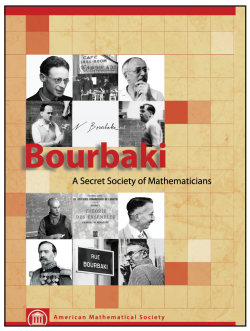
The classes of membership remained relatively stable until the early 1970s, when the Council created "nominee" members as a way to entice young mathematicians to join the AMS early in their careers. Affiliate members (they were originally called "Category-S") were added in the early 1980s.

One chapter in the Society's attempts to deal with membership might better be forgotten. In 1965, the minutes of the Executive Committee and Board of Trustees record the following action:

> The establishment of US$28 as membership dues for a husband–wife joint memberships [sic]. The husband is to be billed at the rate of US$28 for dues and will receive the *Notices* and the *Bulletin* as a privilege of membership. The wife will pay no dues but will be allowed a choice of subscriptions at members' rates, and both will be accorded all other privileges of membership.

The AMS still offers family memberships, but they are not described in such language—a stark reminder of attitudes in 1965.

While the records are incomplete, it seems that membership in the Society was only denied to one mathematician, Nicolas Bourbaki. He had applied for reciprocity membership in 1948, having recently joined the Société Mathématique de France. The secretary of the AMS, J. R. Kline, rejected the application, saying that "That Society has two types of membership, individual and institutional, and Bourbaki comes under neither classification." The matter eventually made its way to the Council in December 1950, and the Council pronounced that (1) Bourbaki was not eligible for reciprocity membership, (2) Bourbaki was eligible for institutional membership, and (3) the constituents of Bourbaki could individually become members. A reply came from J. Dieudonné soon after: "If the French Mathematical Society took itself as seriously as seems to be the case with the AMS, this letter and the breach of the reciprocity agreement implied therein could seriously jeopardize the good relations between the two Societies." The Council did not back down.



Meetings

Meetings have always been an essential part of the Society. Each year, we hold the Joint Mathematics Meeting with the Mathematical Association of America. In recent years, a number of other organizations have participated in the meeting as well. This past meeting in San Diego set a record for attendance—about 5,500 people. Each year, the joint meeting seems to grow and become richer and more complex. We also hold eight regional meetings each year, four in the spring and four in the fall, and those meetings continue to grow as well.

The AMS holds joint meetings with the *Sociedad Matemática Mexicana* on a regular basis, and the last one in May 2007 took place in Zacatecas, Mexico. In addition to these, the AMS has approximately one joint international meeting each year, organized jointly with one or more societies in another country. During 2007 we held two such meetings—one in Warsaw, Poland, and another in New Zealand. During 2008 we will hold two more—one in Rio de Janeiro, Brazil, and the other in Shanghai, China. Such meetings provide opportunities for mathematicians to make international connections, but they also provide a way for the societies to connect as well.

In a sense, the AMS was built on meetings. Thomas Fiske set out to create a mechanism to hold regular meetings, and for the first few years of the Society that was essentially all it did. Many other parts of the Society grew from meetings—the *Bulletin* as a way to publicize presentations, the Colloquium series as a way to publish the Colloquium lectures, the Gibbs lectures as a way to reach out to the public.

For many years, the annual meeting was held between Christmas and New Year's. It consisted of a few hour-talks mixed with many short presentations (contributed papers). Over time, the number of hour- talks has increased, and the notion of "special sessions" has become a staple of all our meetings. In 1963, there were five special sessions; today, there are more than thirty at the Joint Meeting, and dozens more at our other meetings.

Summer meetings were a part of the AMS program until

A Sample of Gibbs Lectures (mid-century)

- Albert Einstein, 1934
- Vannevar Bush, 1935
- Theodore von Kármán, 1939
- Harry Bateman, 1943
- John von Neumann, 1944
- S. Chandrasekhar, 1946
- Hermann Weyl, 1948
- Norbert Wiener, 1949
- G. E. Uhlenbeck, 1950
- Kurt Gödel, 1951
- Marston Morse, 1952
- Wassily Leontief, 1953
- K. O. Friedrichs, 1954
- M. H. Stone, 1956

1996. They were usually smaller, but often attracted families, who combined the meeting with a vacation. The Colloquium lectures were given at the summer meeting each year. Gradually, however, summer meetings seemed to have less and less interest for AMS members, and eventually they were discontinued.

Regional meetings have evolved over many years. When they started, these meetings were invariably held in New York or Chicago—a way to supplement the larger meetings with smaller meetings that focused on a more limited set of topics. There were usually seven or fewer each year. Over the past fifty years, these meetings have become more regular and organized, with two held in each of the four regions, one in spring and one in fall.

For many years, the summer and winter joint meetings with the MAA were five-day meetings, with six half days assigned to the AMS and four half days to the MAA. The two days in the middle were interlaced. In 1984 the format was changed to a four-day meeting with all sessions intermingled. These joint meetings have become far more complex in recent years, both because the AMS and MAA have added many more activities (talks, panels, social events) and because a number of other organizations have joined the meeting as well. The governance of the joint meeting is still done by the two primary organizations, AMS and MAA. As the meetings have grown, we have had to accommodate the need for more space. Because meetings have to be planned many years in advance (we are currently working on 2016) this is not always easy to do.

Future Joint Meetings

Washington, DC	2009
San Francisco	2010
New Orleans	2011
Boston	2012
San Diego	2013
Baltimore	2014
San Antonio	2015

Programs/Outreach

In a certain sense, this is the part of the AMS for which there is no good historical perspective. For its first sixty years, the AMS concentrated on meetings and, to a lesser extent, on publications. That's not surprising; the Society had only a handful of staff, and it was largely volunteer run with only modest resources. In its second sixty years, this all changed.

Here is a partial list of some of the programs the AMS runs today.

• The **annual survey**, which covers more than 1,500 mathematics departments and reports on employment, salaries, and demographic data.

• The **CBMS survey**, which takes place every five years and produces a comprehensive view of all aspects of mathematics in colleges and universities.[1]

• Production of **Assistantships and Graduate Fellowships**, which contains comprehensive information on graduate programs throughout the mathematical sciences.

• Production of **Employment Information in the Mathematical Sciences (EIMS)**, which is the standard location for advertising jobs.

• The **Employment Center**, which has evolved over the years from the old employment register. It now provides a convenient mechanism for employers and potential employees to meet at the annual meeting.

MathJobs.Org

• The support of **MathJobs**, which is a service that grows each year and makes the job application process easier for all those involved.[2]

• The **Young Scholars Program** that makes awards to summer programs for talented high school students. This year, this program has awarded US$100,000 in grants to help these programs. The AMS has been working to endow the program by raising US$2M for an endowment, and we are approaching that goal.

• The **Math in Moscow** Semester for Undergraduates, which supports visits of American undergraduates to the Independent University of Moscow for an intensive mathematical program, and is designed for the very best students.[3]

• **Early Careers** is an effort to answer the question, "What good is a mathematics degree?" It publishes profiles of undergraduate majors and encourages mathematics departments to collect such information.

• The **Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)** has an annual meeting that brings together some spectacular students. The AMS has been an enthusiastic participant each year and provides financial support for part of this meeting.

• The **Ky Fan China Exchange Program** funds visits by distinguished North American mathematicians to Chinese departments, as well as visits by prominent young Chinese mathematicians to North American universities.

• The **Book and Journal Donation Program** helps mathematics to donate material to mathematics departments in developing countries, first by matching donors with recipients and then by paying for shipping costs.[4]

The newest program of the Society is **Mathematics Research Communities (MRC)**, which will begin in summer 2008. The goal is to bring together groups of young mathematicians in a common field, so that they make connections and possibly work cooperatively in the future. They will come together in groups of twenty or so, along with more senior mentors, for a week-long

[1] *The CBMS survey is carried out under the auspices of the Conference Board on the Mathematical Sciences and is funded by the National Science Foundation.*

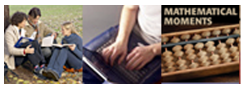
[2] *MathJobs is a cooperative effort of the AMS and the Mathematics Department at Duke University.*

[3] *Math in Moscow is supported by a grant from the National Science Foundation.*

[4] *The Book and Journal Donation Program is funded by donations from Stroock Family Foundation, supplemented by the Society's operating funds when necessary.*

conference (at Snow Bird, Utah), and then reconnect at a special session at the Joint Meeting. There will be additional opportunities to work together online. Part of the project is also to carry out longitudinal studies of their progress over a number of years, so that we can understand better the career path of young mathematicians. The project is funded by a grant from the National Science Foundation and will last for at least three years, and we hope far beyond that.

In 2000 the AMS created a public awareness office, which has grown steadily each year since and now carries out a set of regular activities that have made mathematical



Public Awareness

research more visible and better understood. **Mathematical Moments**, **Math in the Media**, and the **Feature Column** are all expository efforts, each aimed at a slightly different audience. Math Moments hang in classrooms around the country, and some of them have been translated into six different languages. **Headlines and Deadlines** helps to keep AMS members informed; **Who Wants to be a Mathematician** entertains and encourages high school students; **What's Happening** is a series of books aimed at exposing the mathematically interested population to recent mathematics. The public awareness office has connected mathematics to the new media in a way it never was before.

For nearly a decade in the 1980s, the Society talked about establishing an AMS **Washington Office** in order to advocate for mathematics. Finally, in 1993, the Society created the office, which has been headed by Sam Rankin since 1995. Its mission and operations have evolved over the past dozen years, and it now carries out many events each year, including annual **Science Policy Forums**, **Congressional briefings**, and **workshops of department chairs**. The Washington office also manages our **Congressional fellows** and **mass media fellows**.[5]

The main function of the Washington office is something that wasn't on the top of anyone's list before 1993. It gives mathematicians a presence in Washington, along with all the other organizations that advocate for science and research. When people gather to talk about mathematics, or when reporters ask for comments about science, mathematicians are included with physicists, chemists, biologists, and engineers. Sam Rankin who heads the Washington office chairs the Coalition for National Science Funding, which advocates for the National Science Foundation on behalf of many science and engineering societies. That makes mathematics part of mainstream science, and that has changed the general attitude about the importance of mathematics.

Many people think of prizes as an essential part of AMS activities, but it is somewhat surprising that they were largely absent from its first sixty years. The Bôcher Prize was first given in 1923 to honor AMS president Maxime Bôcher (1909–10). The two Cole Prizes, in algebra and number theory, were first given in 1928 and 1931. But there were no other prizes until a spate of new prizes appeared—the Veblen Prize (1964), the Birkhoff Prize (1968), and the Steele Prizes[6] (1970). Many more prizes have been created in recent years, and the Society now has a rich program of prizes and awards, both for research and for other activities (including outstanding departments and programs).

Surveys, employment services, programs for high school students, outreach to the developing world, public awareness, advocacy, and prizes—almost none of these was part of the Society's mission in its first sixty years (and few could have been carried out with only a few staff and a tiny budget).They have come to define the Society in its second sixty years, and they play an increasingly important role in all our activities.

Education

Education has always been problematic for the AMS. When the Society began in 1888, its purpose was clearly stated by its founders—preserving, supplementing, and utilizing the results of their mathematical studies so that "original investigations to which members may be led shall be brought before the society at its meetings." The AMS was focused on research. Indeed, Thomas Fiske wrote about teaching in an article he published in the 1905 *Bulletin*:

> Notwithstanding the great progress recently made in America by our science, we are far from being in a position that we can regard as entirely satisfactory.… the most pressing demand seems to be that those engaged in lecturing…at American universities should be given greater opportunities for private study and research. At present, the time of almost every university professor is taken up to a very large extent with…the care of comparatively young students. [*Bulletin*, February 1905, p. 245]

This would be a familiar theme over the next century: Less time teaching, more time for research.

But then as now, research mathematicians were often engaged in teaching, and from its earliest days the Society's members were mainly teachers. One of its greatest presidents, E. H. Moore (1901–02), was passionate about teaching. His retiring presidential address focused on education, and it contained this plea:

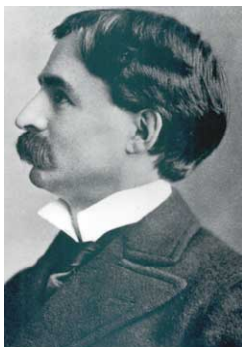
> The American Mathematical Society has, naturally, interested itself chiefly in promoting the

[5] *The Congressional fellow and mass media fellow programs are run through the American Association for the Advancement of Science, but fully supported by the AMS.*

[6] *These prizes were established in 1970 in honor of George David Birkhoff, William Fogg Osgood, and William Caspar Graustein, and are endowed under the terms of a bequest from Leroy P. Steele.*

> interests of research in mathematics. It has, however, recognized that those interests are closely bound up with the interests of education in mathematics. …Do you not feel with me that the AMS, as the organic representative of the highest interests of mathematics in this country, should be directly related with the movement of reform?…[*Bulletin*, May 1903, p. 412]

It was a plea that went largely unheeded by most of the Society's leadership. Indeed, twelve years later, when the *American Mathematical Monthly* came to AMS for help, the AMS dismissed Moore's words. The *Monthly* had become the premier journal for college teachers, but it was in financial trouble and needed an institutional home. They hoped that the Society would provide it and, in doing so, would take on the responsibility for collegiate teaching. The issue was hotly debated, a committee was formed to study the problem (plus ça change…), and by a narrow vote of 3-2 the AMS turned down the *Monthly*. Soon after, the Mathematical Association of America was formed to provide a home for the *Monthly*, and it became the organization devoted to collegiate mathematics teaching.



E. H. Moore

That decision more than ninety years ago shaped the course of the AMS for most of the twentieth century. For decades afterwards, the AMS scarcely dealt with education at all. Education was the business of the MAA. Even in the turbulent times of the "new math", the AMS stayed (mainly) on the sidelines. But, in the last two decades of the twentieth century, the AMS began slowly to renew its interest in education and began to reinsert itself in areas it had previously avoided. The Committee on Education became active in the 1990s, and it now holds an annual forum in Washington that attracts dozens of department chairs and their representatives. Each year the AMS provides judges and prizes for mathematics at the Intel Science Fair[7]; it provides eight US$3,000 scholarships to undergraduate mathematics majors[8]; and it has enthusiastically supported Research Experiences for Undergraduate programs with two separate conferences in the past ten years to help those running these programs to share information.[9]

Most recently, the AMS has been engaged in two other projects, one aimed at providing resources for high school students (and their teachers) so they can prepare themselves for serious undergraduate work in mathematics.

A Sample of Colloquium Lectures (first 50 years)

1896, **Maxime Bôcher**, *Linear differential equations and their applications.*

1906, **Eliakim H. Moore**, *On the theory of bilinear functional operations.*

1913, **Leonard E. Dickson**, *On invariants and the theory of numbers.*

1913, **William F. Osgood**, *Topics in the theory of functions of several complex variables.*

1916, **Oswald Veblen**, *Analysis situs.*

1920, **G. D. Birkhoff**, *Dynamical systems.*

1927, **E. T. (Eric Temple) Bell**, *Algebraic arithmetic.*

1927, **Anna J. Pell Wheeler**, *The theory of quadratic forms in infinitely many variables and applications.*

1929, **R. L. (Robert Lee) Moore**, *Foundations of point set theory.*

1930, **Solomon Lefschetz**, *Topology.*

1931, **Marston Morse**, *The calculus of variations in the large.*

1932, **Joseph F. Ritt**, *Differential equations from the algebraic standpoint.*

1935, **Harry S. Vandiver**, *Fermat's last theorem and related topics in number theory.*

1937, **John von Neumann**, *Continuous geometry.*

The other project focuses on the first year of college mathematics and seeks ways to make a difference by changing the way mathematics departments deal with first year instruction. That effort is now moving into a new phase, which we hope will offer truly practical solutions.

All this interest in education, from K–12 to graduate level, is starkly different from the attitude expressed by the AMS in 1915 when it turned down the *Monthly*. The AMS now finds itself keenly interested in all aspects of education—more involved with the MAA, with which we share a common interest in promoting *both* quality research *and* quality education. That broader interest is good for the future of mathematics.

Publishing

Membership, meetings, programs, public awareness, advocacy, and education—all of these have come to be essential aspects of the Society's personality. But most of this would be impossible if the AMS had not nurtured and eventually expanded its publishing program. Indeed, AMS publishing is what makes the Society different. It's the reason the AMS has more than 200 employees (we own our own printing plant and warehouse), and it's certainly the reason the AMS has a budget of US$25M.

We now publish a dozen journals with more than 20,000 pages annually. We publish more than 100 new books each year as well, and we keep more than 3,000 titles in print—an extraordinary number for any publisher. And, of

[7] *The Intel Science Fair activity is partially supported by the Menger Prize endowment, given in honor of Karl Menger.*

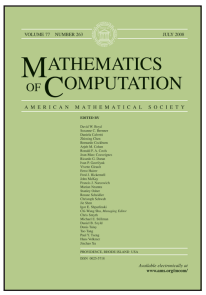
[8] *The scholarships are funded by the Trjitzinsky Fund, given in honor of Waldemar Trjitzinsky.*

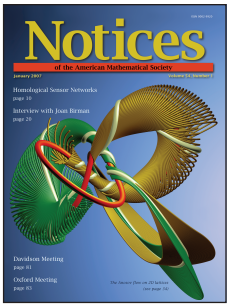
[9] *Both conferences are supported by grants from the National Security Agency.*

course, we publish the Math Reviews database, in several formats but most especially as MathSciNet online.

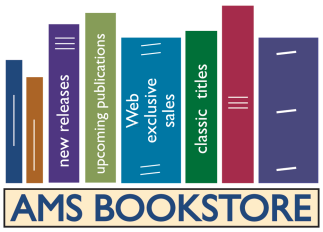
We make money from our publishing, of course, and that's what allows us to do all those other things. But we publish for many other reasons, which include competing with other publishers (to keep them honest), providing mathematicians a friendly venue for their work, and disseminating research material that might otherwise never be seen by the broad community. The competition has been especially important for journals, but it plays an ever larger role in our book publishing as well.

The AMS has always viewed publishing, along with meetings, as an integral part of its activities. Soon after its founding, the *Bulletin* was created as a vehicle for publicizing what happened at meetings. The *Transactions* was started in 1900 in order to give American mathematicians a more amenable outlet for their research. (European journals seemed to be somewhat snobbish towards the fledgling American mathematics community.) The *Proceedings* cleaved itself from the *Bulletin* in 1950 as the "gray issues", replacing many small research papers that were previously published in the primary member journal. The *Memoirs* were created at about the same time, publishing papers at the other end of the spectrum (long!) in a series that was part book, part journal. *Mathematics of Computation* grew from World War II as *Mathematical Tables and Other Aids to Computation*. It was originally published by the National Research Council, but the AMS took over publishing (but not editorial control) in 1961. By 1966, the journal had been fully transferred to the AMS. The *Journal of the AMS* is the youngest of the four primary journals, which after a ten-year debate first appeared in 1988. It has been a remarkable success in every way, and now is considered among the top few mathematics journals in the world. The *Notices* was redesigned and first appeared in its new (enhanced) format in 1995. All the other journals, including our translation journals, were acquired over time in a variety of ways.





The *Notices* and the *Bulletin* are now the two "member" journals of the AMS, and printed copies are mailed to all members.[10] Both are "open access"—that is, they are freely available online to all members and non-members alike, and people have sometimes wondered why we give away our most important member benefit. But making *member* journals available to the world makes them *more* valuable, not less, and because mathematicians everywhere can access these journals, they provide an easy way to reach all mathematicians. In this sense, the *Bulletin* and *Notices* are a donation, from AMS members to the community of mathematicians.



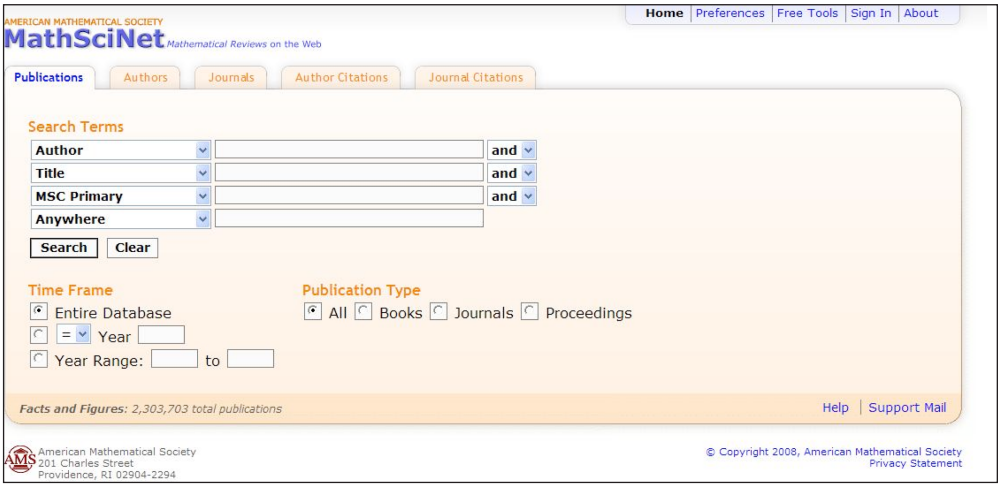
Books have developed more slowly than journals. The oldest series, *Colloquium*, began as a way to publish the proceedings of colloquia given at the annual meeting. The series originated in the earliest days of the Society with the Chicago Congress and Evanston Colloquium of 1893 (not an AMS meeting, but an opportunity nonetheless) and it continued to publish lectures as the colloquium lectures became ever more popular. For its first fifty years, the Society kept largely to this format and style. Then in 1940 the AMS published *Mathematical Surveys* (using a commercial publisher to do the production) and soon after published proceedings of various kinds. In the next fifty years, the AMS was a "small" publisher of books—conference proceedings, volumes from summer workshops, an occasional Survey, and regular translations, especially from Russian. In 1988 the Society published just over thirty new titles—its specialty consisted of books in which commercial publishers had little interest.

Around the time of its centennial, the AMS set out to reinvigorate and expand its book program. In the past twenty years, it has added series (*Graduate Studies*, *Student Math Library*) and increased every part of the program from acquisitions to marketing. Book publishing is a complicated business, however, and it grows over decades, not months. It has taken these twenty years to expand the program to its present state, and it is poised to expand much further in the future.

Mathematical Reviews is in many ways the most important single publication of the Society. When it was started by Otto Neugebauer in 1940, it was a relatively small operation, patterned on *Zentralblatt*, for which Neugebauer had been editor. (When *Zentralblatt* fell under the influence of the Nazi regime, Neugebauer had fled to the United States.) Math Reviews was run from an office at Brown

Kevin Clancey, MR executive editor (left) and Bernd Wegner, *Zentralblatt* editor-in-chief.

[10] *Affiliate members must choose between the two journals.*



University using a staff of four people. In its first year of operation (1940), it had 350 reviewers and published 400 pages containing 2,120 reviews.

Math Reviews grew year by year, and by the 1970s it consisted of those giant orange volumes that one pored over in libraries, trying to find just the right reference in what often took hours. Through remarkable foresight, the Society began to computerize the data long before anyone had thought about a worldwide web. When the Web came into being, the AMS created an interface for that database, and MathSciNet was born in 1996. The online version of Math Reviews goes through an annual revision each year, with a new version appearing each September, and MathSciNet has become an indispensible tool for mathematicians around the world. To the original data, we have added links to original articles (nearly a million of them), links to retro-digitized material that has recently appeared, vast amounts of citation data (over three million citations), and many other tools that can be used to carry out searches in seconds, where hours were previously required. Math Reviews now adds over 80,000 items each year, using more than 12,000 reviewers and a staff of over seventy people located in Ann Arbor. The database has more than 2.3 million items written by almost half a million authors and published in over 1,800 journals. Math Reviews has grown up.

One feature of Math Reviews relies on sixty-eight years of effort, which at one time may have seemed frivolous: For its entire existence, the staff at Math Reviews has identified each author of each article, sometimes doing detective work that might even require making phone calls. As a consequence, the database has a unique identifier for each author, and one can do many things (for example, call up all papers by a particular author) that would be hard to do without author identification. This has become ever more important in an electronic age, when tools such as Google return tens of thousands of results and find it particularly hard to differentiate between many people with the same name.

The Future

Looking back over the history of the AMS, it's hard to miss the irony: The AMS was founded by graduate students who wanted to communicate the excitement and vitality of mathematics to one another; 120 years later, we are creating programs to communicate the excitement and vitality of mathematics to graduate students. To be sure, the Society has done many valuable things in the intervening years—meetings, publications, programs, service, awareness, and advocacy—and it has done all those things remarkably well. All these things partly accomplished the original purpose of the Society. But in the past, the AMS sometimes viewed its mission far too narrowly and circumscribed mathematical research not only from the rest of science, but from other parts of mathematics.

The Society has matured in the past few decades—embraced a broader vision of mathematics, accepted its responsibility for education, and taken on a larger role for itself as a society. Much of what the AMS did for a century laid the foundation for these changes, and perhaps it was good to grow in this way, slowly over time.

But it's also good to come back to our roots.

—John Ewing
Executive Director