

NEWSLETTER

A QUARTERLY

PUBLICATION TO INFORM
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Awards, Prizes, and Programs for Mathematicians at All Levels

Talented high school students, high-achieving undergraduate students, graduate and post-graduate researchers, and recognized, outstanding mathematicians are beneficiaries of AMS awards, prizes, and programs.

For Young Scholars

The AMS is committed to supporting high school students who excel in mathematics—they are the future of the mathematical community. One of the Society's newest programs, the **AMS Young Scholars Program** is endowed by the **Epsilon Fund**, which was established in 2000. The Epsilon Fund was initiated to address the needs of dedicated summer program organizers and students.

In summer 2002 the AMS provided modest Epsilon grants totaling \$85,000 to eight summer mathematics programs: All Girls/All Math (University of Nebraska, Lincoln); Hampshire College Summer Studies in Mathematics (Amherst, MA); Mathcamp (Mathematics Foundation of America, Colorado Springs, CO); Michigan Math and Science Scholars (University of Michigan, Ann Arbor); PROMYS (Boston University); Ross Mathematics Program (The Ohio State University); SWT Honors Summer Math Camp (Southwest Texas State University, San Marcos); and the University of Chicago Young Scholars Program.

Students from this area of the state rarely have such a unique opportunity. They and the schools here do not often have the resources to be able to allow participation in such a high quality camp.

— **SWT Honors Math Camp Teacher**

Here with the long proofs, I learned to be persistent and that answers often do not come easily. One often has to try many wrong paths before getting the right one. Those proofs are the most satisfying.

— **PROMYS Student**

Once the Epsilon Fund endowment, together with the funds designated by the AMS Board of Trustees, reaches the targeted amount of \$2 million, the AMS intends to award a total of \$100,000 in Epsilon grants each year. This support, although modest, covers both operating expenses and tuition and helps programs to attract other funds.

Read more Read about the Epsilon Fund, how to apply for grants, and how to make a donation at www.ams.org/development/epsilon.html.

The annual **Arnold Ross Lectures** for mathematically talented high school students aim to stimulate interest in mathematics beyond the traditional classroom and illustrate recent developments in mathematical research. The program is made possible by a generous gift from Paul Sally.

Elwyn Berlekamp will be the lecturer at the Lawrence Hall of Science, University of California, Berkeley, on April 3, 2003. Robert Devaney (Boston University) is chair of the Arnold Ross Lecture Committee.

Read more See www.ams.org/meetings/ross-lect.html for a report on the 2002 Arnold Ross Lecture by Curt McMullen, the Who Wants To Be A Mathematician game, which followed the lecture, and for updated information on the speaker and location of the 2003 Arnold Ross Lecture.



The **Karl Menger Memorial Prize** was awarded at the 2002 International Science and Engineering Fair (ISEF) to Jacob Licht of William Hall High School, West Hartford, CT, for his outstanding project, *Rainbow Ramsey Theory: Rainbow Arithmetic Progressions and Anti-Ramsey Results*. The Karl Menger Fund was established by the family of the late Karl Menger to be used by the Society for annual awards to high school students who present worthy mathematics projects at this prestigious science fair. For the past thirteen years income from the fund, held at Duke University, has been used for the awards. The AMS—using income from the general fund—underwrites the judging process.



The 2002 Menger Prize Committee judges were Gisele Goldstein (University of Memphis), chair (pictured above, front row left), Julian Palmore (University of Illinois, Urbana-Champaign), and Elwyn Berlekamp (University of California, Berkeley).

I am amazed at the extremely high level of competition for the Menger Awards. Although they are high school students, many of the winners have already published their results in refereed mathematics research journals. The participation of the AMS in the science fair gives us the opportunity to encourage these bright young talents to pursue a career in mathematics. Many of our winners have accepted scholarships to top universities, served on prize winning Mathematical Olympiad teams, placed highly in the Putnam competition and won NSF graduate fellowships.

— **Gisele Goldstein**

Read more See Goldstein's report on the 2002 ISEF in the September issue of the Notices at www.ams.org/notices/200208/people.pdf.

Awards to Undergraduates in the Mathematical Sciences

The **Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate**, established in 1995, is awarded to an undergraduate student (or students having



submitted joint work) for outstanding research in mathematics. The prize is jointly awarded by the AMS, MAA, and SIAM. At Mathfest in August, Ciprian Manolescu (photo at left) received the 2001 Morgan Prize, and Michael A. Levin was awarded honorable mention. The 2002 Morgan Prize(s) will be awarded at the Joint Mathematics Meetings in January 2003.

Each year eight AMS institutional members are awarded \$4000 from the **Waldemar J. Trjitzinsky Fund** with which they in turn award a one-time scholarship to selected students who have declared a major in mathematics but who lack adequate financial resources. The Trjitzinsky Awards for the 2002–03 academic year went to Furman University, College of William and Mary, the University of Southern California, Brigham Young University, Stephen F. Austin State University, the University of Hartford, Bates College, and the University of Texas at Dallas.

Where Are They Now?

 These are some of the Trjitzinsky awardees who have continued their mathematics studies with distinction:

Alexander Sotirov (2001, Columbia University) recently won the Van Buren Prize in mathematics at Columbia.

Allison Pacelli (1996, Union College) is working on her Ph.D. in mathematics at Brown University.

Thomas A. Shimkus (1991, University of Scranton) received his Ph.D. from Lehigh University and is now an assistant professor at De Sales University.

The AMS is also a **SACNAS Session Sponsor**. SACNAS, the Society for the Advancement of Chicanos and Native Americans in Science, is a highly effective organization that serves undergraduates



in the sciences, including mathematics. The AMS contribution helps to underwrite the mathematics talks, including undergraduate presentations, at the annual SACNAS meeting.

Read more AMS members can read profiles of Morgan Prize winners and Trjitzinsky Fund awardees in the Notices at www.ams.org/notices and learn more about SACNAS at www.sacnas.org.

Programs for Graduate Students

The period during which mathematicians work toward their doctorate is the time when the AMS and the graduate students' departments can offer benefits of Society membership at no charge to those individuals. The Society provides nearly 8,000 **Nominee Memberships** each year.

Institutional member mathematics departments provide the Society with names of their full-time graduate students, who are then enrolled as nominee members. As members, these students become part of the mathematical research community and receive tangible member benefits as well, including free subscriptions to the printed

Notices and *Bulletin* of the AMS, a free subscription to e-CMP (email notification of bibliographic entries from each issue of *Current Mathematical Publications*), member discounts on AMS publications, and reduced registration fees at AMS meetings.



Graduate students are also the major beneficiaries of the Society's many **Employment and Career Services**, including the Employment Center (administered by the AMS at the Joint Mathematics Meetings), *Employment in the Mathematical Sciences* (EIMS) and its email notification service, and the MathJobs.Org electronic job application system.

The AMS also sponsors the **AMS-AAAS Mass Media Fellowship Program** in affiliation with the American Association for the Advancement of Science (AAAS). Mathematics graduate students apply for a 10-week fellowship to work full-time over the summer in U.S. mass media organizations. The program 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 nonspecialists.

The 2002 media fellow is Kathy Paur (Harvard University). Her internship was as a science writer at the *Chicago Tribune*.

Read more The application deadline for the summer 2003 AMS-AAAS Mass Media Fellowships is January 15, 2003. For more information see www.ams.org/government/massmediaann.html.

There are many more AMS-supported programs and projects not described in this newsletter, including Project NEXT, STIX, the addition of MR citations to MathSciNet, and of course all of the Society's ongoing activities—publishing, public awareness, summer conferences, and meetings.

Support for Individual Researchers

The AMS Centennial Fellowship

Fund provides one-year research fellowships that are awarded each year in March. The number of fellowships granted each year depends on the contributions the Society receives, matched by the Society up to \$50,000. The current aim is to give preference to candidates who have not had extensive fellowship support in the past.



2002–03 Centennial Fellowship recipients: Albert C. Fannjiang, Wee Teck Gan, and Ravi Ramakrishna. Read about their research in the June/July issue of the Notices, page 686, or online at www.ams.org/notices/200206/people.pdf.

Read more December 1, 2002 is the application deadline for the 2003–04 Centennial Fellowships. See eligibility requirements, application, and reference forms at www.ams.org/employment/centflyer.html.



Where Are They Now?

Past Centennial awardees have continued to publish research, teach in colleges and universities around the world, give talks at meetings, and receive accolades and prizes. Here is an update about Centennial fellows:

Daniel Bump, 1991–92 fellow, a mathematics professor at Stanford University, was recently featured in the *New York Times* (Kate Hafner, August 1, 2002). “Dr. Bump, whose field is number theory, has been playing Go for 35 years and taught himself the C programming language four years ago so he could write Go software.”

Fred Diamond, 1997–98 fellow, was one of the mathematicians who completed a proof of the Shimura-Taniyama conjecture, which was covered in the *Notices*, *Science News*, and on NPR’s “Weekend Edition” (7/31/99). He is now a professor at Brandeis University and editor of *Manuscripta Mathematica*.

Carolyn Gordon (1990–91 fellow) and **David Webb** (1993–94 fellow) published an article on hearing the shape of a drum in *American Scientist*, which led to articles in *Science News* and *What’s Happening in the Mathematical Sciences*, Volume I. Gordon and Webb are professors at Dartmouth College, and Gordon is president-elect of the AWM.



How Does the AMS Support These Programs?

Funding for AMS awards, prizes, programs and services, comes from endowments, contributions, grants, member dues, and revenue from publications. The endowments and funds designated by the AMS Board of Trustees are pooled and invested under the direction of the Investment Committee, which reviews the Society's general investment policy annually. A pre-determined rate is applied to average investment balances. This provides for steady income to support designated projects while maintaining the purchasing power of the original gifts over the long term. Other contributions and revenues become part of the general operating funds.



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AMS MEMBER NEWSLETTER

Prizes and Awards for Outstanding Mathematicians

In 2002 the AMS Council approved the establishment of a new award called the **E. H. Moore Research Article Prize**, to be awarded every three years for an outstanding research article to have appeared in one of the AMS primary research journals. The Moore Prize Selection Committee is accepting nominations for the award to be presented at the Joint Mathematics Meetings.

Read more A complete description of AMS prizes, including those not awarded in 2003, lists of past awardees, and links to more extensive articles in Notices, is at www.ams.org/prizes-awards.

You are invited to attend the Prizes and Awards Session and Reception at the 2003 Joint Mathematics Meetings in Baltimore, Maryland, on Thursday, January 16, at 4:25 p.m.

The following AMS prizes will be presented:
The George David Birkhoff Prize in Applied Mathematics, made jointly by the AMS and SIAM.

(The next Cole Prize in Number Theory will be awarded in 2005.)
The Frank Nelson Cole Prize in Algebra,

The Levi L. Conant Prize, for an outstanding expository paper published in either the *Notices of the AMS* or the *Bulletin of the AMS* in the preceding five years.

The Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate, presented jointly by the AMS, MAA, and SIAM.

The Ruth Lyttle Satter Prize in Mathematics, to recognize an outstanding contribution to mathematics research by a woman in the previous five years.

The Leroy P. Steele Prize for Lifetime Achievement, **Leroy P. Steele Prize for Mathematical Exposition**, and **Leroy P. Steele Prize for Seminal Contribution to Research**.