Mathematics Opportunities

Mathematics Research Communities 2009

The American Mathematical Society (AMS) invites mathematicians just beginning their research careers to become part of Mathematics Research Communities, a new program to develop and sustain long-lasting cohorts for collaborative research projects in many areas of mathematics. Women and underrepresented minorities are especially encouraged to participate. The AMS will provide a structured program to engage and guide all participants as they start their careers. The program will include: a one-week summer conference for each topic, special sessions at the national meeting, discussion networks by research topic, ongoing mentoring, and a longitudinal study of early career mathematicians.

The summer conferences of the Mathematics Research Communities will be held in Snowbird Resort, Utah, where participants can enjoy the natural beauty and a collegial atmosphere. The application deadline for summer 2009 is **March 2, 2009**. This program is supported by a grant from the National Science Foundation. Advanced graduate students and postdoctoral researchers are welcome to apply to be participants.

The topics, dates, and organizers of the 2009 conferences follow.

Mathematical Challenges of Relativity, June 13–19, 2009, Mihalis Dafermos (University of Cambridge), Alexandru Ionescu (University of Wisconsin, Madison), Sergiu Klainerman (Princeton University, chair), and Richard Schoen (Stanford University).

Inverse Problems, June 20–26, 2009, Guillaume Bal (Columbia University), Allan Greenleaf (University of Rochester), Todd Quinto (Tufts University), and Gunther Uhlmann (University of Washington, chair).

Modern Markov Chains and Their Statistical Applications, June 27–July 3, 2009, Persi Diaconis (Stanford University, chair), Jim Hobert (University of Florida), and Susan Holmes (Stanford University).

Harmonic Analysis, June 27–July 3, 2009, Ciprian Demeter (Indiana University), Michael Lacey (Georgia Institute of Technology), and Christoph Thiele (University of California, Los Angeles, chair).

Situated in a breathtakingly beautiful mountain setting, Snowbird Resort provides an extraordinary environment for the MRC. The atmosphere is comparable to the collegial gatherings at Oberwolfach and other conferences that combine peaceful natural ambience with stimulating meetings.

MRC participants have access to a range of activities, such as a tram ride to the top of the mountain, guided hikes, swimming, mountain bike tours, rock climbing, plus heated outdoor pools. More than a dozen walking and hiking trails head deep into the surrounding mountains. Participants can also enjoy the simpler pleasures of convening on the patios at the resort to read, work, and socialize.

In the evenings colleagues enjoy informal gatherings to network and continue discussion of the day's sessions over refreshments. Within a half hour of the University of Utah, Snowbird is easily accessible from the Salt Lake City International Airport. For more information about Snowbird Resort, see `http://www.snowbird.com`.

A report about the 2008 MRC conferences appears in this issue of the *Notices*. For information on applying for the 2009 program, please visit the website `http://www.ams.org/amsmtgs/mrc-09.html`. For further information about the MRC program, please contact AMS associate executive director Ellen Maycock at `ejm@ams.org`.

—AMS announcement

NSF Program ADVANCE

The National Science Foundation (NSF) has instituted the ADVANCE Program in an effort to increase the representation and advancement of women in academic science and engineering careers.

In 2009 this program will support three types of projects. Partnerships for Adaptation, Implementation, and Dissemination (PAID) awards support analysis, adaptation, dissemination, and use of existing innovative materials and practices that have been demonstrated to be effective in increasing representation and participation of women in academic science and engineering careers. This category of award also supports scientific research designed to advance understanding of gender in academic science and engineering careers. The deadline for required letters of intent is **January 20, 2009**; the deadline for full proposals is **February 24, 2009**.

Institutional Transformation (IT) awards support academic institutional transformation to promote the increased participation and advancement of women scientists and engineers in academe. These awards support innovative and comprehensive programs for institution-wide change. The deadline for letters of intent for these awards is **August 4, 2009**; the full proposal deadline is **November 12, 2009**.

Institutional Transformation Catalyst (IT-Catalyst) awards are designed to support institutional self-assessment activities, such as basic data collection and analysis and policy review, in order to identify specific issues in the recruitment, retention, and promotion of women faculty in institutions of higher education. The deadline for letters of intent for these awards is **August 4, 2009**, and the full proposal deadline is **November 12, 2009**.

Proposals are sought from both men and women for creative strategies to realize the goals of the ADVANCE

Program. Members of underrepresented minority groups and individuals with disabilities are especially encouraged to apply. Proposals that address the participation and advancement of women with disabilities and women from underrepresented minority groups are encouraged. For more information see http://www.nsf.gov/pubs/2009/nsf09504/nsf09504.htm.

—From an NSF announcement

NSF Partnerships for International Research and Education

The National Science Foundation (NSF) has instituted the Partnerships for International Research and Education (PIRE) program to support innovative international research and education collaborations. The program will enable U.S. scientists and engineers to establish collaborative relationships with international colleagues to advance knowledge and scientific discoveries and to promote the development of a diverse, globally engaged U.S. scientific and engineering workforce. The program aims to support partnerships that will strengthen the capacity of institutions, multi-institutional consortia, and networks to engage in and benefit from international research and education collaborations.

Proposals may involve one or more disciplines, U.S. institutions, foreign institutions, and countries. The deadline for preliminary proposals is **February 26, 2009**. Full proposals may be submitted by invitation only; the deadline for these is **August 4, 2009**. For complete information see http://www.nsf.gov/pubs/2009/nsf09505/nsf09505.htm.

—From an NSF announcement

Summer Program for Women Undergraduates

The 2009 Summer Program for Women in Mathematics (SPWM2009) will take place at George Washington University in Washington, D.C., from June 27 to August 1, 2009. This is a five-week intensive program for mathematically talented undergraduate women who are completing their junior years and may be contemplating graduate study in mathematical sciences. The goals of this program are to communicate an enthusiasm for mathematics, to develop research skills, to cultivate mathematical self-confidence and independence, and to promote success in graduate school.

Applicants must be U.S. citizens or permanent residents studying at a U.S. university or college who are completing their junior years or the equivalent and have mathematical experience beyond the typical first courses in calculus and linear algebra. Sixteen women will be selected. Each will receive a travel allowance, campus room and board, and a stipend of US$1,750. The deadline for applications is **February 27, 2009**. Early applications are encouraged. Applications are accepted only by mail. For further information, please contact the director, Murli M. Gupta, email: mmg@gwu.edu, telephone: 202-994-4857; or visit the program's website at http://www.gwu.edu/~spwm/. Application material is available on the website.

—From an SPWM announcement

NSF Support for Undergraduate Training in Biological and Mathematical Sciences

The National Science Foundation (NSF) offers opportunities for support through its Undergraduate Biology and Mathematics (UBM) program. The goal of the program is to enhance undergraduate education and training at the intersection of the biological and mathematical sciences and to better prepare undergraduate biology or mathematics students to pursue graduate study and careers in fields that integrate the mathematical and biological sciences.

The program will provide support for jointly conducted long-term research experiences for interdisciplinary-balanced teams of at least two undergraduates from departments in the biological and the mathematical sciences. Projects should focus on research at the intersection of the mathematical and biological sciences and should provide students exposure to contemporary mathematics and biology addressed with modern research tools and methods. Projects must involve students from both areas in collaborative research experiences and include joint mentorship by faculty in both fields.

Between six and nine awards are expected to be made in 2009. The deadline for full proposals is **February 12, 2009**. For more information see http://www.nsf.gov/pubs/2008/nsf08510/nsf08510.htm. The UBM program is a joint effort of the Education and Human Resources (EHR), Biological Sciences (BIO), and Mathematical and Physical Sciences (MPS) directorates of the NSF.

—From an NSF announcement

Nominations for Information-Based Complexity Prize 2009

The annual Prize for Achievement in Information-Based Complexity consists of US$3000 and a plaque, and will be awarded at a suitable location. Nominations may be sent to Joseph Traub, traub@cs.columbia.edu. The deadline for nominations is **March 31, 2009**. The award can be based on work done in a single year, in a number of years, or over a lifetime.

—Joseph Traub, Columbia University