

---

# Mathematics Opportunities

## New NSF Funding Opportunities

Two new funding opportunities, both with a deadline date of **April 7, 2004**, have been announced in the National Science Foundation (NSF) program solicitation “Mathematical Sciences: Innovations at the Interface with the Sciences and Engineering” (NSF 04-538). This solicitation is available on the Web at <http://www.nsf.gov/pubs/ods/getpub.cfm?nsf04538>.

The two new activities are *New Mathematical and Statistical Tools for Understanding Complex Systems in the Environment* (MSPA-CSE) and *Interactions between the Mathematical Sciences and Computer Science* (MSPA-MCS).

The solicitation NSF 04-538 also contains information about other activities related to the NSF’s Mathematical Sciences Priority Area (MSPA). These include activities covered by existing target dates or deadlines previously announced for fiscal year 2004, activities covered by separate solicitations, and competitions whose announcement is expected in the next few months. See the full text of NSF 04-538 and the separate solicitations for detailed information.

—From an NSF announcement

## Call for Nominations for CRM-Fields Prize

The Centre de Recherches Mathématiques (CRM) and The Fields Institute for Research in Mathematical Sciences invite nominations for the joint CRM-Fields Prize, which recognizes exceptional achievement in the mathematical sciences. The candidate’s research should have been conducted primarily in Canada or in affiliation with a Canadian university. The prize carries a cash award of 5,000 Canadian dollars (approximately US\$3,850). The recipient is expected to present a lecture at the CRM and at The Fields Institute.

The deadline for nominations is **October 1, 2004**. For more information, see [http://www.fields.utoronto.ca/proposals/crm-fields\\_prize.html](http://www.fields.utoronto.ca/proposals/crm-fields_prize.html), or contact the

Director, The Fields Institute, 222 College Street, Toronto, Ontario M5T 3J1, Canada.

—From a Fields Institute announcement

## AP Calculus Readers Sought

The Educational Testing Service and the College Board invite interested college faculty to apply to be readers for the Advanced Placement Calculus Exam. The AP Calculus exams (AB and BC) were taken by approximately 200,000 high school students last year. The six free-response problems on the exam are graded during seven days in June by more than 650 high school and college mathematics teachers at Colorado State University in Ft. Collins, Colorado. This is an excellent opportunity for teachers, especially those just starting their professional careers, to enhance their knowledge of the AP Calculus Program and of teaching and to meet with other faculty from around the country. To learn more about this opportunity or to apply for a position as a reader, see the website <http://apcentral.collegeboard.com> and click on the link to “Faculty Involvement” under the dropdown menu for “Colleges & Universities”, or send email to [apreader@ets.org](mailto:apreader@ets.org). Questions about the reading may be sent to Caren Diefenderfer, chief reader for the AP Calculus Program, at [cdiefenderfer@hollins.edu](mailto:cdiefenderfer@hollins.edu).

—Caren L. Diefenderfer, Hollins University

## News from the Clay Mathematics Institute

The Clay Mathematics Institute is organizing a summer school on Floer homology, gauge theory, and low-dimensional topology June 5–26, 2004. The school will be held at the Alfréd Rényi Institute of Mathematics in Budapest, Hungary, and will be aimed at graduate students and mathematicians within five years of the Ph.D.

The school will consist of two weeks of foundational courses and one week of minicourses focusing on more advanced topics and recent developments. These courses

will concentrate on recent activity at the crossroads of mathematical disciplines around low-dimensional topology—the theory of holomorphic curves, gauge theory, knot theory, smooth four-manifold topology, and contact geometry. The aim of this summer school is to provide a comprehensive introduction to these exciting areas through week-long courses in Heegaard Floer theory of three- and four-manifolds, Seiberg-Witten theory, contact topology, and knot theory. The third week of advanced courses will focus on the frontiers of research in these areas. Lecturers will include John Etnyre, Ronald Fintushel, Cameron Gordon, Peter Ozsvath, Andras Stipsicz, and Zoltan Szabo.

While there are no formal prerequisites, preference will be given to applicants with some prior knowledge of topology or symplectic geometry. Funding is available for graduate students and postdoctoral fellows (within five years of the Ph.D.). Standard support amounts will include funds for local expenses and accommodations plus economy travel.

The application deadline is **March 31, 2004**. For more information and an application form, please visit <http://www.claymath.org/summerschool> or email: [summerschool@claymath.org](mailto:summerschool@claymath.org).

—*CMI announcement*

## News from the International Centre for Mathematical Sciences

The International Centre for Mathematical Sciences, Edinburgh, United Kingdom, announces a workshop on the moonshine conjectures and vertex algebras, to be held July 5–15, 2004. Part 1 of the workshop will consist of expository sessions on such areas as Borcherds's proof of the Conway-Norton conjecture, construction of the Monster, vertex (operator) algebras, modular moonshine, BKM algebras and automorphic forms, FLM's construction, and proof of the McKay-Thompson conjecture. Part 2 will consist of invited talks on current research. The scientific committee consists of A. Baker, Glasgow; A. Ivanov, Imperial College; J. Lepowsky, Rutgers University; J. McKay, Concordia; V. Nikulin, Liverpool; and M. Tuite, Galway.

For further information and application forms, see the website <http://www.ma.hw.ac.uk/icms/meetings/2004/moonshine>.

—*ICMS announcement*

## Training in Biological and Mathematical Sciences

The National Science Foundation (NSF) has begun a program called Undergraduate Biology and Mathematics (UBM). The goal of UBM 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 core of the activity is long-term research experiences for interdisciplinarily balanced cohorts of at least four undergraduates. Projects should focus on research at the intersection of the mathematical and biological sciences. Projects should provide students exposure to contemporary mathematics and biology, addressed with modern research tools and methods. That is, projects must be genuine research experiences rather than rehearsals of research methods. Projects must involve students from both areas in collaborative research experiences and include joint mentorship by faculty in both fields. In addition, it is expected that projects will strengthen the research and education capacity, infrastructure, and culture of the participating institutions. To this end, projects should create models for education in the mathematical and biological sciences and influence the direction of academic programs for a broad range of students.

UBM is a joint effort of the Education and Human Resources, Biological Sciences, and Mathematical and Physical Sciences directorates at the NSF.

The program announcement is available on the web page <http://www.nsf.gov/pubsys/ods/getpub.cfm?nsf04546>. The next proposal deadline is **April 26, 2004**.

—*NSF announcement*

## Mathematical Social and Behavioral Sciences

The National Science Foundation (NSF) has established a program called Mathematical Social and Behavioral Sciences (MSBS). Research proposals are invited for projects that advance the mathematical or statistical foundations of research in the social, behavioral, or economic sciences. The resulting research is expected both to further understanding of social and/or behavioral science phenomena and to address a topic of interest to the mathematical sciences. Proposals for workshops or symposia that foster the interaction of social, behavioral, and/or economic scientists with mathematicians and/or statisticians also are welcome.

The program announcement is available on the web at <http://www.nsf.gov/pubsys/ods/getpub.cfm?nsf04548>. The proposal deadline is **April 30, 2004**.

—*NSF announcement*