
Mathematics Opportunities

Math for America Fellowships

Math for America (MfA) is a nonprofit organization with a mission to improve mathematics education in US public secondary schools by recruiting, training, and retaining outstanding mathematics teachers and leaders. MfA offers fellowships for new and experienced teachers and school leaders. The MfA Master Teacher Fellowship is a four-year program that rewards outstanding experienced public secondary school mathematics and science teachers. Master Teacher Fellowships are available in Berkeley, Boston, and New York City. The application deadline for Boston is **April 30, 2015**; for Berkeley, **May 15, 2015**; and for New York City, **July 20, 2015**. For more information and to apply, see www.mathforamerica.org/web/guest/apply.

—From an MfA announcement

NSF Postdoctoral Research Fellowships

The National Science Foundation (NSF) awards Mathematical Sciences Postdoctoral Research Fellowships (MSPRF) for appropriate research in areas of the mathematical sciences, including applications to other disciplines. Awardees are permitted to choose research environments that will have maximal impact on their future scientific development. Awards are made in the form of either Research Fellowships or Research Instructorships. The Research Fellowship option provides full-time support for any eighteen academic-year months in a three-year period, in intervals not shorter than three consecutive months. The Research Instructorship option provides either two academic years of full-time support or one academic year of full-time and two academic years of half-time support. Under both options, the award includes six summer months; however, no more than two summer months of support may be received in any calendar year. Under both options, the stipend support for twenty-four months (eighteen academic-year months plus six summer months) will be provided within a forty-eight-month period.

The deadline for proposals is **October 21, 2015**. See www.nsf.gov/funding/pgm_summ.jsp?pims_id=5301&org=DMS&from=home. ***PLEASE NOTE: THIS URL HAS BEEN UPDATED POST-PUBLICATION AND DIFFERS FROM THE PRINT VERSION.**

—From an NSF announcement

Research Training Groups in the Mathematical Sciences

The National Science Foundation (NSF) Research Training Groups in the Mathematical Sciences (RTG) program provides funds for the training of US students and postdoctoral researchers in the mathematical sciences. Proposals are solicited from groups of researchers based in a subarea of the mathematical sciences or linked by a multidisciplinary theme to support training at educational levels from undergraduate to postdoctoral within that focus. RTG awards are intended to support training programs that have strong potential to increase the number of well-prepared US citizens, nationals, and permanent residents who pursue careers in the mathematical sciences and in other NSF-supported disciplines. The deadline for full proposals is **June 2, 2015**. For more information see www.nsf.gov/funding/pgm_summ.jsp?pims_id=5732&org=DMS&from=home. ***PLEASE NOTE: THIS URL HAS BEEN UPDATED POST-PUBLICATION AND DIFFERS FROM THE PRINT VERSION.**

—From an NSF announcement

International Mathematics Competition for University Students

The Twenty-first International Mathematics Competition (IMC) for University Students will be held July 27–August 2, 2015, at American University in Blagoevgrad, Bulgaria. Participating universities are invited to send several students and one teacher; individual students are welcome. Students completing their first, second, third,

or fourth years of university education are eligible. The competition will consist of two sessions of five hours each. Problems will come from the fields of algebra, analysis (real and complex), geometry, and combinatorics. The working language will be English. See the website www.imc-math.org.uk/ or contact John Jayne, University College London, Gower Street, London WC1E 6BT, United Kingdom, telephone: +44 (0)77 40304010, email: j.jayne@ucl.ac.uk, or Chrisina Jayne, Computing Department, Coventry University, email: chrisina.jayne@gmail.com.

—John Jayne, University College London

News from IPAM

The Institute for Pure and Applied Mathematics (IPAM) is a National Science Foundation (NSF) mathematics institute located at the University of California Los Angeles. IPAM offers programs that encourage collaboration across disciplines and between two areas of mathematics.

IPAM holds long programs (three months) and workshops (three to five days) throughout the academic year for junior and senior mathematicians and scientists who work in academia, the national laboratories, and industry. In the summer, IPAM offers an industrial research experience for undergraduates and a summer school for graduate students and postdocs.

The current long program, on financial mathematics, will present its final two workshops in May: Commodity Markets and Their Financialization (May 4–8) and Forensic Analysis of Financial Data (May 18–22). You may register for either workshop online. During the last workshop, Andrew Lo, director of MIT’s Laboratory for Financial Engineering, will give two public lectures as part of the annual Green Family Lecture Series.

The 2015 graduate summer school, Games and Contracts for Cyber-Physical Security, will be held July 7–23, 2015. It provides an advanced introduction to how the mathematical tools of game theory can be applied to improve the resilience (security and reliability) of cyber-physical systems (CPS) that control critical national infrastructures, such as our electricity, water, and transportation networks. We are no longer accepting applications for funding, but graduate students and recent PhDs may still register to attend without IPAM support.

IPAM will celebrate its fifteenth anniversary and the renewal of support from the National Science Foundation at an anniversary event to be held in the fall, to which the former program participants, board members, and the public are invited. An announcement is forthcoming.

IPAM’s other upcoming programs follow. See the website www.ipam.ucla.edu for detailed information and to find application and registration forms.

September 8–December 11, 2015: New Directions in Mathematical Approaches for Traffic Flow Management. 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 9–12, 2015: Tutorials.

September 28–October 2, 2015: Workshop I: Mathematical Foundations of Traffic.

October 12–16, 2015: Workshop II: Traffic Estimation.

October 26–30, 2015: Workshop III: Traffic Control.

November 16–20, 2015: Workshop IV: Decision Support for Traffic.

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

January 11–15, 2015: Optimization and Equilibrium in Energy Economics.

January 25–29, 2016: Partial Order: Mathematics, Simulations and Applications.

February 8–12, 2016: Shape Analysis and Learning by Geometry and Machine.

February 22–26, 2016: Algebraic Geometry for Coding Theory and Cryptography.

March 7–June 10, 2016: Culture Analytics. You may apply online for support to be a core participant for the entire program or to attend any of the individual workshops.

March 8–11, 2016: Tutorials.

March 21–24, 2016: Workshop I: Mathematical Analysis of Cultural Expressive Forms: Images, Videos, Music, and Cognition.

April 11–15, 2016: Workshop II: Culture Analytics and User Experience Design.

May 9–13, 2016: Workshop III: Cultural Patterns: Multiscale Data-Driven Models.

May 23–27, 2016: Workshop IV: Mathematical Analysis of Cultural Expressive Forms: Text Data.

IPAM seeks program proposals from the mathematics and science communities. Please send your idea for a workshop, long program, or summer school to director@ipam.ucla.edu.

—From an IPAM announcement

Clay Research Conference and Workshops

The 2015 Clay Research Conference will be held September 30 at the Mathematical Institute of the University of Oxford. The plenary speakers are:

- Charles Fefferman (Princeton)
- Mike Hopkins (Harvard)
- Andrei Okounkov (Columbia)
- Peter Scholze (Bonn)

The 2014 Clay Research Award will be presented to Maryam Mirzakhani for her many significant contributions to geometry and ergodic theory. The recipient of the 2015 Clay Research Award will also be announced.

Associated workshops will be held throughout the week of the conference, September 28–October 2:

- Algebraic Topology: manifolds unlocking higher structures (Mike Hopkins and Ulrike Tillmann)
- Geometry and Dynamics of Moduli Spaces (Alex Eskin, Giovanni Forni, and Anton Zorich)
- Motives and Automorphic Forms (Minhyong Kim and Peter Scholze)

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- Water Waves and Related Fluid Models (Alexandru Ionescu and Steve Shkoller)

Registration for the Clay Research Conference is free but required. Participation in the workshops is by invitation; a limited number of additional places is available. Limited accommodation is available for PhD students and early career researchers. For more information email Naomi Kraker at admin@claymath.org. For full details, including the schedule, titles and abstracts when they become available, see www.claymath.org.

—*from a Clay Mathematics Institute announcement*

New Horizons in Mathematics Prize

The Breakthrough Prize has opened the public nomination period for its 2016 prizes in Fundamental Physics, Life Sciences, and Mathematics. Nominations can be submitted online through **May 31, 2015**. For the fourth year, the Breakthrough Prizes will continue to recognize the world's top scientists, granting each a US\$3 million award.

In addition, the Breakthrough Prize is pleased to announce that a new prize category has been created this year—the New Horizons in Mathematics Prize, a US\$100,000 award for promising junior researchers in the field of mathematics, who have already produced important work. Up to three of these prizes will be given each year. Anyone may make a nomination, but self-nominations are prohibited. The nomination form and the rules are available at www.breakthroughprize.org.

The 2016 prizes are expected to be announced in the fall of 2015.

—*from a Breakthrough Prize announcement*