
Mathematics Opportunities

CARGO Program

The National Science Foundation (NSF) and the Defense Advanced Research Projects Agency (DARPA) sponsor a program called Computational and Algorithmic Representations of Geometric Objects (CARGO).

CARGO supports research and development teams focusing on mathematical and computational innovations relevant to representation and computational manipulation of geometrical objects. The awards are administered by the NSF. Areas of specific interest include: computational topology and geometry, computational and geometric cartography (including spatial statistics), and geometric aspects of graphics and computer-aided design. Particularly encouraged are proposals for efforts involving collaborations of experts in the mathematical and computational sciences with other scientists, engineers, and practitioners representing diverse application areas. Proposals for incremental improvements of ongoing efforts will not be selected for funding. What is sought are proposals that offer new approaches and promising significant breakthroughs.

A program announcement for the 2003 competition is available at <http://www.nsf.gov/pubsys/ods/getpub.cfm?nsf02155>. The deadline is **December 3, 2002**.

—From an NSF announcement

NRC Research Associateship Programs

The Policy and Global Affairs Division of the National Research Council (NRC) is sponsoring the 2003 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 one of more than 120 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 and computer

science, life and medical sciences, space and planetary 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 \$30,000 to \$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 three times during the year, and applications will be accepted on a continuous basis. The deadlines for application materials to be postmarked are **January 15, April 15, and August 15, 2003**. The award recipients will be announced in March-April, July, and November.

For further information and application materials, see the NRC website at <http://www4.nationalacademies.org/pga/rap.nsf/>, or contact the National Research Council, Associateship Programs (TJ 2114), 2101 Constitution Avenue, NW, Washington, DC 20418; telephone: 202-334-2760; fax: 202-334-2759; email: rap@nas.edu.

—From an NRC announcement

National Defense Science and Engineering Graduate 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) plans to award approximately 200 new three-year graduate fellowships in April 2002, based on available funding. The DoD will offer these fellowships to individuals who have demonstrated ability and special aptitude for advanced training in science and engineering. National Defense Science and Engineering Graduate (NDSEG) Fellowships will be awarded for study and research leading to doctoral degrees in

mathematical, physical, biological, ocean, and engineering sciences.

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 their bachelor's degrees by fall of 2003. 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.

The deadline for submitting a complete application is **January 6, 2003**. 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. #600, Washington, DC 20036; telephone: 202-331-3516; fax: 202-265-8504; email: ndseg@asee.org. For further information see the website <http://www.asee.org/ndseg/html/preface.htm>.

—From an NDSEG announcement

NRC-Ford Foundation Fellowships for Minorities

The National Research Council (NRC) administers the Ford Foundation Fellowships for Minorities program. This program offers predoctoral fellowships, dissertation fellowships, and postdoctoral fellowships. Eligible applicants must be U.S. citizens or nationals who are members of one of the following groups: Black/African American, Alaskan Native, Mexican American/Chicano/Chicana, Native American, Native Pacific Islander (Polynesian, Micronesian, Filipino), or Puerto Rican.

The predoctoral fellowship program offers support for three years in research-based programs in social and behavioral sciences, humanities, physical and biological sciences, engineering, and mathematics, or for interdisciplinary programs comprising two or more eligible disciplines leading to the Ph.D. or Sc.D. The annual stipend is \$16,000 and an additional cost of education allowance of \$7,500. The deadline to apply is **November 20, 2002**.

The dissertation fellowship is intended for the final year of dissertation writing. The stipend is \$21,000. The application deadline is **December 4, 2003**.

The postdoctoral fellowship offers one year of postdoctoral support for individuals who have received their Ph.D.'s no earlier than January 1996 and no later than February 14, 2003. The stipend is \$34,000, with an additional \$7,500 cost of education allowance. The application deadline is **January 8, 2003**.

Applicants are encouraged to apply online at <http://national-academies.org/fellowships/>. The postal address is Ford Foundation Fellowships/TJ 2041, National Research Council, 2101 Constitution Avenue, NW,

Washington, DC 20418. The telephone number is 202-334-2872. The email address is infof11@nas.edu.

—From an NRC announcement

EDGE Summer Program

Funded by the National Science Foundation, the National Security Agency, and the Andrew W. Mellon Foundation, the Enhancing Diversity in Graduate Education (EDGE) Program, a postbaccalaureate summer enrichment program, is designed to strengthen the ability of women and minority students to successfully complete graduate programs in the mathematical sciences.

The summer program consists of two core courses in analysis and algebra/linear algebra. There will also be minicourses in vital areas of mathematical research in pure and applied mathematics, short-term visitors from academia and industry, guest lectures, graduate student mentors, and problem sessions. In addition, a follow-up mentoring program and support network will be established with the participants' respective graduate programs.

Applicants to the program should be women who are (i) graduating seniors who have applied to graduate programs in the mathematical sciences, (ii) recent recipients of undergraduate degrees who are now entering graduate programs, or (iii) first-year graduate students. All applicants should have completed standard junior-senior-level undergraduate courses in analysis and abstract algebra and have a desire to earn the doctorate degree. Women from minority groups who fit one of the above three categories are especially encouraged to apply. Final acceptance to the program is contingent upon acceptance to a graduate program in the mathematical sciences.

In 2003 the program will be held at Pomona College in Claremont, California. The dates for the summer program are June 2-June 27, 2003. It will be codirected by Sylvia Bozeman (Spelman College), Rhonda Hughes (Bryn Mawr College), and local coordinator Ami Radunskaya (Pomona College). A stipend of \$2,000 plus room and board will be awarded to participants. Names of applicants chosen to participate in the program will be announced by April 15, 2003.

Applications should consist of the following: (1) a completed application form; (2) a statement describing the expected value of this program to the applicant's academic goals; (3) two letters of recommendation from mathematical sciences faculty familiar with the applicant's work; (4) a transcript and current résumé; (5) a list of graduate programs to which the applicant has applied, together with a ranked list of her two or three top choices.

The application deadline is **March 3, 2003**. Applications should be sent to: EDGE Program, Department of Mathematics, Spelman College, Atlanta, GA 30314. For more information visit the program's website at <http://www.edgeforwomen.org/>.

—EDGE Program announcement

AMS-AAAS Mass Media Fellowships

The American Association for the Advancement of Science sponsors the Mass Media Science and Engineering 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 *Business Week*, National Geographic Television, *The Chicago Tribune*, and *Time* magazine.

Fellows receive a weekly stipend of \$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 2003 is **January 15, 2003**. Further information about the fellowship program and application procedures is available online at <http://ehrweb.aaas.org/massmedia.htm>; or contact Katrina Malloy, Program Coordinator, AAAS Mass Media Science and Engineering Fellows Program, 1200 New York Avenue, NW, Washington, DC 20005; telephone: 202-326-6760; fax: 202-371-9849; or the AMS Washington Office, 1527 Eighteenth Street, NW, Washington, DC 20036; telephone: 202-588-1100; fax: 202-588-1853; email: amsdc@ams.org.

—Elaine Kehoe

News from The Fields Institute

The Fields Institute for Research in Mathematical Sciences has announced its program for 2002–2003.

The Thematic Program on Set Theory and Analysis runs from September to December 2002 and centers on the relationship between set theory and analysis.

November 10–16, 2002: Workshop on Geometry of Banach Spaces and Infinite Dimensional Ramsey Theory. Organizers: E. Odell, T. Schlumprecht, S. Todorcevic, and N. Tomczak-Jaegermann. For more detailed information, see the website http://www.fields.utoronto.ca/programs/scientific/02-03/set_theory/workshop2/.

The Thematic Program on Automorphic Forms will be held from January through May 2003. The program will concentrate on the geometric and analytic aspects of the subject.

January 21–April 29, 2003: Course on Automorphic L-Functions. Instructors: H. Kim and R. Murty.

March 4–8, 2003 (tentative): Workshop on Shimura Varieties and Related Topics. Organizers: T. Haines and G. Pappas.

May 5–9, 2003: Workshop on Automorphic L-Functions. Organizers: H. Kim and R. Murty.

June 2–27, 2003: Summer School Program supported by The Clay Mathematics Institute. Organizers: J. Arthur, R. Kottwitz, J. Milne, and F. Muraghan.

For more detailed information, see the website http://www.fields.utoronto.ca/programs/scientific/02-03/automorphic_forms/index.html.

The Fields Institute invites applications for postdoctoral fellowship positions at the institute for the 2003–2004 academic year. These fellowships provide an opportunity to spend at least one year engaged in research and participating in the research activities of the institute. Applications for the Program on Partial Differential Equations should be received by **January 2, 2003**.

Applicants seeking postdoctoral fellowships funded by other agencies (such as NSERC and international fellowships) should request The Fields Institute as their proposed location of tenure and should apply to The Fields Institute for a letter of invitation. For further information please see <http://www.fields.utoronto.ca/proposals/postdoc.html>.

—From a Fields Institute announcement

News from the IMA

The 2002–2003 program at the Institute for Mathematics and its Applications (IMA) is Mathematical Optimization. The winter quarter will focus on advances in the underlying methods dealing with both nonlinear and linear optimization, and the spring quarter will deal with the connections between optimization and information technology. The dates and topics of the workshops follow.

January 6–7, 2003: Short Course on Industrial Strength Optimization.

January 8–16, 2003: Tutorial and workshop on Optimization in Simulation-Based Models.

March 11–19, 2003: Tutorial and workshop on Semidefinite Programming and Robust Optimization.

April 6–11, 2003: Tutorial and workshop on Network Management and Design.

May 5–9, 2003: Tutorial and workshop on Data Analysis and Optimization.

The organizing committee consists of John Birge (Northwestern University), William Cook (Georgia Institute of Technology), Donald Goldfarb (Columbia University), Brenda Dietrich (IBM, Yorktown), William Pulleyblank (IBM, Yorktown), and Prabhakar Raghavan (Verity, Inc., Sunnyvale, CA). Further information and application forms are available at the IMA website, <http://www.ima.umn.edu/>.

—From an IMA announcement