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# Mathematics Opportunities

## American Mathematical Society Centennial Fellowships

### *Invitation for Applications for Awards for 2010–2011*

**Deadline December 1, 2009**

*Description:* 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. One fellowship will be awarded for the 2010–2011 academic year. A list of previous fellowship winners can be found at <http://www.ams.org/prizes/centennial-fellowship.html>.

*Eligibility:* 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 National Science Foundation 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, 1998, and September 1, 2007). Applications will be accepted from those currently holding a tenured, tenure-track, postdoctoral, or comparable position (at the discretion of the selection committee) 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.

*Grant amount:* The stipend for fellowships awarded for 2010–2011 is expected to be US\$77,000, with an additional expense allowance of about \$7,700. Acceptance of the fellowship cannot be postponed.

*Deadline:* The deadline for receipt of applications is **December 1, 2009**. Awards will be announced in February 2010 or earlier if possible.

*Application information:* 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](mailto:prof-serv@ams.org); or call 401-455-4105.

—AMS announcement

## AMS Scholarships for “Math in Moscow”

The Independent University of Moscow runs a program called “Math in Moscow”, which offers foreign students (undergraduate or graduate students specializing in mathematics and/or computer science) the chance to spend a semester in Moscow studying mathematics. The AMS provides a small number of scholarships to students to attend the program.

Math in Moscow provides students with a fifteen-week program similar to the Research Experiences for Undergraduates programs that are held each summer across the United States. Math in Moscow draws on the Russian tradition of teaching mathematics, which emphasizes creative approaches to problem solving. The focus is on developing in-depth understanding of carefully selected material rather than broad surveys of large quantities of material. Discovering mathematics under the guidance of an experienced teacher is the central principle of Math in Moscow. Most of the program's teachers are internationally recognized research mathematicians, and all of them have considerable teaching experience in English, typically in the United States or Canada. All instruction is in English.

With funding from the National Science Foundation (NSF), the AMS awards five US\$7,500 scholarships each semester to U.S. students to attend the Math in Moscow program. To be eligible for the scholarships, students must submit *separate* applications to *both* the Math in Moscow program and the AMS. An applicant should be an undergraduate mathematics or computer science major enrolled at a U.S. institution. **September 30, 2009**, is the deadline for the spring 2010 semester; **April 15, 2010**, is the deadline for scholarship applications for the fall 2010 semester.

Information and application forms for Math in Moscow are available on the Web at <http://www.mccme.ru/mathinmoscow>, or by writing to Math in Moscow, P.O. Box 524, Wynnewood, PA 19096; fax: +7095-291-65-01; email: [mim@mccme.ru](mailto:mim@mccme.ru). Information and application forms

for the AMS scholarships are available on the Web at <http://www.ams.org/employment/mimoscow.html>, or by writing to Math in Moscow Program, Membership and Programs Department, American Mathematical Society, 201 Charles Street, Providence RI 02904-2294; email: [student-serv@ams.org](mailto:student-serv@ams.org).

—AMS announcement

## Call for Nominations for Chern Medal

The International Mathematical Union (IMU) and the Chern Medal Foundation (CMF) have established a major new prize in mathematics, the Chern Medal Award, in memory of the outstanding mathematician Shiing-Shen Chern. The Chern Medal will be awarded every four years in conjunction with the International Congress of Mathematicians (ICM) to an individual whose accomplishments warrant the highest level of recognition for outstanding achievements in the field of mathematics.

The medal will be awarded for the first time at ICM 2010 in Hyderabad, India. The award carries a cash prize of US\$250,000. In addition, each awardee may nominate one or more organizations to receive Organization Awards, funding totaling US\$250,000, for the support of research, education, or other outreach programs in the field of mathematics.

Nominations should ideally be sent by **December 15, 2009**, electronically or on paper, to Phillip A. Griffiths, Institute for Advanced Study, Einstein Drive, Princeton, NJ, 08540, email: [huguenin@ias.edu](mailto:huguenin@ias.edu). For more details about the award, the nomination process, and the selection criteria, see [http://www.mathunion.org/fileadmin/IMU/Prizes/Chern/Chern\\_Medal\\_Program\\_Guidelines.pdf](http://www.mathunion.org/fileadmin/IMU/Prizes/Chern/Chern_Medal_Program_Guidelines.pdf).

Shiing-Shen Chern (1911–2004) devoted his life to mathematics, both in active research and education. He obtained fundamental results in all the major aspects of modern geometry and founded the area of global differential geometry. Chern's work exhibited keen aesthetic tastes in his selection of problems, and in its breadth it exemplified the interconnectiveness of modern geometry and all of its aspects. The Chern Medal Award is funded by CMF.

—From an IMU announcement

## NRC–Ford Foundation Diversity Fellowships

The National Research Council (NRC) administers the Ford Foundation Diversity Fellowships program. The program seeks to promote the diversity of the nation's college and university faculties by increasing their ethnic and racial diversity, to maximize the educational benefits of diversity, and to increase the number of professors who can and will use diversity as a resource for enriching the education

of all students. Predoctoral fellowships support study toward a Ph.D. or Sc.D.; dissertation fellowships offer support in the final year of writing the Ph.D. or Sc.D. thesis; postdoctoral fellowships offer one-year awards for Ph.D. recipients. Applicants must be U.S. citizens or nationals in research-based fields of study and members of one of the following groups: Alaska Native (Eskimo or Aleut), Black/African American, Mexican American/Chicana/Chicano, Native American Indian, Native Pacific Islander (Polynesian/Micronesian), or Puerto Rican.

Approximately sixty predoctoral fellowships will be awarded for 2010. The awards provide three years of support and are made to individuals who, in the judgment of the review panels, have demonstrated superior academic achievement, are committed to a career in teaching and research at the college or university level, show promise of future achievement as scholars and teachers, and are well prepared to use diversity as a resource for enriching the education of all students. The annual stipend is US\$20,000, with an insitutional allowance of US\$2,000. The deadline for applying online is **November 2, 2009**.

Approximately thirty-five dissertation fellowships will be awarded for 2010 and will provide one year of support for study leading to a Ph.D. or Sc.D. degree. The stipend for one year is US\$21,000. The deadline for applying online is **November 9, 2009**.

Approximately twenty postdoctoral fellowships will be awarded for 2010. These fellowships provide one year of support for individuals who have received their Ph.D. or Sc.D. degrees no earlier than November 30, 2002, and no later than November 9, 2009, in an eligible research-based field from a U.S. educational institution. The stipend is US\$40,000 with an employing institution allowance of US\$1,500. The deadline for applying online is **November 9, 2009**.

More detailed information and applications are available at the website <http://sites.nationalacademies.org/pga/FordFellowships/index.htm>. The postal address is: Fellowships Office, Keck 576, National Research Council, 500 Fifth Street, NW, Washington, DC 20001. The telephone number is 202-334-2872. The email address is [infofell@nas.edu](mailto:infofell@nas.edu).

—From an NRC announcement

## NSF International Research Fellow Awards

The objective of the International Research Fellowship Program (IRFP) of the National Science Foundation (NSF) is to introduce scientists and engineers in the early stages of their careers to research opportunities abroad. The program provides support for postdoctoral and junior investigators to do research in basic science and engineering for nine to twenty-four months in any country in the world. The goal of the program is to establish productive, long-term relationships between U.S. and foreign science and engineering communities. Applicants must be U.S. citizens or permanent residents who have earned their

doctoral degrees within two years before the date of application or who expect to receive their degrees by the date of the award.

The deadline for full proposals is **September 8, 2009**. For further information contact the program officer, Susan Parris, 703-292-7225, [sparris@nsf.gov](mailto:sparris@nsf.gov); or visit the website [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5179&org=NSF](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5179&org=NSF).

—From an NSF announcement

## AWM Travel Grants for Women

The National Science Foundation (NSF) and the Association for Women in Mathematics (AWM) sponsor travel grant programs for women mathematicians.

AWM Travel Grants enable women to attend research conferences in their fields, thereby providing scholars valuable opportunities to advance their research activities and their visibility in the research community. A Mathematics Travel Grant provides full or partial support for travel and subsistence for a meeting or conference in the grantee's field of specialization. The Mathematics Education Research Travel Grants provide full or partial support for travel and subsistence in math/math education research for mathematicians attending a math education research conference or math education researchers attending a math conference.

AWM Mentoring Travel Grants are designed to help junior women develop long-term working and mentoring relationships with senior mathematicians. A mentoring travel grant funds travel, subsistence, and other expenses for an untenured woman mathematician to travel to an institute or a department to do research with a specified individual for one month.

The final deadline for the Travel Grants program for 2009 is **October 1, 2009**; the deadlines for 2010 are **February 1, 2010**; **May 1, 2010**; and **October 1, 2010**. For the Mentoring Travel Grants program the deadline is **February 1, 2010**. For further information and details on applying, see the AWM website, <http://www.awm-math.org/travelgrants.html>; telephone: 703-934-0163; or email: [awm@awm-math.org](mailto:awm@awm-math.org). The postal address is: Association for Women in Mathematics, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030.

—From an AWM announcement

## Call for Nominations for Clay Research Fellows

The Clay Mathematics Institute (CMI) solicits nominations for its competition for the 2010 Clay Research Fellowships. Fellows are appointed for a period of two to five years. They may conduct their research at whatever institution or combination of institutions best suits their research. In

addition to a generous salary, the Fellow receives support for travel, collaboration, and other research expenses.

The selection criteria are the quality of the candidate's research and promise to make contributions of the highest level. At the time of their selection, most recent appointees were graduating Ph.D. students. However, mathematicians within three years of the Ph.D. are sometimes appointed. Selection decisions are made by CMI's Scientific Advisory Board: Jim Carlson, Simon Donaldson, Gregory Margulis, Richard Melrose, Yum-Tong Siu, and Andrew Wiles.

To nominate a candidate, please send the following items by **September 16, 2009**: (1) letter of nomination; (2) names and contact information of two other references; (3) curriculum vitae for the nominee; and (4) publication list for the nominee.

Nominations should be sent to the attention of Alagi Patel, Clay Mathematics Institute, One Bow Street, Cambridge, MA 02138. Electronic submissions are also accepted at [nominations@claymath.org](mailto:nominations@claymath.org).

Information about the Clay Research Fellows is available on the CMI website at [http://www.claymath.org/research\\_fellows](http://www.claymath.org/research_fellows). Additional information may be obtained by calling Alagi Patel at 617-995-2602 or emailing her at [patel@claymath.org](mailto:patel@claymath.org).

Current and alumni Clay Research Fellows are Mohammed Abouzaid, Spyridon Alexakis, Artur Avila, Roman Bezrukavnikov, Manjul Bhargava, Daniel Biss, Alexei Borodin, Maria Chudnovsky, Dennis Gaitsgory, Soren Galatius, Daniel Gottesman, Ben Green, Sergei Gukov, Adrian Ioana, Bo'az Klartag, Elon Lindenstrauss, Ciprian Manolescu, Daves Maulik, Maryam Mirzakhani, Sophie Morel, Mircea Mustata, Sam Payne, Igor Rodnianski, Sucharit Sarkar, David Speyer, Terence Tao, Andras Vasy, Akshay Venkatesh, Teruyoshi Yoshida, Xinyi Yuan.

—Clay Mathematics Institute announcement

## Graduate Student Travel Grants to 2010 JMM

The AMS, with funding from a private gift, is accepting applications for partial travel support for graduate students attending the Joint Mathematics Meetings in San Francisco, CA, January 13-16, 2010. The awards, not to exceed US\$500, must be matched by travel funds from the student's institution. It is expected that awards will be made late in November 2009. Funding is provided on a reimbursement basis.

The deadline for submitting applications is **October 28, 2009**. Awards or decline notifications will be made by email in late November 2009. Information can be found at <http://www.ams.org/employment/student-JMM.html>.

This travel grant program is being administered by the AMS Membership & Programs Department. You can reach the department at [student-JMM@ams.org](mailto:student-JMM@ams.org), or 800-321-4267, ext. 4060, or 401-455-4060.

—AMS announcement

## News from the Fields Institute

Edward Bierstone of the University of Toronto assumed the post of director of the Fields Institute for Research in the Mathematical Sciences on July 1. He succeeds Barbara Lee Keyfitz, who retired from the directorship on December 31 to assume a professorship at the Ohio State University in Columbus, Ohio, and Juris Steprans of York University, who served as acting director in the interim.

*Thematic Programs.* The fall 2009 thematic program will be *Foundations of Computational Mathematics*. Three workshops will be held: *Discovery and Experimentation in Number Theory*, September 22–26 (held at the Interdisciplinary Research in the Mathematical and Computational Sciences [IRMACS] Centre, Simon Fraser University); the *Fields Institute Workshop on Complexity of Numerical Computation*, October 20–24; and *Computational Differential Geometry, Topology, and Dynamics*, November 16–21.

Hendrik Lenstra (Universiteit Leiden) will deliver the *Distinguished Lecture Series*, September 16–18, and Éva Tardos (Cornell University) will deliver the *Coxeter Lecture Series* on a date to be announced.

More information can be found at <http://www.fields.utoronto.ca/programs/scientific/09-10/FoCM>.

Future thematic programs include the following:

*Winter/Spring 2010:* Quantitative Finance: Foundations and Applications

*Fall 2010:* Asymptotic Geometric Analysis

*Winter/Spring 2011:* Dynamics and Transport in Disordered Systems

*Fall 2011:* Discrete Geometry and Applications

*Winter/Spring 2012:* Galois Representations

Activities in the fall of 2009 include:

*September 10–13:* Workshop on Adaptive Movement of Interactive Species

*September 24–26:* Workshop on Modeling Indirectly or Imprecisely Observed Data

*October 1:* CRM-Fields-PIMS Prize Lecture. Lecturer: Martin Barlow, University of British Columbia.

*October 3–4:* Southern Ontario Groups and Geometry Workshop

*October 31–November 1:* Workshop on Algebraic Varieties

*November 25:* IFID Conference on Retirement Income Analytics

See the Fields Institute website, <http://www.fields.utoronto.ca/programs/scientific/>, for information on all activities at the Institute.

—Fields Institute announcement

## PIMS Postdoctoral Fellowships

The Pacific Institute for the Mathematical Sciences (PIMS) invites nominations of outstanding young researchers in the mathematical sciences for Postdoctoral Fellowships for the year 2010–2011. Candidates must be nominated by one or more scientists affiliated with PIMS or by a department or departments affiliated with PIMS. The fellowships are intended to supplement support made available through such a sponsor. The Institute supports fellowships tenable at any of its Canadian member universities: Simon Fraser University, the University of Alberta, the University of British Columbia, the University of Calgary, the University of Victoria, the University of Regina, and the University of Saskatchewan, as well as at the University of Lethbridge (a PIMS affiliate).

For the 2010–2011 competition, to be held in January of 2010, the amount of the award will be CA\$20,000 (approximately US\$17,500), and the sponsor(s) is (are) required to provide additional funds to finance a minimum stipend of \$40,000 (approximately US\$35,000).

Award decisions are made by the PIMS PDF Review Panel based on the excellence of the candidate, potential for participation in PIMS programs, and potential for involvement with PIMS partners. PIMS Postdoctoral Fellows will be expected to participate in all PIMS activities related to the Fellow's area of expertise and will be encouraged to spend time at other sites. To ensure that PIMS Postdoctoral Fellows are able to participate fully in Institute activities, they may not teach more than two single-term courses per year.

Nominees must have a Ph.D. or equivalent (or expect to receive a Ph.D. by December 31, 2010) and be within three years of the Ph.D. at the time of the nomination (i.e., the candidate must have received her or his Ph.D. on or after January 1, 2007). The fellowship may be taken up at any time between September 1, 2010, and January 1, 2011. The fellowship is for one year and is renewable for at most one additional year.

The nomination/application process will take place entirely online this year, utilizing the MathJobs service provided by the American Mathematical Society (AMS). Having selected their nominees, sponsors direct them to apply online at [mathjobs.org/jobs/PIMS](http://mathjobs.org/jobs/PIMS). Nominees are required to upload two letters of reference, a curriculum vitae, and a statement of research interests. Sponsors must also upload their own reference letters (these are in addition to the two reference letters mentioned above) and statements of anticipated support to MathJobs; they will receive instructions as to how to proceed from their nominees via email from MathJobs. Detailed instructions regarding all aspects of the MathJobs application procedure may be found in the online MathJobs user guides. Please note that application is **by nomination only**; unsolicited applications will not be considered.

Complete applications must be uploaded to MathJobs by **December 15, 2009**. For further information, visit the website <http://www.pims.math.ca/scientific/postdoctoral>.

—PIMS announcement