Mathematics People

Kuo Awarded 2014 Information-Based Complexity Prize

Frances Kuo of the University of New South Wales has been named the recipient of the 2014 Prize for Achievement in Information-Based Complexity (IBC). The prize consists of US$3,000 and a plaque, to be presented at the Foundations of Computational Mathematics conference in Montevideo, Uruguay, in December 2014. This annual prize is given for outstanding contributions to information-based complexity.

—Joseph Traub, Columbia University

Prizes of the Association for Women in Mathematics

J. Elisenda Grigsby of Boston College has been awarded the inaugural AWM-Joan and Joseph Birman Research Prize in Topology and Geometry by the Association for Women in Mathematics (AWM) for her "pioneering and influential contributions to low-dimensional topology, particularly in the areas of knot theory and categorified invariants". Her research focuses on the interplay between the combinatorial theory of Khovanov homology and the more geometric Heegaard-Floer homology. She will receive the prize at the Joint Mathematics Meetings in San Antonio, Texas, in January 2015. The Birman Prize recognizes exceptional research in topology and/or geometry by a woman early in her career.

Marie A. Vitulli of the University of Oregon has been named the 2014 Etta Z. Falconer Lecturer of the AWM and the Mathematical Association of America (MAA). She was honored for her "original and important contributions to commutative algebra and its interactions with algebraic geometry", as well as for her distinguished career. She will deliver the Falconer Lecture, titled "From Algebraic to Weak Subintegral Extensions in Algebra and Geometry", at the MAA MathFest in Portland, Oregon, in August 2014.

—From MAA announcements

Prizes of the Mathematical Society of Japan

The Mathematical Society of Japan (MSJ) has awarded several prizes for 2014.

The Spring Prize has been awarded to Yukinobu Toda of the University of Tokyo for his outstanding contributions to the study of derived categories of algebraic varieties. The Spring Prize is awarded to researchers under the age of forty who have obtained outstanding mathematical results.

The Algebra Prize has been awarded to Yuji Yoshino of Okayama University for work on Cohen-Macaulay representation theory and to Hidekazu Furusho of Nagoya University for work on Grothendieck-Teichmüller theory and multiple zeta values. The Algebra Prize is awarded to researchers who have made significant contributions to the development of algebra in a broad sense by obtaining outstanding results.

The Prize for Science and Technology in Research was awarded to the following individuals: Hiroyuki Ochiai of the Institute of Mathematics for Industry, Kyushu University, and Ken-ichi Anjyo of OLM Digital, Inc., for their outstanding contributions to mathematical modeling on discrete image synthesis; to Mitsuhiro Nakao of Sasebo National College of Technology for outstanding contributions to research on validated computation and its applications to partial differential equations; and to Atsuko Miyaji of the Japan Advanced Institute of Science and Technology for her outstanding contributions to secure and efficient elliptic curve cryptsystems.

The Young Scientists' Prize was awarded to Yoshiko Ogata of the University of Tokyo for her research on operator algebras and their applications to quantum statistical mechanics and to Tsuyoshi Yoneda of the Tokyo Institute of Technology for his research on fluid equations by real analysis.

The Outstanding Paper Prizes were awarded to Daisuke Fujiwara of Gakushuin University for the article "An integration by parts formula for Feynman path integrals", *Journal of the Mathematical Society of Japan* **65** (2013), no. 4, 1273–1318, and to Hisashi Okamoto of Kyoto University for the article "Blow-up problems in the strained vorticity dynamics and critical exponents", *Journal of the Mathematical Society of Japan* **65** (2013), no. 4, 1079–1099. The prize is awarded to the authors of the most outstanding articles published in the *Journal of the Mathematical Society of Japan* during the preceding year.

The Japan Academy Prize has been awarded to Hiraku Nakajima of Kyoto University for his outstanding contributions to geometric representation theory and mathematical physics. The Japan Academy Prize is awarded to persons who have achieved notable research landmarks or who have authored particularly outstanding academic papers or books.

—From MSJ announcements

VanderWeele Receives 2013 Carroll Young Investigator Award

Tyler J. VanderWeele of Harvard University has been chosen the recipient of the 2013 Raymond J. Carroll Young Investigator Award by the Texas A&M University Department of Statistics. VanderWeele was honored "for his methodological research on how to distinguish association and causation in the social and biomedical sciences". The award is given biannually in odd-numbered years to a statistician who has made important contributions to the area of statistics.

—From a Texas A&M University announcement

Moody's Mega Math Challenge

The winners of the 2014 Mega Math Challenge for high school students have been announced. The topic for this year focused on the question, "Can school lunches be nutritious, affordable, and delicious?"

A team from the North Carolina School of Science and Mathematics in Durham, North Carolina, was awarded the Summa Cum Laude team prize of US$20,000 in scholarship money. The students were Anne Lee, Irwin Li, Steven Liao, Zack Polizzi, and Jennifer Wu. Their coach was Daniel Teague.

The Magna Cum Laude Team Prize of US$15,000 in scholarship money was awarded to a team from High Technology High School in Lincroft, New Jersey. The team members were Cynthia Guo, Ruby Guo, Patrick LeBlanc, Austin Liu, and Zachary Liu. They were coached by Raymond Eng.

Another team from the North Carolina School of Science and Mathematics was awarded the Cum Laude Team Prize of US$10,000 in scholarship money. The members were Allan Jiang, Pranay Orugunta, Anshul Subramanya, Margaret Tian, and Chris Yuan, and they were also coached by Daniel Teague.

The Meritorious Team Prize of US$7,500 in scholarship money was awarded to a team from Columbus North High School in Columbus, Indiana. The team members were Tushar Chandra, Brian Pierson, Chris Von Hoene, and Byron Zaharako. Their coach was Michael Spock.

The Exemplary Team Prize of US$5,000 in scholarship money was awarded to the Charter School of Wilmington, Delaware. The members were Steven Burcat, Christopher Deng, Byron Fan, Martin Kurian, and Kyle Lennon. Their coach was Mimi Payne.

The First Honorable Mention Team Prize of US$2,500 was awarded to a team from Arsenal Technical High School in Indianapolis, Indiana.The team members were John Francis, Jackson Herbertz, Elijah Stevenson, and Jack Vanschaik. They were coached by Mark Blachly.

The Mega Math Challenge invites teams of high school juniors and seniors to solve an open-ended, realistic, challenging modeling problem focused on real-world issues. The top five teams receive awards ranging from US$5,000 to US$20,000 in scholarship money. The competition is sponsored by the Moody's Foundation, a charitable foundation established by Moody's Corporation, and organized by the Society for Industrial and Applied Mathematics (SIAM).

—From a Moody's Foundation/SIAM announcement

USA Mathematical Olympiad

The 2014 USA Mathematical Olympiad (USAMO) was held April 29–30, 2014. The students who participated in the Olympiad were selected on the basis of their performances on the American High School and American Invitational Mathematics Examinations. The twelve highest scorers in this year's USAMO, listed in alphabetical order, were: Joshua Brakensiek, home schooled, Arizona College Prep-Erie, Chandler, Arizona; Evan Chen, Irvington High School, Fremont, California; Ravi Jagadeesan, Phillips Exeter Academy, Exeter, New Hampshire; Allen Liu, Penfield Senior High School, Penfield, New York; Nipun Pitimanaaree, Pomfret School, Pomfret, Connecticut; Mark Sellke, William Henry Harrison High School, West Lafayette, Indiana; Zhuoqun Song, Phillips Exeter Academy, Exeter, New Hampshire; David Stoner, South Aiken High School, Aiken, South Carolina; Kevin Sun, Phillips Exeter Academy, Exeter, New Hampshire; James Tao, Illinois Mathematics and Science Academy, Aurora, Illinois; Alexander Whatley, North Houston Academy of Science and Mathematics, Spring, Texas; Scott Wu, Baton Rouge Magnet High School, Baton Rouge, Louisiana.

The twelve USAMO winners will attend the Mathematical Olympiad Summer Program (MOSP) at the University of Nebraska, Lincoln. Ten of the twelve will take the team selection test to qualify for the U.S. team. The six students with the highest combined scores from the test and the USAMO will become members of the U.S. team and will compete in the International Mathematical Olympiad (IMO) to be held in Cape Town, South Africa, July 3–13, 2014.

—From Mathematical Association of America announcements

National Academy of Sciences Elections

The National Academy of Sciences (NAS) has elected eighty-four new members and twenty-one foreign associates for 2014. Following are the new members whose work involves the mathematical sciences: Richard Borcherds, University of California Berkeley; Emmanuel Candès, Stanford University; Cynthia Dwork, Microsoft; Lawrence C. Evans, University of California Berkeley; Drew Fudenberg, Harvard University; Jeffrey A. Harvey, Enrico Fermi Institute, University of Chicago; Carlos E. Kenig, University of Chicago; Judea Pearl, University of California Los Angeles; James H. Simons, Simons Foundation and Stony Brook University; and Bin Yu, University of California Berkeley. Elected as foreign associates were James Arthur, University of Toronto; Yves F. Meyer, Centre de Mathématiques et de Leurs Applications, École Normale Supérieure; and Edvard I. Moser, Centre for Neural Computation, Kavli Institute for Systems Neuroscience, Norwegian University of Science and Technology.

—From an NAS announcement

Royal Society Elections

The Royal Society of London has elected its new fellows for 2014. The new fellows whose work involves the mathematical sciences are: Tom Bridgeland, University of Sheffield; Geoffrey Grimmett, University of Cambridge; Martin Hairer, University of Warwick; Vladimir Markovic, University of Cambridge and California Institute of Technology; and Nicholas Stern, London School of Economics.

—From a Royal Society announcement

Mathematics Opportunities

AMS Scholarships for "Math in Moscow"

The Math in Moscow program at the Independent University of Moscow (IUM) was created in 2001 to provide foreign students (primarily from the U.S., 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 and was founded in 1991 at the initiative of a group of well-known Russian research mathematicians, who now comprise 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.

Pending renewal of funding from the National Science Foundation (NSF), the AMS intends to award five scholarships in the amount of US$9,500 for the spring 2015 semester and five scholarships in the amount of US$9,800 for the fall 2015 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 **September 15, 2014**, for the spring 2015 semester and **April 15, 2015**, for the fall 2015 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`. 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 Math-

ematical Society, 201 Charles Street, Providence RI 02904-2294; email student-serv@ams.org.

—AMS Membership and Programs Department

Applications for Adams Prize 2014–2015

Applications are being accepted for the 2014–2015 Adams Prize, which will be awarded for achievements in the field of algebraic geometry. The prize is open to any person under the age of forty who will hold an appointment in the United Kingdom either in a university or in some other institution as of October 31, 2014. (In exceptional circumstances the age limit may be relaxed.) The value of the prize is expected to be approximately £14,000 (approximately US$24,000), of which one-third is awarded to the prizewinner on announcement of the prize, one-third is provided to the prizewinner's institution (for research expenses of the prizewinner), and one-third is awarded to the prizewinner on acceptance for publication in an internationally recognized journal of a substantial (normally at least twenty-five printed pages) original article of which the prizewinner is an author, surveying a significant part of the winner's field. The deadline for receipt of applications is **October 31, 2014**. For more information, see the website http://www.maths.cam.ac.uk/news/4.html.

—From a University of Cambridge announcement

NSF Focused Research Groups

The Focused Research Groups (FRG) activity of the Division of Mathematical Sciences (DMS) of the National Science Foundation (NSF) supports small groups of researchers in the mathematical sciences. The deadline date for full proposals is **September 19, 2014**. The FRG solicitation may be found on the Web at http://www.nsf.gov/pubs/2012/nsf12566/nsf12566.htm.

—From an NSF announcement

NSF Mathematical Sciences Postdoctoral Research Fellowships

The Mathematical Sciences Postdoctoral Research Fellowship program of the Division of Mathematical Sciences (DMS) of the National Science Foundation (NSF) awards fellowships each year that are designed to permit awardees to choose research environments that will have maximal impact on their future scientific development. Awards of these fellowships are made for appropriate research in areas of the mathematical sciences, including applications to other disciplines. Fellows may opt to choose either a research fellowship or a research instructorship. The deadline for this year's applications is **October 15, 2014**. Applications must be submitted via FastLane on the World Wide Web. For more information see the website http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5301.

—From an NSF announcement

NSA Mathematical Sciences Grants and Sabbaticals Program

As the nation's largest employer of mathematicians, the National Security Agency (NSA) is a strong supporter of the academic mathematics community in the United States. Through the Mathematical Sciences Program, the NSA provides research funding and sabbatical opportunities for eligible faculty members in the mathematical sciences.

Grants for Research in Mathematics. The Mathematical Sciences Program (MSP) supports self-directed, unclassified research in the following areas of mathematics: Algebra, Number Theory, Discrete Mathematics, Probability, and Statistics. The Research Grants program offers two types of grants, the Young Investigators Grant and the Standard Grant, and also supports Conferences/Workshops/Special Situations (including Research Experiences for Undergraduates, REUs, as well as other innovative programs at a university in one of the five designated areas). The program does not entertain research or conference proposals that involve cryptology. In particular, MSP is interested in supporting efforts that increase broader participation in the mathematical sciences, promote wide dissemination of mathematics, and promote the education and training of undergraduates and graduate students. Principal investigators, graduate students, and all other personnel supported by NSA grants must be U.S. citizens or permanent residents of the United States at the time of proposal submission. Proposals should be submitted **electronically** by **October 15, 2014**, via the program website: http://www.nsa.gov/research/math_research/index.shtml.

Sabbatical Program. NSA's Mathematics Sabbatical Program offers mathematicians, statisticians, and computer scientists the unique opportunity to develop skills in directions that would be nearly impossible anywhere else. Sabbatical employees work side by side with other NSA scientists on projects that involve cryptanalysis, coding theory, number theory, discrete mathematics, statistics and probability, and many other subjects. Visitors spend 9–24 months at NSA, and most find that within a very short period of time they are able to make significant contributions.

NSA pays 50 percent of salary and benefits during academic months and 100 percent of salary and benefits during summer months of the sabbatical detail. A housing supplement is available to help offset the cost of local lodging.

Applicants must be U.S. citizens and must be able to obtain a security clearance. A complete application includes a cover letter and curriculum vitae with list of significant publications. The cover letter should describe the applicant's research interests, programming experience and level of fluency, and how an NSA sabbatical would affect teaching and research upon return to academia. Additional information is available about the Sabbatical Program at the following website: `http://www.nsa.gov/research/math_research/sabbaticals/index.shtml`.

For more information about the Grants or Sabbaticals Program, please contact the program office at 443-634-4304. You may also send email to `mspgrants@nsa.gov`.

—From an NSA Mathematical Sciences Program announcement

Call for Nominations for 2014 Sacks Prize

The Association for Symbolic Logic (ASL) invites nominations for the 2014 Sacks Prize for the most outstanding doctoral dissertation in mathematical logic. The Sacks Prize consists of a cash award and five years' free membership in the ASL. Dissertations must have been defended by September 30, 2014. General information about the prize is available at `http://www.aslonline.org/info-prizes.html`. For details about nomination procedures, see `http://www.aslonline.org/Sacks_nominations.html`.

—From an ASL announcement

Research Experiences for Undergraduates

The Research Experiences for Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation (NSF). Student research may be supported in two forms: REU supplements and REU sites.

REU supplements may be requested for ongoing NSF-funded research projects or may be included in proposals for new or renewal NSF grants or cooperative agreements.

REU sites are based on independent proposals to initiate and conduct undergraduate research participation projects for a number of students. REU site projects may be based in a single discipline or academic department or on interdisciplinary or multidepartment research opportunities with a strong intellectual focus. Proposals with an international dimension are welcomed. A partnership with the Department of Defense supports REU sites in research areas relevant to defense. Undergraduate student participants supported with NSF funds in either supplements or sites must be citizens or permanent residents of the United States or its possessions.

Students may not apply to NSF to participate in REU activities. Students apply directly to REU sites and should consult the directory of active REU sites on the Web at `http://www.nsf.gov/crssprgm/reu/reu_search.cfm`. The deadline for full proposals for REU sites is **August 27, 2014**. Deadline dates for REU supplements vary with the research program; contact the program director for more information. The full program announcement can be found at the website `http://www.nsf.gov/pubs/2009/nsf09598/nsf09598.htm`.

—From an NSF announcement

News from PIMS

The Pacific Institute for the Mathematical Sciences (PIMS) is seeking nominations of outstanding young researchers in the mathematical sciences for postdoctoral fellowships for the year 2015–2016.

Nominees must have a Ph.D. or equivalent (or expect to receive a Ph.D. by December 31, 2015) and must be within three years of receipt of the Ph.D. at the time of the nomination (i.e., Ph.D. received on or after January 1, 2012). The fellowship may be taken up at any time between September 1, 2015, and January 1, 2016. The fellowship is for one year and is renewable, contingent on satisfactory progress, for at most one additional year. PIMS postdoctoral fellows are expected to participate in all PIMS activities related to their areas of expertise and will be encouraged to spend time at more than one site.

Candidates must be nominated by at least one scientist or by a department (or departments) affiliated with PIMS. The fellowships are intended to supplement support provided by the sponsor and are tenable at any of the PIMS Canadian member universities: the University of Alberta, the University of British Columbia, the University of Calgary, the University of Lethbridge, the University of Regina, the University of Saskatchewan, Simon Fraser University, and the University of Victoria, as well as at the PIMS affiliate, the University of Northern British Columbia.

Complete applications must be uploaded to MathJobs by **December 1, 2014**. For further information, visit: `http://www.pims.math.ca/scientific/postdoctoral` or contact `assistant.director@pims.math.ca`.

—From a PIMS announcement

News from MSRI

MSRI invites applications for 40 Research Professors, 200 Research Members, and 30 semester-long Post-Doctoral Fellows in the following programs: New Challenges in PDE: Deterministic Dynamics and Randomness in High and Infinite Dimensional Systems (August 17–December 18, 2015) and Differential Geometry (January 11–May 20, 2016). Research Professorships are intended for senior researchers who will be making key contributions to a program, including the mentoring of postdoctoral fellows, and who will be in residence for three or more months. Research Memberships are intended for researchers who

will be making contributions to a program and who will be in residence for one or more months. Post-Doctoral Fellowships are intended for recent Ph.D.s. Interested individuals should carefully describe the purpose of their proposed visit, and indicate why a residency at MSRI will advance their research program. To receive full consideration, application must be complete, including all letters of support, by the following deadlines: Research Professorships, **October 1, 2014**; Research Memberships, **December 1, 2014**; Post-doctoral Fellowships, **December 1, 2014**. Application information can be found at `https://www.msri.org/web/msri/scientific/member-application`. It is the policy of MSRI actively to seek to achieve diversity in its programs and 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. MSRI is proud to announce a new resource to assist visitors with finding childcare in Berkeley. For more information, please contact Sanjani Varkey at `sanjani@msri.org`. Programs are funded by the National Science Foundation.

—From an MSRI announcement

Inside the AMS

Math in Moscow Scholarships Awarded

The AMS has made awards to four mathematics students to attend the Math in Moscow program in the fall of 2014. Following are the names of the undergraduate students and their institutions: Harrison LeFrois, University of Nebraska, Omaha; Gillian Grindstaff, Pomona College; Jacob Spear, Carleton College; and Xuanhua Wang, Hendrix College.

Math in Moscow is a program of the Independent University of Moscow that offers foreign students (undergraduate or graduate students specializing in mathematics and/or computer science) the opportunity to spend a semester in Moscow studying mathematics. All instruction is given in English. The fifteen-week program is similar to the Research Experiences for Undergraduates programs that are held each summer across the United States.

The AMS awards several scholarships for U.S. students to attend the Math in Moscow program. The scholarships are made possible through a grant from the National Science Foundation. For more information about Math in Moscow, consult `http://www.mccme.ru/mathinmoscow` and the article "Bringing Eastern European mathematical traditions to North American students", *Notices*, November 2003, pages 1250–1254.

—Elaine Kehoe

2014 AMS-AAAS Mass Media Fellow Chosen

The 2014 AMS-AAAS Mass Media Fellowship has been awarded to Joshua Batson, a recent Ph.D. graduate in mathematics from the Massachusetts Institute of Technology. He will spend ten weeks this summer working at WIRED magazine.

Joshua Batson

The Mass Media Science and Engineering Fellows program is organized by the American Association for the Advancement of Science (AAAS). This competitive program is designed to improve public understanding of science and technology by placing graduate and postgraduate science, mathematics, and engineering students in media outlets nationwide. The fellows work as reporters, researchers, and production assistants alongside media professionals to sharpen their communication skills and increase their understanding of the editorial process by which events and ideas become news.

The program is available to enrolled college or university students (graduate, doctoral, or upper-level undergraduates) in the physical, biological, geological, health, engineering, computer, or social sciences or mathematics with outstanding written and oral communication skills and a strong interest in learning about the media.

In its fortieth year, this fellowship program has placed over 600 science, mathematics, and engineering scholars

in media organizations nationwide as they research, write, and report today's headlines.

For more information on the AAAS Mass Media Science and Engineering Fellows Program, visit the website `http://www.aaas.org/mmfellowship`.

—AMS Washington Office

From the AMS Public Awareness Office

AMS at the 2014 USA Science and Engineering Festival. The AMS hosted a curve-stitching activity at the 2014 USA Science and Engineering Festival, which was held this spring in Washington, D.C. About 2,500 people, mostly young people, came by and stitched polygons and approximations to curves at the AMS booth. Susan Wildstrom, Walt Whitman High School, led the activity with help from about a dozen of her students and AMS staff members Mike Breen, Anita Benjamin, and Colleen Rose. Kyle Gatesman, an eighth-grader from Virginia, won US$1,000 playing *Who Wants to Be a Mathematician*, which was held on Sneak Peek Friday, the opening day of the festival. More than 300,000 people attended the three-day festival. See more at `http://www.ams.org/meetings/usasef2014`.

2014 Mathematical Art Exhibition Album. Images of selected works in the 2014 Mathematical Art Exhibition are now in an album on Mathematical Imagery. Share the e-postcards by email and on social media and explore the world of mathematics and art at `http://www.ams.org/mathimagery/thumbnails.php?album=39`.

—Annette Emerson and Mike Breen
AMS Public Awareness Officers
`paoffice@ams.org`