
Mathematics Opportunities

NSF-CBMS Regional Conferences, 2006

With funding from the National Science Foundation (NSF), the Conference Board of the Mathematical Sciences (CBMS) will hold four NSF-CBMS Regional Research Conferences during the summer of 2006.

These conferences are intended to stimulate interest and activity in mathematical research. Each five-day conference features a distinguished lecturer who will deliver ten lectures on a topic of important current research in one sharply focused area of the mathematical sciences. The lecturer subsequently prepares an expository monograph based on these lectures. Depending on the conference topic, the monograph will be published by the American Mathematical Society, by the Society for Industrial and Applied Mathematics, or jointly by the American Statistical Association and the Institute of Mathematical Statistics.

Support for about thirty participants will be provided for each conference. Established researchers and interested newcomers, including postdoctoral fellows and graduate students, are invited to attend.

Information about an individual conference may be obtained by contacting the conference organizer. The four conferences to be held in 2006 are as follows.

Mathematical and Numerical Treatment of Fluid Flow and Transport in Porous Media, Zhangxin (John) Chen, lecturer. May 22–26, 2006; University of Nevada, Las Vegas. Organizers: Jichun Li, telephone: 702-895-0365, email: jichun@unlv.nevada.edu; and Yi-Tung Chen, telephone: 702-895-1202, email: uuchen@nscee.edu; website: <http://www.ncacm.unlv.edu/cbms/>.

Cluster Algebras and Applications, Andrei Zelevinsky, lecturer. June 13–17, 2006; North Carolina State University. Organizer: Naihuan Jing, telephone: 919-513-3584, email: jing@unity.ncsu.edu; website: <http://www.math.ncsu.edu/~jing/conf/CBMS/cbms06.html>.

The Interplay between Convex Geometry and Harmonic Analysis, Alexander Koldobsky, lecturer. July 29–August 2, 2006; Kansas State University. Organizers: Dmitry Ryabogin, telephone: 785-532-6750, email: ryabs@math.ksu.edu; and David Auckly, telephone: 785-532-6750,

email: dav@math.ksu.edu; website: <http://www.math.ksu.edu/main/events/convex-geom>.

Probabilistic and Combinatorial Approach in Analysis, Mark Rudelson, lecturer. August 6–12, 2006; Kent State University. Organizers: Artem Zvavitch, telephone: 330-672-3316, email: zvavitch@math.kent.edu; Per Enflo, telephone 330-672-9095, email: enflo@math.kent.edu; and Andrew Tonge, telephone: 330-672-9046, email: tonge@math.kent.edu; website: <http://www.math.kent.edu/math/CBMS.cfm>.

—From a CBMS announcement

Call for Proposals for 2007 NSF-CBMS Regional Conferences

To stimulate interest and activity in mathematical research, the National Science Foundation (NSF) intends to support up to seven NSF-CBMS Regional Research Conferences in 2007. A panel chosen by the Conference Board of the Mathematical Sciences will make the selections from among the submitted proposals.

Each five-day conference features a distinguished lecturer who delivers ten lectures on a topic of important current research in one sharply focused area of the mathematical sciences. The lecturer subsequently prepares an expository monograph based on these lectures, which is normally published as a part of a regional conference series. Depending on the conference topic, the monograph will be published by the American Mathematical Society, by the Society for Industrial and Applied Mathematics, or jointly by the American Statistical Association and the Institute of Mathematical Statistics. Support is provided for about thirty participants at each conference, and the conference organizer invites both established researchers and interested newcomers, including postdoctoral fellows and graduate students, to attend.

The proposal due date is **April 7, 2006**. For further information on submitting a proposal, consult the CBMS website, http://www.cbmsweb.org/NSF/2007_call.htm, or contact: Conference Board of the Mathematical Sciences, 1529 Eighteenth Street, NW, Washington, DC 20036;

telephone: 202-293-1170; fax: 202-293-3412; email: tko1be@maa.org or rosier@georgetown.edu.

—From a CBMS announcement

National Academies Research Associateship Programs

The Policy and Global Affairs Division of the National Academies is sponsoring the 2006 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.

Awards are made for one or two years, renewable for a maximum of three years. Annual stipends for recent Ph.D. recipients range from US\$30,000 to US\$50,000, depending on the sponsoring laboratory; the awards for senior recipients will be higher. 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 2006 review is **February 1, 2006**.

For further information and application materials, see the National Academies website at <http://www4.nas.edu/pgarap.nsf/WebDocuments/Home+Page>, or contact Research Associateship Programs, Keck Center of the National Academies, 500 Fifth Street, NW, GR322A, Washington, DC 20001; telephone 202-334-2760; fax 202-334-2759; email: rap@nas.edu.

—From an NRC announcement

National Academies Graduate Fellowship Program

The Christine Mirzayan Science and Technology Policy Graduate Fellowship Program of the National Academies is designed to engage graduate science, engineering, medical, veterinary, business, and law students in the analysis and creation of science and technology policy and to familiarize them with the interactions of science, technology, and government. As a result, students develop essential skills different from those attained in academia and make the transition from graduate student to professional. In 2006 programs will be held in the summer,

from June 5 through August 11, and in the fall, from September 11 through November 17.

Applications for the fellowships are invited from scholars from graduate through postdoctoral levels in any physical, biological, or social science field or any field of engineering, medicine and health, or veterinary medicine, as well as business, law, education, and other graduate and professional programs. Postdoctoral scholars should have received their Ph.D.'s within the past five years.

The stipend for both ten-week programs is US\$4,800. The fellowship stipend is intended to cover all living expenses for the period. In addition, a travel stipend of up to US\$500 will be provided.

Deadlines for receipt of materials for the summer program is **March 1, 2006**, and for the fall program, **June 1, 2006**. More information and application forms and instructions can be found on the website <http://www7.nationalacademies.org/policyfellows> or by contacting National Academies Christine Mirzayan Science and Technology Policy Graduate Fellowship Program, 500 Fifth Street, NW, Room 508, Washington, DC 20001; telephone: 202-334-2455; fax: 202-334-1667.

—From a National Academies announcement

ONR Young Investigator Program

The Office of Naval Research (ONR) sponsors a Young Investigator Program to support academic scientists and engineers who have recently received Ph.D. or equivalent degrees and who show exceptional promise for doing creative research. The ONR expects to make up to twenty-four new awards in fiscal year 2006. Awards of up to US\$100,000 per year for three years are made, and additional funds may be provided based on need.

Proposals are sought that address the following priority research areas in mathematical, computer, and information sciences: inverse problems arising from electromagnetic and acoustic wave propagation and scattering; mathematical foundations for imaging, image analysis, and image processing; mathematical optimization; fundamentals of software and systems; and intelligent systems. The program is open to United States citizens, nationals (native residents of a U.S. possession), and permanent residents who hold tenure-track or permanent faculty positions at U.S. universities and who received their graduate degrees on or after November 1, 2000.

Proposals in mathematical, computer, and information sciences should be sent to: Office of Naval Research (FY06 YIP BAA No. 06-002), Attn: YIP Coordinator, Mathematical, Computer, and Information Sciences Division, ONR Code 311, Room 1106, 875 North Randolph Street, Suite 1425, Arlington, VA 22203-1995; telephone: 703-696-4313. Proposals must be received by 4:00 p.m. Eastern Standard Time on **January 12, 2006**. For further information and instructions for proposal preparation, see the ONR

website, http://www.onr.navy.mil/sci_tech/industrial/363/docs/baa_06_002.doc.

—From an ONR announcement

Clay Mathematics Institute 2006 Summer School

The Clay Mathematics Institute (CMI) Summer School on Arithmetic Geometry will be held at the Mathematisches Institut, Georg-August-Universität Göttingen, Germany, from July 17 to August 11, 2006.

Designed for graduate students and mathematicians within five years of receipt of the Ph.D., the program will introduce the participants to modern techniques and outstanding conjectures at the interface of number theory and algebraic geometry. The main focus is rational points on algebraic varieties over nonalgebraically closed fields. Do they exist? If not, can this be proven efficiently and algorithmically? When rational points do exist, are they finite in number and can they be found effectively? When there are infinitely many rational points, how are they distributed?

For curves, a cohesive theory addressing these questions has emerged in the past few decades. Highlights include Faltings's finiteness theorem and Wiles's proof of Fermat's last theorem. Key techniques are drawn from the theory of elliptic curves, including modular curves and parametrizations, Heegner points, and heights.

The arithmetic of higher dimensional varieties is equally rich, offering a complex interplay of techniques, including Shimura varieties, the minimal model program, moduli spaces of curves and maps, deformation theory, Galois cohomology, harmonic analysis, and automorphic functions. However, many foundational questions about the structure of rational points remain open, and research tends to focus on properties of specific classes of varieties.

This school will offer three core courses (on curves, surfaces, and higher-dimensional varieties), supplemented by seminars on computational and algorithmic aspects of arithmetic geometry and by minicourses on more advanced topics. Lecturers include Dan Abramovich, Fedor Bogomolov, Antoine Chambert-Loir, Ching-Li Chai, Henri Darmon, David Harari, Brendan Hassett, Andrew Kresch, Yuri Manin, Frans Oort, Jason Starr, Yuri Tschinkel, and others. The organizers of the summer school are Jim Carlson, Henri Damon, David Ellwood, Brendan Hassett, and Yuri Tschinkel.

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

The deadline for application is **February 28, 2006**. For more information and an application form, see <http://www.claymath.org/summerschool> or contact summerschool@claymath.org; telephone: 617-995-2600.

—CMI announcement