Mathematics People

2013–2014 AMS Centennial Fellowship Awarded

Photo courtesy of Kate Juschenko.

Kate Juschenko

The AMS has awarded its Centennial Fellowship for 2014–2015 to Kate Juschenko of Northwestern University. The fellowship carries a stipend of US$85,000, an expense allowance of US$8,500, and a complimentary Society membership for one year.

Kate Juschenko was born in Kiev, Ukraine. She attended Kiev National University for her bachelor's degree and completed her Ph.D. at Texas A&M University in 2011 under the direction of Gilles Pisier. She has been an assistant professor at Vanderbilt University, Nashville, and a postdoctoral fellow at EPFL, Lausanne. In 2013 she was appointed an assistant professor at Northwestern University.

Juschenko's research began in the field of operator spaces and operator algebras. In later research she has primarily concentrated on amenability of groups and analytic aspects of group theory.

Please note: Information about the competition for the 2015–2016 AMS Centennial Fellowships will be published in the "Mathematics Opportunities" section of an upcoming issue of the *Notices*.

—Allyn Jackson

Zhang Awarded Ostrowski Prize

Yitang Zhang of the University of New Hampshire has been awarded the 2013 Ostrowski Prize for outstanding mathematical achievement. The prize carries a monetary award of 75,000 Swiss francs (approximately US$85,000).

Zhang was honored "for his breakthrough work on small gaps between prime numbers." The prize citation reads in part: "Let $p_1, p_2, \ldots$ denote the increasing sequence of prime numbers. It follows from the prime number theorem that the average gap between consecutive prime numbers p_{n+1} and p_n is roughly $\log p_n$ in size. What can be said about small gaps between consecutive primes? Erdős, in 1940, was the first to prove that there is a positive number c which is smaller than 1 such that $p_{n+1}-p_n<c \log p_n$ for infinitely many positive integers n. This result was refined by Bombieri and Davenport, Huxley, Maier, and others. In particular, Maier proved that the preceding equation holds with $c=.248\ldots$ in 1988. Next Goldston, Pintz, and Yıldırım established, in a pair of papers which appeared in 2009 and 2010, that a much stronger result is true. They proved that there is a positive number C such that $p_{n+1}-p_n< C(\log p_n)^{1/2}(\log\log p_n)^2$ for infinitely many positive integers n. Building on the work of Goldston, Pintz, and Yıldırım, Zhang proved in 2013 that $p_{n+1}-p_n<7\cdot 10^7$ for infinitely many positive integers n. This represents a stunning step forward and brings the twin prime conjecture into view. Zhang's proof employs many powerful ideas from analytic number theory including the sieve of Goldston, Pintz, and Yıldırım; the Bombieri-Vinogradov theorem; Weil's bound for Kloosterman sums; Deligne's proof of the Riemann hypothesis for varieties over finite fields; and the work of Bombieri, Friedlander, and Iwaniec on the distribution of primes in arithmetical progressions. It is a landmark achievement."

Yitang Zhang was born in China in 1955 and studied mathematics at the University of Beijing. He moved to the United States in 1985 and defended his doctoral thesis at Purdue University in 1992. He joined the University of New Hampshire in 1999 and is currently professor of mathematics. He was awarded the 2014 Cole Prize in Number Theory by the AMS and the Rolf Schock Prize in mathematics for 2014.

About the Prize

The Ostrowski Foundation was created by Alexander Ostrowski, for many years a professor at the University of Basel. He left his entire estate to the foundation and stipulated that the income should provide a prize for outstanding recent achievements in pure mathematics and the foundations of numerical mathematics. The prize is awarded every other year.

—From an Ostrowski Foundation announcement

Hughes-Oliver to Receive 2014 Blackwell-Tapia Prize

Jacqueline M. Hughes-Oliver of North Carolina State University has been awarded the 2014 Blackwell-Tapia Prize. She has made important contributions in a number of statistical research areas, including methodological research on prediction and classification, variable and model selection with dimension reduction, design of experiments, and spatial modeling. Application areas of her research include drug discovery, environmental modeling, transportation modeling, engineering manufacturing,

genomics, and metabolomics. She has worked passionately on the cause of increasing diversity of individuals working in the statistical and mathematical sciences.

The Blackwell-Tapia Prize is awarded every other year in honor of the legacy of David H. Blackwell and Richard A. Tapia, two distinguished mathematical scientists who have been inspirations to more than a generation of African American, Latino/Latina, and Native American students and professionals in the mathematical sciences. The prize will be presented at the eighth Blackwell-Tapia Conference, to be held at the Institute for Pure and Applied Mathematics (IPAM) in November 2014.

—From an IPAM announcement

Moore Awarded Heineman Prize

Gregory W. Moore of Rutgers University has been awarded the 2014 Dannie Heineman Prize in Mathematical Physics for his "eminent contributions to mathematical physics with a wide influence in many fields, ranging from string theory to supersymmetric gauge theory, conformal field theory, condensed matter physics and four-manifold theory."

The Heineman Prize is awarded annually in recognition of outstanding publications in the field of mathematical physics. The prize consists of US$10,000 and a certificate. It was established by the Heineman Foundation for Research, Educational, Charitable, and Scientific Purposes, Inc., and is administered jointly by the American Physical Society and the American Institute of Physics.

—From a Heineman Foundation announcement

Ruelle Receives Max Planck Medal

David Ruelle of the Institut des Hautes Études Scientifiques (IHES) in Bures-sur-Yvette, France, has received the 2014 Max Planck Medal of the Deutsche Physikalische Gesellschaft (DPG, German Physical Society), the highest honor of the DPG in theoretical physics. Ruelle was honored "for his fundamental contributions to relativistic quantum field theory, statistical mechanics, and the theory of dynamical systems with applications to the problem of the onset of turbulence."

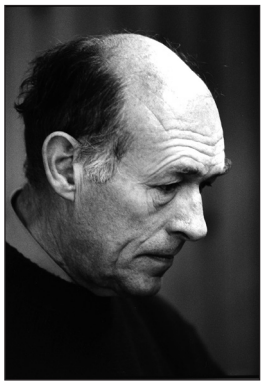

Photo courtesy of IHES.

David Ruelle

Ruelle has made fundamental and groundbreaking contributions to three central areas of modern theoretical physics: axiomatic quantum field theory, statistical mechanics, and the theory of dynamical systems. His works on scattering processes in quantum field theory, on the properties of thermal equilibrium and phase transitions, as well as the onset and nature of turbulence in liquids, are classics of modern mathematical physics. Among other things, Ruelle is the author of seven books, including *Statistical Mechanics: Rigorous Results* (1969).

Ruelle received his Ph.D. in 1959 from the Université Libre de Bruxelles. The basis of his Ph.D. thesis was work done at the Eidgenössische Technische Hochschule (ETH) Zurich under the guidance of Res Jost. After postdoctoral stays at the ETH Zurich and the Institute for Advanced Study in Princeton, Ruelle was appointed a professor at the IHES, where he has been working since 1964. Ruelle has received many honors for his research and is a member of five academies. He is also a Fellow of the AMS.

—From a DPG announcement

Levin Awarded Tyler Environmental Prize

Simon A. Levin of Princeton University has been named the recipient of the 2014 Tyler Prize "for his research revealing the complexity of and relationships between species and ecosystems." His work has been fundamental in the crafting of environmental policies and advancing the study of complex ecosystems—the myriad relationships and interactions in nature." The prize citation reads in part: "Levin's research has led the way to a deeper understanding of the interactions among groups of plants and animals living together, to their impact on the environment, to the interplay of different ecosystems—forests, oceans, and tidal zones, for example. This research has revealed insights into evolution and the origins of biodiversity, leading to improved management of natural resources, like forests and fisheries, as well as broader environmental policies. Fundamentally, Levin's work on theoretical ecology—ecology based on mathematical modeling—has helped to put environmental research into context and provide a big picture for understanding our environment."

Levin received his Ph.D. in mathematics from the University of Maryland in 1964. His research interests include modeling of ecological systems; dynamics of populations and communities; spatial heterogeneity and problem of scale; evolutionary, mathematical, and theoretical ecology; evolution of cooperation; and maintenance of social norms.

The prize is awarded by the international Tyler Prize Executive Committee, with the administrative support of the University of Southern California, to honor exceptional foresight and dedication in the environmental sciences. It carries a cash award of US$200,000 and a gold medal.

—From a Tyler Prize Committee press release

Balinski Awarded von Neumann Prize

Michel L. Balinski of CNRS and École Polytechnique has been awarded the 2013 John von Neumann Theory Prize, the highest prize given in the field of operations research and management science. The prize citation recognizes his contributions in linear and nonlinear optimization, integer programming, convex polyhedra and combinatorics, and in the domain of electoral decisions: representation and apportionment and voting. He is coauthor of the books *Fair Representation: Meeting the Ideal of One Man, One Vote* and *Majority Judgment: Measuring, Ranking, and Electing*.

—From an INFORMS announcement

Prizes of the Canadian Mathematical Society

The Canadian Mathematical Society (CMS) has awarded a number of prizes for 2014.

Gail Wolkowicz of McMaster University has been awarded the Krieger-Nelson Prize for her contributions to the study of differential equations, dynamical systems, and their applications. The prize recognizes women mathematicians who have made outstanding contributions in mathematical research. According to the prize citation, she researches mathematical models in biology, including preservation of species diversity, pest control, biological waste remediation, and the production of green energy that involve differential equations, using analytical and numerical tools from modern dynamical systems and bifurcation theory.

Askold Khovanskii of the University of Toronto has been awarded the Jeffrey-Williams Prize for Research Excellence for his work in pure mathematics. According to the prize citation, he has done outstanding research in Galois theory, Newton polyhedra theory, the theory of fewnomials, and the theory of Newton-Okounkov bodies. The Jeffrey-Williams Prize is awarded annually to an individual who has made outstanding contributions to mathematical research in Canada.

Marco Gualtieri of the University of Toronto has been awarded the Coxeter-James Prize for young mathematicians who have made outstanding contributions in mathematical research for his work in special geometric structures. According to the prize citation, he works "at the interface between differential geometry and theoretical physics. The mathematical models developed by physicists to describe the behaviour and properties of the elementary forces in nature are comprised of many intricate 'moving parts', each of which is a system of geometric structures occupying various dimensions and often having interesting symmetries."

Kenneth R. Davidson of the University of Waterloo has been awarded the 2014 CMS David Borwein Distinguished Career Award "in recognition of his exceptional, broad, and continued contributions to mathematics." According to the prize citation, he "has published well over 100 refereed publications in the areas of operator theory, nonselfadjoint operator algebras, and C^*-algebras, and his research in these areas has garnered attention worldwide. He is also the author of two research monographs and a real analysis textbook." He has helped to build a research group at Toronto "that is acclaimed for being one of the strongest functional and harmonic analysis groups" in Canada. He is a Fields Institute Fellow and a Fellow of the Royal Society of Canada.

—From CMS announcements

Tachikawa Awarded 2014 Hermann Weyl Prize

Yuji Tachikawa of the University of Tokyo has been named the recipient of the 2014 Hermann Weyl Prize "for outstanding contributions to our understanding of supersymmetric quantum field theories; in particular, to the discovery of the Alday-Gaiotto-Tachikawa correspondence that has led to spectacular advances in both mathematics and quantum physics." The prize recognizes young scientists under thirty-five years of age or who are within five years of receipt of the doctoral degree who have performed original work of significant scientific quality in the area of understanding physics through symmetries. The award will be presented at the International Colloquium on Group Theoretical Methods in Physics (ICGTMP) in July 2014.

—From an ICGTMP announcement

Salur Awarded Michler Prize

Sema Salur of the University of Rochester has been awarded the 2014–2015 Ruth I. Michler Memorial Prize of the Association for Women in Mathematics (AWM). Salur was selected for "her wide range of mathematical talents." Her research is in the area of manifolds with special holonomy and calibrations. In particular, she studies geometry and topology of the moduli spaces of calibrated submanifolds inside Calabi-Yau, G_2, and Spin(7) manifolds. At Cornell she will continue her work on manifolds with special holonomy and Ricci flat metrics. She plans to collaborate with Xiaodong Cao and Yuri Berest on projects related to the geometric flows on G_2 and Spin(7) manifolds. Understanding these flows will have many applications in mathematical physics and algebraic geometry. She also plans to work with Tara Holm and Reyer Sjamaar on calibrated submanifolds and special vector fields on manifolds with special holonomy.

Salur received her Ph.D. in mathematics from Michigan State University in 2000 under the direction of Gang Tian. She has been a visiting assistant professor at both Cornell University and Northwestern University and a research fellow at Princeton University, the Mathematical Sciences Research Institute (MSRI), and the Institute for Pure and

Applied Mathematics (IPAM). She has been on the faculty at the University of Rochester since 2006.

The Ruth Michler Prize grants a midcareer woman in academia a residential fellowship in the Cornell University mathematics department without teaching obligations.

—From an AWM announcement

Gamba Awarded Kovalevsky Lectureship

Irene Gamba of the University of Texas, Austin, has been chosen as the AWM-SIAM Sonia Kovalevsky Lecturer for 2014 by the Association for Women in Mathematics (AWM). She was honored "for her contribution to analytical and numerical methods for statistical transport problems in complex particle systems, and for her service to the applied mathematics community including serving in scientific, policy, and editorial committees and boards and training postdocs and graduate students including women applied mathematicians." Gamba received her Ph.D. from the University of Chicago in 1989 under the direction of Jim Douglas Jr. She has been affiliated with the Courant Institute of Mathematical Sciences and has held many visiting positions. She was elected to the inaugural class of Fellows of the AMS and is also a Fellow of the Society for Industrial and Applied Mathematics (SIAM). She is currently an editor for the *Journal of Mathematical Fluid Dynamics*. She will deliver the Kovalevsky Lecture, titled "The evolution of complex interactions in non-linear kinetic systems", at the 2014 SIAM annual meeting. The Sonia Kovalevsky Lectureship honors significant contributions of women to applied or computational mathematics.

—From an AWM-SIAM announcement

Milner Awarded 2014 PIMS Education Prize

Susan Milner of the University of the Fraser Valley in British Columbia, Canada, has been awarded the 2014 Education Prize of the Pacific Institute for the Mathematical Sciences (PIMS). The prize recognizes individuals in Western Canada and Washington State who have played a major role in encouraging activities that have enhanced public awareness and appreciation of mathematics, as well as fostering communication among various groups concerned with mathematical education at all levels.

According to the prize citation, Milner's interests, in addition to teaching, include curriculum design and ways to make mathematics more accessible to a wide audience. She has brought the PIMS Math Mania program to many schools and has enhanced the program by adding such activities as origami and puzzles. She has given workshops for teachers from many schools and school districts.

—From a PIMS announcement

Sloan Fellowships Awarded

The Alfred P. Sloan Foundation has announced the names of the recipients of the 2014 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 2014 awardees in mathematics: Nir Avni, Northwestern University; Nayantara Bhatnagar, University of Delaware; Maksym Fedorchuk, Boston College; Jonathan Hauenstein, North Carolina State University; Kai-Wen Lan, University of Minnesota; Lionel Levine, Cornell University; Ivan Loseu, Northeastern University; Maryanthe Malliaris, University of Chicago; Amir Mohammadi, University of Texas, Austin; Aaron Naber, Northwestern University; Deanna Needell, Claremont McKenna College; Michael J. Neilan, University of Pittsburgh; Benoit Pausader, Princeton University; Charles Smart, Massachusetts Institute of Technology; Jared Speck, Massachusetts Institute of Technology; Samuel Stechmann, University of Wisconsin, Madison; Song Sun, Stony Brook University; Benjamin Webster, University of Virginia; Jared Weinstein, Boston University; Jun Yin, University of Wisconsin, Madison.

—From a Sloan Foundation announcement

Intel Science Talent Search Winners Announced

Three students whose work involves the mathematical sciences have received scholarship awards in the 2014 Intel Science Talent Search. Kevin Lee, seventeen, of Irvine, California, was awarded second place and a US$75,000 scholarship for developing "a mathematical model to describe the shape of the heart as it beats using the principles of fluid mechanics. His faster and computationally efficient model could provide insights into arrhythmia and may lead to better treatments for the disease." William Henry Kuszmaul, seventeen, of Lexington, Massachusetts, was awarded third place honors and a scholarship of US$50,000 for developing "a new approach to the mathematics of modular enumeration, which has applications to a wide number of problems in computer science, bioinformatics and computational biology." Shaun Datta of North Potomac, Maryland, was awarded tenth place and a scholarship award of US$20,000 for his research that used computer models and equations to improve our understanding of the interactions of nuclear matter.

—From an Intel Corporation announcement

Putnam Prizes Awarded

The winners of the seventy-fourth 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: Mitchell M. Lee, Massachusetts Institute of Technology; Zipei Nie, Massachusetts Institute of Technology; Evan M. O'Dorney, Harvard University; Bobby C. Shen, Massachusetts Institute of Technology; and David H. Yang, Massachusetts Institute of Technology. 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 members listed in alphabetical order) were: first place, Massachusetts Institute of Technology (Benjamin P. Gunby, Mitchell M. Lee, Zipei Nie); second place, Carnegie Mellon University (Michael Druggan, Linus Hamilton, Thomas Swayze); third place, Stanford University (Vishal Arul, Ravi Fernando, Sam G. Keller); fourth place, Harvard University (Octav I. Dragoi, Evan M. O'Dorney, Allen Yuan); fifth place, California Institute of Technology (Xiangyi Huang, Zhaorong Jin, Tian Nie). 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.

Xiao Wu of Yale University received the Elizabeth Lowell Putnam Prize, awarded periodically to a woman whose performance in the competition has been deemed particularly meritorious. She received a cash award of US$1,000.

—From an MAA announcement

Shamai Awarded Rothschild Prize

Shlomo Shamai of Technion/Israel Institute of Technology has been awarded the Rothschild Prize in Mathematics/Computer Science and Engineering "for his consistent, outstanding and original contributions to the field of information theory—the mathematical theory of communications—which serve as a beacon for state-of-the-art communications technologies." Rothschild Prizes are awarded by the Yad Hanadiv Foundation to support, encourage, and advance the sciences and humanities in Israel. Prizes are awarded in recognition of original and outstanding published work in the following disciplines: mathematics/computer sciences and engineering, chemical sciences and physical sciences, life sciences, Jewish studies, humanities and social sciences.

—From a Yad Hanadiv Foundation announcement

Hertz Fellowships Awarded

Two young mathematicians have been selected to receive 2014 Fannie and John Hertz Foundation Fellowships. Gene Katsevich of Princeton University and Andrew Rzeznik of the Massachusetts Institute of Technology 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

AWM Essay Contest Winners

The Association for Women in Mathematics (AWM) has announced the winners of its 2014 essay contest, "Biographies of Contemporary Women in Mathematics". The grand prize was awarded to Nathalie Sieh, St. Cecelia Interparochial School, Clearwater, Florida, for her essay, "The Road Not Taken". The essay won first place in the middle school category and will be published in the *AWM Newsletter*. First place in the undergraduate-level category was awarded to Tory Fields of Ball State University, for the essay "Nora Moushey: Chief Actuary and Lifelong Learner". First place in the high school category was awarded to Francesca Paris of Head-Royce School, Oakland, California, for her essay "Dr. Kate Stevenson: Adding Value".

—From an AWM announcement

NSF Graduate Research Fellowships Awarded

The National Science Foundation (NSF) has awarded a number of Graduate Research Fellowships for fiscal year 2014. 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 2014, followed by their undergraduate institutions (in parentheses) and the institutions at which they plan to pursue graduate work.

Joshua H. Alman (Massachusetts Institute of Technology), Massachusetts Institute of Technology; Levent Alpoge (Harvard University), Harvard University; Erik W. Bates (Michigan State University), Michigan State University; Kelly N. Bodwin (Harvard University), University of North Carolina at Chapel Hill; Zarathustra E. Brady (California Institute of Technology), Stanford University; Boris Brimkov (State University of New York at Buffalo), Rice University; Clark W. Butler (Ohio State University), University of Chicago; Stephen P. Cameron (College of William and Mary), College of William and Mary;

Alexander J. Carney (University of Michigan, Ann Arbor), University College London; Alice Chan (Pomona College), Pomona College; Jeffrey D.-W. Chan (Massachusetts Institute of Technology), Massachusetts Institute of Technology; Alan Chang (Princeton University), Princeton University; Wan-Schwin A. Cheng (National Taiwan University), Johns Hopkins University; Sara Clifton (Colorado School of Mines), Northwestern University; William L. Cocke (Brigham Young University), Brigham Young University; Reid R. G. Dale (University of Washington), University of Washington; Brisa N. Davis (Whitworth University), University of Washington; Kristin M. Dettmers (California State Polytechnic University, Pomona), California State Polytechnic University, Pomona; Natalie C. Gasca (California State Polytechnic University, Pomona), California State Polytechnic University, Pomona; Samuel Gutekunst (Harvey Mudd College), Harvey Mudd College; Lynette Guzman (University of Arizona), Michigan State University; Erika Helgeson (Gonzaga University), University of North Carolina at Chapel Hill; Benjamin S. S. Hoffman (Lewis and Clark College); Amanda A. Howard (Stanford University), Brown University; Jessica Hwang (Harvard University), Stanford University; Jami N. Jackson (Columbia University), North Carolina State University; Arun Jambulapati (University of Memphis), University of Memphis; Nadine Y. Jansen (North Carolina Agricultural and Technical State University), North Carolina Agricultural and Technical State University; Michael Jemison (Harvard University), Princeton University; Eric Kightley (University of Cincinnati), University of Colorado at Boulder; Daniel J. Kriz (Princeton University), Princeton University; Miriam Kuzbary (University of Texas at Dallas), Rice University; Nathan J. L. Lenssen (Claremont McKenna College); Keli Liu (Harvard University); Molly M. Logue (University of Michigan), University of Michigan; Kristina M. Mallory (University of Central Florida), University of Central Florida; Akhil Mathew (Harvard University), Harvard University; Frederick N. McCollum (University of Arkansas), University of Arkansas; Katherine J. Meyer (Smith College), University of Minnesota, Twin Cities; Laurel A. M. Ohm (Saint Olaf College), University of Washington; Morgan P. Opie (University of Massachusetts, Amherst), University of Massachusetts, Amherst; Colin Pawlowski (Yale University), Yale University; Sarah A. Peluse (University of Chicago), University of Chicago; Yannik K. Pitcan (Harvard University), University of California Berkeley; Anna Plantinga (Calvin College), University of Washington; Joan L. Ponce (University of Florida); Christopher V. Rackauckas (Oberlin College), University of California Irvine; Andrew J. Rzeznik (Cornell University), Massachusetts Institute of Technology; Kevin R. Sackel (State University of New York at Stony Brook), Cambridge University; Anthony Sanchez (Arizona State University), Arizona State University; Kelly Spendlove (Montana State University), Rutgers University; Melissa Strait (Harvey Mudd College), North Carolina State University; Aubrey Thompson (University of Nebraska, Lincoln), University of Nebraska, Lincoln; Diego Torrejon (George Mason University), George Mason University; Catherine G. Triandafillou (Temple University); Minh-Tam Quang Trinh (Princeton University), Princeton University; Dennis Tseng (Massachusetts Institute of Technology), Massachusetts Institute of Technology; Jeremy Usatine (Harvey Mudd College), Harvey Mudd College; Saraswathi J. Venkatesh (California Institute of Technology), Columbia University; Isabel M. Vogt (Harvard University), Harvard University; Matthew K. Voigt (Saint John's University), University of Minnesota, Twin Cities; Joseph D. Walsh (Western Michigan University), Georgia Institute of Technology; Jane Wang (Princeton University), Princeton University; Andre K. Waschka (North Carolina State University), University of California Berkeley; Jonathan Weed (Princeton University); Lynnelle L. Ye (Stanford University), Stanford University; Evangelie M. L. Zachos (Princeton University), Princeton University; Andrew Zucker California Institute of Technology), Carnegie Mellon University.

—From an NSF announcement

2014 Guggenheim Fellowship Awards to Mathematical Scientists

The John Simon Guggenheim Memorial Foundation has announced the names of 178 scholars, artists, and scientists who were selected as Guggenheim Fellows for 2014. Selected as fellows in mathematics and applied mathematics, along with their areas of research, were: Kiran Kedlaya, University of California, San Diego, for work on computational aspects of the Langlands program; Doron Levy, University of Maryland, College Park, for work on dynamics of drug resistance in cancer; and Daniel Stein, New York University, for work on disordered systems, nonequilibrium dynamics, and stochastic processes. In addition, Carla Mazzio, University of Buffalo, was awarded a Guggenheim to work on her book *The Trouble with Numbers: The Drama of Mathematics in the Age of Shakespeare*. Guggenheim Fellows are appointed on the basis of distinguished achievement in the past and exceptional promise for future accomplishments.

—From a Guggenheim Foundation news release

SIAM Fellows Elected

The Society for Industrial and Applied Mathematics (SIAM) has elected thirty-two new fellows for 2014. Their names and institutions follow.

Mark Ainsworth, Brown University; John S. Baras, University of Maryland, College Park; Lorenz T. Biegler, Carnegie Mellon University; Ake Bjorck, Linkoping University; Alfred M. Bruckstein, Technion/Israel Institute of Technology; Suncica Canic, University of Houston; Inderjit S. Dhillon, University of Texas at Austin; Vladimir L. Druskin, Schlumberger-Doll Research; Leah Edelstein-Keshet, University of British

Columbia; Donald Estep, Colorado State University; Omar Ghattas, University of Texas at Austin; Philip E. Gill, University of California, San Diego; Solomon W. Golomb, University of Southern California; Jan S. Hesthaven, École Polytechnique Federale de Lausanne; Dorit S. Hochbaum, University of California Berkeley; Masakazu Kojima, Tokyo Institute of Technology and JST CREST; Jeffrey C. Lagarias, University of Michigan; Jean B. Lasserre, Centre National de la Recherche Scientifique and Institute of Mathematics, University of Toulouse; Tai-Ping Liu, Academia Sinica; Mitchell B. Luskin, University of Minnesota; Nancy K. Nichols, University of Reading; Peter J. Olver, University of Minnesota; Yuriko Yamamuro Renardy, Virginia Polytechnic Institute and State University; L. Ridgway Scott, University of Chicago; Mikhail Shashkov, Los Alamos National Laboratory; Christine A. Shoemaker, Cornell University; Valeria Simoncini, Università di Bologna; Zdenek Strakos, Charles University in Prague; Bernd Sturmfels, University of California Berkeley; Jorge X. Velasco-Hernandez, Universidad Nacional Autónoma de Mexico; Michael S. Vogelius, Rutgers, The State University of New Jersey.

—From a SIAM announcement

American Academy of Arts and Sciences Elections

The American Academy of Arts and Sciences has elected 204 new fellows and 16 foreign honorary members for 2014. Following are the new fellows whose work involves the mathematical sciences:

Deborah Loewenberg Ball, University of Michigan; Michael P. Brenner, Harvard University; Emmanuel J. Candès, Stanford University; Jennifer T. Chayes, Microsoft Research New England; Edward Frenkel, University of California Berkeley; David Gabai, Princeton University; Richard W. Kenyon, Brown University; Daphne Koller, Stanford University; Leslie B. Lamport, Microsoft Research; Richard J. Lipton, Georgia Institute of Technology; Paul A. Seidel, Massachusetts Institute of Technology; Gigliola Staffilani, Massachusetts Institute of Technology; and Daniel I. Tătaru, University of California Berkeley. Michel Broué of Université Paris Diderot was elected as a foreign honorary member.

—From an AAAS announcement

Isidore Fleischer (1927–2011)

Isidore (Izzy) Fleischer was born to Abraham and Augusta Fleischer (née Lipper) in June of 1927 in Leipzig, Germany. Isidore was registered as a U.S. citizen in the same year with the American Consulate in Leipzig because Abraham had become a naturalized American citizen in 1922, his work as a diamond cutter and trader frequently taking him between New York and Europe. Unable to continue working under the Nazi regime, Abraham returned to the United States. Augusta sailed with Isidore and his sister, Sarah, to New York in 1934 to rejoin Abraham.

Isidore grew up in Brooklyn and served briefly in the U.S. Navy at the end of World War II. Following the war he attended Brooklyn College in New York and then did graduate work at the University of Chicago, graduating in 1952 as Irving Kaplansky's first Ph.D. student, along with another Kaplansky student, Arlen Brown. His thesis topic was algebraic treatment of locally symmetric topological spaces. Isidore did postdoctoral studies with Laurent Schwartz in Paris and subsequently taught for one or two years in southern France. Returning to the United States, he taught at Purdue until he was dismissed in 1961 because he refused to sign a loyalty oath in the wake of the infamous McCarthy era. He spent the remainder of his career as a visitor to many universities throughout the world, surviving financially as best he could using a bequest from his father and support from colleagues. In particular, he spent much time in the Centre de Recherche Mathématiques at the Université de Montréal.

His earliest paper dealt with topological fields with valuation and appeared in *Comptes Rendus de l'Académie des Sciences* in 1953. He subsequently generalized it to topological division rings and then turned to non-Archimedean normed spaces. Isidore was also deeply interested in universal algebra, and in 1955, generalizing a result of Fuchs, Isidore gave a sufficient condition for a subalgebra of the direct product $B_1 \times B_2$ of algebras B_1 and B_2 to be the equalizer of two homomorphisms with domains B_1 and B_2, respectively. This result is mentioned in several universal algebra texts as "Fleischer's Lemma". Taking a lattice-theoretic approach in a 1956 paper in the *Annals of Mathematics*, Isidore extended Ky Fan's characterization of the set of continuous real-valued functions on a compact Hausdorff space as a partially ordered group. In the next year he published another paper in the *Annals* giving decomposition theorems for modules over Prüfer rings. He continued to publish while working for Sylvania Applied Research Laboratory and at Bell Labs in the late 1950s. Over the years, Isidore worked with many collaborators until his death in 2011, producing well over one hundred papers in such diverse areas as universal algebra, lattice and semigroup theory, general topology, convergence spaces, logic, category theory, group-valued measures, stochastic processes, and ordered groups. Isidore espoused a compressed style of mathematical writing, which created tension with his coauthors, delayed publication of some of his papers, and did not win him many friends among his referees!

Isidore was a member of the AMS for twenty-six years and became a member of the Fiske Society, whose members have included the AMS in their estate plans. Isidore left the entirety of his estate to the AMS.

Note. I am indebted to Lucienne Cummings, Syd Bulman-Fleming, and Tim Traynor for information about Isidore. Reprints of many of his papers may be obtained by sending email to Tim Traynor at `tt@uwindsor.ca`.

—Larry Cummings
University of Waterloo

Mathematics Opportunities

NSF CAREER Awards

The National Science Foundation (NSF) solicits proposals for the Faculty Early Career Development (CAREER) Awards. These awards support junior faculty members who exemplify the role of teacher-scholars through outstanding research, excellent education, and the integration of education and research within the context of the mission of their organizations. In addition, award recipients are eligible to be selected for Presidential Early Career Awards for Scientists and Engineers (PECASE). The deadline for submission of proposals in the mathematical sciences is **July 23, 2014**. For more information see `http://www.nsf.gov/pubs/2014/nsf14532/nsf14532.htm`.

—From an NSF announcement

Call for Nominations for Parzen Prize

To promote the dissemination of statistical innovation, the Emanuel and Carol Parzen Prize for Statistical Innovation is awarded in even-numbered years to a North American statistician whose outstanding research contributions include innovations that have had an impact on practice and who received his or her Ph.D. degree at least twenty-five years before the nomination.

The Parzen Prize is awarded by the Department of Statistics at Texas A&M and consists of an honorarium of US$1,000 and travel expenses to College Station, Texas, to present a lecture at the prize ceremony. Nominations for the 2014 Parzen Prize should be submitted by **August 15, 2014**, to Thomas Wehrly, Department of Statistics, Texas A&M University, TAMU 3143, College Station, Texas 77843-3143. For more information see the website `http://www.stat.tamu.edu/events/parzenprize/index.html`.

—From a Texas A&M announcement

Call for Nominations for Heineman Prize

The American Physical Society (APS) and the American Institute of Physics (AIP) are seeking nominations for the 2015 Dannie Heineman Prize for Mathematical Physics. The prize recognizes outstanding publications in the field of mathematical physics. The prize carries a cash award of US$10,000, an award certificate, and travel expenses to the meeting at which the prize is given. The deadline for nominations for the 2015 prize is **July 1, 2014**. For more information see the APS website at `http://www.aps.org/programs/honors/prizes/heineman.cfm`.

—From an APS announcement

Call for Nominations for the 2014 SASTRA Ramanujan Prize

The Shanmugha Arts, Science, Technology, Research Academy (SASTRA) is seeking nominations for the 2014 SASTRA Ramanujan Prize. The prize is given annually to a mathematician not over the age of thirty-two for outstanding contributions in an area of mathematics influenced by the late Indian mathematical genius Srinivasa Ramanujan. The prize carries a cash award of US$10,000 and an invitation to give a talk at the SASTRA conference in December 2014. The deadline for nominations is **July 31, 2014**. For more information see the website `http://qseries.org/sastra-prize/nominations-2014.html`.

—Krishna Alladi, University of Florida

Call for Nominations for Sloan Fellowships

Nominations of candidates for Sloan Research Fellowships, sponsored by the Alfred P. Sloan Foundation, are due by **September 15, 2014**. A candidate must be a member of the regular faculty at a college or university in the United States or Canada and must have received the Ph.D. or equivalent within the six years prior to the nomination. For information write to: Sloan Research Fellowships, Alfred P. Sloan Foundation, 630 Fifth Avenue, Suite 2550, New York, New York 10111-0242, or consult the foundation's website: `http://www.sloan.org/fellowships`.

—From a Sloan Foundation announcement

Fulbright Postdoctoral Fellowships in Israel

The United States-Israel Educational Foundation (USIEF), the Fulbright commission for Israel, will award eight fellowships to U.S. postdoctoral researchers in support of work to be carried out at Israeli universities during the course of the 2015–2016 academic year. The fellowships will support study for at least two academic years with an award of US$20,000

per academic year. The deadline for applications is **August 1, 2014**. For more information see the website http://fulbright.org.il/en/?pageid=1024&utm_source=AmericanMathematicalSociety&utm_medium=www&utm_campaign=postdoc.

—From a USIEF announcement

News from the Clay Mathematics Institute

The Clay Mathematics Institute (CMI) will hold the 2014 Clay Research Conference on October 1, 2014, at the Mathematical Institute of the University of Oxford. The speakers are Ben Green (University of Oxford), Jonathan Pila (University of Oxford), Paul Seidel (Massachusetts Institute of Technology), and Scott Sheffield (Massachusetts Institute of Technology).

The recipient of the 2014 Clay Research Award will be announced at the conference. Presented annually, the Clay Research Award celebrates outstanding achievements in mathematical research.

The following workshops will be held throughout the week of the conference:

September 28–October 2, 2014: Advances in Probability. Ivan Corwin and Martin Hairer.

September 29–October 3, 2014: Analytic Number Theory. Ben Green and Roger Heath-Brown.

September 29–October 3, 2014: Functional Transcendence around Ax-Schanuel. Jonathan Pila and Alex Wilkie.

September 29–October 3, 2014: Symplectic Topology. Dominic Joyce, Alexander Ritter, and Ivan Smith.

Registration for the Clay Research Conference is free and required. Participation in the workshops is by invitation; a limited number of additional places are available. Limited accommodation is available for Ph.D. 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 CMI announcement

News from IPAM

The Institute for Pure and Applied Mathematics (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. IPAM seeks program proposals from the math and science communities. Please send your idea for a workshop, long program, or summer school to director@ipam.ucla.edu.

IPAM will host the Blackwell-Tapia Conference and Awards Ceremony on November 14–15, 2014. This biennial conference was established in 2002 in honor of David H. Blackwell and Richard A. Tapia, distinguished mathematical scientists who have been inspirations to more than a generation of African American and Latino/Latina students and professionals in the mathematical sciences. The 2014 Blackwell-Tapia Prize will be presented at the conference. More information and an application are available on IPAM's website. The application deadline is **September 15, 2014**.

Additionally, IPAM will host the Latinos in Mathematics Conference April 9–11, 2015. The conference will feature talks by several prominent Latino/Latina mathematicians and statisticians. It will also include mentoring and networking activities and opportunities for students to present their research. Please check the IPAM website in the fall for information.

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

September 8–December 12, 2014: Mathematics of Turbulence. 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, 2014: Tutorials.

September 29–October 3, 2014: Workshop I: Mathematical Analysis of Turbulence.

October 13–17, 2014: Workshop II: Turbulent Transport and Mixing.

October 27–31, 2014: Workshop III: Geophysical and Astrophysical Turbulence.

November 17–21, 2014: Workshop IV: Turbulence in Engineering Applications.

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

January 12–16, 2015: Multiple Sequence Alignment.

January 26–30, 2015: Symmetry and Topology in Quantum Matter.

February 4–6, 2015: Computational Photography and Intelligent Cameras.

February 9–13, 2015: Zariski-Dense Subgroups.

February 23–27, 2015: Machine Learning for Many-Particle Systems.

March 9–June 12, 2015: Broad Perspectives and New Directions in Financial Mathematics. 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 10–13, 2015: Tutorials.

March 23–27, 2015: Workshop I: Systemic Risk and the Financial Networks.

April 13–17, 2015: Workshop II: The Mathematics of High Frequency Financial Markets.

May 4–8, 2015: Workshop III: Commodity Markets and Their Financialization.

May 18–22, 2015: Workshop IV: Forensic Analysis of Financial Data.

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.

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. The workshop schedule will be posted soon.

—From an IPAM announcement

News from MSRI

With funding from the National Science Foundation (NSF), the National Security Agency (NSA), and the Clay Mathematics Institute (CMI), the Mathematical Sciences Research Institute (MSRI) will hold six workshops in Geometric Representation Theory and New Geometric Methods in Number Theory and Automorphic Forms during the fall of 2014. 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. MSRI is proud to announce a new resource to assist visitors with finding child care in Berkeley. For more information, please contact Sanjani Varkey at `sanjani@msri.org`.

The workshops are as follows:

August 14–15, 2014: Connections for Women: New Geometric Methods in Number Theory and Automorphic Forms. Website: `http://www.msri.org/workshops/709`.

August 18–22, 2014: Introductory Workshop: New Geometric Methods in Number Theory and Automorphic Forms. Website: `http://www.msri.org/workshops/710`.

August 28–29, 2014: Connections for Women: Geometric Representation Theory. Website: `http://www.msri.org/workshops/706`.

September 2–5, 2014: Introductory Workshop: Geometric Representation Theory. Website: `http://www.msri.org/workshops/707`.

November 17–21, 2014: Categorical Structures in Harmonic Analysis. Website: `http://www.msri.org/workshops/708`.

December 1–5, 2014: Automorphic Forms, Shimura Varieties, Galois Representations, and *L*-functions. Website: `http://www.msri.org/workshops/719`.

—From an MSRI announcement

Inside the AMS

Fan China Exchange Program Awardees

The Society's Fan China Exchange Program awards grants to support collaborations between Chinese and U.S. or Canadian researchers. Institutions in the United States or Canada apply for the funds to support a visitor from China or vice versa. This funding is made possible through a generous gift made to the AMS by Ky and Yu-Fen Fan in 1999. The awardees for 2014 follow.

Auburn University received a grant of US$3,600 to support a visit from Hongtao Zhao of North China Electric Power University.

Inner Mongolia University received a grant of US$5,000 to support a visit from Anton Zettl of Northern Illinois University.

Each visitor's own department will receive a grant of US$1,000 after the visit.

For information about the Fan China Exchange Program, visit the website `http://www.ams.org/programs/travel-grants/china-exchange/china-exchange` or contact the AMS Membership and Programs Department, email: `chinaexchange@ams.org`, telephone 401-455-4170 (within the U.S. call 800-321-4267, ext. 4170).

—AMS Membership and Programs Department

Erdős Memorial Lecture

The Erdős Memorial Lecture is an annual invited address named for the prolific mathematician Paul Erdős (1913–1996). The lectures are supported by a fund created by Andrew Beal, a Dallas banker and mathematics enthusiast. The Beal Prize Fund, now US$100,000, is being held by the AMS until it is awarded for a correct solution to the Beal Conjecture (see `www.math.unt.edu/~mauldin/beal.html`). At Mr. Beal's request, the interest from the fund is used to support the Erdős Memorial Lecture.

The Erdős Memorial Lecturer for 2014 was Maria Chudnovsky of Columbia University. She gave a talk in March 2013 titled "Coloring Graphs with Forbidden Induced Subgraphs" at the spring southeastern sectional meeting at the University of Knoxville, Tennessee.

—AMS announcement

From the AMS Public Awareness Office

MATH in the MEDIA

Math in the Media. Tony Phillips and past AMS-AAAS Mass Media Fellows write their takes and summaries on recent media coverage of mathematics and mathematicians. Explore the archive to read about Edward Frenkel on *The Colbert Report*; mathematics and March Madness; what's new at MoMath; the perception of mathematical beauty; Nate Silver and FiveThirtyEight; and to see links to reviews of "The Simpsons and Their Mathematical Secrets" by Simon Singh and "Undiluted Hocus-Pocus: The Autobiography of Martin Gardner" by Martin Gardner. `http://www.ams.org/mathmedia/`.

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

Deaths of AMS Members

James Badenius, of Sumner, Washington, died on February 22, 2014. Born on June 8, 1928, he was a member of the Society for 20 years.

John A. Higgins, of Middletown, Delaware, died on October 30, 2013. Born on September 23, 1942, he was a member of the Society for 41 years.

William C. Hoffman, of Tucson, Arizona, died on January 16, 2013. Born on August 11, 1919, he was a member of the Society for 66 years.

Jun-Ichi Igusa, of Hunt Valley, Maryland, died on November 24, 2013. Born on January 30, 1924, he was a member of the Society for 56 years.

Arlen M. Ilin, professor, Russian Academy of Sciences, Institute of Mathematics and Mechanics, died on June 23, 2013. Born on January 8, 1932, Professor Ilin was a member of the Society for 20 years.

Thomas C. Kipps, of Fresno, California, died on March 10, 2014. Born on February 28, 1923, he was a member of the Society for 58 years.

Clinton J. Kolaski, of Superior, Wisconsin, died on April 18, 2012. Born on October 30, 1938, he was a member of the Society for 38 years.

Richard Laver, professor, University of Colorado, died on September 19, 2012. Born on October 20, 1942, he was a member of the Society for 26 years.

P. J. Lelong, of Paris, France, died on October 12, 2011. Born on March 14, 1912, he was a member of the Society for 62 years.

Gary B. Levy, of Metairie, Louisiana, died on January 15, 2013. Born on October 21, 1941, he was a member of the Society for 42 years.

Lawrence S. Levy, of Madison, Wisconsin, died on March 22, 2014. Born on October 21, 1933, he was a member of the Society for 54 years.

Lee Lorch, professor, York University, died on February 28, 2014. Born on September 20, 1915, he was a member of the Society for 77 years.

Ann Robertson, professor, Connecticut College, died on November 20, 2013. Born on March 19, 1943, she was a member of the Society for 36 years.

W. C. Royster, professor, University of Kentucky, died on February 19, 2014. Born on January 12, 1925, he was a member of the Society for 61 years.

William H. Ruckle, of Seneca, South Carolina, died on February 26, 2014. Born on October 29, 1936, he was a member of the Society for 52 years.

Victor L. Shapiro, professor, University of California Riverside, died on March 1, 2013. Born on October 16, 1924, he was a member of the Society for 61 years.

Richard F. Thompson, of Waldorf, Maryland, died on March 12, 2013. Born on May 29, 1931, he was a member of the Society for 14 years.

Jerzy Urbanowicz, professor, Polish Academy of Science, Poland, died on September 6, 2012. Born on May 28, 1951, he was a member of the Society for 20 years.

Joe F. Wampler, of Lincoln, Nebraska, died on December 19, 2013. Born on December 13, 1926, he was a member of the Society for 31 years.

Gerald B. Whitham, professor, California Institute of Technology, died on January 26, 2014. Born on December 13, 1927, he was a member of the Society for 32 years.