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# 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 2007. Please refer to the program announcement or contact the program director for more information.

**December 12, 2006 (full proposal):** East Asia and Pacific Summer Institutes for U.S. Graduate Students

**December 15, 2006 (full proposal):** Joint DMS/NIGMS Initiative to Support Research in the Area of Mathematical Biology

**January 13, 2007 (full proposal):** Mathematical Biology

**January 25, 2007 (full proposal):** Scientific Computing Research Environments for the Mathematical Sciences (SCREMS)

**February 1, 2007 (full proposal):** Collaboration in Mathematical Geosciences

**February 19, 2007 (full proposal):** Interdisciplinary Grants in the Mathematical Sciences (IGMS)

**June 2, 2007 (full proposal):** University-Industry Cooperative Research Programs in the Mathematical Sciences

**June 5, 2007 (full proposal):** Enhancing the Mathematical Sciences Workforce in the Twenty-First Century

**June 6, 2007 (full proposal):** Research Experiences for Undergraduates: REU site proposals to the Antarctic program

**August 23, 2007 (full proposal):** Conferences, Workshops, and Special Meetings in the Mathematical Sciences: Special Meetings only

**September 21, 2007 (full proposal):** Focused Research Groups (FRG) in the Mathematical Sciences

**October 2, 2007 (full proposal):** Algebra, Number Theory and Combinatorics; Analysis

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](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

## 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 200 fellowships will be awarded in 2007.

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 2007. 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 8, 2007**. 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

## 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 the 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 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 2007 is **January 15, 2007**. Further information about the fellowship program and application procedures is available online at <http://www.aaas.org/programs/education/MassMedia/index.shtml>, or applicants may contact Stacey Pasco, Manager, Mass Media Program, AAAS Mass Media Science and Engineering Fellows Program, 1200 New York Avenue, NW, Washington, DC 20005; telephone: 202-326-6441; fax: 202-371-9849; email: [spasco@aaas.org](mailto: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](mailto:amsdc@ams.org).

—AMS-AAAS announcement

## Maria Mitchell Women in Science Award

The Maria Mitchell Association offers an annual award to recognize an individual, program, or organization that encourages the advancement of girls and women in

studies and careers in science and technology. Maria Mitchell (1818–1889) was the first woman astronomer and first woman astronomy professor in the United States.

The award may be given in the natural and physical sciences, mathematics, engineering, computer science, or technology. The winner will be chosen by a national jury of distinguished educators and scientists and will receive a cash award of US\$5,000. Funding for the award is provided by a grant from the Henry Luce Foundation.

Nominations will be accepted in **January 2007**. Guidelines and nomination forms are available from the website [http://www.mmo.org/category.php?cat\\_id=14](http://www.mmo.org/category.php?cat_id=14), or contact the Maria Mitchell Women in Science Award Committee, Maria Mitchell Association, 4 Vestal Street, Nantucket, MA 02554; telephone 508-228-9198.

—From a Maria Mitchell Association announcement

## Departments Coordinate Job Offer Deadlines

A group of mathematical sciences departments has adopted an agreement to coordinate deadlines for acceptance of postdoctoral job offers. 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 less than two years past the Ph.D. The departments have agreed not to require these applicants to decide about a job offer before Monday, February 12, 2007. The NSF has already agreed that it will complete its review of applications by January 31, 2007, at the latest, and that all awardees of NSF postdoctoral fellowships will receive notification by February 8, 2007. The list of participating departments, together with additional information, may be found on the Web at <http://www.ams.org/employment/postdoc-offers.html>.

—Ellen Maycock, AMS Meetings and Professional Services Department

## Focused Topic Area in Computational Mathematics

The Computational Mathematics Program of the Division of Mathematical Sciences (DMS) at the National Science Foundation has a long history of supporting basic research on numerical methods and algorithm design in large-scale computation for problems in science and engineering. The program has a focused topic area in fiscal year 2007 that addresses longtime behavior of numerical methods in large-scale scientific computing. This area of emphasis should not discourage the community from submitting proposals in the usual wide variety of computation-

related fields, but should be viewed as a special topic of interest.

Unsolicited research proposals to DMS addressing cross-cutting topics in one or more aspects of large-scale scientific computing may be considered in this focused topic area. Novel and creative numerical approaches that address solving real physical problems are invited. Such proposals should be submitted to the Computational Mathematics Program before **January 15, 2007**. For more information see the NSF website, <http://www.nsf.gov/div/index.jsp?div=DMS>. Prior to submitting a proposal, investigators are strongly encouraged to contact the Computational Mathematics Program. The primary contacts are: Leland Jameson, 703-292-4883, [ljameson@nsf.gov](mailto:ljameson@nsf.gov); Thomas Russell, 703-292-4863, [trussell@nsf.gov](mailto:trussell@nsf.gov); and Junping Wang, 703-292-4488, [jwang@nsf.gov](mailto:jwang@nsf.gov).

—From a DMS announcement

## News from the Clay Mathematics Institute

### CMI Annual Meeting

Each year the Clay Mathematics Institute (CMI) holds a meeting at which it presents the Clay Research Awards and lectures on the awardees' work. In past years this event has been held in November.

Beginning in 2006 the Institute will hold its annual meeting in the spring using an expanded format which includes the awards and a two-day series of ten lectures. The lectures are intended for an audience of nonspecialists and will generally address recent breakthroughs.

The next CMI annual meeting will be held in Cambridge, Massachusetts, May 14–15, 2007. Below is the list of confirmed speakers and topics. Two additional speakers, as well as exact titles of the talks and information about schedule and venue, will be announced later.

*Alessio Corti and Shigefumi Mori:* Recent progress in higher-dimensional algebraic geometry and minimal models

*Alex Eskin:* Dynamics of rational billiards

*David Fisher:* Quasi-isometries and rigidity of solvable groups

*Mark Kisin:* Modularity of Galois representations

*Curt McMullen:* Complex dynamical systems

*Peter Oszsvath:* New invariants in low-dimensional topology

*Richard Taylor:* The Sato-Tate conjecture

Further information about the meeting and the lectures will be posted at [http://www.claymath.org/annual\\_meeting](http://www.claymath.org/annual_meeting); for general information about the CMI, see <http://www.claymath.org>.

Past recipients of the Clay Research Award are: Manindra Agrawal, Manjul Bhargava, Alain Connes, Nils Dencker, Ben Green, Richard Hamilton, Laurent Lafforgue, Gérard Laumon, Bao-Châu Ngô, Oded Schramm, Stanislav Smirnov, Terence Tao, Edward Witten, and Andrew Wiles. Recipients receive a bronze sculpture by Helaman Ferguson and substantial, flexible research support for one year.

Information on past recipients is available at [http://claymath.org/research\\_award/](http://claymath.org/research_award/).

### CMI 2007 Summer School

The CMI Summer School on “Homogeneous flows, moduli spaces, and arithmetic” will be held at the Centro di Ricerca Matematica Ennio De Giorgi, Pisa, Italy, from June 11 to July 6, 2007.

Designed for graduate students and mathematicians within five years of their Ph.D., the program is an introduction to the theory of flows on homogeneous spaces, moduli spaces, and their many applications.

These flows give concrete examples of dynamical systems with highly interesting behavior and a rich and powerful theory. They are also a source of many interesting problems and conjectures. Furthermore, understanding the dynamics of such concrete systems leads to numerous applications in number theory and geometry regarding equidistributions, diophantine approximations, rational billiards, and automorphic forms.

The school will consist of three weeks of foundational courses and one week of mini-courses focusing on more advanced topics. The foundational courses will be: “Unipotent flows and application” by Alex Eskin and Dmitry Kleinbock, “Diagonalizable actions and arithmetic applications” by Manfred Einsiedler and Elon Lindenstrauss, and “Interval exchange maps and translation surfaces” by Jean-Christophe Yoccoz. Shorter courses will be given by Svetlana Katok and Shahar Mozes. Advanced minicourses will be given by Nalini Anantharaman, Artur Avila, Hee Oh, Akshay Venkatesh, and others.

Funding is available to graduate students and post-doctoral fellows who are within five years of receipt of their Ph.D. Standard support amounts will include funds for local expenses and accommodation plus economy travel.

The organizers of the CMI 2007 Summer School are: Manfred Einsiedler, David Ellwood, Alex Eskin, Dmitry Kleinbock, Elon Lindenstrauss, Gregory Margulis, Stefano Marmi, Peter Sarnak, Jean-Christophe Yoccoz, and Don Zagier.

The deadline for application is **February 28, 2007**. For more information and an application form see [http://www.claymath.org/programs/summer\\_school/2007/](http://www.claymath.org/programs/summer_school/2007/) or contact [summerschool@claymath.org](mailto:summerschool@claymath.org); telephone: 617-995-2600.

—CMI announcement

## News from the Bernoulli Center

The Bernoulli Center (CIB), funded jointly by the Swiss National Science Foundation and the Swiss Federal Institute of Technology in Lausanne, has issued a call for proposals of two one-semester programs during the period July 1, 2009–June 30, 2010. Those who are interested in organizing a program at the CIB should submit a two-page letter of intent by **February 1, 2007**. For more details see <http://bernoulli.epfl.ch/recruiting>.

—Bernoulli Center Announcement