Mathematics Opportunities

Collaborations in Mathematical Geosciences

The National Science Foundation sponsors the Collaborations in Mathematical Geosciences (CMG) Program. The purposes of CMG are: (A) to enable collaborative research at the intersection of mathematical sciences and geosciences, and (B) to encourage cross-disciplinary education through summer graduate training activities.

Research topics under (A) should fall within one of two broad themes: (1) mathematical and statistical modeling of large, complex geosystems; or (2) representing uncertainty in geosystems. Research projects supported under this activity should be essentially collaborative in nature. Research groups should include at least one mathematical scientist and at least one geoscientist. Projects under category (A) should be of three to four years in duration. It is not the intent of this activity to provide general support for infrastructure. Projects under category (B) are not restricted to topics (1) and (2).

The CMG program is a joint effort between the Directorate for Geosciences and the Division of Mathematical Sciences (DMS). The cognizant program officers in the DMS are: Alexandre Freire, email: afreire@nsf.gov; Ken Shaw, email: kshaw@nsf.gov; and John Stufken, email: jstufken@nsf.gov. Further information is available on the Web at http://www.nsf.gov/cgi-bin/getpub?nsf03508. The deadline for proposals is **February 20, 2003**.

—From an NSF announcement

Request for Proposals for 2004 NSF-CBMS Regional Conferences

The National Science Foundation (NSF), with the sponsorship of the Conference Board of the Mathematical Sciences (CBMS), intends to support up to seven NSF-CBMS Regional Research Conferences in 2004.

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, depending on the topic, is published either by the AMS, 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, including postdoctoral researchers and graduate students.

Colleges and universities with at least some research competence in the field of the proposal are eligible to apply. Because a major goal of these conferences is to attract new researchers into the field of the conference and to stimulate new research activity, institutions that are interested in upgrading or improving their research efforts are especially encouraged to apply.

Proposals should reach the NSF by **April 8, 2003**. For further information on the NSF-CBMS Regional Conferences and guidelines for preparing proposals, contact: Conference Board of the Mathematical Sciences, 1529 18th Street, NW, Washington, DC 20036-1385; telephone: 202-293-1170; fax: 202-293-3412; World Wide Web: http://www.cbmsweb.org/NSF/2004_call.htm; email: kolbe@math.georgetown.edu or rosier@math.georgetown.edu.

—From a CBMS announcement

IAS/Park City Mathematics Institute

The Institute for Advanced Study (IAS)/Park City Mathematics Institute (PCMI) will hold its 2003 summer session from June 29–July 19, 2003, in Park City, Utah. The research topic is harmonic analysis and partial differential equations. The organizers are Michael Christ (University of California, Berkeley), Carlos Kenig (University of Chicago), and Wilhelm Schlag (California Institute of Technology). The education topic is knowledge of mathematics for teaching.

The IAS/PCMI began in 1991 at the University of Utah as a National Science Foundation Regional Geometry Institute. In 1993 the IAS assumed sponsorship of the program. Each summer the PCMI offers an integrated set of programs for researchers, postdoctorates, graduate and undergraduate students, and teachers.

Further information is available at the website `http://www.admin.ias.edu/ma/`.

—From an IAS/PCMI announcement

2003 NSF-CBMS Regional Conferences

With funding from the National Science Foundation (NSF), the Conference Board of the Mathematical Sciences (CBMS) will hold five NSF-CBMS Regional Research Conferences during the summer of 2003. 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 importance in current research. 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. The title of each conference follows, along with the name of the principal speaker, the date and location of the conference, and the names of the organizers, as well as contact information. More information about the conferences can also be found at the website `http://www.cbmsweb.org/NSF/` or by contacting the Conference Board of the Mathematical Sciences, 1529 18th Street, NW, Washington, DC 20036-1385; telephone: 202-293-1170; fax: 202-293-3412; email: `kolbe@math.georgetown.edu` or `rosier@math.georgetown.edu`.

Expansion Methods in Combinatorics, Christian Borgs, May 13–17, University of Memphis. Organizer: Anthony Quas. Telephone: 901-678-4950, email: `aquas@memphis.edu`, World Wide Web: `http://troy.msci.memphis.edu/cbms`.

Free Boundary Problems in Partial Differential Equations and Applications, David Jerison, May 18–22, Wayne State University. Organizers: Guozhen Lu and Pao-Liu Chow. Telephone: 313-577-3176, 313-577-3197; email: `gzlu@math.wayne.edu`, `plchow@math.wayne.edu`; World Wide Web: `http://www.math.wayne.edu/~gzlu/cbms/cbms.html`.

Stochastic Partial Differential Equations and Their Applications, Jerzy Zabczyk, May 19–23, Illinois Institute of Technology. Organizer: Jinqiao Duan. Telephone: 312-567-5335, email: `duan@iit.edu`, World Wide Web: `http://www.iit.edu/~duan/SPDE.html`.

The Web of Modularity, Ken Ono, June 3–7, University of Illinois, Urbana-Champaign. Organizer: Scott Ahlgren. Telephone: 217-244-1738, email: `ahlgren@math.uiuc.edu`, World Wide Web: `http://www.math.uiuc.edu/cbms/`.

Fully Nonlinear Equations in Geometry, Neil Trudinger, June 23–27, University of Notre Dame. Organizers: Matthew Gursky and Qing Han. Telephone: 574-631-8848, 574-631-6834; email: `gursky.1@nd.edu`, `qhan@nd.edu`; World Wide Web: `http://www.nd.edu/~cbms/`.

—From a CBMS announcement

Sixth Pan-African Congress of Mathematicians

The Pan-African Congress of Mathematicians is held every four years. The next congress will take place September 1–6, 2004, at the Institut National des Sciences Appliquées et de la Technologie (INSAT) at the Université de 7 Novembre à Carthage in Tunis, Tunisia.

The theme of the congress is "Mathematical Sciences and the Development of Africa: Challenges for Building a Knowledge Society in Africa". The scientific program will include plenary lectures, invited lectures, contributed research papers, a symposium, and exhibitions.

There will be limited travel and/or subsistence support for African participants. Those interested in applying for support should submit a curriculum vitae and an abstract of their contributed papers to: J. Persens, President, African Mathematical Union, University of the Western Cape, Private Bag X17, Belville 7535, South Africa; email: `jpersens@uwc.ac.za`. A copy of this material should also be sent to: J.-P. Ezin, Secretary General, African Mathematical Union, Institut de Mathématiques et de Sciences Physiques, BP613, Porto Novo, Benin; email: `jpezin@syfed.bj.refer.org`.

For information about the African Mathematical Union, consult the website `http://www.math.buffalo.edu/mad/AMU/index.html`.

—Announcement of the African Mathematical Union

News from the IMA

The Institute for Mathematics and its Applications (IMA) at the University of Minnesota is delighted to announce New Directions Visiting Professorships for 2003–2004 and the New Directions Short Course in summer 2003. These programs offer extraordinary opportunities for established mathematicians to branch into new directions and increase the impact of their research.

IMA New Directions Visiting Professorships: The IMA invites applications by established mathematicians for two Visiting Professorships for a period of 9 to 12 months, including the thematic program Probability and Statistics in Complex Systems: Genomics, Networks, and Financial Engineering, which runs from September 2003 through June 2004. Visiting Professors will enjoy an excellent research environment and stimulating scientific program with broad mathematical connections, including probability, statistics, dynamical systems, network and graph theory, optimization, control, and visualization. They are

expected to be resident and active participants in the program but are not assigned formal duties. The New Directions program will supply 50 percent of faculty salary up to $45,000 maximum. Deadline: **March 15, 2003**.

IMA New Directions Short Courses: From June 16 to 27, 2003, the IMA will host a two-week intensive short course designed to efficiently provide mathematicians the basic knowledge prerequisite to undertaking interdisciplinary research in the burgeoning field of mathematical biology at the cellular level. The course in Cellular Physiology will be taught by James Keener, professor of mathematics and adjunct professor of bioengineering at the University of Utah and author of the award-winning text *Mathematical Physiology*; and Alexander Mogilner, professor and Chancellor's Fellow in the Department of Mathematics and Center for Genetics and Development at the University of California at Davis. Participants will receive full travel and lodging support during the workshop. Deadline: **April 1, 2003**.

For further information and application procedures, see `http://www.ima.umn.edu/new-directions/`.

NOTE: The IMA New Directions Program is subject to funding, which is anticipated but currently pending.

—IMA Announcement

2003 Summer Program for Women in Mathematics

The George Washington University, with funding from the National Security Agency, will hold the 2003 Summer Program for Women in Mathematics (SPWM 2003) June 28–August 2, 2003, in Washington, DC. SPWM 2003 is an intensive five-week program for mathematically talented undergraduate women who are completing their junior years and may be contemplating graduate study in the 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. Sixteen women will be selected. Each will receive a travel allowance, campus room and board, and a stipend of $1,500. The application deadline is **March 1, 2003.** For further information, see the university's website, `http://www.gwu.edu/~math/spwm.html`, or contact the director, Murli M. Gupta (`mmg@gwu.edu`), Department of Mathematics, George Washington University, Washington, DC 20052; telephone: 202-994-4857; fax: 202-994-6760.

—George Washington University announcement

Cryptology Paper Competitions

The journal *Cryptologia* has announced two paper competitions for undergraduate students: the Annual Undergraduate Paper Competition on Cryptology and the Annual Greg Mellen Memorial Cryptology Scholarship Prize. Papers may focus on any area of cryptology, including technical, historical, and literary subjects. Each competition offers a $300 prize and publication in *Cryptologia*.

Deadline for entries is **December 31, 2003**. Information may be obtained from *Cryptologia*, Department of Mathematical Sciences, United States Military Academy, West Point, NY 10996; email: `Cryptologia@usma.edu`; or from the website `http://www.dean.usma.edu/math/pubs/cryptologia/`.

—Cryptologia announcement