AMS MEMBER
SPRING 2006
NEWSLETTER

*A PUBLICATION TO INFORM MEMBERS ABOUT SOCIETY ACTIVITIES. THIS ISSUE INCLUDES NEWS ABOUT AMS PROGRAMS FOR MATHEMATICS DEPARTMENTS AND A CHANCE TO WIN AMS POINTS.*

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# AMS Award for an Exemplary Program or Achievement in a Mathematics Department

*Faculty at the fall 2005 mathematics department retreat.*

*Professors Jon Jacobsen and Francis Su demonstrate the fluid dynamics of a vortex cannon (the stable toroidal ring will blow out the candle Francis is holding). Many HMC Math faculty use physical demonstrations in their lectures.*

*The AMS Award for an Exemplary Program or Achievement in a Mathematics Department recognizes a department which has distinguished itself by undertaking an unusual or particularly effective program of value to the mathematics community, internally or in relation to the rest of society.*

**Harvey Mudd College** is the first mathematics department to receive this new AMS Award. The department excels in numerous areas. Its exciting programs have led to a doubling of the number of math majors over the last decade. Currently more than one out of every six graduating seniors at Harvey Mudd College majors in mathematics or in new joint majors of mathematics with computer science and mathematical biology. Furthermore, about 60% of these math majors continue their education at the graduate level.

Harvey Mudd's successful program includes the College Mathematics Clinic, giving students a terrific research experience; the weekly Putnam Seminars on problem solving, leading to an unusually large number of Harvey Mudd students taking—and ranking well in—the Putnam exam each year (finishing in the top ten nationwide in 2001, 2002, and 2003, and with an eleventh-place finish in 2004). Harvey Mudd mathematics students have won 19 NSF fellowships over the last six years. The department is also heavily involved in outreach to low-income and underrepresented minority communities.

The mathematics community is fortunate to have Harvey Mudd College present such an outstanding example of an exemplary program in a mathematics department. The deadline for nominations being considered for 2006 has just passed, but the Secretary (secretary@ams.org) will hold any nominations that arrive after the deadline for transmittal to the committee in 2007 for the next round of awards.

*Read more* More details about Harvey Mudd's programs are in the news release at www.ams.org/ams/press/mudd-05.html; information about the AMS Exemplary Program Prize is at www.ams.org/prizes/department-award.html.

# AMS Recognizes Mathematics Programs That Make a Difference

*SIMU at the Universidad de Puerto Rico, Humacao*

*Graduate students and faculty in the math department of the University of Iowa*

*Each year the AMS will highlight two programs that specifically: (1) aim to bring more persons from underrepresented minority backgrounds into some portion of the pipeline beginning at the undergraduate level and leading to an advanced degree in mathematics, or retain them in the pipeline; (2) have achieved documentable success in doing so; and (3) are replicable models.*

At the Joint Mathematics Meetings in January 2006, the AMS recognized the first two outstanding mathematics programs that have made significant, successful efforts to encourage underrepresented minorities to continue in the study of mathematics: **The graduate program at the University of Iowa** and the **Summer Institute in Mathematics for Undergraduates (SIMU) Research Experience for Undergraduates program** conducted at the Universidad de Puerto Rico, Humacao from 1998 to 2002.

In 1995, the Department of Mathematics at the University of Iowa made a long-term commitment to substantially increase the number of its U.S. graduate students from underrepresented minority groups. Specific aspects of the ongoing program include a three-week intensive Summer Institute for incoming students, faculty mentoring for all students, peer mentoring at key points in the graduate career, and a new course: "Introduction to the graduate program". The Department's underrepresented minority graduate student population has grown from zero students in 1995 to twenty-four students currently. The Department projects that, out of an average of 12 Ph.D.'s awarded each year, 3 will be awarded to U.S. minority students in the foreseeable future.

The goal of SIMU was to increase the number of Latinos/as and Native Americans earning graduate degrees and pursuing careers in the mathematical sciences. Students attending SIMU were able to participate in a mathematics seminar and to attend a series of colloquium talks, complete an undergraduate research project, and learn about the skills and techniques needed for research careers. Later, students had opportunities to present their work at a Society for Advancement of Chicano and Native Americans in Science conference and the Joint Mathematics Meetings and to continue their mentoring relationships. During five summers, 115 students participated in the program. Fifty-nine of these students have been accepted into mathematics Ph.D. programs; three have completed Ph.D.'s in mathematics and one student has completed a Ph.D. in physics. Twenty-three participants have completed Masters degrees in mathematics.

*Read more* Read about Mathematics Programs That Make a Difference, including the citations and in-depth program descriptions of these two programs, at www.ams.org/employment/makeadiff.html.

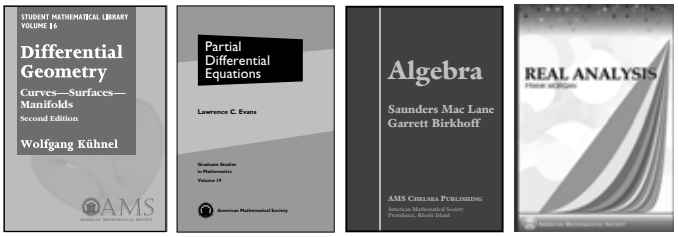
# MathJobs.Org

MathJobs.Org is an automated job application system used primarily by departments of mathematics. Departments pay an annual fee and are able to post jobs, receive applications electronically, and provide password-protected access to faculty. Additional features allow for reference letter submission, email generation, and faculty notes and rankings. Searching and sorting is possible both within the group of applicants, and among the publicly accessible candidates who have not yet applied. Approximately 60 academic institutions are now utilizing MathJobs, which was originally developed at the Duke University Department of Mathematics. The system is free to applicants.

New in 2006 is a short Flash video introduction on the website that highlights the main features and processes.

*Read more* The Job Application Database for Mathematicians is at www.mathjobs.org.

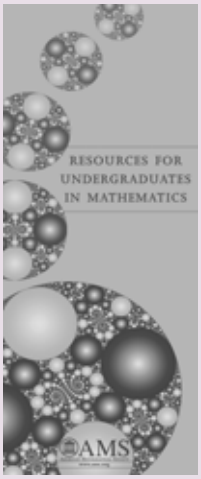
# The AMS Textbook Publishing Program




Textbooks are a growing component of the AMS publishing program. Titles in the textbook program span a wide range of subjects and levels, from classics included in the AMS-Chelsea imprint to exciting new topics offered in the Student Mathe-

matical Library series. The AMS engages in text publishing as yet another means to support mathematical research and education at the undergraduate and graduate level.

*Read more* The most recent AMS Course Adoption Catalog is at www.ams.org/bookstore/pspdf/course-adoption-catalog-2006.pdf. It includes 56 recommended texts, information on how to request examination and desk copies, and testimonials of faculty who have adopted the books for classroom use.




Faculty may request at no charge a bulk quantity of the "Resources for Undergraduates in Mathematics" brochure. Email paoffice@ams.org (with Undergrad brochure request in the subject line), and be sure to include your address and the quantity to be mailed directly to you. The brochure is also online at www.ams.org/outreach/undergrad-resources.pdf.

## AMS Committee on Education

*The AMS Washington DC office provides support for the COE.*

The AMS Committee on Education (COE) serves as the Society's channel for communication and cooperation with other organizations on matters concerning education, and provides a forum for the discussion of mathematics education issues.

In October the COE met in Washington DC. Guests of the Committee included representatives from the NSF, Achieve, the Australian International Centre of Excellence for Education in Mathematics, the Business Roundtable, the Business-Higher Education Forum, the Mathematical Sciences Education Board, and the U.S. Department of Education. The meeting was well attended, with 75 participants, including 44 chairs and representatives of masters and doctorate-granting departments.

*Read more* A report of the meeting is posted at www.ams.org/ams/SummaryCOEMtg.October2005.Final.pdf.

## AMS Workshop for Department Chairs

The annual Workshop for Department Chairs, hosted by the AMS, was held for mathematical sciences department chairs at the 2006 Joint Mathematics Meetings in San Antonio, Texas. The workshop focused on a number of areas of importance to department chairs including: utilizing resources in tight budget environments; departmental assessment and long-range planning; evaluation and development of faculty and staff; and department engagement within and outside the institution. Over thirty-five department chairs and leaders came together to share ideas and experiences in a form of department chair therapy, thus creating an environment that enabled attendees to address matters from new perspectives.

*Read more* Read about the workshop, led by Krishnaswami Alladi (University of Florida), Deanna Caveny (College of Charleston), David Manderscheid (University of Iowa), and Peter March (The Ohio State University), at http://www.ams.org/government/chrsworkshop06report.html.

## U.S. citizens receive 39% of U.S. doctorates in mathematics

The AMS-ASA-IMS-MAA Annual Survey of the Mathematical Sciences reported in February, 2006 that the percentage of U.S. citizens receiving doctorates from a U.S. mathematical sciences department fell to 39% in 2004/05 (after fluctuating for the last decade, with a recent high of 49% in 2000/01). The survey also reported that 30% of the recipients were female. The preliminary total of doctorates granted in 2004/05 was 1,116. The Annual Survey First Report also presented initial employment figures for the new doctorates and U.S. faculty salary data. These preliminary figures will be updated in summer 2006.

*Read more* The survey, by Ellen E. Kirkman, James W. Maxwell, and Colleen Rose, is in the February issue of *Notices of the AMS* on p. 230 and online at www.ams.org/notices/200602/05firstreport.pdf.

## Newsletter Scrambler

The quote below by a famous mathematician has been encrypted by substituting a different letter for each letter in the alphabet (for example, each "a" in the original quote might have been replaced with a "j"). You could receive AMS Points by unscrambling this quote:

**GWB GBKDJ LBM AOMWQA WOUQ MWQ TORQ BT OAXWVRQJQZ MWOL MWOM BT WVZ XBLSKQABA ROAXQDDKZ? - GVDDVOR ABGOL WORVDMBL**

AMS members are invited to submit solutions to paoffice@ams.org before May 31, 2006. Ten correct solutions will be drawn and those problem-solvers will receive 25 AMS Points. For information on how AMS Points can be used, see www.ams.org/customers/macs-faq.html#points.

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# The Early Career Profiles Network

In response to the question "What can I do with a math degree?" the AMS has launched the **Early Career Profiles Network**, supported in part by the Alfred P. Sloan Foundation. This is a web resource on which mathematics departments systematically provide job profiles of their recent bachelors-degree alumni. These early career profiles provide informative snapshots of the early career paths of alumni from both small colleges and large universities, highlighting where they work and how they got their job, how they use math on the job, their academic background (mathematics courses taken or areas of concentration in mathematics), and their advice for students. To date, profiles from 16 schools have been posted, and more will be added on an ongoing basis. Readers may browse profiles either by industry sector (e.g., arts and entertainment, education, finance and insurance, government, information technology), or by undergraduate institution.

*Read more* View profiles of individuals employed in various industry sectors at www.ams.org/early-careers/.