Mathematics Opportunities

American Mathematical Society Centennial Fellowships

Invitation for Applications for Awards for 2008–2009
Deadline December 1, 2007

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 2008–2009 academic year. A list of previous fellowship winners can be found at: `http://www.ams.org/prizes-awards`.

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, 1996, and September 1, 2005). 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.

Grant amount: The stipend for fellowships awarded for 2008–2009 is expected to be US$70,000, with an additional expense allowance of about US$7,000. Acceptance of the fellowship cannot be postponed.

Deadline: The deadline for receipt of applications is **December 1, 2007**. Awards will be announced in February 2008 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 email to `prof-serv@ams.org`; or call 401-455-4107.

—AMS announcement

AMS Scholarships for "Math in Moscow"

The Independent University of Moscow has created 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 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, 2007**, is the deadline for the spring 2008 semester; **April 15, 2008**, is the deadline for scholarship applications for the fall 2008 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. Information and application forms for the AMS scholarships are available on the Web at http://www.ams.org/outreach/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.

—AMS announcement

NSF Distinguished International Postdoctoral Research Fellowships

The Distinguished International Postdoctoral Research Fellowships Program of the Mathematical and Physical Sciences (MPS) Directorate of the National Science Foundation (NSF) provides opportunities for postdoctoral investigators to conduct research projects abroad as MPS Distinguished International Postdoctoral Research Fellows (MPS-DRF).

The objective of the program is to provide talented recent doctoral recipients in the mathematical and physical sciences an effective means of establishing international collaborations in the early stages of their careers.

Applicants must be citizens or permanent residents of the United States who have fulfilled the requirements for the doctoral degree between June 1 of the year of submission and September 30 of the year following submission. NSF expects to fund up to twenty awards that will provide up to US$100,000 per year for up to twenty-four months.

The deadline for full proposals is **October 10, 2007**. For technical and scientific information, contact Lynne Walling, Program Director, Division of Mathematical Sciences, Room 1025, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230; telephone: 703-292-8104; email: lwalling@nsf.gov. For more detailed information, see the program announcement at http://www.nsf.gov/pubs/2001/nsf01154/nsf01154.txt.

—From an NSF 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 three years prior to the date of application or who expect to receive their degrees by the date of the award.

The deadline for applications is **September 11, 2007**. For further information contact the program officer, Susan Parris, 703-292-8711, sparris@nsf.gov; or visit the website http://www.nsf.gov/pubs/2005/nsf05599/nsf05599.txt.

—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 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 2007 is **October 1, 2007**; the deadlines for 2008 are **February 1, 2008**; **May 1, 2008**; and **October 1, 2008**. For the Mentoring Travel Grants program the deadline is **February 1, 2008**. 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.edu. The postal address is: Association for Women in Mathematics, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030.

—From an AWM announcement

Research Experiences for Undergraduates

The Research Experiences for Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation (NSF). Student research may be supported in two forms: REU supplements and REU sites.

REU supplements may be requested for ongoing NSF-funded research projects or may be included in proposals for new or renewal NSF grants or cooperative agreements.

REU sites are based on independent proposals to initiate and conduct undergraduate research participation projects for a number of students. REU site projects may be based in a single discipline or academic department or on interdisciplinary or multidepartment research opportunities with a strong intellectual focus. Proposals with an international dimension are welcomed. A partnership with the Department of Defense supports REU sites in research areas relevant to defense. Undergraduate student participants supported with NSF funds in either supplements or sites must be citizens or permanent residents of the United States or its possessions.

Students may not apply to NSF to participate in REU activities. Students apply directly to REU sites and should consult the directory of active REU sites on the Web at http://www.nsf.gov/crssprgm/reu/reu_search.cfm. The deadline for full proposals for REU sites is **September 13, 2007**, and **August 18, 2008**. Deadline dates for REU supplements vary with the research program; contact the program director for more information. The full program announcement can be found at the website http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf07569.

—From an NSF announcement

AWM Seeks Executive Director

The Association for Women in Mathematics (AWM) is seeking an executive director to succeed Jennifer Quinn, who in June 2007 accepted a position at the University of Washington, Tacoma.

The AWM seeks an outstanding individual who is passionate about supporting women in mathematics. The part-time position can be combined with an existing academic appointment via course reductions. The AWM office is in the Washington, DC, area, but the geographic base of the executive director can be anywhere in North America.

Nominations, inquiries, and leads may be directed to Cathy Kessel, AWM president, at cbkessel@earthlink.net. For more information on the position and application details, see http://www.awm-math.org/EDsearch. Review of applications will begin immediately and will continue until the position is filled.

—From an AWM announcement

News from AIM

AIM, the American Institute of Mathematics, anticipates renewal of its five-year grant as a mathematical science institute from the National Science Foundation (NSF). The grant renewal will allow AIM to continue its unique style of week-long workshops that emphasize focused collaborative research.

In addition, AIM is pleased to announce a new program called SQuaREs, Structured Quartet Research Ensembles. This program provides both research facilities and financial support for groups of four to eight researchers to dedicate up to two weeks at AIM working on a focused research problem.

To learn more about AIM's programs and application process, please go to http://www.aimath.org/research/. The deadline for proposing a workshop or a SQuaRE is **November 1, 2007**.

Finally, the groundbreaking ceremony for AIM's new facility in Morgan Hill, California, was held on May 31, 2007. It is expected that the first AIM workshop at the Castle will be fall 2009.

—AIM announcement

News from the Fields Institute

The Fall 2007 thematic program of the Fields Institute for Research in the Mathematical Sciences will be *Operator Algebras*, organized by George Elliott (chair, Toronto), Dietmar Bisch (Vanderbilt), Joachim Cuntz (Münster), Kenneth Davidson (Waterloo), Thierry Giordano (Ottawa), and Roland Speicher (Queen's). The speakers in the Distinguished Lecture Series will be Uffe Haagerup (Odense) and (in May 2008) Alain Connes (Collège de France).

A workshop *Noncommutative Dynamics and Applications* took place on July 16–20, and four more are scheduled:

September 17–21, *Free Probability, Random Matrices, and Planar Algebras*

October 29–November 2, *von Neumann Algebras*

November 12–16, *Structure of C*-Algebras*

December 11–15, *Operator Spaces and Quantum Groups*

There will also be four graduate courses: *Introduction to Operator Algebras* (Man-Duen Choi (Toronto), Ken Davidson (Waterloo)); *Structure of C*-Algebras* (George Elliott (Toronto), Chris Phillips (Oregon), Mikael Rordam (Odense)); *Free Probability* (Roland Speicher (Queen's), Jamie Mingo (Queen's)). *Functional Analysis* (Andrew Toms (York)) was held during the summer.

Other Fall events at the Institute:

September 4–7, *Data Assimilation Workshop.*

September 27–28, Distinguished Lecture Series in Statistical Science, Persi Diaconis (Stanford), *Mathematics and Magic Tricks.*

October 30, *The Nathan and Beatrice Keyfitz Lectures in Mathematics and the Social Sciences*, Jon Kleinberg (Cornell).

November 9–10, *Conference in honor of the 60th Birthday of Professor Andreas R. Blass.*

The thematic program for the Winter/Spring 2008 term will be *New Trends in Harmonic Analysis*, organized by Izabella Laba (chair, UBC), Alex Iosevich (Missouri-Columbia), Michael Lacey (Georgia Tech), and Eric Sawyer (McMaster). Workshops planned are:

January 7–11, *Recent Advances in Operator Theory and Function Theory.*

February 18–24, *Harmonic Analysis.*

April 5–13, *Clay-Fields Conference on Additive Combinatorics, Number Theory, and Harmonic Analysis.*

The *Coxeter Lecture Series* will be delivered by Jill Pipher (Brown) and the *Distinguished Lecture Series* by Tim Gowers (Cambridge) (to be confirmed).

Future thematic programs: Fall 2008, *Arithmetic Geometry, Hyperbolic Geometry and Related Topics*; Winter/Spring 2009, *O-Minimal Structures and Real Analytic Geometry*; Winter/Spring 2010, *Financial Mathematics.*

Complete and up-to-date information on Fields Institute activities can be found at `http://www.fields.utoronto.ca`.

—Fields Institute announcement

About the Cover

Felix Klein in Göttingen

This month's cover accompanies the article by Eugene Chislenko and Yuri Tschinkel. Their article describes the archive of notes from Klein's seminar over several years, but Göttingen possesses other legacies of Klein (not to speak of Gauss, Dirichlet, Minkowski, Hilbert, or Siegel). Among them is a portfolio of drawings discovered by S. J. Patterson on his arrival there many years ago, stored in the cupboards underneath the glass cabinets containing the famous collection of mathematical models. Among several drawings, the cover illustration is distinguished by its use of color in cross-hatching. It depicts the geometry of a Schottky group with two generators. A note written in the margin, possibly by Klein, specifies the generators S and T of the group as Möbius transformations. The transformation S has attracting fixed point 2.5 + 6.5i, repelling -2.5 + 6.5i, and multiplier 4/9, while T has conjugate fixed points and the same multiplier.

It is not at all clear who produced the diagram, or for what it was used. The cover drawing is similar to illustrations in the classic text by Fricke and Klein on automorphic functions, but I am not aware that it was in fact published anywhere. Taking color as well as the amount of hard work involved into account, one would have to look at Chapter 4 of the recent book *Indra's Pearls* by Mumford, Series, and Wright to see something quite so impressive.

Patterson speculates that it was Otto Neugebauer who was responsible for preserving the portfolio when the Mathematical Institute moved into its present building in 1929. He writes, "Neugebauer seems to have been the one who recognized that what was merely old in 1929 would eventually be of historical interest"—something for us all to keep in mind.

Our thanks to David Wright, who went to some trouble to interpret the diagram and verify its correctness by reproducing it with modern software.

—Bill Casselman, Graphics Editor
(notices-covers@ams.org)