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# Mathematics Opportunities

## Math in Moscow Scholarship Program

The Math in Moscow program at the Independent University of Moscow (IUM) was created in 2001 to provide foreign students (primarily from the United States, Canada, and Europe) with a semester-long, mathematically intensive program of study in the Russian tradition of teaching mathematics, the main feature of which has always been the development of a creative approach to studying mathematics from the outset—the emphasis being on problem solving rather than memorizing theorems. Indeed, discovering mathematics under the guidance of an experienced teacher is the central principle of the IUM, and the Math in Moscow program emphasizes in-depth understanding of carefully selected material rather than broad surveys of large quantities of material. Even in the treatment of the most traditional subjects, students are helped to explore significant connections with contemporary research topics. The IUM is a small, elite institution of higher learning focusing primarily on mathematics that was founded in 1991 at the initiative of a group of well-known Russian research mathematicians, who now compose the Academic Council of the university. Today, the IUM is one of the leading mathematical centers in Russia. Most of the Math in Moscow program's teachers are internationally recognized research mathematicians, and all of them have considerable teaching experience in English, typically in the United States or Canada. All instruction is in English.

With funding from the National Science Foundation (NSF), the AMS awards five US\$9,000 scholarships each semester to U.S. students to attend the Math in Moscow program. To be eligible for the scholarships, students must be either U.S. citizens or enrolled at a U.S. institution at the time they attend the Math in Moscow program. Students must apply separately to the IUM's Math in Moscow program and to the AMS Math in Moscow Scholarship program. Undergraduate or graduate mathematics or computer science majors may apply. The deadlines for

applications for the scholarship program are **April 15, 2013**, for the fall 2013 semester and **September 15, 2013**, for the spring 2014 semester.

Information and application forms for Math in Moscow are available on the Web at <http://www.mccme.ru/mathinmoscow>, or by writing to: Math in Moscow, P.O. Box 524, Wynnewood, PA 19096; fax: +7095-291-65-01; email: [mim@mccme.ru](mailto:mim@mccme.ru). Information and application forms for the AMS scholarships are available on the AMS website at <http://www.ams.org/programs/travel-grants/mimoscow> or by writing to: Math in Moscow Program, Membership and Programs Department, American Mathematical Society, 201 Charles Street, Providence RI 02904-2294; email: [student-serv@ams.org](mailto:student-serv@ams.org).

—AMS Membership and Programs Department

## NSF-CBMS Regional Conferences 2013

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 2013. These conferences are intended to stimulate interest and activity in mathematical research. 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.

Support for about thirty participants will be provided for each conference. Both 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 conferences to be held in 2013 follow.

**May 20–24, 2013:** Solitons in Two-Dimensional Water Waves and Applications to Tsunami. Yuji Kodama,

lecturer. University of Texas, Pan American. Organizers: Kenichi Maruno, 956-665-3536, [kmaruno@utpa.edu](mailto:kmaruno@utpa.edu); and Virgil Pierce, 956-665-3535, [piercevu@utpa.edu](mailto:piercevu@utpa.edu). Conference website: [faculty.utpa.edu/kmaruno/nsfcbms-tsunami.html](http://faculty.utpa.edu/kmaruno/nsfcbms-tsunami.html).

**June 17–21, 2013:** The Global Behavior of Solutions to Critical Nonlinear Wave Equations. Carlos Kenig, lecturer. Kansas State University. Organizers: Virginia Naibo, 785-532-0554, [vnaibo@math.ksu.edu](mailto:vnaibo@math.ksu.edu); and Diego Maldonado, 785-532-0581, [dmaldona@math.ksu.edu](mailto:dmaldona@math.ksu.edu). Conference website: [www.math.ksu.edu/events/conference/cbms2013/](http://www.math.ksu.edu/events/conference/cbms2013/).

**August 12–16, 2013:** Uncertainty Principles in Harmonic Analysis: Gap and Type Problems. Alexei Poltoratski, lecturer. Clemson University. Organizers: Mishko Mitkovski, 864-656-0411, [mmitkov@clemson.edu](mailto:mmitkov@clemson.edu); Constanze Liaw, 254-710-3859, [Constanze\\_Liaw@baylor.edu](mailto:Constanze_Liaw@baylor.edu); and Brett Wick, 404-894-4311, [wick@math.gatech.edu](mailto:wick@math.gatech.edu). Conference website: [people.clemson.edu/~mmitkov/cbms/index.html](http://people.clemson.edu/~mmitkov/cbms/index.html).

**August 19–23, 2013:** Analysis of Stochastic Partial Differential Equations. Davar Khoshnevisan, lecturer. Michigan State University. Organizers: Yimin Xiao, 517-432-5411, [xiao@stt.msu.edu](mailto:xiao@stt.msu.edu); and V. S. Mandrekar, 517-353-7172, [mandrekar@stt.msu.edu](mailto:mandrekar@stt.msu.edu). Conference website: [www.stt.msu.edu/CBMS2013](http://www.stt.msu.edu/CBMS2013).

—From a CBMS announcement

## DMS Workforce Program in the Mathematical Sciences

The Division of Mathematical Sciences (DMS) of the National Science Foundation (NSF) welcomes proposals for the Workforce Program in the Mathematical Sciences. The long-range goal of the program is increasing the number of well-prepared U.S. citizens, nationals, and permanent residents who successfully pursue careers in the mathematical sciences and in other NSF-supported disciplines. Of primary interest are activities centered on education that broaden participation in the mathematical sciences through research involvement for trainees at the undergraduate through postdoctoral educational levels. The program is particularly interested in activities that improve recruitment and retention, educational breadth, and professional development.

The submission period for unsolicited proposals is **May 15–June 15, 2013**. For more information and a list of cognizant program directors, see the website [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=503233](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503233).

—From a DSM announcement

## NSF Scholarships in Science, Technology, Engineering, and Mathematics

The NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) program provides institutions with funds for student scholarships to encourage and enable academically talented students demonstrating financial need to enter the STEM workforce or STEM graduate school following completion of an associate, baccalaureate, or graduate degree in fields of science, technology, engineering, or mathematics. Students to be awarded scholarships must demonstrate academic talent and financial need. S-STEM grants may be made for up to five years and provide individual scholarships of up to US\$10,000 per year, depending on financial need. Proposals must be submitted by institutions, which are responsible for selecting the scholarship recipients. The deadline for full proposals is **August 13, 2013**. For more information, see the website <http://www.nsf.gov/pubs/2012/nsf12529/nsf12529.htm>.

—From an NSF announcement

## Project NExT 2013–2014

Project NExT (New Experiences in Teaching) is a professional development program for new and recent Ph.D.'s in the mathematical sciences (including pure and applied mathematics, statistics, operations research, and mathematics education). It addresses all aspects of an academic career: improving the teaching and learning of mathematics, engaging in research and scholarship, and participating in professional activities. It also provides the participants with a network of peers and mentors as they assume these responsibilities. In 2013 about eighty faculty members from colleges and universities throughout the country will be selected to participate in a workshop preceding the Mathematical Association of America (MAA) summer meeting, in activities during the summer MAA meetings in 2013 and 2014 and the Joint Mathematics Meetings in January 2014, and in an electronic discussion network. Faculty for whom the 2013–2014 academic year will be the first or second year of full-time teaching (post-Ph.D.) at the college or university level are invited to apply to become Project NExT Fellows.

Applications are invited for the fellowship year 2013–2014, the twentieth year of Project NExT. The deadline for applications is **April 12, 2013**. For more information, see the Project NExT website, <http://archives.math.utk.edu/projnext/> or contact Aparna Higgins, director, at [Aparna.Higgins@udayton.edu](mailto:Aparna.Higgins@udayton.edu). Project NExT is a program of the MAA. It receives major funding from the Mary P. Dolciani Halloran Foundation and additional funding from the Educational Advancement Foundation, the American Mathematical Society, the American Statistical Association, the National Council of Teachers of Mathematics, the Association for Symbolic Logic, the

W. H. Freeman Publishing Company, John Wiley & Sons, MAA Sections, and the Greater MAA Fund.

—Aparna Higgins, Director

## AWM Gweneth Humphreys Award

The Association for Women in Mathematics (AWM) sponsors the Gweneth Humphreys Award to recognize outstanding mentorship activities. This prize will be awarded annually to a mathematics teacher (female or male) who has encouraged female undergraduate students to pursue mathematical careers and/or the study of mathematics at the graduate level. The recipient will receive a cash prize and honorary plaque and will be featured in an article in the AWM newsletter. The award is open to all regardless of nationality and citizenship. Nominees must be living at the time of their nomination.

The deadline for nominations is **April 30, 2013**. For details, see [www.awm-math.org](http://www.awm-math.org), telephone: 703-934-0163, or email: [awm@awm-math.org](mailto:awm@awm-math.org).

—From an AWM announcement

## News from the IMA

The Institute for Mathematics and its Applications (IMA), located on the University of Minnesota campus, will soon launch its new Annual Thematic Program, running from September 2013 to June 2014. The theme, Scientific and Engineering Applications of Algebraic Topology, will gather researchers from topology, computational geometry, networking, statistics, biology, and other fields to address methods for qualitative analysis and recognition problems in contemporary contexts, including data (finite metric spaces as samples from experiments, surveys, or sensors), networks (Internet traffic, gene regulation, coordinated robotics, communications), and dynamics (systems equipped with only finite resolution or which are stochastic). The six workshops planned for the year are designed to be truly interdisciplinary. More information about this year's workshops and the thematic program are available online at [www.ima.umn.edu/programs](http://www.ima.umn.edu/programs).

*Call for Proposals for Hot Topics Workshops.* The IMA's Hot Topics Workshops cover rapidly developing areas of interest, focusing on a specific problem or area of exceptional contemporary significance. These workshops are often cosponsored by a participating institution, corporation, government funding agency, or an NSF-focused research group. More information on submitting a workshop proposal is available online at [www.ima.umn.edu/solicit/hot-topics-guidelines.html](http://www.ima.umn.edu/solicit/hot-topics-guidelines.html).

*New Directions Research Professorships.* New Directions Research Professorships provide an extraordinary opportunity for established mathematicians—typically mid-career faculty at U.S. universities—to branch into new directions and increase the impact of their research

by spending an academic year immersed in the thematic program at the IMA, where they learn new mathematics and applications, connect their research with important problems, and establish new contacts and collaborations. Applications for professorships during the 2013–2014 (Scientific and Engineering Applications of Algebraic Topology) and 2014–2015 (Discrete Structures: Analysis and Applications) thematic programs are still being accepted. Please visit [www.ima.umn.edu/new-directions](http://www.ima.umn.edu/new-directions) for more information as well as for the online application.

*Applications for New Directions Short Course: Applied Statistics and Machine Learning.* From June 17–28, 2013, the IMA will hold its New Directions Short Course, Applied Statistics and Machine Learning. Organized by Bin Yu (University of California Berkeley) and David Madigan (Columbia University), the two-week course will introduce participants to a broad array of modern statistical concepts and techniques with a focus on critical thinking and practical data analysis. The statistical software R will be used extensively, and students are expected to have at least rudimentary knowledge of R prior to the course. The course will cover exploratory data analysis (visualization, dimension reduction, clustering), statistical modeling (linear models, generalized linear models, logistic regression, graphical models), and statistical computation (Monte Carlo, Markov chain Monte Carlo, convex optimization). The course will also cover regularized and large-scale modeling techniques. The deadline for applications is **April 15, 2013**. More information and an online application are available online at <http://www.ima.umn.edu/2012-2013/ND6.17-28.13>.

—IMA announcement