
Mathematics People

Castro Receives the Royal Spanish Mathematical Annual Prize

The current year is a significant year in the history of the Royal Spanish Mathematical Society (RSME), which in 2011 commemorated its one hundredth anniversary, and this year celebrates the tenth edition of its highest award, the Rubio de Francia Prize. The prize honors the memory of renowned Spanish analyst J. L. Rubio de Francia (1949-1988). The RSME awards the prize annually to a mathematician from Spain or residing in Spain who is at most thirty-two years of age, in recognition of research contributions to any area of pure or applied mathematics.

This year the recipient is ANGEL CASTRO (born 1982) of the Universidad Autónoma de Madrid and the Institute for Mathematical Sciences (ICMAT). The prize jury emphasized Castro's contributions to partial differential equations and fluid mechanics, in particular the results of Castro and his collaborators on the problem of appearance of singularities, which is essential to understanding turbulence. This work of a high caliber becomes particularly significant in view of the fact that little was known about it prior to the contributions of Castro and his collaborators.

The Rubio de Francia Prize is awarded by an international jury covering a range of mathematical areas. This year the prize committee was chaired by Jesús Bastero (Zaragoza, Spain) and made up of Noga Alon (Tel Aviv, Israel), Álvaro Pelayo (University of California, San Diego, USA), Gilles Pisier (Université Pierre et Marie Curie, France), Marta Sanz-Solé (Universidad de Barcelona, Spain), Cédric Villani (Institut Henri Poincaré, France), and Claire Voisin (École Polytechnique, France). Recent prize winners include Maria Pe (2012), Alberto Enciso (2011), Carlos Beltrán (2010), Álvaro Pelayo (2009), and Francisco Gancedo (2008).

—From a Royal Spanish Mathematical Society (RSME) announcement.

2014 Simons Investigators Named

The Simons Foundation has named sixteen mathematicians, theoretical physicists, and theoretical computer scientists as Simons Investigators for 2014. The Simons Investigators program provides a stable base of support for outstanding scientists, enabling them to undertake long-term study of fundamental questions. The names and institutions of the awardees whose work involves the mathematical sciences and brief excerpts from the prize citations follow.

ALEX ESKIN of the University of Chicago is a leading geometer with important contributions to geometric group theory, ergodic theory, and number theory. He has applied ideas from dynamical systems to solve counting problems in the theory of Diophantine equations, the theory of the mapping class group, and mathematical billiards on rational polygons.

LARRY GUTH of the Massachusetts Institute of Technology is a geometer with outstanding contributions to Riemannian geometry, symplectic geometry, and combinatorial geometry. In Riemannian geometry, he solved a long-standing problem concerning sharp estimates for volumes of k -cycles. In symplectic geometry, he disproved a conjecture concerning higher-dimensional symplectic invariants by constructing ingenious counterexamples. In combinatorial geometry, he adopted a recent proof of the finite field analog of the Kakeya problem to the Euclidean context. He and Jean Bourgain established the best current bounds to the restriction problem. Extending this work, he and Katz essentially solved one of the most well-known problems in incidence geometry, Erdős's distinct distance problem, which was formulated in the 1940s.

RICHARD KENYON of Brown University, whose mathematical contributions are centered in statistical mechanics and geometric probability. He established the first rigorous results on the dimer model, opening the door to recent spectacular advances in the Schramm-Loewner evolution theory. In his most recent work, he introduced new homotopic invariants of random structures on graphs, establishing an unforeseen connection between probability and representation theory.

ANDREI OKOUNKOV of Columbia University works in a wide range of topics at the interface of representation theory, algebraic geometry, combinatorics, and mathematical physics. He has made major contributions to enumerative geometry of curves and sheaves, the theory of random surfaces and random matrices. His papers reveal hidden structures and connections between mathematical objects and introduce deep new ideas and techniques of wide applicability.

MOSES CHARIKAR of Princeton University is one of the world's leading experts on the design of approximation algorithms. He gave an optimal algorithm for unique games, a central problem in complexity theory. His work sheds light on the strengths and limitations of continuous relaxations for discrete problems. He has uncovered new obstructions to dimension reduction and compression of geometric data. His algorithms for locality-sensitive hash functions are now de facto standard in real-life applications.

SHANG-HUA TENG of the University of Southern California is one of the most original theoretical computer scientists in the world, with groundbreaking discoveries in algorithm design, spectral graph theory, operations research, and algorithmic game theory. In joint work with Dan Spielman, Shang-Hua introduced smoothed analysis, a new framework that has served as a basis for advances in optimization, machine learning, and data mining. His work laid foundations for many algorithms central in network analysis, computational economics, and game theory.

Simons investigators are appointed for an initial period of five years with possible renewal for a further five years. Investigators receive research support of US\$100,000 per year, with an additional US\$10,000 per year provided to the investigator's department.

—From a Simons Foundation announcement

Prizes of the London Mathematical Society

The London Mathematical Society (LMS) has awarded a number of prizes for 2014. The Polya Prize was awarded to MILES REID of the University of Warwick for his exceptionally creative work on higher-dimensional algebraic geometry; in particular, on canonical singularities, the MacKay correspondence, the explicit study of three-dimensional flips, the structure of Gorenstein rings, and for his inspired expositions. The Fröhlich Prize was awarded to MARTIN HAIRER of the University of Warwick for his work on the interface between probability theory and partial differential equations, a body of work that is widely recognized as revolutionizing an entire field of research. CAROLINE SERIES of the University of Warwick was awarded the Senior Anne Bennett Prize in recognition of her leading contributions to hyperbolic geometry and symbolic dynamics, and of the major impact of her numerous initiatives toward the advancement of women in mathematics.

The Senior Berwick Prize was awarded to DANIEL FREED (University of Texas at Austin), MICHAEL HOPKINS (Harvard University), and CONSTANTIN TELEMAN (University of California, Berkeley) in recognition of their paper “Loop groups and twisted K -theory,” *Journal of Topology* 4 (2011), 737–799. The paper sets out the foundations of twisted equivariant K -theory and prepares the ground for the proof that the twisted equivariant K -theory of a compact Lie group is isomorphic to the Verlinde algebra of its loop group.

The Whitehead Prizes are given to mathematicians with less than fifteen years' experience at the postdoctoral level (allowing for career breaks). The Whitehead Prizes were awarded to: CLÉMENT MOUHOT, University of Cambridge, for fundamental mathematical contributions to the foundations of statistical mechanics and the Boltzmann equation; RUTH BAKER, University of Oxford, for her outstanding contributions to the field of mathematical biology; TOM COATS, Imperial College, London, for his influential work on Gromov-Witten theory, the quantum Lefschetz theorem, the crepant resolution conjecture, the quantum cohomology of stacks, the higher genus theory of Calabi-Yau manifolds, and the Fanosearch program; and DANIELA KÜHN and DERYK OSTHUS (University of Birmingham), jointly, for their many results in extremal graph theory and related areas. Several of their papers resolve long-standing open problems in the area.

—From an LMS announcement

Ford Foundation Fellowships Awarded

Two young mathematicians have been awarded National Research Council-Ford Foundation fellowships for 2014. CHRISTOPHER VINCENT RACKAUCKAS of the University of California, Irvine, and DAVID MCMILLON of Princeton University received predoctoral fellowships. SAMUEL IVY of North Carolina State University received a dissertation fellowship.

—From a Ford Foundation announcement

NSF Postdoctoral Fellowships Awarded

The Mathematical Sciences Postdoctoral Research Fellowship Program of the Division of Mathematical Sciences (DMS) of the National Science Foundation (NSF) awards fellowships each year for postdoctoral research in pure mathematics, applied mathematics and operations research, and statistics. Following are the names of the fellowship recipients for 2014, together with their Ph.D. institutions (in parentheses) and the institutions at which they will use their fellowships.

JOSHUA BALLEW (University of Maryland), Carnegie Mellon University; BLAKE BARKER (Indiana University),

Brown University; ANNA BARRY (Boston University), University of British Columbia; REBECCA BELLOVIN (Stanford University), University of California, Berkeley; JOHN BERGDALL (Brandeis University), Boston University; WILL BONEY (Carnegie Mellon University), University of Illinois-Chicago; ALEXANDER CLONINGER (University of Maryland), Yale University; KATHLEEN CRAIG (Rutgers University), University of California, Los Angeles; DANIEL CRISTOFARO-GARDINER (University of California, Berkeley), Harvard University; RUTH DAVIDSON (North Carolina State University), University of Texas at Austin; GALYNA DOBROVOLSKA (University of Chicago), Columbia University; TAREK ELGINDI (New York University), Princeton University; ILYA GEKHTMAN (University of Chicago), Yale University; BORIS HANIN (Northwestern University), Massachusetts Institute of Technology; PHILIP ISETT (Princeton University), Massachusetts Institute of Technology; LELAND JEFFERIS (University of Wisconsin-Madison), Stanford University; JEFFREY MEIER (University of Texas at Austin), Indiana University; TOBIAS JOHNSON (University of Washington), University of Southern California; TYLER KELLY (University of Pennsylvania), University of Cambridge; DANIEL KETOVER (Massachusetts Institute of Technology), Princeton University; KAROL KOZIOL (Columbia University), University of Toronto; JOEL LEWIS (Massachusetts Institute of Technology), University of Minnesota; KATHRYN LINDSEY (Cornell University), University of Chicago; TIANKAI LIU (Massachusetts Institute of Technology), University of Utah; ALISON MILLER (Princeton University), Harvard University; JASON MURPHY (University of California, Los Angeles), University of California, Berkeley; ANAND OZA (Massachusetts Institute of Technology), Courant Institute; AARON POLLACK (Princeton University), Stanford University; SAM RASKIN (Harvard University), Massachusetts Institute of Technology; JOSE RODRIGUEZ (University of California, Berkeley), North Carolina State University; DUSTIN ROSS (Colorado State University), University of Michigan; SOBHAN SEYFADDINI (University of California, Berkeley), Massachusetts Institute of Technology; SHRENIK SHAH (Princeton University), Columbia University; AARON SILBERSTEIN (Harvard University), University of Chicago; NIKE SUN (Stanford University), Massachusetts Institute of Technology; HIROAKI TANAKA (Northwestern University), Harvard University; SAMUEL TAYLOR (University of Texas at Austin), Yale University; ALEXANDER VOLFOVSKY (University of Washington), Harvard University; MILES WHEELER (Brown University), Courant Institute; JESSE WOLFSON (University of Chicago), University of Chicago; MARY WOOTERS (University of Michigan), Carnegie Mellon University; BOHUA ZHAN (Princeton University), Massachusetts Institute of Technology; ANDREW ZIMMER (University Michigan), University of Chicago.

—NSF announcement

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Informal enquiries can be made to Professor Peter Clarkson on PA.Clarkson@kent.ac.uk.

For further information on the role and details on how to apply, visit our website – www.kent.ac.uk/jobs

Closing date: 13 October 2014

Interviews: 27 & 28 November 2014

