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# Mathematics Opportunities

## Grants for Collaboration with Colleagues in Central Europe and Eurasia

With funding from the National Science Foundation (NSF), the Office for Central Europe and Eurasia of the National Research Council offers grants to individual U.S. researchers who wish to collaborate with colleagues from Central or Eastern Europe (CEE) and the Newly Independent States (NIS) of the former Soviet Union.

Applications may be made by researchers who are U.S. citizens or permanent residents and who will have had Ph.D.s or equivalent research experience at least six months prior to the requested starting date of the proposed visit. Visiting researchers must be citizens of a country in CEE or NIS and must hold Ph.D. (kandidat) degrees or equivalent research experience at least six months prior to the starting dates of the proposed visit. Applicants who have received doctoral degrees within the past six years will receive special consideration, as will applicants wishing to work with colleagues in less frequently represented countries and regions. As the program is primarily designed to support new collaborative efforts, no more than two grants will be awarded per applicant in a four-year period.

*Short-term Project Development Grants* support American researchers who wish to host or visit their CEE or NIS colleagues for two-week periods in order to prepare collaborative research proposals for submission to the NSF. Grant levels range from \$2,200 to \$2,500. *Long-term Grants* support American researchers who wish to host or visit their CEE or NIS colleagues for a period of one to six months. Significant publications jointly authored by the participants are expected. Grant levels range from \$3,000 to \$15,300.

The deadlines are: **April 21, 1995** (Project Development only); **July 7, 1995** (Long-term only); **August 11, 1995** (Project Development only); and **December 29, 1995** (Project Development only).

To obtain information and application materials, contact: Office for Central Europe and Eurasia, National Research Council, 2101 Constitution Avenue, NW, Washington, DC 20418; telephone 202-334-3680; fax 202-334-2614; e-mail [oce@nas.edu](mailto:oce@nas.edu).

—NRC Announcement

## Humboldt Foundation Grants for Research in Germany and for German Scholars Abroad

The Alexander von Humboldt Foundation of Bonn, Germany, provides support for highly qualified individuals of all nationalities to conduct research in Germany. Since 1953, the Foundation has enabled more than 3,500 scholars from the United States and Canada to participate in such programs. The Foundation's North American office distributes information on the programs to North American scholars.

The *Research Fellowship Program* provides support to non-German scholars who have earned a doctorate and are under forty years of age for the conduct of research in Germany in all fields of scholarship for six to twelve months.

The *Humboldt Research Awards* provide internationally recognized scholars the opportunity to spend four to twelve months conducting research in Germany; candidates may be nominated only by German scholars and previous awardees.

The *Feodor-Lynen Fellowship Program* enables German scholars under thirty-eight years of age who have doctoral degrees to spend as many as three years at the home institutions of former Humboldt fellows and awardees.

The *Max-Planck Awards* permit internationally recognized German and non-German scholars to conduct long-term, project-oriented cooperative research; only senior officials of German research institutions may nominate candidates.

The *Bundeskanzler Scholarship Program* provides the opportunity each year for as many as ten promising young Americans who demonstrate the potential of playing a pivotal role in the future relationship of Germany and the U.S. to spend a year in Germany doing research.

Qualified individuals are encouraged to apply for these programs. For more information, contact Bernard Stein, Alexander von Humboldt Foundation, Suite 903, 1350 Connecticut Avenue, NW, Washington, DC 20036; telephone 202-296-2990; fax 202-833-8514.

—Humboldt Foundation

## NSF-EPA Partnership for Environmental Research

The National Science Foundation (NSF) and the Environmental Protection Agency (EPA) announce their intent to support a special awards competition in Fiscal Year (FY) 1995. This NSF-EPA competition has been developed based on a Memorandum of Understanding signed on December 8, 1994, which establishes a partnership between the two agencies emphasizing the support and merit review of fundamental, extramural environmental research. The three research areas targeted are: Water and Watersheds, Technology for a Sustainable Environment, and Valuation and Environmental Policy.

Awards made through this competition are dependent upon responsiveness of the proposals to the announcement, the quality of the proposals, and the availability of funds. Under this announcement, NSF and EPA anticipate awarding:

1. At least \$10.0 million for Water and Watersheds, with a projected award range from \$75,000 to \$500,000 per award per year and an approximate duration of two to three years.
2. Up to \$6.5 million for Technology for a Sustainable Environment, with a projected award range from \$75,000 to \$150,000 per award per year and an approximate duration of two to three years.
3. At least \$2.5 million for Valuation and Environmental Policy, with a projected award range from \$60,000 to \$100,000 per award per year and an approximate duration of two to three years.

Proposals in response to this announcement must be received by **May 1, 1995**. It is anticipated that awards will be made by fall 1995.

The program announcement is available on STIS, NSF's online information system. Use ftp or gopher to the address `stis.nsf.gov` and retrieve the document named `nsf9548`.

Or use Mosaic to connect to the URL `http://stis.nsf.gov/`. One may also request publication number NSF 95-48 from: Forms and Publications Unit, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230; telephone 703-306-1130; e-mail `pubs@nsf.gov`.

The contact in NSF's Division of Mathematical Sciences is Sallie Keller-McNulty, Program Director, Statistics and Probability Program, Division of Mathematical Sciences, National Science Foundation, Room 1025, 4201 Wilson Boulevard, Arlington, VA 22230; e-mail `smcnulty@nsf.gov`; telephone 703-306-1883.

—NSF Announcement

## News from the Mathematical Sciences Research Institute Berkeley, California

Two programs have been chosen for the year 1997–1998 at MSRI. One is a full-year program on Stochastic Analysis, and the other a half-year program in spring 1998 on Model Theory of Fields. More information on these programs, as well as a further program for fall 1997, will be given in future issues of the *Notices*.

In 1996–1997, there will be two full-year programs, one on Combinatorics and the other on Low-dimensional Topology. Details about those programs, along with application information, can be found in a full-page advertisement elsewhere in this issue of the *Notices*.

The 1995–1996 schedule includes a full-year program on Several Complex Variables and two half-year programs: Holomorphic Spaces in the fall and Convex Geometry and Geometric Functional Analysis in the spring. Information about workshops associated with those programs will be given in a future issue of the *Notices* or can be obtained by sending e-mail to `workshops@msri.org`.

The remaining workshop during the current year is on Low Dimensional Holomorphic Dynamics, May 15–20, 1995. Details on that can be obtained by e-mail from `work595@msri.org`.

A conference on the Future of Mathematical Communication was held at MSRI during November 30–December 2, 1994. The conference brought together mathematicians, publishers, librarians, and a variety of speakers who have been concerned with issues surrounding electronic publications and new means of communication. The entire conference was broadcast over the internet via Mbone. Plans are now under way to make future conferences and events at MSRI also available over Mbone. As these plans take more concrete form, further information will be given on how to receive those Mbone broadcasts.

General inquiries to MSRI can be addressed to `inquiries@msri.org`.

—MSRI Announcement

## News from Centre de Recherches Mathématiques Montreal

The Centre de Recherches Mathématiques (CRM) and Centre Interuniversitaire en Analyse des Organisations (CIRANO) signed a protocol agreement in December 1994 to collaborate in the development of research in the mathematics and statistics of finance.

The initial joint program under this agreement will be a series of lectures in the mathematics of finance, to be held from December 1995 to April 1996, followed by a workshop in May 1996. The principal speaker will be Ioannis Karatzas of Columbia University, who will hold the Aisenstadt Chair at CRM during that period. Other speakers and scheduling details will be announced as they become available. The scientific advisory committee for this program consists of: Luis Caffarelli, Institute for Advanced Study; J. Darrell Duffie, Stanford University; Ioannis Karatzas, Columbia University; and Stanley Pliska, University of Illinois at Chicago. These activities are part of CRM's theme year in applied and numerical analysis.

For further details, write to: Louis Pelletier, CRM, Université de Montréal, CP 6128, Succ. Centre-ville, Montréal, Québec, Canada H3C 3J7; e-mail [pelletl@crm.umontreal.ca](mailto:pelletl@crm.umontreal.ca).

—CRM Announcement

## REU Programs for Summer of 1995

The Division of Mathematical Sciences of the National Science Foundation has made a number of awards in its Research Experience for Undergraduates (REU) program. These grants support programs running several weeks over the summer, in which undergraduate students participate in a research experience in the mathematical sciences over the summer.

Information about the REU programs for the summer of 1995 is given below. For further information about a particular program, contact the individual named.

*Mathematical Analysis and Analysis of Nonlinear Phenomena*, 12 students, 7 weeks: Steven E. Shreve, Department of Mathematics, Carnegie Mellon University, Pittsburgh, PA 15213; telephone 412-268-8484; fax 412-268-6380; e-mail [cn0s@andrew.cmu.edu](mailto:cn0s@andrew.cmu.edu).

*Fractals and Harmonic Analysis, Geometric Convexity, Circle Packings, Tensegrities*, 8 students, 8 weeks: Robert S. Strichartz, Department of Mathematics, Cornell University, Ithaca, NY 14853; telephone 607-255-3509; fax 607-255-7149; e-mail [reu@math.cornell.edu](mailto:reu@math.cornell.edu).

*Algebra, Topology, Applied Mathematics, and Analysis*, 6 students, 8 weeks: David C. Carothers, Department of Mathematics, Hope College, Holland, MI 49423; telephone

616-394-7530; fax 616-394-7123; e-mail [reu@hope.bitnet](mailto:reu@hope.bitnet).

*Algebra, Topology and Applied Mathematics*, 8 students, 8 weeks: Darrell Haile, Department of Mathematics, Indiana University, Bloomington, IN 47402; telephone 812-855-2197; fax 812-855-0046; e-mail [haile@iubacs.bitnet](mailto:haile@iubacs.bitnet).

*Inverse Problems in Mathematics and Engineering* (joint between mathematics and engineering), 6 students, 8 weeks: Suzanne Weaver Smith, Department of Engineering Mechanics, University of Kentucky, Lexington, KY 40506; telephone 606-257-4584; fax 606-257-8057; e-mail [ssmith@engr.uky.edu](mailto:ssmith@engr.uky.edu).

*Partial Differential Equations, Probability and Dynamics*, 10 students, 2 months: Clifford A. Reiter, Department of Mathematics, Lafayette College, Easton, PA 18042; telephone 610-250-5277; fax 610-250-9850; e-mail [reiterc@lafcol.lafayette.edu](mailto:reiterc@lafcol.lafayette.edu).

*Algebraic Geometry and Knot Theory*, 10 students, 8 weeks: James J. Madden, Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803; telephone 504-388-1580; fax 504-388-4276; e-mail [madden@marais.math.lsu.edu](mailto:madden@marais.math.lsu.edu).

*Probabilistic Methods in Graph Theory, Combinatorics and Number Theory*, 6 students, 9 weeks: Anant P. Godbole, Department of Mathematics, Michigan Technological University, Houghton, MI 49931; telephone 906-487-2884, 2068; fax 906-487-2357; e-mail [anant@math.mtu.edu](mailto:anant@math.mtu.edu).

*Analysis, Probability and Finite Mathematics*, 6 students, 10 weeks: Steven G. Krantz, Department of Mathematics, Washington University, St. Louis, MO 63130; telephone 314-935-6712; fax 314-935-5799; e-mail [sk@math.wustl.edu](mailto:sk@math.wustl.edu); or contact Cleon Yohe, telephone 314-936-6765, e-mail [cy@math.wustl.edu](mailto:cy@math.wustl.edu).

*Matrix Analysis and Its Applications*, 8 students, 8 weeks: David P. Stanford, Department of Mathematics, College of William and Mary, Williamsburg, VA 23187; telephone 804-221-2000; fax 804-221-2988; e-mail [stanford@cs.wm.edu](mailto:stanford@cs.wm.edu).

*Discrete Mathematics, Combinatorics and Graph Theory*, 6 students, 10 weeks: Joseph A. Gallian, Department of Mathematics and Statistics, University of Minnesota, Duluth, MN 55812; telephone 218-726-7576; fax 218-726-8399; e-mail [jgallian@d.umn.edu](mailto:jgallian@d.umn.edu).

*Number Theory, Algebraic Geometry and Applied Analysis*, 10 students, 8 weeks: Alan H. Durfee, Department of Mathematics, Mount Holyoke College, South Hadley, MA 01075; telephone 413-538-2299; fax 413-538-2327; e-mail [reu@mtholyoke.edu](mailto:reu@mtholyoke.edu).

*Combinatorics, Dynamical Systems and Stochastic Processes*, 8 students, 8 weeks: Terence R. Blows, Department of Mathematics, Northern Arizona University, Flagstaff, AZ 86011; telephone 602-523-6863; fax 602-523-5847; e-mail [blows@nauvax.ucc.nau.edu](mailto:blows@nauvax.ucc.nau.edu).

*Computational and Combinatorial Group Theory*, 10 students, 8 weeks: Andy Miller, Department of Mathematics, University of Oklahoma, Norman, OK 73019; telephone 405-325-6711; fax 405 325-7484; e-mail [amiller@nsfuvax.math.uoknor.edu](mailto:amiller@nsfuvax.math.uoknor.edu).

*Analysis of Algorithms, Geometry, Population Dynamics, and Topology*, 10 students, 8 weeks: Dennis J. Garity,

Department of Mathematics, Oregon State University, Corvallis, OR 97331; telephone 503-737-5138; fax 503-737-0517; e-mail [reu@math.orst.edu](mailto:reu@math.orst.edu).

*Statistics*, 10 students, 10 weeks: James L. Rosenberger, Department of Statistics, Pennsylvania State University, University Park, PA 16802; telephone 814-865-1348; fax 814-863-7114; e-mail [jlrs@stat.psu.edu](mailto:jlrs@stat.psu.edu).

*Computational Group Theory*, 6 students, 7 weeks: Gary J. Sherman, Department of Mathematics, Rose-Hulman Institute of Technology, Terre Haute, IN 47803; telephone 812-877-8445; fax 812-877-3198; e-mail [sherman@rose-hulman.edu](mailto:sherman@rose-hulman.edu).

*Theory and Application of Statistical Methods*, 10 students, 8 weeks: Madhuri S. Mulekar, Department of Mathematics and Statistics, University of South Alabama, Mobile, AL 36688; telephone 334-460-6264; fax 334-460-7969; e-mail [mmulekar@jaguar1.usouthal.edu](mailto:mmulekar@jaguar1.usouthal.edu).

*Selected Topics*, 10 students, 8 weeks: Susanne M. Lenhart, Department of Mathematics, University of Tennessee, Knoxville, TN 37996; telephone 615-974-4270; fax 615-974-6576; e-mail [lenhart@math.utk.edu](mailto:lenhart@math.utk.edu).

*Computational Group Theory*, 6 students, 8 weeks: Rhonda L. Hatcher, Department of Mathematics, Texas Christian University, Fort Worth, TX 76129; telephone 817-921-7335; fax 817-921-7333; e-mail [hatcher@gamma.is.tcu.edu](mailto:hatcher@gamma.is.tcu.edu).

*Geometry and Topology*, 3 students, 8 weeks: Morris Kalka, Department of Mathematics, Tulane University, New Orleans, LA 70118; telephone 504-865-5727; fax 504-865-5274; e-mail [kalka@math.tulane.edu](mailto:kalka@math.tulane.edu).

For general information about the REU program, contact Keith Crank, Program Director, Division of Mathematical Sciences, National Science Foundation, 4201 Wilson Boulevard, Room 1025, Arlington, VA 22230; telephone 703-306-1885; e-mail [kcrank@nsf.gov](mailto:kcrank@nsf.gov).

—NSF Announcement

nesota-Duluth; AMS President Cathleen Morawetz, Courant Institute; Sharon Ross, DeKalb College; and Abdulalim Shabazz, Clark Atlanta University.

Following the workshop, Project NExT Fellows will attend the Mathfest, August 6–8, 1995, participating in all the opportunities of that meeting, and will choose among special short courses on issues in teaching and learning collegiate mathematics, including the pedagogical uses of graphing calculators and computers. During the following year, Project NExT Fellows will participate in a number of activities, including special events at the Joint Mathematics Meetings in Orlando in January 1996 and a workshop in the summer of 1996.

Sixty Project NExT Fellows will be selected for the 1995–1996 year. Funding for room and board at the workshop in Vermont and for the short courses at the 1995 Mathfest will be provided by a grant from the Exxon Education Foundation. Institutions employing the Project NExT Fellows are expected to provide financial assistance. Limited funds are available to assist those institutions that are unable to afford full or partial support.

Applications must be received by **April 28, 1995**. Applications received after that date will be considered until all spaces are filled. Applicants will be notified by June 1, 1995, whether they have been accepted as Project NExT Fellows.

For application forms and other inquiries, write to: James R. C. Leitzel, Department of Mathematics and Statistics, University of Nebraska-Lincoln, P.O. Box 880323, Lincoln, NE 68588-0323; telephone 402-472-7232; fax 402-472-8466; e-mail [jimleitz@unlinfo.unl.edu](mailto:jimleitz@unlinfo.unl.edu).

—Project NExT Announcement

## Project NExT

Project NExT (New Experiences in Teaching) is a program for new or recent Ph.D.s in the mathematical sciences who are interested in improving the teaching and learning of undergraduate mathematics. Faculty who are just beginning or just completing their first year of full-time teaching at the college/university level are invited to apply to become Project NExT Fellows.

The first event for the 1995–1996 Fellows will be a workshop, August 3–5, 1995, just prior to the Summer Joint Mathematics Meetings (the Mathfest) in Burlington, Vermont. At this workshop, Fellows will explore and discuss issues of special relevance to beginning faculty, including: calculus and precalculus reform, alternative methods of teaching and assessment, using technology in the classroom, lessons from pedagogical research, and the faculty member as teacher and scholar.

Invited speakers include: MAA President Kenneth Ross, University of Oregon; Joseph Gallian, University of Min-