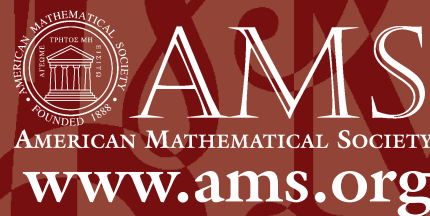


RESOURCES FOR UNDERGRADUATES IN MATHEMATICS



TO HELP YOU ON YOUR WAY

This brochure introduces you to just some of the resources available from the AMS and many other organizations that support undergraduate students. Visit the library, talk with the mathematics department faculty, or contact the organizations listed in this brochure directly to find out more about publications, internships, careers, and funding.

“WHAT CAN I DO WITH A MATH DEGREE?”

College graduates with a bachelor's degree in mathematics have the foundation for a broad range of positions in business, industry, government, and education. Companies in the computer and communications industries employ many mathematicians, as do oil companies, banks, insurance companies, and consulting firms. Almost every bureau and branch of the federal government—including the Department of Health and Human Services, Department of Energy, Department of Defense, and the National Security Agency—employ mathematicians in various capacities.

For answers to the question “What can I do with a math degree?”, visit the Mathematical Sciences Career Information website at www.ams.org/careers/; the Mathematical Association of America's profiles of individuals at www.maa.org/careers/index.html; the American Statistical Association's guide to careers in statistics at www.amstat.org/careers/index.html; and BeAnActuary.org for information on the field of actuarial science. A streaming video of *Careers in Mathematics*, containing interviews with mathematicians working in industry, business, and government, is posted on the Mathematical Sciences Research Institute (MSRI) website at www.msri.org/ext/CareersInMathematics.html. Most of the professionals profiled on these sites use mathematics on a daily basis, but many others rely on the general problem-solving skills acquired in their mathematics courses.

The Association for Women in Mathematics (AWM) at www.awm-math.org and Agnes Scott College of Atlanta at www.agnesscott.edu/lriddle/women/women.htm include biographies of women mathematicians, and the Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) Biography Project at www.sacnas.com/biography/ profiles Chicano, Latino, and Native American mathematicians.

HONORARY SOCIETIES

Kappa Mu Epsilon (KME) is an honor society of undergraduates in mathematics. KME has 118 chapters in colleges and universities and approximately 61,000 members in 34 states. *The Pentagon*, the official journal of the society, includes news about chapters and their activities, articles, book reviews, and problems. See www.kme.eku.edu.

Pi Mu Epsilon (PME) is dedicated to the promotion of mathematics and recognition of students successful in mathematics. PME, in conjunction with MAA, sponsors an annual conference at which undergraduate members of PME are encouraged to give a 15-minute presentation and attend a banquet and lecture.

PME chapters also sponsor regional conferences. The *PME Journal* includes refereed papers by students and faculty. See www.pme-math.org.

Also see a list of **College Math Club websites** at www.ams.org/careers-edu/club-sites.html.

COMPETITIONS

Each year in the **William Lowell Putnam Competition**, undergraduate mathematics students across the nation struggle with challenging math problems during a six-hour examination. The top five scorers in the competition each receive a cash prize and the distinction of having done well in one of the nation's most difficult and prestigious mathematics competitions. There are also monetary prizes for runners-up and for the winning teams. Read about the current winners in the *Notices of the AMS* by searching at www.ams.org/notices.

The **Mathematical Contest in Modeling**, sponsored by the Consortium for Mathematics and its Applications (COMAP), challenges teams of students to clarify, analyze, and propose solutions to open-ended problems. The contest attracts diverse students and faculty advisors from over 500 institutions around the world. Registration begins each fall.

The AWM sponsors the **Biographies of Contemporary Women in Mathematics Essay Contest**. Essays are based primarily on interviews with women working in the mathematical sciences, and there is a separate category for entries from undergraduate students. See www.awm-math.org/biographies/contest.html for information on the next contest and to read the most recent winning essays.

To learn more about these and other competitions, see www.ams.org/careers-edu/undergrad.html or contact your math department.

PRIZES

The **Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student** is awarded annually to one undergraduate student (or students having submitted joint work) for outstanding research in mathematics. Undergraduate students in Canada, Mexico, or the U.S. or its possessions are eligible. Read about the current Morgan Prize winner in the *Notices of the AMS* by searching at www.ams.org/notices. The cash prize is awarded by the American Mathematical Society, the Mathematical Association of America, and the Society for Industrial and Applied Mathematics.

The **Alice T. Schafer Prize**, sponsored by AWM, is awarded annually for excellence in mathematics by an undergraduate woman. The criteria for selection include the quality of the nominees' performance in mathematics courses and special programs; exhibition of real interest in mathematics; ability to do independent work; and, if applicable, performance in mathematical competitions. See www.awm-math.org for the current winners.

Each year the AMS also designates four AMS institutional members to receive funds from the **Waldemar J. Trjitzinsky Memorial Fund**: the schools award the funds to support math majors who need financial aid.

SUMMER PROGRAMS

Research Experience for Undergraduates. Each summer the National Science Foundation sponsors approximately 20 intensive mathematics programs held at universities around the country. Undergraduates work closely with a faculty member to experience graduate research firsthand. See www.ams.org/employment/reu.html.

George Washington University hosts the Summer Program for Women in Mathematics. See www.gwu.edu/~math/spwm.html. Carleton and St. Olaf Colleges host a summer mathematics program for women undergraduates. See www.mathcs.carleton.edu/smp/.

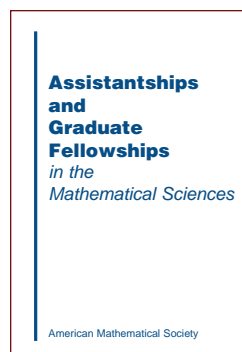
INTERNSHIPS AND JOBS

The AMS lists over 50 websites with internship and co-op opportunities for undergraduates at www.ams.org/careers-edu/internships.html. These include positions at universities, in government agencies, and in a wide range of private industries including high tech, communications, investments, and manufacturing. Note that the application deadlines for summer programs usually occur during the previous fall or winter.

Here are some of the links to other internship and job listings at www.ams.org/careers-edu/undergrad.html#jobs:

- Employment Information in the Mathematical Sciences: select type, "Business or Industry", to find jobs that may be open to those with a bachelor's in mathematics
- Career Path: job listings from many sources in the U.S.
- Federal government: jobs in many branches (for instance, General Accounting Office, Internal Revenue, Social Security, to name just a few) for those with a bachelor's degree in mathematics
- Internship and Co-op Opportunities from the Association for Computing Machinery's Crossroads
- Internships in statistics from the American Statistical Association
- JobWeb: maintained by the National Association of Colleges and Employers
- Online Career Center (now Monster.com): a free resource for job seekers, sponsored by hundreds of major corporations
- The Princeton Review: internship advice and links
- Jobs and internships in finance
- Other sources of internships: Rising Star Internships, The Vault, and The Wall Street Journal (search job ads by search key "intern")
- Considering a public school career? Read about the New York City Teaching Fellows Program
- Check out potential salaries at salary.com

APPLYING TO GRADUATE SCHOOL IN MATHEMATICS?



Assistantships and Graduate Fellowships

Review of a recent annual edition:
This directory is a tool for undergraduate mathematics majors seeking information about graduate programs in mathematics. Although most of the information can be gleaned from the Internet, the usefulness of this directory for the prospective graduate student is the consistent format for comparing different mathematics graduate programs without the hype. Published annually, the information is up-to-date, which is more than can be said of some websites. Support for graduate students in mathematics is a high priority of the American Mathematical Society, which also provides information for fellowships and grants they offer, as well as support from other societies and foundations. The book is highly recommended for academic and public libraries.

—American Reference Books Annual

This publication is an indispensable source of information for students seeking support for graduate study in the mathematical sciences.

Assistantships and Graduate Fellowships brings together a wealth of information about resources available for graduate study in mathematical sciences departments in the U.S. and Canada. Information on the number of faculty, graduate students, and degrees awarded (bachelor's, master's, and doctoral) is listed for each department when available. Stipend amounts and the number of awards available are given, as well as information about foreign language requirements. Numerous display advertisements from mathematical sciences departments throughout the country provide additional information.

Also listed are sources of support for graduate study and travel, summer internships, and graduate study in the U.S. for foreign nationals. Finally, a list of reference publications for fellowship information makes Assistantships and Graduate Fellowships a centralized and comprehensive resource for students, mathematical sciences departments, and faculty. Check with your mathematics department to see if there is a reference copy available.

To order go to the AMS Bookstore at www.amsbookstore.org.

RESOURCES FOR UNDERGRADUATES IN MATHEMATICS

MATHEMATICS WEBSITES FOR UNDERGRADUATES

The AMS website at www.ams.org serves AMS members and the mathematical community worldwide by providing a wealth of information on careers, science and education policy, publications, other mathematics organizations, what's new in math, and more.

Link to these and more websites from the **Undergraduate Mathematics Majors web page** at www.ams.org/careers-edu/undergrad.html.



**MATHEMATICS PROGRAM IN ENGLISH
FOR UNDERGRADUATES
AND GRADUATE STUDENTS**

During my visit to the [Independent University of Moscow](#), I was enormously impressed with the quality and excitement of its mathematics; the setting also is quite modern.

Serge Smole (Fields medalist)

 Accommodations Living in Moscow Insurance and medical information	General info Introduction About the IUM Program features Our students and their impressions	How to apply Grants Application materials Costs
	 How to find us Address: P.O.B. #524 Wynnewood PA 19096 USA Fax: (709)5291 6501 E-mail: mim@mcmr.ru	Program Schedule List and contents of courses
		
	Current semester info Timetable This semester teachers & staff	

STUDENT CENTER

TEACHERS' PLACE

RESEARCH DIVISION

PARENTS & CITIZENS

What's New

Math Forum Partners with WebCT Meetings and Conferences
NCTM T-shirt Winners

Forum Features

[Ask Dr. Math](#)
[Discussion Groups](#)
[Forum Showcase](#)
[Internet Newsletter](#)
[Problems of the Week](#)
[Teacher2Teacher](#)
[Web Units & Lessons](#)

[Search for Math](#) or browse our [Internet Mathematics Library](#)

Math Resources by Subject

K-12, College, & Advanced Math


Math Education

Innovations and Concerns

Key Issues in Math

Innovations and Concerns

[SUGGESTION BOX](#)
[MATH LIBRARY](#)
[HELP](#)
[QUICK REFERENCE](#)
[SEARCH OUR SITE](#)



Mathematical Sciences Career Information

AMS-MAA-SIAM
Project for Nonacademic Employment

▲ Have you ever wondered what a mathematician working in industry or the government does all day? You can look in the [Archives](#) at an alphabetical listing of over 90 career profiles of mathematicians working in nonacademic positions. Or, you can [Search the Archives](#) by key word, employment sector or degree and access the profiles, forums and applications of the mathematicians previously profiled in the Mathematical Careers Bulletin Board.

▲ Have you ever been mystified by what applications there might be for that topic in mathematics that you spent so much time struggling with? The [Mathematical Applications Index](#) includes lists of applications provided by the mathematicians profiled on the bulletin board and is a quick reference to some of the fields of mathematics used in industry and government applications.

▲ A summary of data from a National Survey of Recent College Graduates sponsored by the NSF provides a look at demographic, educational and employment characteristics of recent bachelor's and master's degree recipients working in nonacademic positions.

▲ Do you need some help writing a resume or starting a job search? [Career Planning Resources](#) has information about books and articles on career planning and job searching, as well as connections to other on-line resources, including job listing services.

▲ In addition to the profiles in the Mathematics Careers Bulletin Board, check out the [MAA Career Profiles](#). They show you how the study of mathematics can prepare you for a range of rewarding careers in many fields. Those profiled work in well known companies, government agencies, the arts, and in professions such as law and medicine. Much of the material is geared toward the undergraduate student in mathematics.

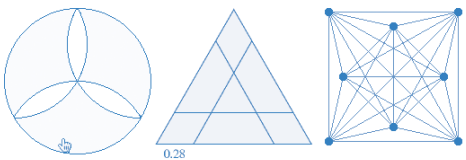


Research Experience for Undergraduates Summer Programs

The table below contains links to REU programs active in Summer, 2003 (unless otherwise noted). Applicants should note that most application deadlines fall in February - March. Program directors: this list will be updated regularly. To update your entry, or to request a new entry, please send e-mail to the AMS.

Albany Medical Center	Research Opportunities for Undergraduates	http://www.amc.edu/academic/gradstudies/gradstu-research_opportunities.htm
California Polytechnic State University	Operator Theory and Combinatorics	http://www.calpoly.edu/~jsapino/REU.html
Carleton College and St. Olaf College	Carleton/St. Olaf Summer Mathematics Program for Women Undergraduates	http://www.mathcs.carleton.edu/smp/index.html
Carnegie Mellon University	Summer Undergraduate Applied Mathematics Institute	http://www.math.cmu.edu/summerinst/
Central Michigan University	Combinatorics, Geometry, Graph Theory and Matrix Analysis	http://calenets.stcmich.edu:16080/cgi/NSF/REU/

Hosted by [The Math Forum](#)



Macalester College Problem of the Week

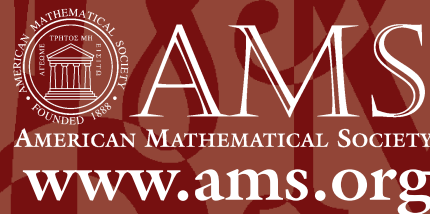
[About the Problem of the Week] [Which Way Did the Bicycle Go?]
[Where are the answers?] [Other math problem pages]

[Search the MacPOW Archives]

Spring 2003

- Problem 986: Not A Putnam Problem
- Problem 985: Little Boxes
- Problem 984: A Black and White Issue
- Problem 983: Where in the Square
- Problem 982: A Sliding Coin Puzzle
- Problem 981: Pablito's Solitaire
- Problem 980: Everyone's A Winner
- Problem 979: Find the Roots
- Problem 978: A Diophantine Problem
- Problem 977: Anything Goes
- Problem 976: A Zero-One Decision
- Problem 975: A New Prisoners' Dilemma
- Problem 974: The Broken Cash Register

RESOURCES FOR UNDERGRADUATES IN MATHEMATICS



CONTACT THESE ORGANIZATIONS FOR MORE INFORMATION

American Mathematical Society (AMS): 201 Charles St., Providence, RI 02904-2294;
tel 800-321-4267 or 401-455-4000; fax 401-331-3842; email prof-serv@ams.org;
www.ams.org

American Statistical Association (ASA): 1429 Duke St., Alexandria, VA 22314-3415;
tel 703-684-1221 (toll-free 888-231-3473); fax 703-684-2037; email asainfo@amstat.org;
www.amstat.org

Association for Women in Mathematics (AWM): 4114 Computer & Space Sciences
Building, University of Maryland, College Park, MD 20742-2461; tel 301-405-7892;
fax 301-314-9363; email awm@math.umd.edu; www.awm-math.org

Institute for Operations Research and the Management Sciences (INFORMS): 901
Elkridge Landing Road, Suite 400, Linthicum, MD 21090-2909; tel 800-4IN-FORMS;
fax 410-684-2963; email informs@informs.org; www.informs.org

Mathematical Association of America (MAA): P.O. Box 91112, Washington, DC 20090-
1112; tel 800-741-9415 or 202-387-5200; fax 202-265-2384; email maahq@maa.org;
www.maa.org

National Association of Mathematicians (NAM): Box 959, Elizabeth City State University,
Elizabeth City, NC 27909; tel 919-335-3326; fax 919-335-3487 or 919-335-3651;
email: nam@ias.ga.unc.edu; jewel.morgan.edu/~nam or
www.caam.rice.edu/~nated/orgs/nam/index.html

National Council of Teachers of Mathematics (NCTM): 1906 Association Drive, Reston,
VA 20191-9988; tel 703-476-2970; fax: 703-476-2970; email nctm@nctm.org;
www.nctm.org

Society for Advancement of Chicanos and Native Americans in Science (SACNAS):
P.O. Box 8526, Santa Cruz, CA 95061-8526; tel 831-459-0170; fax 831-459-0194;
email info@sacnas.org; www.sacnas.org

Society for Industrial and Applied Mathematics (SIAM): 3600 University City Science
Center, Philadelphia, PA 19104-2688; tel 215-382-9800; fax 215-386-7999;
email siam@siam.org; www.siam.org

Society of Actuaries (SOA): 475 North Martingale Road, Suite 800, Schaumburg, IL
60173-2226; tel 847-706-3500; fax 847-706-3599; www.soa.org

The website URL addresses are accurate at the time of this printing.

If you are unable to locate any subsidiary Web address, try the organization's main website for more information.