
Mathematics Opportunities

Mathematics Research Communities 2011

The American Mathematical Society (AMS) invites mathematicians just beginning their research careers to become part of Mathematics Research Communities, a 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, 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 2011 is **March 2, 2011**. 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 2011 conferences follow.

Week 1: The Geometry of Real Projective Structures, Virginie Charette (Université de Sherbrooke), Daryl Cooper (University of California, Santa Barbara), William Goldman (University of Maryland), and Anna Wienhard (Princeton University).

Week 2: Computational and Applied Topology, Gunnar Carlsson (Stanford University), Robert Ghrist (University of Pennsylvania), and Benjamin Mann (Ayasdi, Inc.).

Week 3: The Pretentious View of Analytic Number Theory, Andrew Granville (Université de Montréal), Dimitris Koukoulopoulos (Université de Montréal), Youness Lamzouri (University of Illinois at Urbana-Champaign), Kannan Soundararajan (Stanford University), and Frank Thorne (Stanford University).

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 the February 2008 issue of the *Notices* (www.ams.org/notices/200802/tx080200247p.pdf). For information on applying for the 2011 program, please visit the website <http://www.ams.org/programs/research-communities/mrc-11>. For further information about the MRC program, please contact AMS associate executive director Ellen Maycock at ejm@ams.org.

—AMS announcement

Summer Program for Women Undergraduates

The 2011 Summer Program for Women in Mathematics (SPWM2011) will take place at George Washington University in Washington, DC, from June 25 to July 30, 2011. 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, develop research skills, cultivate mathematical self-confidence and independence, and 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 **March 1, 2011**. Early applications are encouraged. Applications are accepted only by mail. For further information, please contact the director, Murlu 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 2011. The deadline for full proposals is **February 10, 2011**. 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

News from the Fields Institute

The Fields Institute will hold a thematic program on Dynamics and Transport in Disordered Systems during the spring of 2011. The following workshops will be held:

February 14–19, 2011: Disordered Polymer Models

April 4–8, 2011: The Fourier Law and Related Topics

June 13–17, 2011: Instabilities in Hamiltonian Systems

Yakov Sinai of Princeton University will deliver the Distinguished Lecture Series, February 22–24, 2011; see www.fields.utoronto.ca/programs/scientific/10-11/disorderedsys/DLS/. Srinivasa Varadhan of the Courant Institute of Mathematical Sciences will give the Coxeter Lecture Series, April 13–15, 2011. See www.fields.utoronto.ca/programs/scientific/10-11/disorderedsys/DLS/. More and up-to-date information on the program can be found at www.fields.utoronto.ca/programs/scientific/10-11/disorderedsys/.

The thematic program during the summer 2011 term will be Mathematical and Algorithmic Aspects of Constraint Satisfaction. It will include a Summer School whose primary goal is to provide participants with a thorough and intense introduction to the main themes of the program. The four threads of the school are: an introduction to the CSP, graph theory and combinatorics, universal algebra, and approximability of CSPs. The following three workshops are planned:

July 11–15, 2011: Graph Homomorphisms

August 2–6, 2011: Algebra and CSPs

August 15–19, 2011: Approximability of CSPs

The Logic in Computer Science (LICS) annual meeting will be held during the week of June 20, 2011, at the

Institute and at the University of Toronto. More information is available at www.fields.utoronto.ca/programs/scientific/11-12/constraint/.

Special Lectures

Shing-Tung Yau of the Chinese University of Hong Kong and Harvard University will deliver several lectures as part of the Fields' Distinguished Lecture Series, January 19–21, 2011, at the University of Toronto. See www.fields.utoronto.ca/programs/scientific/10-11/DLS_Yau/.

Piergiorgio Odifreddi of the University of Turin will give a public lecture on February 17, 2011. See www.fields.utoronto.ca/programs/scientific/10-11/public_lectures/.

The annual Nathan and Beatrice Keyfitz Lectures in Mathematics and the Social Sciences will take place on March 14, 2011, delivered by George Lakoff of the Linguistics Department, University of California, Berkeley. The title of the lecture is “The Cognitive and Neural Basis of Mathematics”. See www.fields.utoronto.ca/programs/scientific/keyfitz_lectures/.

Future thematic programs include Discrete Geometry and Applications (Fall 2011), Galois Representations (Winter/Spring 2010), and Forcing and Its Applications (Fall 2012).

See www.fields.utoronto.ca/programs/scientific/ for more information on these programs and on all other activities at the institute.

—From a Fields Institute announcement

CRM-PISA Junior Visiting Program

The “Centro di Ricerca Matematica Ennio De Giorgi” (CRM PISA) invites applications for four one-year Junior Visiting Positions for the academic year 2011–2012.

Successful candidates will be new or recent Ph.D.s in mathematics with an exceptional research potential. The annual Junior Visitors' salary is 25,000 Euros tax inclusive (personal income tax) plus a research allowance of approximately 2,500 Euros which Junior Visitors can spend to invite other researchers to CRM PISA. Junior Visitors are expected to start their research activity at CRM no later than October 2011.

Since 2001 CRM PISA has aimed at promoting excellence in a vast spectrum of research fields, from pure mathematics to mathematics applied to the natural and social sciences, and at providing a thriving international and interdisciplinary research environment, particularly for junior visitors who can take part in a great variety of scientific activities and have a unique opportunity to interact with top-class scientists who visit the Centre.

The deadline for application is January 31, 2011. Full particulars about the positions offered and the application procedure are available at <http://www.crm.sns.it/grant/18/>.

Complete information about the CRM PISA can be found at <http://www.crm.sns.it/>.

—From a CRM-PISA announcement