

Mathematics People

2012–2013 AMS Centennial Fellowship Awarded



Photo by Riza Falk.

Karin Melnick

The AMS has awarded its Centennial Fellowship for 2012–2013 to KARIN MELNICK of the University of Maryland. The fellowship carries a stipend of US\$80,000, an expense allowance of US\$8,000, and a complimentary Society membership for one year.

Karin Melnick was born and raised in Marin County, California. She attended Reed College in Portland, Oregon, and completed her Ph.D. at the University of Chicago in 2006

under the direction of Benson Farb. With a Postdoctoral Research Fellowship from the National Science Foundation, she went to Yale University as a Gibbs Assistant Professor. She received a Junior Research Fellowship from the Erwin Schrödinger Institute in spring 2009. She has been an assistant professor at the University of Maryland since fall 2009.

Melnick's research is on differential-geometric aspects of rigidity. She studies the relationship between algebraic or dynamical properties of the group of automorphisms of a geometric structure on a manifold M and the geometry and topology of M . Her work has focused on manifolds with Lorentzian metrics, conformal pseudo-Riemannian structures, and parabolic geometries in general.

Please note: Information about the competition for the 2013–2014 AMS Centennial Fellowships will be published in the Mathematics Opportunities section of an upcoming issue of the *Notices*.

—Allyn Jackson

Aaronson Receives Waterman Award

SCOTT AARONSON of the Massachusetts Institute of Technology has been selected as a recipient of the 2012 Alan T. Waterman Award of the National Science Foundation (NSF). He is a theoretical computational scientist whose research interests focus on the limitations of quantum computers and computational complexity theory more generally.

His research addresses a variety of topics, including the information content of quantum states, the physical resources needed for quantum computers to surpass classical computers, and the barriers to solving computer science's vexing P versus NP question, that is, whether every problem whose solution can be quickly verified by a computer can also be quickly solved by a computer.

The Waterman Award is given annually to one or more outstanding researchers under the age of thirty-five in any field of science or engineering supported by the NSF. The prize consists of a medal and a US\$1 million grant to be used over a five-year period for further advanced study in the awardee's field.

—From an NSF announcement

Kalai Awarded Rothschild Prize

GIL KALAI of the Einstein Institute of Mathematics, The Hebrew University of Jerusalem, has been named a recipient of the 2012 Rothschild Prize for his groundbreaking work in combinatorics, convexity, and probability theory. According to the prize citation, his work on discrete harmonic analysis has had a major influence in the field of computational complexity and on other areas of theoretical computer science.

The Rothschild Prizes are awarded in two-year cycles in recognition of original and outstanding published work in the disciplines of agriculture, chemical sciences, engineering, humanities, Jewish studies, life sciences, mathematics, physical sciences, and social sciences. A prize is awarded for each discipline once in four years. The prize carries a cash award of US\$50,000 and is intended to support, encourage, and advance the sciences and humanities in Israel.

—From a Hebrew University announcement

2012 Balaguer Prize Awarded

The Ferran Sunyer i Balaguer Foundation has awarded the 2012 Ferran Sunyer i Balaguer Prize to ANGEL CANO, Universidad Nacional Autónoma de Mexico, JUAN PABLO NAVARRETE, Universidad Autónoma de Yucatan, and JOSE SEADE, Universidad Nacional Autónoma de Mexico, for their joint monograph *Complex Kleinian Groups*.

The prize citation reads in part: "Kleinian groups were introduced by Henri Poincaré in the 1880s as the

monodromy groups of certain second-order differential equations. These are discrete groups of automorphisms of the complex projective line CP^1 ; they can be regarded also as groups of isometries of the real hyperbolic 3-space. These groups have played, for decades, a major role in several fields of mathematics, as, for example, in the theory of Riemann surfaces, in holomorphic dynamics, and in the geometrization conjecture for 3-manifolds. The monograph by the prize recipients lays the foundations of the theory of complex Kleinian groups.”

The Ferran Sunyer i Balaguer Foundation of the Institut d’Estudis Catalans (IEC) awards this international prize every year to honor the memory of Ferran Sunyer i Balaguer (1912–1967), a self-taught Catalan mathematician who gained international recognition for his research in mathematical analysis despite the serious physical disabilities with which he was born. The prize carries a cash award of 15,000 euros (approximately US\$20,000); the winning monographs are published by Birkhäuser Verlag.

—From a Ferran Sunyer i Balaguer Foundation announcement

Prizes of the Canadian Mathematical Society

The Canadian Mathematical Society (CMS) has awarded a number of prizes for 2012.

GREGORY SMITH of Queen’s University has been awarded the 2012 Coxeter-James Prize for young mathematicians who have made outstanding contributions to mathematical research. His research centers on combinatorial varieties, the fundamental objects at the interface between algebra, combinatorics, and geometry. Combinatorial varieties account for a large number of the important geometric objects that arise in commutative algebra, representation theory, and mathematical physics, and their explicit nature makes them a good testing ground for general theories and conjectures, as well as computational experimentation.

ROLAND SPEICHER of Queen’s University, Kingston, Ontario, Canada, has been awarded the 2012 Jeffery-Williams Prize for Research Excellence for his research in free probability. The prize citation reads in part: “Through his focus on the combinatorial side of free probability, Speicher has helped reveal key links between several areas of mathematics. These linkages have, in turn, led to the resolution of several mathematical problems that have long been in question.” The Jeffery-Williams Prize is awarded annually to an individual who has made outstanding mathematical research contributions.

AILANA FRASER of the University of British Columbia has been awarded the 2012 Krieger-Nelson Prize by the CMS for her work in the study of geometrical analysis. According to the prize citation, she has made important contributions to the theory of minimal surfaces, including existence and Morse index estimates. She has also found striking applications to Riemannian geometry and to extremal eigenvalue questions for surfaces. The

Krieger-Nelson Prize recognizes female mathematicians who have made outstanding contributions to mathematical research.

—From a CMS announcement

Sloan Fellowships Awarded

The Alfred P. Sloan Foundation has announced the names of the recipients of the 2012 Sloan Research Fellowships. Each year the foundation awards fellowships in the fields of mathematics, chemistry, computational and evolutionary molecular biology, computer science, economics, neuroscience, physics, and ocean sciences. Grants of US\$50,000 for a two-year period are administered by each fellow’s institution. Once chosen, fellows are free to pursue whatever lines of inquiry most interest them, and they are permitted to employ fellowship funds in a wide variety of ways to further their research aims.

Following are the names and institutions of the 2012 awardees in mathematics: ANAR AKHMEDOV, University of Minnesota; MARGARET BECK, Boston University; GRIGORIY BLEKHERMAN, Georgia Institute of Technology; JAMES BREMER, University of California, Davis; PIERRE GERMAIN, New York University; ALIREZA SALEHI GOLSEFIDY, University of California, San Diego; FLORIAN HERZIG, University of Toronto; VERA MIKYOUNG HUR, University of Illinois, Urbana-Champaign; MATTHEW KAHLE, Ohio State University; JOEL KAMNITZER, University of Toronto; YOUNG-HEON KIM, University of British Columbia; TONG LIU, Purdue University; YI NI, California Institute of Technology; BENJAMIN RECHT, University of Wisconsin, Madison; SEBASTIEN ROCH, University of California, Los Angeles; MARCUS ROPER, University of California, Los Angeles; KARL SCHWEDE, Pennsylvania State University; ALLAN SLY, University of California, Berkeley; VALENTINO TOSATTI, Columbia University; RACHEL A. WARD, University of Texas, Austin.

—From a Sloan Foundation announcement

Keyfitz Awarded Kovalevsky Lectureship

BARBARA KEYFITZ of the Ohio State University has been chosen as the AWM-SIAM Sonia Kovalevsky Lecturer for 2012 by the Association for Women in Mathematics (AWM). She will deliver the AWM-SIAM Kovalevsky Lecture, titled “The Role of Characteristics in Conservation Laws”, at the 2012 annual meeting of the Society for Industrial and Applied Mathematics (SIAM) in Minneapolis, Minnesota. She was honored in recognition of her pioneering and seminal contributions to the field of hyperbolic conservation laws. The Sonia Kovalevsky Lectureship honors significant contributions of women to applied or computational mathematics.

—From AWM-SIAM announcements

Cornuejols Awarded John von Neumann Theory Prize

GERARD P. CORNUEJOLS of Carnegie Mellon University has been awarded the 2011 John von Neumann Theory Prize, the highest prize given in the field of operations research and management science, for his fundamental and broad contributions to discrete optimization, including his deep research on balanced and ideal matrices, perfect graphs, and cutting planes for mixed-integer optimization. The award, which is presented by the Institute for Operations Research and the Management Sciences (INFORMS), carries a cash prize of US\$5,000.

—From an INFORMS announcement

Rollo Davidson Prizes Awarded

The Rollo Davidson Trust has awarded the 2012 Rollo Davidson Prize jointly to VINCENT BEFFARA (École Normale Supérieure, Lyon) and HUGO DUMINIL-COPIN (University of Geneva) for their work on disordered systems in two dimensions, and in particular for their solution of the problem of the critical point of the random cluster model. The Rollo Davidson Trust was founded in 1975 and awards an annual prize to young mathematicians working in the field of probability.

—From a Rollo Davidson Trust announcement

Hertz Fellowships Awarded

Two young mathematicians are among fifteen graduate students chosen to receive 2012 Fannie and John Hertz Foundation Fellowships. BRIAN LAWRENCE of the California Institute of Technology and YUN WILLIAM YU of Indiana University, Bloomington, will receive support of more than US\$250,000 each for up to five years of graduate work. Fellows have the freedom to innovate in their doctoral studies without university or research restrictions.

—From a Hertz Foundation announcement

MacLean Awarded 2012 PIMS Education Prize

MARK MACLEAN of the University of British Columbia has been awarded the 2012 PIMS Education Prize of the Pacific Institute for the Mathematical Sciences. The prize recognizes individuals who have played a major role in encouraging activities that have enhanced public awareness and appreciation of mathematics, as well as those who foster communication among various groups concerned with mathematical education at all levels.

According to the prize citation, Mark MacLean is an outstanding instructor making a major impact on teaching in mathematics at UBC and beyond. He was one of the original members of the UBC Science One (first-year science) program and has contributed greatly to its success, with a personal dedication to enhancing the learning environment. In addition to his excellent teaching, MacLean has taken leadership roles in course development, instructor supervision, tutorial centre management, and TA [teaching assistant] training. He has also chaired UBC committees on scholarships and teaching awards. He is also a leader in Aboriginal education.

—From a PIMS announcement

Putnam Prizes Awarded

The winners of the seventy-second William Lowell Putnam Mathematical Competition have been announced. The Putnam Competition is administered by the Mathematical Association of America (MAA) and consists of an examination containing mathematical problems that are designed to test both originality and technical competence. Prizes are awarded to both individuals and teams.

The five highest ranking individuals, listed in alphabetical order, were SAMUEL S. ELDER, California Institute of Technology; BRIAN R. LAWRENCE, California Institute of Technology; SEOK HYEONG LEE, Stanford University; XIAOSHENG MU, Yale University; and EVAN M. O'DORNEY, Harvard University. Each received a cash award of US\$2,500.

Institutions with at least three registered participants obtain a team ranking in the competition based on the rankings of three designated individual participants. The five top-ranked teams (with team members listed in alphabetical order) were: Harvard University (ERIC K. LARSON, EVAN M. O'DORNEY, and ALEX (LIN) ZHAI); Carnegie-Mellon University (MICHAEL T. DRUGGAN, ALBERT GU, and ARCHIT U. KULKARNI); California Institute of Technology (ZARATHUSTRA E. BRADY, SAMUEL S. ELDER, and BRIAN R. LAWRENCE); Stanford University (SEOK HYEONG LEE, GYUJIN OH, and LYUBOSLAV N. PANCHEV); and the Massachusetts Institute of Technology (VLAD FIROIU, COLIN P. SANDON, and JACOB N. STEINHARDT). The first-place team receives an award of US\$25,000, and each member of the team receives US\$1,000. The awards for second place are US\$20,000 and US\$800; for third place, US\$15,000 and US\$600; for fourth place, US\$10,000 and US\$400; and for fifth place, US\$5,000 and US\$200. The Elizabeth Lowell Putnam Prize, which goes to the outstanding woman in the competition, was awarded to FEI SONG of the University of Virginia. She received a cash award of US\$1,000.

—From a Putnam announcement

Guggenheim Fellowships Awarded

The John Simon Guggenheim Memorial Foundation has announced the names of 180 artists, scholars, and scientists from the United States, Canada, and the United Kingdom who were selected as Guggenheim Fellows for 2012. Guggenheim Fellows are appointed on the basis of distinguished achievement in the past and exceptional promise for future accomplishment. The mathematicians selected to receive the 2012 fellowships are STAVROS GAROUFALIDIS, Georgia Institute of Technology; NETS KATZ, University of Indiana; and ALEXANDER KISELEV, University of Wisconsin-Madison. In addition, ANDREA HENDERSON of the University of California, Irvine, was awarded a fellowship for her project, Algebraic Art, an exploration of the aesthetic implications of mathematical accounts of symbolism and formal coherence.

—From a Guggenheim Foundation news release

Intel Science Talent Search Winners Announced

Two students who work in the mathematical sciences have received scholarship awards in the 2012 Intel Science Talent Search. FENGNING (DAVID) DING, an eighteen-year-old student from Albany, California, was awarded fourth place for his project, which classified the irreducible finite-dimensional representations of infinitesimal Cherdnik algebras. This mathematics work reveals important symmetries in representation theory and is related to conservation laws. He received a prize of US\$40,000.

ANIRUDH PRABHU, a seventeen-year-old student from West Lafayette, Indiana, was awarded seventh place and a US\$25,000 prize for his project, in which he investigated odd perfect numbers, assigning the first nontrivial analytic lower bound for them, a bound in terms of the number of distinct prime divisors. His research suggests that odd perfect numbers do not exist.

—From an Intel Corporation announcement

NSF Graduate Research Fellowships

The National Science Foundation (NSF) has awarded a number of Graduate Research Fellowships for fiscal year 2012. Further awards may be announced later in the year. This program supports students pursuing doctoral study in all areas of science and engineering and provides a stipend of US\$30,000 per year for a maximum of three years of full-time graduate study. Following are the names of the awardees in the mathematical sciences selected so far in 2012, followed by their undergraduate institutions (in parentheses) and the institutions at which they plan to pursue graduate work.

LAUREN BANDKLAYDER (New York University), New York University; ASHLEY BELL (Colorado School of Mines), Colorado School of Mines; EVA BELMONT (Harvard University), Massachusetts Institute of Technology; MARIO BENCOMO (Rice University), Rice University; JOHN BINDER (Massachusetts Institute of Technology), Massachusetts Institute of Technology; EMILY BUTLER (University of North Carolina, Chapel Hill), University of North Carolina, Chapel Hill; FREDERICK CAMPBELL (Rice University), Rice University; SUZANNE CARTER (University of Iowa), University of Texas, Austin; ZEV CHONOLES (Brown University), University of Pennsylvania; GIULIA DESALVO (University of California, Berkeley), Stanford University; BENJAMIN DOZIE (Harvard University), Stanford University; SYLVESTER ERIKSSON-BIQUE (New York University), New York University; LAURE FLAPAN (Yale University), University of California, Berkeley; BENJAMIN FOGELSON (University of California, Davis), University of California, Davis; ALEXANDER FURGER (Princeton University), Princeton University; JOHN GOES (University of Minnesota, Twin Cities), University of Minnesota, Twin Cities; RYAN GOH (University of Minnesota, Twin Cities), University of Minnesota, Twin Cities; SHERRY GONG (Cambridge University), Massachusetts Institute of Technology; PAUL GRIGAS (Massachusetts Institute of Technology), Massachusetts Institute of Technology; KELVIN GU (Duke University), Duke University; BOAZ HABERMAN (University of California, Berkeley), University of California, Berkeley; NATHAN HARMAN (University of Massachusetts, Amherst), University of California, Berkeley; KYLE HASENSTAB (University of California, Los Angeles), University of California, Los Angeles; WILLIAM KARR (University of Illinois, Urbana-Champaign), University of Illinois, Urbana-Champaign; CHRISTOPHER KINSON (University of Illinois), University of Illinois; ISABEL KLOUMANN (Cornell University), Cornell University; BRIAN LAWRENCE (California Institute of Technology), Harvard University; OLEG LAZAREV (Princeton University), Stanford University; MARGARET-ROSE LEUNG (Oregon State University), Cornell University; DANIKA LINDSAY (California State University, Channel Islands), Brown University; XUE LIU (Princeton University), Massachusetts Institute of Technology; NICOLE LOOPER (Dartmouth College), University of Michigan, Ann Arbor; JUAN LOPEZ ARRIAZA (University of California, Santa Cruz), University of California, Santa Cruz; JOHN LOPEZ (Brigham Young University), Massachusetts Institute of Technology; NICHOLAS LOWMAN (North Carolina State University), North Carolina State University; EILEEN MARTIN (University of Texas, Austin), New York University; MICHELE MEISNER (North Carolina State University), North Carolina State University; VICTOR MINDEN (Tufts University), University of Maryland, College Park; HILARY MONACO (Massachusetts Institute of Technology), Massachusetts Institute of Technology; CONNOR MOONEY (Columbia University), Columbia University; ROBIN NEUMAYER (University of South Carolina, Columbia), University of Texas, Austin; DEREK OLSON (University of Minnesota, Twin Cities), University of Minnesota, Twin Cities; SUCHANDAN PAL (University of Michigan, Ann Arbor), University of Michigan, Ann Arbor; ALEKSANDR PANKOV (University of California, San Francisco), University of

California, San Francisco; JOSEPH PAULSON (University of Maryland), University of Maryland; CRISTIAN POTTER (East Carolina University), Purdue University; SUZETTE PUENTE (University of California, Berkeley), University of California, Berkeley; EVAN RANGLES (Cornell University), Cornell University; ROBERT RICHARDSON (University of California, Santa Cruz), University of California, Santa Cruz; LARRY ROLAN (Emory University), Emory University; DAVID ROLNICK (Massachusetts Institute of Technology), Massachusetts Institute of Technology; KRISHANU SANKAR (Massachusetts Institute of Technology), Harvard University; BARRET SCHLOERKE, Rice University; BENJAMIN SCHWEINHART (Princeton University), Princeton University; AYON SEN (California Institute of Technology), California Institute of Technology; EMILY SERGEL (University of California, San Diego), University of California, San Diego; JAY SHAH (University of Chicago), Harvard University; ALEXANDER SHAPIRO (University of California, Berkeley), University of California, Berkeley; YIWEI SHE (University of Chicago), University of Chicago; KYLER SIEGEL (Stanford University), Stanford University; ANTHONY SIMMS (Rice University), Rice University; SLATER STICH (University of California, Berkeley), University of California, Berkeley; ANANDH SWAMINATHAN (California Institute of Technology), California Institute of Technology; DANIEL THOMPSON (Yale University), Massachusetts Institute of Technology; LINDA TRAN (University of California, Berkeley), University of California, Berkeley; RACHEL VISHNEPOLSKY (University of Chicago), University of Chicago; OLIVIA WALCH (University of Michigan), University of Michigan; ROBERT WALKER (University of Michigan, Ann Arbor), University of Michigan, Ann Arbor; BRIAN WILLIAMS (University of Florida), University of Pennsylvania; CAMERON WILLIAMS (University of Houston), University of Texas, Austin; DYLAN WILSON (University of Washington), Harvard University; SCOTT YANG (University of Texas, Austin), University of Texas, Austin; QIAOCHU YUAN (Massachusetts Institute of Technology), University of California, Berkeley; YI ZENG (Massachusetts Institute of Technology), Massachusetts Institute of Technology; CHARLES ZHENG (Texas A&M University), Texas A&M University.

—From an NSF announcement

SIAM Fellows Elected

The Society for Industrial and Applied Mathematics (SIAM) has elected thirty-five new fellows for 2012. Their names and institutions follow.

TAMER BASAR, University of Illinois, Urbana-Champaign; MICHELE BENZI, Emory University; ANTHONY BLOCH, University of Michigan; PAVEL BOCHEV, Sandia National Laboratories; RICHARD BRUALDI, University of Wisconsin, Madison; GUI-QIANG CHEN, University of Oxford; G. BARD ERMENTROUT, University of Pittsburgh; RICHARD FALK, Rutgers University; LISA FAUCI, Tulane University; DAVID FERGUSON, Applied Mathematical Analysis; M. GREGORY FOREST, University of North Carolina, Chapel Hill; SUSAN FRIEDLANDER, University of Southern California; IRENE M. GAMBA, University of Texas, Austin; WALTER GAUTS-

CHI, Purdue University; DONALD GOLDFARB, Columbia University; SVEN HAMMARLING, University of Manchester; PAVOL HELL, Simon Fraser University; BRUCE HENDRICKSON, Sandia National Laboratories, University of New Mexico; KIRK JORDAN, IBM T. J. Watson Research Center; MICHAEL JORDAN, University of California, Berkeley; JAMES KEENER, University of Utah; NAOMI LEONARD, Princeton University; PHILIP MAINI, University of Oxford; GEOFFREY MCFADDEN, National Institute of Standards and Technology; EDWARD OTT, University of Maryland, College Park; TAMAR SCHLICK, Courant Institute of Mathematical Sciences, New York University; DAVID SHMOYS, Cornell University; MARY SILBER, Northwestern University; BARRY SMITH, Argonne National Laboratory; TAO TANG, Hong Kong Baptist University; EDRISS TITI, Weizmann Institute of Science; ROBERT VANDERBEI, Princeton University; RICHARD VARGA, Kent State University; JAN WILLEMS, K.U. Leuven; and THALEIA ZARIPHPOULOU, University of Oxford, University of Texas, Austin.

AAAS Elects New Members

The American Academy of Arts and Sciences (AAAS) has chosen 220 new members and 17 foreign honorary members for 2012. Following are the names and affiliations of the new members who work in the mathematical sciences: BONNIE BERGER, Massachusetts Institute of Technology; JOAN S. BIRMAN, Barnard College, Columbia University; RUSSEL E. CAFLISCH, University of California, Los Angeles; NGÙ BAO CHU, University of Chicago; BJORN M. POONEN, Massachusetts Institute of Technology; STEVEN H. STROGATZ, Cornell University; RICHARD L. TAYLOR, Institute for Advanced Study. LOUIS BOUTET DE MONVEL, Université Pierre et Marie Curie, Paris, France, was elected an honorary foreign member.

—From an AAAS announcement

Royal Society Elections

The Royal Society has elected its new fellows for 2012. The new fellows whose work involves the mathematical sciences include: ALAN BUNDY, University of Edinburgh; ALASDAIR HOUSTON, University of Bristol; CHRISTOPHER HULL, Imperial College London; DOMINIC JOYCE, University of Oxford and Lincoln College; RICHARD KERSWELL, University of Bristol; CHANDRASHEKHAR KHARE, University of California, Los Angeles; JOHN MCNAMARA, University of Bristol; and MATHUKUMALLI VIDYASAGAR, University of Texas, Dallas.

—From a Royal Society announcement