
Mathematics Opportunities

Proposal Due Dates at the DMS

The Division of Mathematical Sciences (DMS) of the National Science Foundation (NSF) has a number of programs in support of mathematical sciences research and education. Listed below are some of the programs and their proposal due dates for the year 2009. Please refer to the program announcement or contact the program director for more information.

December 15, 2008 (full proposal): Computational Mathematics

January 13, 2009 (full proposal): Mathematical Biology

January 22, 2009 (full proposal): Scientific Computing Research Environments for the Mathematical Sciences (SCREMS)

February 12, 2009 (full proposal): Interdisciplinary Training for Undergraduates in Biological and Mathematical Sciences (UBM)

February 16, 2009 (full proposal): Proactive Recruitment in Introductory Science and Mathematics (PRISM)

February 19, 2009 (full proposal): Interdisciplinary Grants in the Mathematical Sciences (IGMS)

February 27, 2009 (full proposal): Mathematical Science Research Institutes

June 2, 2009 (full proposal): University-Industry Cooperative Research Programs in the Mathematical Sciences

June 5, 2009 (full proposal): Research Experiences for Undergraduates (REU)

June 15, 2009 (full proposal): Workforce Program in the Mathematical Sciences

July 23, 2009 (full proposal): Faculty Early Career Development (CAREER) Program

August 21, 2009 (letter of intent): Focused Research Groups (FRG) in the Mathematical Sciences

August 27, 2009 (full proposal): Conferences, Workshops, and Special Meetings in the Mathematical Sciences

September 18, 2009 (full proposal): Focused Research Groups (FRG) in the Mathematical Sciences

October 6, 2009 (full proposal): Algebra, Number Theory and Combinatorics; Analysis; Foundations

For further information see the website http://www.nsf.gov/funding/pgm_list.jsp?ord=date&type=all&org=DMS&sel_org=DMS&status=1. The mailing address is Division of Mathematical Sciences, National Science Foundation, Room 1025, 4201 Wilson Boulevard, Arlington, VA 22230. The telephone number is 703-292-5111.

—From the DMS website

AMS-AAAS Mass Media Summer Fellowships

The American Association for the Advancement of Science (AAAS) sponsors the Mass Media Science and Engineering Summer Fellows Program, through which graduate students work during the summer in major media outlets. The AMS provides support each year for one or two graduate students in the mathematical sciences to participate in the program. In past years, AMS-sponsored fellows have held positions at *Scientific American*, *Business Week*, *Voice of America*, *Discovery Channel Online*, *National Geographic Television*, *Popular Science*, *The Chicago Tribune*, and *Time* magazine.

Fellows receive a weekly stipend of US\$450, plus travel expenses, to work for ten weeks during the summer as reporters, researchers, and production assistants in media organizations. They observe and participate in the process by which events and ideas become news, improve their ability to communicate about complex technical subjects in a manner understandable to the public, and increase their understanding of editorial decision making and of how information is effectively disseminated. Each fellow attends an orientation and evaluation session in Washington DC and begins the internship in mid-June. Fellows submit interim and final reports to the AAAS. A wrap-up session is held at the end of the summer.

Mathematical sciences faculty are urged to make their graduate students aware of this program. The deadline to apply for fellowships for the summer of 2009 is **January 15, 2009**. Further information about the fellowship program and application procedures is available online at <http://www.aaas.org/programs/education/MassMedia/>, or applicants may contact Stacey Pasco, Director, Mass Media Program, AAAS Mass Media Science and Engineering Fellows Program, 1200 New York Avenue, NW, Washington, DC 20005; telephone 202-326-6641; fax 202-371-9849; email: spasco@aaas.org. Further information is also available at <http://www.ams.org/government/massmediaann.html> and through the AMS Washington Office, 1527 Eighteenth Street, NW, Washington, DC 20036; telephone 202-588-1100; fax 202-588-1853; email: amsdc@ams.org.

—AMS Washington Office

DARPA Mathematical Challenges

The Defense Advanced Research Projects Agency has issued a Broad Agency Announcement (BAA) soliciting innovative research proposals in the area of DARPA Mathematical Challenges, with the goal of dramatically revolutionizing mathematics and thereby strengthening the scientific and technological capabilities of the Department of Defense. Proposers are strongly encouraged to submit a white paper in advance of a full proposal. White papers can be submitted at any time up to **July 25, 2009**; full proposals can be submitted at any time up to **September 25, 2009**. Further information on DARPA-BAA08-65 is available at <https://www.fbo.gov/spg/ODA/DARPA/CMO/DARPA-BAA08-65/listing.html>.

—DARPA announcement

NDSEG Fellowships

As a means of increasing the number of U.S. citizens trained in disciplines of military importance in science and engineering, the Department of Defense (DoD) awards National Defense Science and Engineering Graduate (NDSEG) Fellowships each year to individuals who have demonstrated ability and special aptitude for advanced training in science and engineering. The fellowships are awarded for a period of three years for study and research leading to doctoral degrees in mathematical, physical, biological, ocean, and engineering sciences. Approximately two hundred fellowships will be awarded in 2009.

The NDSEG Fellowship Program is open only to applicants who are citizens or nationals of the United States. NDSEG Fellowships are intended for students at or near the beginning of their graduate studies in science or engineering. Applicants must have received or be on track to receive their bachelor's degrees by fall of 2009. Fellows selected in spring 2009 must begin their fellowship tenure

in fall 2009. Fellowships are tenable only at U.S. institutions of higher education offering doctoral degrees in the scientific and engineering disciplines specified. Fellows will receive full tuition and a stipend for 12-month tenures. Applications are encouraged from women, persons with disabilities, and minorities, including members of ethnic minority groups such as African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, Hispanic, or Latino.

Complete applications must be submitted electronically or postmarked by **January 5, 2009**. Application materials are available from, and completed applications should be returned to, the American Society for Engineering Education (ASEE) at NDSEG Fellowship Program, c/o American Society for Engineering Education, 1818 N Street, N.W., Suite 600, Washington, DC 20036; telephone 202-331-3516; email: ndseg@asee.org. For further information see the website <http://www.asee.org/ndseg/preface.cfm>.

—From an NDSEG announcement

National Academies Research Associateship Programs

The Policy and Global Affairs Division of the National Academies is sponsoring the 2009 Postdoctoral and Senior Research Associateship Programs. The programs are meant to provide opportunities for Ph.D., Sc.D., or M.D. scientists and engineers of unusual promise and ability to perform research at more than one hundred research laboratories throughout the United States and overseas.

Full-time associateships will be awarded for research in the fields of mathematics, chemistry, earth and atmospheric sciences, engineering, applied sciences, life sciences, space sciences, and physics. Most of the laboratories are open to both U.S. and non-U.S. nationals and to both recent doctoral recipients and senior investigators. The amount of the stipend depends on the sponsoring laboratory. Support is also provided for allowable relocation expenses and for limited professional travel during the period of the award.

Awards will be made four times during the year: in February, May, August, and November. The deadline for application materials to be postmarked or for electronic submissions for the February 2009 review is **February 15, 2009**. Materials for the May review are due **May 15, 2009**; for the August review, **August 15, 2009**; and for the November review, **November 15, 2009**.

For further information and application materials, see the National Academies website at <http://www7.nationalacademies.org/rap/> or contact Research Associateship Programs, National Research Council, Keck 568, 500 Fifth Street, NW, Washington, DC 20001; telephone 202-334-2760; fax 202-334-2759; email: rap@nas.edu.

—From an NRC announcement

Noether Lecture at ICM 2010

Emmy Noether was one of the great mathematicians of her time, someone who worked and struggled for what she loved and believed in. Her life and work remain a tremendous inspiration. The 2010 Emmy Noether Lecture will be presented as a plenary lecture at the International Congress of Mathematicians in August 2010 in Hyderabad to honor women who have made fundamental and sustained contributions to the mathematical sciences.

There have been Emmy Noether Lectures at four previous ICMs, and this will be the second time that the selection of the Emmy Noether Lecturer has been made formally by the International Mathematical Union. The IMU Executive Committee has established a committee of five, chaired by Cheryl Praeger (Australia), to select the 2010 Emmy Noether Lecturer. The committee will conduct their work over the next six to nine months, and suggestions for consideration by the committee may be sent to Cheryl Praeger at praeger@maths.uwa.edu.au.

—*IMU announcement*

2009 Fermat Prize for Mathematics Research

The Fermat Prize for Mathematics Research recognizes research in fields in which Pierre de Fermat made decisive contributions. These include statements of variational principles, foundations of probability and analytical geometry, and number theory. The prize carries a cash award of 20,000 euros (approximately US\$27,000). The prize is awarded every two years. The deadline for applications is **June 30, 2009**. Further information is available from Prix Fermat de Recherche en Mathématiques, Service Relations Publiques, Université Paul Sabatier, 31062 Toulouse Cedex 9, France, or at the website <http://www.math.ups-tlse.fr/Fermat/>.

—*Jean-Marc Schlenker, Université Paul Sabatier*

Plus Magazine New Writers Award

Plus, an Internet magazine that aims to introduce readers to the beauty and the practical applications of mathematics, is looking for science writers who can make mathematics lively and interesting for a general audience. The New Writers Award competition is open to new writers of any age and from any background who can explain a mathematical topic or application they think the world needs to know about. The winning entries will appear in the June 2009 issue of *Plus*, and the winners will receive an iPod, subscriptions to the journal *Nature*, and signed copies of popular math books by some of the best science writers today. The competition is open to secondary school and sixth-form students, university students (both

undergraduate and postgraduate), and the general public. The submission deadline is **March 31, 2009**. For further information, see the website <http://plus.maths.org/competition/>.

Plus is part of the Millennium Mathematics Project (MMP), a long-term national initiative based in Cambridge, United Kingdom. The MMP aims to help people of all ages and abilities share in the excitement of mathematics and understand the enormous range and importance of its applications to science and commerce.

—*From a Plus announcement*

Departments Again Coordinate Job Offer Deadlines

A group of mathematical sciences departments has adopted an agreement to coordinate deadlines for acceptance of postdoctoral job offers for jobs that begin in the fall of 2009. The purpose is to ensure that applicants do not have to make decisions about job offers before the results of the National Science Foundation (NSF) postdoctoral fellowship competition are announced. The agreement applies only to offers of postdoctoral positions and not tenure-track positions, and only to applicants who are two years or less past the Ph.D. The departments have agreed not to require these applicants to decide about a job offer before Monday, February 9, 2009. The NSF has already agreed that it will complete its review of applications by January 31, 2009, at the latest, and that all awardees of NSF postdoctoral fellowships will receive notification electronically by February 7, 2009. The list of participating departments, together with additional information, may be found on the Web at <http://www.ams.org/employment/postdoc-offers.html>.

—*AMS Career Services announcement*

News from the Fields Institute

Edward Bierstone, professor of mathematics at the University of Toronto, has been appointed as the new director of the institute, beginning July 2009. He succeeds Barbara Lee Keyfitz, who retired from the directorship to assume a professorship at the Ohio State University in Columbus, Ohio. The current deputy director, Juris Steprans, is acting director in the interim. Bierstone, a graduate of the University of Toronto who received his Ph.D. from Brandeis University, has made pathbreaking contributions in singularity theory, analytical geometry, and differential analysis.

The 2009 Winter/Spring thematic program at the Fields Institute will be o-Minimal Structures and Real Analytic Geometry. Two workshops will be held: o-Minimal Geometry, January 12–16, 2009; and Finiteness Problems in Dynamical Systems, June 22–26, 2009. See <http://www.fields.utoronto.ca/programs/scientific/08-09/o-minimal/>.

The Distinguished Lecture Series is tentatively scheduled for May 25–29, 2009. Jean-Christophe Yoccoz (Collège de France) will deliver the lecture series. See <http://www.fields.utoronto.ca/programs/scientific/> for information on activities at the institute. Future thematic programs include Quantum Computation (summer 2009), Foundations of Computational Mathematics (fall 2009), Quantitative Finance: Foundations and Applications (2010 winter/spring), Asymptotic Geometric Analysis (fall 2010), Dynamics and Transport in Disordered Systems (winter/spring 2011), Discrete Geometry and Applications (fall 2011), and Galois Representations (winter/spring 2012). Support for postdoctoral fellows is available; see <http://www.fields.utoronto.ca/proposals/postdoc.html>.

—Fields Institute announcement

Clay Mathematics Institute 2009 Summer School

The Clay Mathematics Institute (CMI) Summer School on Galois Representations will be held at the University of Hawaii at Manoa from June 15 to July 10, 2009. The school will focus on recent progress in the theory of Galois representations. Many advances on the algebraic side of number theory in the last 15 years (such as the solutions of the Shimura-Taniyama conjecture, Sato-Tate conjecture, and Serre's conjecture, as well as decisive progress on the Fontaine-Mazur conjecture and Main conjectures for modular forms) have relied in an essential way on improvements in the theory of Galois representations. The aim of the three main courses is to present an overview of many of the ideas and applications involved, aimed at advanced graduate students and postdocs with a strong background in number theory, Galois cohomology, and basic algebraic geometry. One course will focus entirely on local problems (p -adic representations of Galois groups of p -adic fields), a second course will have a more global flavor (Galois deformation theory and global applications), and a third (on L-values) will rely on the other two courses. The scientific committee consists of Brian Conrad, David Alexandre Ellwood, Mark Kisin, and Chris Skinner.

The Foundational Courses will be: *p -adic Hodge Theory* (Olivier Brinon, Brian Conrad), *Deformation of Galois Representations and Modular Forms* (Jacques Tilouine, Mark Kisin), *Iwasawa Theory and Automorphic Applications* (Joel Bellaïche, Chris Skinner).

Financial Support: Graduate students and postdoctoral fellows who are within five years of receipt of their Ph.D.'s can apply for financial support. Support is decided on a competitive basis and may include accommodation plus funds towards the cost of economy travel.

The deadline for applications is **February 15, 2009**. More information and an online application form can be found at <http://www.claymath.org/summerschool>.

—Clay Mathematics Institute Announcement

News from the Mathematical Biosciences Institute

The Mathematical Biosciences Institute (MBI) at The Ohio State University is accepting applications for Early Career Visitor and postdoctoral positions. The Early Career Visitor term runs during the 2009–2010 Year on Molecular Interactions within the Cell: Network, Scale, and Complexity. Early Career Visitors are hired for up to a one-year term. They are engaged in the integrated program of tutorials, working seminars, and workshops tied to the scientific theme of the year and are expected to interact with local and visiting researchers. Early Career Visiting positions are aimed at nontenured scientists who currently have continuing employment.

Postdoctoral positions will start in September 2009. Postdoctoral fellows are immersed in the topics of the MBI's emphasis year programs. They will engage in an integrated program of tutorials, working seminars or journal clubs, workshops, and interactions with local and visiting mentors. These activities are geared toward providing the tools to pursue an independent research program with an emphasis on collaborative research in the mathematical biosciences. MBI-facilitated activities for postdoctoral fellows are tailored to the needs of each young scientist. The program provides training in bioscience fundamentals to the mathematically oriented fellow, as well as mathematical fundamentals to the bioscience-oriented fellow. The postdoctoral program includes both regular postdoctoral fellows and sponsored postdoctoral fellows.

The deadline for applications for either program is **January 18, 2009**. For more information and to apply, see the website <http://mbi.osu.edu> or call 614-292-3648.

—MBI announcement