# Mathematics Opportunities

## American Mathematical Society Centennial Fellowships

***Invitation for Applications for Awards for 2006–2007***
***Deadline December 1, 2005***

The AMS Centennial Research Fellowship Program makes awards annually to outstanding mathematicians to help further their careers in research. The number of fellowships to be awarded is small and depends on the amount of money contributed to the program. The Society supplements contributions as needed. At most, two fellowships will be awarded for the 2006–2007 academic year. A list of previous fellowship winners can be found at `http://www.ams.org/prizes-awards`.

The eligibility rules are as follows. The primary selection criterion for the Centennial Fellowship is the excellence of the candidate's research. Preference will be given to candidates who have not had extensive fellowship support in the past. Recipients may not hold the Centennial Fellowship concurrently with another research fellowship such as a Sloan or NSF Postdoctoral Fellowship. Under normal circumstances, the fellowship cannot be deferred. A recipient of the fellowship shall have held his or her doctoral degree for at least three years and not more than twelve years at the inception of the award (that is, received between September 1, 1994, and September 1, 2003). Applications will be accepted from those currently holding a tenured, tenure-track, postdoctoral, or comparable (at the discretion of the selection committee) position at an institution in North America.

Applications should include a cogent plan indicating how the fellowship will be used. The plan should include travel to at least one other institution and should demonstrate that the fellowship will be used for more than reductions of teaching at the candidate's home institution. The selection committee will consider the plan in addition to the quality of the candidate's research and will try to award the fellowship to those for whom the award would make a real difference in the development of their research careers. Work in all areas of mathematics, including interdisciplinary work, is eligible.

The stipend for fellowships awarded for 2006–2007 is expected to be US$64,000, with an additional expense allowance of about US$3,250. Acceptance of the fellowship cannot be postponed.

The deadline for receipt of applications is **December 1, 2005**. Awards will be announced in February 2006 or earlier if possible.

Application forms are available via the Internet at `http://www.ams.org/employment/centflyer.html`. For paper copies of the form, write to the Membership and Programs Department, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2294; or send electronic mail to `prof-serv@ams.org`; or call 401-455-4107.

*—AMS announcement*

## NSF Graduate Research Fellowships

The National Science Foundation (NSF) awards Graduate Research Fellowships to graduating seniors and first-year graduate students. These are three-year fellowships awarded to U.S. students for full-time graduate study at the institutions of their choice. The fellowships include a stipend, tuition coverage, and possible international travel allowances. Awards are made based on the candidates' intellectual merit and potential for research achievement. The deadline for applications in mathematical sciences is **November 3, 2005**. For more information see `http://www.nsf.gov/grfpd`.

*—From an NSF announcement*

## ICM 2006 Travel Grants

The International Mathematical Union (IMU) and the Organizing Committee of ICM 2006 will award a limited number of grants for travel to the International Congress of Mathematicians (ICM 2006) in Madrid, Spain, August 22–30, 2006. The grants will be awarded to active young research mathematicians (under thirty-five years old at the time of the Congress) and to senior mathematicians from developing and economically disadvantaged countries.

The travel grants, provided by the IMU Special Development Fund, will support travel costs and living expenses for the duration of the Congress. The Organizing Committee will also provide partial support for a limited number of senior mathematicians from Latin America and from developing Mediterranean countries, as well as for young Spanish mathematicians (under thirty-two years old at the time of the Congress).

Deadline for grant applications is **January 1, 2006**. For more information, see `http://www.icm2006.org` or email: `grants@icm2006.org`.

*—From an ICM announcement*

**Editor's Note:** The AMS is also offering travel grants for ICM 2006. See the September 2005 *Notices*, page 887, or consult the Web page `http://www.ams.org/careers-edu/icmapp.html`.

# Research Opportunities for U.S. Graduate Students in Asia and Australia

The National Science Foundation (NSF) and the National Institutes of Health (NIH) are cosponsoring a summer research program in Australia, China, Japan, Korea, and Taiwan for U.S. graduate students during the summer of 2006. The East Asia and Pacific Summer Institutes (EAPSI) provide U.S. graduate students in science and engineering firsthand research experience in Australia, China, Japan, Korea, or Taiwan; an introduction to the science and science policy infrastructure of the respective location; and orientation to the culture and language. The primary goals of EAPSI are to introduce students to East Asian and Pacific science and engineering in the context of a research laboratory and to initiate personal relationships that will better enable them to collaborate with foreign counterparts in the future. The institutes last approximately eight weeks, from June to August, and are administered in the United States by the NSF. The National Institutes of Health (NIH) cosponsor the summer institute in Japan.

Applicants must be U.S. citizens or permanent residents. They must be enrolled at U.S. institutions in science or engineering Ph.D. programs, in M.D. programs with an interest in biomedical research, or in master's degree programs with at least one full academic year completed by the end of the calendar year of application. They must be pursuing studies in fields of science or engineering that are supported by the NSF or the NIH (for Japan) and that also are represented among the potential host institutions. International travel will be provided, and each awardee will receive an allowance of US$3,000.

The deadline for application materials to be postmarked is **December 10, 2005**. Proposers are required to prepare and submit proposals through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at `http://www.nsf.gov/funding` (search on "EAPSI").

*—From an NSF announcement*

# DMS Focus on Stochastic Systems

In recent years, there has been a surge of research activities within the mathematical sciences community on analysis, modeling, and computation of inherently stochastic systems. Such studies are interdisciplinary with a broad range of applications, including models in biology, nanoscience, fluid mechanics, solid mechanics, atmospheric sciences, oceanography, finance, economics, and social sciences, etc. Unanswered and challenging questions arise from stochastic refinements of deterministic laws that are necessary and appropriate for uncertainty quantification, understanding of observed variabilities, and prediction.

The Division of Mathematical Sciences (DMS) of the Directorate for Mathematical and Physical Sciences (MPS) of the National Science Foundation (NSF) recognizes the needs and opportunities posed by this recent surge. Unsolicited research proposals to DMS (proposals submitted to disciplinary programs) addressing cross-cutting topics in one or more aspects of mathematical analysis, modeling, and computation of stochastic systems will be considered as a division-wide focused topic area. Such proposals will be managed by a team consisting of program directors in applied mathematics, computational mathematics, and probability programs within DMS.

Proposals addressing this focused topic area should include the phrase "AMC-SS:" at the beginning of the proposal title. Such proposals should be submitted to the disciplinary programs designated by the PI in accordance with the target dates of the relevant disciplinary programs; see the NSF website, `http://www.nsf.gov/div/index.jsp?div=DMS`.

Proposals requesting levels of effort that are typical for Focused Research Groups (FRG) activities are not appropriate for this focused topic area and should be submitted to the next round of the FRG competition.

Primary contacts: Wen Masters, DMS, 703-292-4871, `wmasters@nsf.gov`; Thomas Russell, DMS, 703-292-4863, `trussell@nsf.gov`.

*—William Rundell, Director, DMS*

# AAUW Educational Foundation Fellowships and Grants

The American Association of University Women (AAUW) awards Selected Professions Fellowships to women who intend to pursue a full-time course of study at accredited institutions during the fellowship year in a designated degree program in which women's participation has traditionally been low. All women who are candidates for the master of science (M.S.) degree in mathematics or statistics are eligible to apply. Candidates are eligible to apply for support for the final year of study only and are expected to receive their degrees at the end of the fellowship year. Special consideration is given to applicants who show professional promise in innovative or neglected areas of research or practice in areas of public interest.

Applications are now available for Master's and First Professional Awards, which carry cash awards of between US$5,000 and US$12,000. The deadline for applications to be postmarked is **January 10, 2006**. The fellowship year runs from July 1, 2006, to June 30, 2007. For more information, see the AAUW's website at `http://www.aauw.org/fga/fellowships_grants/selected.cfm` or contact the AAUW Educational Foundation, 1111 Sixteenth St.

N.W., Washington, DC 20036; telephone 800-326-2289 (AAUW); fax 202-872-1425; email: `info@aauw.org`.

## AWM Essay Contest

To increase awareness of women's ongoing contributions to the mathematical sciences, the Association for Women in Mathematics (AWM) is holding an essay contest for biographies of contemporary women mathematicians and statisticians in academic, industrial, and government careers. The 2005 contest is sponsored by Sandia National Laboratories.

The essays will be based primarily on interviews with women who are currently working in mathematical sciences careers. The contest is open to students in the following categories: 6th–8th grades, 9th–12th grades, and college undergraduates. At least one winning submission will be chosen from each category. Winners will receive a prize, and their essays will be published online at the AWM website. A grand prize winner will have his or her submission published in the *AWM Newsletter* as well. The deadline for entries is **October 24, 2005**.

In addition to student entries, organizers are currently seeking women mathematicians to volunteer as the subjects of these essays.

For more information, go to `http://www.awm-math.org/biographies/contest.html` or contact Victoria Howle, the contest organizer, by email at `vehowle@sandia.gov` or by mail at Sandia National Labs, MS 9159, P.O. Box 969, Livermore, CA 94551.

## Call for Nominations for Waterman Award

Congress established the Alan T. Waterman Award in August 1975 to mark the twenty-fifth anniversary of the National Science Foundation (NSF) and to honor its first director. The annual award recognizes an outstanding young researcher in any field of science or engineering supported by the NSF. In addition to a medal, the awardee receives a grant of US$500,000 over a three-year period for scientific research or advanced study in the mathematical, physical, medical, biological, engineering, social, or other sciences at the institution of the recipient's choice.

Candidates must be U.S. citizens or permanent residents and must be thirty-five years of age or younger or not more than seven years beyond receipt of the Ph.D. degree by December 31 of the year in which they are nominated. Candidates should have demonstrated exceptional individual achievements in scientific or engineering research of sufficient quality to place them at the forefront of their peers. Criteria include originality, innovation, and significant impact on the field.

The deadline for nominations for the award is **November 30, 2005**. Supporting references must be submitted by **December 31, 2005**. For more detailed information concerning the nomination procedures consult the webpage `http://www.nsf.gov/nsb/awards/waterman/waterman.htm`.

## Call for Nominations for Third World Academy of Sciences Prizes

The Third World Academy of Sciences (TWAS) Prizes will be awarded to individual scientists in developing countries in recognition of outstanding contributions to knowledge in eight fields: mathematics, basic medical sciences, biology, chemistry, physics, agricultural sciences, earth sciences, and engineering sciences. Each award consists of a prize of US$10,000 and a plaque. Candidates for the awards must be nationals of developing countries and, as a rule, must be living and working in those countries.

The deadline for nominations for the 2006 prizes is **March 31, 2006**. Nomination forms should be sent to Helen Grant, TWAS Prizes, Third World Academy of Sciences (TWAS), c/o The Abdus Salam International Centre for Theoretical Physics (ICTP), Strada Costiera 11, 1-34014 Trieste, Italy, fax: +39-040-224559. Further information is available at `http://www.twas.org/`.

## News from the Fields Institute

The 2005–2006 thematic program of the Fields Institute for Research in the Mathematical Sciences is on renormalization and universality in mathematics and mathematical physics and on holomorphic dynamics, laminations, and hyperbolic geometry. The fall program, on renormalization and universality, is organized by Pavel Bleher, Mikhail Lyubich, and Michael Yampolsky. Lai-Sang Young of the Courant Institute of Mathematical Sciences will deliver a series of Coxeter Lectures November 23–25, 2005. A workshop on renormalization in dynamical systems will be held from November 29 to December 3, 2005.

The spring program, on holomorphic dynamics, laminations, and hyperbolic geometry, will be organized by Bruce Kleiner, Mikhail Lyubich, Yair Minsky, Michael Shub, and Michael Yampolsky. The following activities are scheduled. *January 5–9, 2006*: Workshop on Partially Hyperbolic Dynamics, Laminations, and Teichmüller Flow. *January 9–11, 2006*: Distinguished Lecture Series, lecturer: Gregory Margulis (Yale University). *March 7–11, 2006*: Workshop on Holomorphic Dynamics in honor of John Milnor's 75th birthday. *May 23–27, 2006*: Workshop on Hyperbolic Geometry. *To Be Announced*: The Coxeter Lecture Series, lecturer: Yair Minsky (Yale University).

The 2006–2007 thematic program will be on cryptography (fall 2006) and geometric applications of homotopy theory (spring 2007). The fall program is organized by Hugh Williams, Ian F. Blake, Alfred Menezes, Michele Mosca, Kumar Murty, Renate Scheidler, Douglas Stinson, and Ramarathnam Venkatesan. Four workshops have been scheduled, as follows: *September 18–20, 2006*: Algebraic Curves in Cryptography (The 10th Workshop on Elliptic Curve Cryptography, ECC 2006); *October 2–6, 2006*: Quantum Cryptography and Computing. *October 30–November 3, 2006*: Computational Challenges Arising in Algorithmic Number Theory and Cryptography. *November 27–December 1, 2006*: New Directions in Cryptography. The spring program will be organized by J. F. Jardine, G. Carlsson, and J. D. Christensen. The following are the titles of three subprograms, each with its own graduate courses and five-day workshop. *January-February 2007*: Higher Categories and Their Applications; workshop, January 9–13, 2007. *March–April 2007*: Homotopy Theory of Schemes; workshop, March 26–30, 2007. *May-June 2007*: Stacks in Geometry and Topology; workshop, May 14–18, 2007.

For information and application procedures for visitors to these thematic programs, see `http://www.fields.utoronto.ca/proposals/visitors.html`. For information and application procedures for postdoctoral fellowships, see `http://www.fields.utoronto.ca/proposals/postdoc.html`. The deadline for applications is **December 9, 2005**.

*—Fields Institute announcement*

# News from the Institut Mittag-Leffler

The academic year 2006–2007 at the Institut Mittag-Leffler, in Djursholm, Sweden, will be devoted to *Moduli Spaces*. The organizing committee consists of Torsten Ekedahl, University of Stockholm (chair), and Carel Faber, KTH, Stockholm.

The application deadline for postdoctoral fellowships is **January 31, 2006**. Applications should be sent to: Marie-Louise Koskull (`koskull@mittag-leffler.se`), Institut Mittag-Leffler, Auravägen 17, SE-182 60 Djursholm, Sweden. For further information see the institute's home page `http://www.mittag-leffler.se/grants`.

*— Institut Mittag-Leffler announcement*

# News from AIM

The American Institute of Mathematics (AIM) makes the following announcements.

### Call for Proposals

The AIM Research Conference Center (ARCC) seeks proposals for interesting and innovative focused workshops in all areas of the mathematical sciences. Workshops generally last 4 or 5 days and can fully support up to 32 participants.

Proposals for ARCC workshops are due **November 1, 2005,** and should be submitted online using the forms and guidelines at `http://www.aimath.org/ARCC/workshopproposals.html`.

### Associate Director

AIM/ARCC is seeking an associate director for a two-year position. The primary responsibility is to oversee ARCC focused workshops at our facility in California. A successful candidate for this position should have research experience and should be open-minded about new paradigms for how mathematical research is conducted. Please see `http://www.aimath.org/Associate_Director` for information on how to apply.

### Five-Year Fellowship

As part of AIM's commitment to the education of outstanding young mathematicians we seek nominations and applications for the AIM Five-Year Fellowship. This award is intended for an absolutely first-rate new Ph.D.—someone with the potential to leave a lasting mark on mathematics. Applications/nominations, which are limited to persons expecting to receive a Ph.D. in the calendar year 2006, must be received by **December 31, 2005**. Please see `http://www.aimath.org/fellows/` for information on how to apply.

*—AIM announcement*

# Correction

The August 2005 issue of the *Notices* carried a list of contact information for major mathematics institutes around the world. The following institute was inadvertently omitted from the list.

Sobolev Institute of Mathematics
Russian Academy of Sciences, Siberian Branch
4 Koptyug Avenue
Novosibirsk, 630090, Russia
Telephone: (+7) 3833 33 28 92; Fax: (+7) 3833 33 25 78
email: `im@math.nsc.ru`
Website: `http://www.math.nsc.ru`

*—Allyn Jackson*

# Correction



**Richard FitzHugh**

The photograph at left appeared on page 835 of the September 2005 issue of the *Notices,* incorrectly identified as A. F. Huxley. This is actually a photograph of Richard FitzHugh, as indicated here.

*—Sandra Frost*