
Mathematics Opportunities

American Mathematical Society Centennial Fellowships

*Invitation for Applications for Awards for 2013–2014
Deadline December 1, 2011*

Description: The AMS Centennial Research Fellowship Program makes awards annually to outstanding mathematicians to help further their careers in research. The number of fellowships to be awarded is small and depends on the amount of money contributed to the program. The Society supplements contributions as needed. One fellowship will be awarded for the 2013–2014 academic year. A list of previous fellowship winners can be found at <http://www.ams.org/profession/prizes-awards/ams-awards/centennial-fellow>.

Eligibility: The eligibility rules are as follows. The primary selection criterion for the Centennial Fellowship is the excellence of the candidate's research. Preference will be given to candidates who have not had extensive fellowship support in the past. Recipients may not hold the Centennial Fellowship concurrently with another research fellowship such as a Sloan or NSF Postdoctoral fellowship. Under normal circumstances, the fellowship cannot be deferred. A recipient of the fellowship shall have held his or her doctoral degree for at least three years and not more than twelve years at the inception of the award (that is, received between September 1, 2001, and September 1, 2010). Applications will be accepted from those currently holding a tenured, tenure-track, postdoctoral, or comparable (at the discretion of the selection committee) position at an institution in North America. Applications should include a cogent plan indicating how the fellowship will be used. The plan should include travel to at least one other institution and should demonstrate that the fellowship will be used for more than reduction of teaching at the candidate's home institution. The selection committee will consider the plan in addition to the quality of the candidate's research and will try to award the fellowship to those for whom the award would make a real

difference in the development of their research careers. Work in all areas of mathematics, including interdisciplinary work, is eligible.

Deadline: The deadline for receipt of applications is **December 1, 2012**. The award recipient will be announced in February 2013 or earlier if possible.

Application information: Find Centennial information and the application form via the Internet at <http://www.ams.org/ams-fellowships/>. For paper copies of the form, write to the Membership and Programs Department, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2294; prof-serv@ams.org; 401-455-4105.

—AMS announcement

AMS Epsilon Fund

The AMS Epsilon Fund awards grants to summer mathematics programs that support and nurture mathematically talented high school students in the United States. The deadline to apply for funding for summer 2013 programs is **December 15, 2012**. Applications are now taken online at MathPrograms.org (<http://www.mathprograms.org>). For more information about the program and updated application information, go to <http://www.ams.org/programs/edu-support/epsilon/emp-epsilon>. For more information contact the AMS Membership and Programs Department by email at prof-serv@ams.org or by telephone at 800-321-4267, ext. 4170.

—AMS announcement

Call for Nominations for IMU Prizes

The International Mathematical Union (IMU) has announced a new prize to be awarded every four years at the International Congress of Mathematicians (ICM). The

Leelavati Prize will be awarded for outstanding contributions to increasing public awareness of mathematics as an intellectual discipline and the crucial role it plays in diverse human endeavors. Nominations may be made of individuals who have contributed to the visibility of mathematics through books; films; plays; television or radio shows; museum exhibits, activities, or fairs; public lectures; Internet activities for mathematics; or other means. The prize carries a cash award of 1 million Indian rupees (approximately US\$18,000) and is sponsored by Infosys. For more information about the prize, see the website <http://www.mathunion.org/general/prizes/leelavati/details/>.

The IMU is also calling for nominations for its other prizes: the Fields Medals, the Rolf Nevanlinna Prize, the Carl Friedrich Gauss Prize, the Chern Medal, and the Emmy Noether Lecture. For nomination guidelines, see the website <http://www.mathunion.org/general/prizes/nomination-guidelines/>.

Nominations for all prizes should be sent to the committee chairs; their names, addresses, and email addresses can be found at the website <http://www.mathunion.org/general/prizes/prize-committee-chairs/2014/>.

The deadline for nominations for prizes to be given at the 2014 ICM in Seoul, Korea, is **December 31, 2012**.

—From an IMU announcement

Jefferson Science Fellows Program

The Jefferson Science Fellows (JSF) program at the U.S. Department of State is intended to involve the American academic science, technology, and engineering communities in the formulation and implementation of U.S. foreign policy. Each fellow will spend one year at the U.S. Department of State or the U.S. Agency for International Development (USAID) for an on-site assignment in Washington, D.C., that may also involve extended stays at U.S. foreign embassies and/or missions. Each fellow will receive a stipend of up to US\$50,000. An additional US\$10,000 is awarded for travel associated with their assignments at the U.S. Department of State/USAID. Following the fellowship year, the Jefferson Science Fellow will return to his or her academic career but will remain available to the U.S. Department of State for short-term projects over the following five years. The JSF program is administered by the National Academies and is supported through a partnership of the U.S. science, technology, and academic communities, professional scientific societies, and the U.S. Department of State. The deadline for applications is **January 13, 2013**. For further information, email jssf@nas.edu, telephone 202-334-2643, or see the website http://sites.nationalacademies.org/PGA/Jefferson/PGA_046612.

—From a National Academies announcement

NSF Graduate Research Fellowships

The National Science Foundation's Graduate Research Fellowship Program (GRFP) recognizes and supports outstanding graduate students in NSF-supported science, technology, engineering, and mathematics disciplines who are pursuing research-based master's and doctoral degrees at accredited U.S. institutions. The NSF welcomes applications from all qualified students and strongly encourages underrepresented populations, including women, underrepresented racial and ethnic minorities, and persons with disabilities, to apply for this fellowship.

Fellows benefit from a three-year annual stipend of US\$30,000 along with a US\$10,500 cost of education allowance for tuition and fees, opportunities for international research and professional development, and the freedom to conduct their own research at any accredited U.S. institution of graduate education they choose.

The next deadline to apply for to the GRFP is **November 14, 2012**. For further information, visit the website <http://www.nsfgrfp.org/>.

—From NSF announcements

Editor's Note: This issue of the *Notices* carries the article "Applications Wanted: NSF Graduate Research Fellowships", by Meredith Berthelson and Jennifer Slimowitz Pearl. Written by two NSF staffers, the article is geared specifically toward students in the mathematical sciences who wish to apply for the fellowships.

AMS Congressional Fellowship

The AMS, in conjunction with the American Association for the Advancement of Science (AAAS), will sponsor a Congressional Fellow from September 2013 through August 2014. The fellow will spend the year working on the staff of a Member of Congress or a congressional committee as a special legislative assistant in legislative and policy areas requiring scientific and technical input.

The fellowship is designed to provide a unique public policy learning experience, to demonstrate the value of science-government interaction, and to bring a technical background and external perspective to the decision-making process in the Congress.

An AMS Fellowship Committee will select the AMS Congressional Fellow. The fellowship stipend is US\$74,872 for the fellowship period, with allowances for relocation and professional travel and a contribution towards health insurance.

Deadline for applications is **February 15, 2013**. Applicants must have a Ph.D. or an equivalent doctoral-level degree in the mathematical sciences by the application deadline. For further information, please consult the website at <http://www.ams.org/programs/ams-fellowships/ams-aaas/ams-aaas-congressional-fellowship>, or

contact the AMS Washington Office at 202-588-1100, email: amsdc@ams.org.

—AMS Washington Office

AAUW Educational Foundation Fellowships and Grants

The American Association of University Women (AAUW) has programs for supporting women students and scholars at various stages of their careers: American Fellowships, Career Development Grants, International Fellowships, and Selected Professions Fellowships. The latter fellowships support women students in areas in which women's participation has traditionally been low, including computer/information sciences and mathematics/statistics.

For further information about the fellowships and application procedures, visit the website http://www.aauw.org/learn/fellowships_grants/. Questions by phone or postal mail must be directed to the Iowa City office of the AAUW. Please do not contact the AAUW office in Washington, D.C., or local branches for application information. Please call 319-337-1716, ext. 60; email aauw@act.org; or write to the customer service center at: AAUW Fellowships and Grants, C/O ACT, Inc., P.O. Box 4030, Iowa City, IA 52243-4030.

—From AAUW website

NRC-Ford Foundation Fellowships

Through its Fellowship Programs, the Ford Foundation seeks to increase the diversity of the nation's college and university faculties by increasing their ethnic and racial diversity, to maximize the educational benefits of diversity, and to increase the number of professors who can and will use diversity as a resource for enriching the education of all students. The fellowships are administered by the Fellowships Office of the National Research Council.

All citizens or nationals of the United States are eligible, regardless of race, national origin, religion, gender, age, disability, or sexual orientation. The fellowships are awarded to individuals who demonstrate superior academic achievement (such as grade point average, class rank, honors or other designations) and who are committed to a career in teaching and research at the college or university level.

Sixty Predoctoral Fellowships will be awarded. These fellowships provide three years of support for individuals engaged in graduate study leading to a Doctor of Philosophy (Ph.D.) or Doctor of Science (Sc.D.) degree. The online application deadline is **November 14, 2012**.

Thirty-five Dissertation Fellowships will be awarded. These fellowships provide one year of support for individuals working to complete a dissertation leading to a

Ph.D. or Sc.D. degree. The online application deadline is **November 19, 2012**.

Approximately twenty Postdoctoral Fellowships will be awarded. These fellowships provide one year of support for individuals engaged in postdoctoral study after the attainment of the Ph.D. or Sc.D. degree. The online application deadline is **November 19, 2012**.

Awards will be announced in April 2013. For further information, visit the website <http://sites.nationalacademies.org/pga/fordfellowships/>, or contact: Fellowships Office, Keck 576, National Research Council, 500 Fifth Street, NW, Washington, DC 20001; tel: 202-334-2872; fax: 202-334-3419; email: infofell@nas.edu.

—From the Ford Foundation Fellowships website

AWM Essay Contest

To increase awareness of women's ongoing contributions to the mathematical sciences, the Association for Women in Mathematics (AWM) and Math for America are cosponsoring an essay contest for biographies of contemporary women mathematicians and statisticians in academic, industrial, and government careers.

Each essay will be based primarily on an interview with a woman currently working in a mathematical sciences career. This contest is open to students in the following categories: Grades 6-8, Grades 9-12, and College Undergraduate. At least one winning submission will be chosen from each category. Winners will receive a prize, and their essays will be published online at the AWM website. Additionally, a grand prize winner will have his or her submission published in the AWM Newsletter.

The deadline for the 2013 AWM Essay Contest is **January 31, 2013**. AWM is also currently seeking women mathematicians to volunteer as the subjects of these essays. For more information or to sign up as a volunteer, contact the contest organizer, Heather Lewis, at hlewis5@naz.edu.

—AWM announcement

AMS Department Chairs Workshop

The annual workshop for department chairs will be held a day before the start of the Joint Mathematics Meetings in San Diego, California, on Tuesday, January 8, 2013, from 8:00 a.m. to 6:30 p.m. This one-day session for mathematical sciences department chairs is organized in a workshop format so as to stimulate discussion among attendees. Sharing ideas and experiences with peers creates an environment that enables attending chairs to address departmental challenges from new perspectives.

Workshop leaders will be: Timothy Hodges, professor and graduate program director, Department of Mathematical Sciences, University of Cincinnati; Helen Roberts, professor and chair, Department of Mathematical Sciences,

Montclair State University; Alex Smith, professor and chair, Department of Mathematics, University of Wisconsin-Eau Claire; and Michel Smith, professor and chair, Department of Mathematics and Statistics, Auburn University.

Past workshop sessions have focused on a range of issues facing departments, including planning and budgeting, personnel management, assessment, outreach, faculty development, communications, and departmental leadership.

There is a registration fee for the workshop, which is in addition to and separate from the Joint Meetings registration. An invitation to attend the workshop will be sent to department chairs this fall. Information will also be posted on the AMS website. For further information, please contact the AMS Washington Office at 202-588-1100 or amsdc@ams.org.

—AMS Washington Office

Mathematics Research Communities 2013

The AMS invites mathematicians just beginning their research careers—those who are close to finishing their doctorates or have recently finished—to become part of Mathematics Research Communities, a unique and successful program that builds social and collaborative networks through which individuals inspire and sustain each other in their work. Women and underrepresented minorities are especially encouraged to participate. Supported by the National Science Foundation, the structured program engages and guides all participants as they start their careers.

Those accepted into the program will receive support for the summer conference and will be partially supported for their participation in the Joint Mathematics Meetings that follow in January 2014. The summer conferences of the MRC are held in the breathtaking mountain setting of the Snowbird Resort, Utah, where participants can enjoy the natural beauty and a collegial atmosphere. The program also includes discussion networks by research topic and a longitudinal study of early career mathematicians.

Four conferences will be held in summer 2013, on the following topics.

Week 1a: June 9–15, 2013: Complex Dynamics. Organizers: Laura DeMarco, University of Illinois at Chicago; Adam Epstein, University of Warwick; Sarah Koch, Harvard University.

Week 1b: June 9–15, 2013: Tropical and Nonarchimedean Analytic Geometry. Organizers: Matt Baker, Georgia Institute of Technology; Sam Payne, Yale University.

Week 2: June 16–22, 2013: Geometric Group Theory. Organizers: Ruth Charney, Brandeis University; Tullia Dymarz, University of Wisconsin, Madison; Dan Margalit, Georgia Institute of Technology; Kim Ruane, Tufts University; Kevin Wortman, University of Utah.

Week 3: June 25–July 1, 2013: Regularity Problems for Nonlinear Partial Differential Equations Modeling Fluids and Complex Fluids. Organizers: Peter Constantin, Princeton University; Gautam Iyer, Carnegie Mellon University;

Igor Kukavica, University of Southern California; Helena Nussenzweig-Lopes, Universidade Federal do Rio de Janeiro; Jiahong Wu, Oklahoma State University.

Individuals within one to two years prior to the receipt of their Ph.D.'s, or within one to three years after receipt of their Ph.D.'s, are welcome to apply. The MRC program is open to individuals who are U.S. citizens, as well as to those who are affiliated with U.S. institutions. A few international participants may be accepted. Women and underrepresented minorities are especially encouraged to apply. All participants are expected to be active in the full MRC program. Detailed instructions and the online application will be available on November 1, 2012.

Situated in a beautiful, breathtaking mountain setting, Snowbird Resort provides an extraordinary environment for the MRC. The atmosphere is comparable to the collegial gatherings at Oberwolfach and other conferences that combine peaceful natural ambience with stimulating meetings. MRC participants have access to a range of activities such as a tram ride to the top of the mountain, guided hikes, swimming, mountain bike tours, rock climbing, plus heated outdoor pools. More than a dozen walking and hiking trails head deep into the surrounding mountains. Participants also enjoy the simpler pleasures of convening on the patios at the resort to read, work, and socialize. In the evenings colleagues enjoy informal gatherings to network and continue discussion of the day's sessions over refreshments. Within a half hour of the University of Utah, Snowbird is easily accessible from the Salt Lake City International Airport. For more information about Snowbird Resort, see <http://www.snowbird.com>.

For further information on Mathematics Research Communities, visit the website <http://www.ams.org/programs/research-communities/mrc-13> or contact Ellen J. Maycock at ejm@ams.org.

—AMS announcement

EDGE Summer Program 2013

The EDGE Program (Enhancing Diversity in Graduate Education) was launched in 1998 with the goal of strengthening the ability of women students to successfully complete graduate programs in the mathematical sciences. The program has a special emphasis on inclusion of women from underrepresented groups.

EDGE sponsors a summer program consisting of two core workshops in analysis and algebra/linear algebra, as well as minicourses in vital areas of mathematical research in pure and applied mathematics. The program brings in short-term visitors from academia and industry, guest lecturers, and graduate student mentors, and also holds problem sessions. A follow-up mentoring program and support network is established with the participants' respective graduate programs.

Applicants to the program should be women who are: (1) graduating seniors who have applied to Ph.D. programs in the mathematical sciences; (2) recent recipients of undergraduate degrees who are now entering Ph.D.

programs; or (3) first-year Ph.D. students. All applicants should have completed standard junior-senior level undergraduate courses in analysis and abstract algebra. 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 Ph.D. program in the mathematical sciences.

Pending funding, the EDGE 2013 Summer Program will be held at New College Florida. A stipend plus travel, room, and board will be awarded to participants. The application deadline for the program is **Monday, February 25, 2013**. Acceptance to the program will be announced in April.

For further information, visit the website <http://www.edgeforwomen.org/>.

—EDGE announcement

Research Opportunities for U.S. Graduate Students in Asia and Australia

The National Science Foundation (NSF) is sponsoring a summer research program in Australia, China, Japan, Korea, Taiwan, New Zealand, and Singapore for U.S. graduate students during the summer of 2013. The East Asia and Pacific Summer Institutes (EAPSI) provide U.S. graduate students in science and engineering with firsthand research experience in the aforementioned countries; an introduction to the science and science policy infrastructure of the respective locations; and orientation to the culture and language. The primary goals of EAPSI are to introduce students to East Asian and Pacific science and engineering in the context of a research laboratory and to initiate personal relationships that will better enable them to collaborate with foreign counterparts in the future. The institutes last approximately eight weeks (ten weeks in Japan) from June to August and are administered in the United States by the NSF.

Applicants must be U.S. citizens or permanent residents. They must be enrolled at U.S. institutions in a research-oriented master's or Ph.D. program (including joint degree programs) in fields of science or engineering research and education that are supported by the NSF and that also are represented among the potential host institutions. International travel will be provided, and each awardee will receive a stipend of US\$5,000.

The deadline for full proposals is **November 8, 2012**. Proposers are required to prepare and submit all proposals for this announcement/solicitation through the FastLane system. Further information and detailed instructions are available at http://www.nsf.gov/pubs/2012/nsf12498/nsf12498.htm?WT.mc_id=USNSF_25&WT.mc_ev=click #awd_info (or <http://tinyurl.com/cqgnexu>).

—From an NSF announcement

News from the Fields Institute

The Fields Institute in Toronto, Canada, invites applications for postdoctoral fellowships to participate in the Thematic Program on Calabi-Yau Varieties: Arithmetic, Geometry, and Physics during the 2013–2014 academic year. The fellowships provide for a period of engagement in research and participation in the activities of the Institute. In addition to regular postdoctoral support, one visitor for each six-month program will be awarded the Institute's prestigious Jerrold E. Marsden Postdoctoral Fellowship.

Applicants seeking postdoctoral fellowships funded by other agencies (such as NSERC or international fellowships) are encouraged to request the Fields Institute as their proposed location of tenure and should apply to the Institute for a letter of invitation.

Qualified candidates who will have recently completed a Ph.D. in a related area of the mathematical sciences are encouraged to apply. The deadline for applications is **December 15, 2012**, although late applications may be considered. For more information, see the website <http://www.fields.utoronto.ca/honours/postdoc.html>.

The Fields Institute is committed to diversity and welcomes applications from women, members of First Nations or visible minorities, persons with disabilities, members of sexual minority groups, and others who may contribute to the diversity of ideas.

—From a Fields Institute announcement

News from IPAM

The Institute for Pure and Applied Mathematics (IPAM), a National Science Foundation (NSF) mathematics institute located at the University of California Los Angeles, offers programs that encourage cross-disciplinary collaboration. IPAM holds long- and short-term research programs and workshops throughout the academic year for junior and senior mathematicians and scientists who work in academia, the national laboratories, and industry.

IPAM will be attending the Joint Math Meetings in San Diego on January 9–12, 2013. A reception sponsored by all of the mathematical sciences institutes will take place on Wednesday, January 9, from 5:30 to 8:00 p.m. in San Diego Ballroom B at the Marriott. Additionally, several students in our Research in Industrial Projects for Students (RIPS) program will present posters in the MAA Undergraduate Poster Session on Friday, January 11, 2013, 3:30–5:30 p.m., in Exhibit Hall B2, San Diego Convention Center.

Currently, IPAM is in the midst of its long program on Materials Defects: Mathematics, Computation, and Engineering. Researchers from mathematics, physics, materials science, and computer science are in residence at IPAM, and a series of workshops is in progress. The final two workshops will be held in November and December; more information is available at <http://www.ipam.ucla.edu/programs/md2012/>.

Next summer, IPAM will sponsor a graduate summer school on computer vision from July 22 to August 9, 2013. The application deadline is **March 31, 2013**. IPAM will also offer its undergraduate program, Research in Industrial Projects for Students (RIPS), in both Los Angeles and Hong Kong. The application deadline for RIPS is **February 12, 2013**.

Finally, IPAM is pleased to announce that Fields Medalist Wendelin Werner will give a series of talks during our annual Green Family Lecture Series, to be held the week of June 3, 2013. Details will be posted in the spring.

Following is a list of upcoming programs at IPAM. See the website www.ipam.ucla.edu for detailed information and to find application and registration forms.

Winter Workshops. You may apply for support or register for each workshop online.

January 15–18, 2013: Structure and Randomness in System Identification and Learning.

January 28–February 1, 2013: Adaptive Data Analysis and Sparsity.

February 11–15, 2013: Convex Relaxation Methods for Geometric Problems in Scientific Computing.

March 4–8, 2013: Multimodal Neuroimaging.

Long Programs. You may apply online for support to be a core participant for the entire program or to attend any of the following individual workshops.

March 11–June 14, 2013. Interactions Between Analysis and Geometry.

March 12–15, 2013: Tutorials.

March 18–22, 2013: Workshop I: Analysis on Metric Spaces.

April 8–12, 2013: Workshop II: Dynamics of Groups and Rational Maps.

April 29–May 3, 2013: Workshop III: Nonsmooth Geometry.

May 20–24, 2013: Workshop IV: Quasiconformal Geometry and Elliptic PDEs.

September 9–December 13, 2013: Materials for a Sustainable Energy Future. This program is part of the international initiative “Mathematics of Planet Earth”. You may apply online for support to be a core participant for the entire program or to attend any of the following individual workshops.

September 10–13, 2013: Tutorials.

September 23–27, 2013: Workshop I: Solar Cells.

October 14–18, 2013: Workshop II: Fuels from Sunlight.

November 4–8, 2013: Workshop III: Batteries and Fuel Cells.

November 18–22, 2013: Workshop IV: Energy Conservation and Waste Heat Recovery.

—From an IPAM announcement

News from the MSRI

With funding from the National Science Foundation (NSF) and the National Security Agency (NSA), the Mathematical Sciences Research Institute (MSRI) will hold five workshops in Commutative Algebra and Noncommutative Algebraic

Geometry and Representation Theory during the spring of 2013. Established researchers, postdoctoral fellows, and graduate students are invited to apply for funding. It is the policy of MSRI to actively seek to achieve diversity in its workshops. Thus a strong effort is made to remove barriers that hinder equal opportunity, particularly for those groups that have been historically underrepresented in the mathematical sciences. The workshops to be held are as follows:

January 24–25, 2013: Connections for Women: Noncommutative Algebraic Geometry and Representation Theory. <https://www.msri.org/web/msri/scientific/workshops/programmatic-workshops/show/-/event/Wm9061>.

January 28–February 1, 2013: Introductory Workshop: Noncommutative Algebraic Geometry and Representation Theory. <https://www.msri.org/web/msri/scientific/workshops/programmatic-workshops/show/-/event/Wm9062>.

February 11–17, 2013: Representation Theory, Homological Algebra, and Free Resolutions. <https://www.msri.org/web/msri/scientific/workshops/programmatic-workshops/show/-/event/Wm8999>.

April 8–12, 2013: Interactions between Noncommutative Algebra, Representation Theory, and Algebraic Geometry. <https://www.msri.org/web/msri/scientific/workshops/programmatic-workshops/show/-/event/Wm9063>.

May 6–10, 2013: The Commutative Algebra of Singularities in Birational Geometry: Multiplier Ideals, Jets, Valuations, and Positive Characteristic Methods. <https://www.msri.org/web/msri/scientific/workshops/programmatic-workshops/show/-/event/Wm9000>.

News from Institut Mittag-Leffler

Institut Mittag-Leffler in Djursholm, Sweden, announces postdoctoral fellowship grants for 2013–2014. The scientific areas are *Evolutionary Problems*, September 2 to December 13, 2013; and *Graphs, Hypergraphs, and Computing*, January 14 to April 30, 2014. The deadline to apply is **January 7, 2013**.

The institute also issues a call for proposals for programs in mathematical sciences for the academic year 2015–2016. The deadline to submit proposals is **February 4, 2013**.

For further information on both of these opportunities, visit the website <http://www.mittag-leffler.se>.

—Institut Mittag-Leffler announcements