

Mathematics People

Takeda Awarded 2017–2018 Centennial Fellowship



Shuichiro Takeda

The AMS has awarded its Centennial Fellowship for 2017–2018 to SHUICHIRO TAKEDA. Takeda's research focuses on automorphic forms and representations of p -adic groups, especially from the point of view of the Langlands program. He will use the Centennial Fellowship to visit the National University of Singapore and work with Wee Teck Gan during the academic year 2017–2018.

Takeda obtained a bachelor's degree in mechanical engineering from Tokyo University of Science, master's degrees in philosophy and mathematics from San Francisco State University, and a PhD in 2006 from the University of Pennsylvania. After postdoctoral positions at the University of California at San Diego, Ben-Gurion University in Israel, and Purdue University, since 2011 he has been assistant and now associate professor at the University of Missouri at Columbia.

The Fellowship carries a stipend of US\$91,000, an expense allowance of US\$9,100, and a complimentary Society membership for one year.

Please note: Information about the competition for the 2018–2019 AMS Centennial Fellowships will be published in the “Mathematics Opportunities” section of an upcoming issue of the *Notices*.

—*Allyn Jackson*

Borcea Awarded Kovalevsky Lectureship

LILIANA BORCEA of the University of Michigan has been chosen as the AWM-SIAM Sonia Kovalevsky Lecturer by the Association for Women in Mathematics (AWM) and the Society for Industrial and Applied Mathematics (SIAM). She was honored “for her distinguished scientific contributions to the mathematical and numerical analysis of wave propagation in random media, array imaging in complex environments, and inverse problems in high-



Liliana Borcea

contrast electrical impedance tomography, as well as model reduction techniques for parabolic and hyperbolic partial differential equations.”

Borcea received her PhD from Stanford University and has since spent time at the California Institute of Technology, Rice University, the Mathematical Sciences Research Institute, Stanford University, and the

École Normale Supérieure, Paris. Currently Peter Field Collegiate Professor of Mathematics at Michigan, she is deeply involved in service to the applied and computational mathematics community, in particular on editorial boards and as an elected member of the SIAM Council.

The Sonia Kovalevsky Lectureship honors significant contributions by women to applied or computational mathematics.

—*From an AWM announcement*

Pardon Receives Waterman Award



John Pardon

JOHN PARDON of Princeton University has been named the recipient of the Alan T. Waterman Award of the National Science Foundation (NSF) for “revolutionary, groundbreaking results in geometry and topology.” The award is the nation's highest honor for scientists and engineers younger than thirty-five. It consists of a five-year grant worth US\$1 million.

The prize citation reads: “Pardon is a Clay Research Fellow and professor of mathematics at Princeton University. His research focuses on geometry and topology, the study of properties of shapes that are unaffected by deformations, such as stretching or twisting. He is known for solving problems that stumped other mathematicians for decades and generating solutions that provide new tools for geometric analysis.

“In 2013, Pardon published a solution to the Hilbert-Smith conjecture, a mathematical proposition involving the actions of groups of ‘manifolds’ in three dimensions. Manifolds include spheres and doughnut-shaped objects.

“The conjecture originates from one of the twenty-three problems published in 1900 by German mathematician David Hilbert, which helped guide the course of twentieth-century mathematics. American topologist Paul Althaus Smith proposed a stronger version of the problem in 1941. This problem has connections to many other areas of mathematics and physics. Pardon’s publication was notable for proving this long-standing conjecture, a major achievement in mathematics.

“Prior to that publication, as a senior undergraduate at Princeton, Pardon answered a question posed in 1983 by Russian mathematician Mikhail Gromov regarding ‘knots,’ mathematical structures that resemble physical knots, but are closed, instead of having any ends.

“Gromov’s question involved a special class of knots called ‘torus knots.’ He asked whether these knots could be tied without altering or distorting their topology. Pardon figured out a way to use the distortion between two properties of knots—their intrinsic and extrinsic distances—to control their topology. He showed that torus knots are limited by their geometric properties, and can be tied without altering their topology.

“Pardon’s solution has important applications in fluid dynamics and electrodynamics, calculating forces involved in aircraft movement, predicting weather patterns, determining the flow of liquids through water treatment plant pipelines, determining the flow of electrical charges, and more.”

Pardon received his PhD in 2015 from Stanford University under the direction of Yakov Eliashberg. He was the recipient of an NSF Graduate Research Fellowship and of the Morgan Prize in 2012.

—From a National Science Foundation announcement

Gordon Awarded AWM Michler Prize



Julia Gordon

JULIA GORDON of the University of British Columbia has been named the recipient of the 2017–2018 Ruth I. Michler Memorial Prize of the Association for Women in Mathematics (AWM). Gordon was selected to receive the Michler Prize because of her “wide range of mathematical talents” and the connection of her work with the research of several Cornell faculty members. Gordon’s re-

search is in the areas of representation theory of p -adic groups and of motivic integration.

Gordon received her PhD in 2003 from the University of Michigan, Ann Arbor, under the direction of

Thomas C. Hales. She has been a postdoctoral fellow at the University of Toronto and at the Fields Institute for Research in Mathematical Sciences and spent a year at the Institute for Advanced Study.

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

—From an AWM announcement

Ribet Awarded Brouwer Medal



Kenneth A. Ribet

KENNETH A. RIBET of the University of California Berkeley and president of the AMS has been awarded the 2017 Brouwer Medal by the Royal Dutch Mathematical Society (KWG). According to the prize citation, he was honored “for his contributions to number theory, in particular for the groundbreaking work in which he applies methods of algebraic geometry

to number theoretical problems. This work later became of decisive importance for the proof of Fermat’s Last Theorem.” The prize is awarded every three years to a mathematician of international renown.

—From a KWG announcement

Clay Research Awards Presented

The Clay Mathematics Institute (CMI) has made a number of Research Awards for 2017.

ALEKSANDR LOGUNOV of Tel Aviv University and Chebyshev Laboratory, St. Petersburg State University, and EUGENIA MALINNIKOVA of the Norwegian University of Science and Technology have received a Clay Research Award “in recognition of their introduction of a novel geometric combinatorial method to study doubling properties of solutions to elliptic eigenvalue problems.” According to the prize citation, this work “has led to the solution of long-standing problems in spectral geometry, for instance the optimal lower bound on the measure of the nodal set of an eigenfunction of the Laplace-Beltrami operator in a compact smooth manifold (Yau and Nadirashvili’s conjectures).”

JASON MILLER of Cambridge University and SCOTT SHEFFIELD of the Massachusetts Institute of Technology have received a Clay Research Award “in recognition of their groundbreaking and conceptually novel work on the geometry of the Gaussian free field and its application to the solution of open problems in the theory of two-dimensional random structures.” The prize citation reads: “The two-dimensional Gaussian free field (GFF) is a classical and fundamental object in probability theory and



Jason Miller

field theory. It is a random and Gaussian generalized function h defined in a planar domain D . Despite its roughness and the fact that it is not a continuous function, it possesses a spatial Markov property that explains why it is the natural counterpart of Brownian motion when the time-line is replaced by the two-dimensional set D . Miller and Sheffield have studied what can be viewed as level-lines of h and more generally flow lines of the vector fields $\exp(iah)$, where a is any given constant. This framework, which they call imaginary geometry, allows them to embed many Schramm-Loewner Evolutions within a given GFF. A detailed study of

the way in which the flow lines interact and bounce off each other allowed Miller and Sheffield to shed light on a number of open questions in the area and to pave the way for further investigations involving new random growth processes and connections with quantum gravity.”



Maryna Viazovska

MARYNA VIAZOVSKA of Princeton University and École Polytechnique Fédérale de Lausanne has received a Clay Research Award “in recognition of her groundbreaking work on sphere-packing problems in eight and twenty-four dimensions. In particular, her innovative use of modular and quasimodular forms, which

enabled her to prove that the E_8 lattice is an optimal solution in eight dimensions.” The prize citation reads in part: “The result had been suggested by earlier work of Henry Cohn and Noam Elkies, who had conjectured the existence of a certain special function that would force the optimality of the E_8 lattice through an application of the Poisson summation formula. Viazovska’s construction of the function involved the introduction of unexpected new techniques and establishes important connections with number theory and analysis. Her elegant proof is conceptually simpler than that of the corresponding result in three dimensions.”

The awards will be presented at the 2017 Clay Research Conference at the University of Oxford in September 2017.

Note: See the feature story on Viazovska and her work in the February 2017 *Notices*.

—From a CMI announcement

Simons Fellows in Mathematics

The Simons Foundation Mathematics and Physical Sciences (MPS) division supports research in mathematics, theoretical physics, and theoretical computer science. The MPS division provides funding for individuals, institutions, and science infrastructure. The Fellows Program provides funds to faculty for up to a semester-long research leave from classroom teaching and administrative obligations. The mathematical scientists who have been awarded Simons Fellowships for 2017 are:

- MATTHEW BAKER, Georgia Institute of Technology
- DAVID BEN-ZVI, University of Texas at Austin
- MLADEN BESTVINA, University of Utah
- LEWIS BOWEN, University of Texas at Austin
- TOBIAS COLDING, Massachusetts Institute of Technology
- PANAGIOTA DASKALOPOULOS, Columbia University
- ALEKSANDAR DONEV, New York University
- ZEEV DVIR, Princeton University
- EZRA GETZLER, Northwestern University
- ANNA GILBERT, University of Michigan
- FLORIAN HERZIG, University of Toronto
- JOHN IMBRIE, University of Virginia
- JEFF KAHN, Rutgers, The State University of New Jersey
- JEREMY KAHN, Brown University
- MICHAEL KAPOVICH, University of California, Davis
- BORIS KHESIN, University of Toronto
- KAY KIRKPATRICK, University of Illinois at Urbana—Champaign
- NITU KITCHLOO, Johns Hopkins University
- ALEX KONTOROVICH, Rutgers, The State University of New Jersey
- SVITLANA MAYBORODA, University of Minnesota
- CHIKAKO MESE, Johns Hopkins University
- TOMASZ MROWKA, Massachusetts Institute of Technology
- CAMIL MUSCALU, Cornell University
- IRINA NENCIU, University of Illinois at Chicago
- THOMAS NEVINS, University of Illinois at Urbana—Champaign
- HEE OH, Yale University
- JULIA PEVTSOVA, University of Washington
- ANDREI RAPINCHUK, University of Virginia
- DANIEL RUBERMAN, Brandeis University
- MARK RUDELSON, University of Michigan
- THOMAS SCANLON, University of California, Berkeley
- NATASA SESUM, Rutgers, The State University of New Jersey
- GIGLIOLA STAFFILANI, Massachusetts Institute of Technology
- NICOLAS TEMPLIER, Cornell University
- BENEDEK VALKÓ, University of Wisconsin—Madison
- ANDRÁS VASY, Stanford University
- ALEXANDER VOLBERG, Michigan State University
- SIJUE WU, University of Michigan
- WEI ZHANG, Massachusetts Institute of Technology
- MACIEJ ZWORSKI, University of California, Berkeley

—From a Simons Foundation announcement

Spohn Receives Max Planck Medal



Herbert Spohn

HERBERT SPOHN of Technical University Munich has been awarded the 2017 Max Planck Medal for his “important contributions to statistical physics regarding the transition from microscopic physics to macroscopic phenomena.” The prize citation reads in part: “His seminal contributions include the derivation of kinetic and diffusive behavior on the

basis of classical and quantum many-body systems, the hydrodynamic limit for stochastic interacting particle systems, and the fluctuation behavior of surface growth models. Spohn has worked with great innovativeness and independence. His research has a major impact on the field of statistical mechanics of non-equilibrium systems.”

His awards include the 2011 Dannie Heineman Prize for Mathematical Physics, the 2011 Leonard Eisenbud Prize for Mathematics and Physics of the AMS, the 2014 Cantor Medal, and the 2015 Henri Poincaré Prize.

—From a German Physical Society announcement

Prizes of the Canadian Mathematical Society



Robert McCann

The Canadian Mathematical Society (CMS) has awarded a number of prizes for 2017.

ROBERT MCCANN of the University of Toronto has been awarded the Jeffery-Williams Prize for Research Excellence. According to the prize citation, “McCann is an internationally recognized expert in applied mathematics at the forefront of the develop-

ment of the theory and applications of optimal transportation. Together with his collaborators and peers worldwide, he has led a renaissance in the theory of optimal transportation, helping to transform it into one of the most vibrant and exciting areas in mathematics today.” McCann received his PhD from Princeton University in 1994 for his thesis introducing the concept of displacement convexity under the supervision of Elliot H. Lieb. His honors include the Monroe H. Martin Prize (2001) and the Coxeter-James Prize of the CMS (2005). He is an elected member of the Royal Society of Canada (2014) and the Fields Institute of Mathematics (2015). McCann and his wife, Carolyn, live in Toronto, where, he says, they live in a home “originally built to accommodate the gardener of Casa Loma, a turn-of-the-century castle and folly which is now a Toronto

tourist attraction. It was the site of the secret laboratory in which sonar was developed during the Second World War.”



Stephanie van Willigenburg

STEPHANIE VAN WILLIGENBURG of the University of British Columbia has been awarded the 2017 Krieger-Nelson Prize for her outstanding research contributions. The prize recognizes outstanding research by a woman mathematician. The citation reads in part: “Professor van Willigenburg is a leading expert in algebraic combinatorics, a vibrant area of mathematics that connects

with many other fields of study, including representation theory, algebraic geometry, mathematical physics, topology, and probability. Her research and subsequent discoveries have focused on Schur functions, skew Schur functions, and quasisymmetric Schur functions, central topics within the field of algebraic combinatorics.” She received her PhD from the University of St. Andrews, Scotland, in 1998. She has been a postdoctoral fellow at York University and a visiting assistant professor at Cornell University before joining the faculty at the University of British Columbia. She is a cofounder and organizer of the Algebraic Combinatorixx workshops at the Banff International Research Station to foster mentoring, collaborations, and networking for women in algebraic combinatorics and related areas. Van Willigenburg and her husband, medieval historian Niall Christie, live in “Hollywood North” (i.e., Vancouver). They have sung on movie soundtracks when not in the classroom.



Sabin Cautis

SABIN CAUTIS of the University of British Columbia has been awarded the 2017 Coxeter-James Prize for outstanding contributions to mathematical research. According to the prize citation, he “is a leader in the new and rapidly developing field of categorification as it relates to geometric representation theory, algebraic geom-

etry, mathematical physics and low-dimensional topology. Categorification is a search for deeper structure behind invariants in algebra and topology.” Cautis received his PhD from Harvard University in 2006 under the supervision of Joe Harris. He taught at Rice University, Columbia University, and the University of California before joining the University of British Columbia in 2013. He was an Alfred P. Sloan Fellow in 2011–2013 and received the André-Aisenstadt Prize in 2014.

Note: See van Willigenburg’s short article in the April 2016 *Notices*.

—From CMS announcements

Resende and Žilinskas Awarded Carathéodory Prize

MAURICIO RESENDE of Amazon.com, Inc., and ANTANAS ŽILINSKAS of the Institute of Mathematics and Informatics, Vilnius University, Lithuania, have been awarded the 2017 Constantin Carathéodory Prize of the International Society of Global Optimization for fundamental contributions to theory, algorithms, and applications of stochastic global optimization. Resende was honored for his major work in combinatorial optimization, analysis of very large and massive databases, and metaheuristics. Žilinskas was recognized for his fundamental work on statistical models in global optimization and developing powerful Bayesian algorithms. The prize is awarded biennially to an individual (or a group) for fundamental contributions to theory, algorithms, and applications of global optimization. The prize carries a cash award of US\$2,000 and a certificate.

—*International Society of Global Optimization*

Bender Awarded Heineman Prize



Carl M. Bender

CARL M. BENDER of Washington University in St. Louis has been awarded the 2017 Dannie Heineman Prize for Mathematical Physics “for developing the theory of PT symmetry in quantum systems and sustained seminal contributions that have generated profound and creative new mathematics, impacted broad areas of experimental physics, and inspired

generations of mathematical physicists.” His research interests are in developing techniques such as asymptotics, perturbation theory, semiclassical methods, differential equations, complex variable theory, numerical methods, and combinatorics for solving difficult mathematical problems arising in theoretical physics. Bender tells the *Notices*: “I love music and play several instruments seriously, such as the clarinet, and I also love chess. I enjoy traveling to conferences, universities, and laboratories and meeting new and interesting people. I also love teaching very much and enjoy preparing students for mathematical competitions such as the Putnam exam.”

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*

Putnam Prizes Awarded

The winners of the seventy-seventh 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 both to individuals and to teams.

The five highest ranking individuals each received a cash award of US\$2,500. Listed in alphabetical order, they are:

- JOSHUA D. BRAKENSIEK, Carnegie Mellon University
- DONG RYUL KIM, Harvard University
- THOMAS E. SWAYZE, Carnegie Mellon University
- SAMUEL ZBARSKY, Carnegie Mellon University
- YUNKUN ZHOU, Massachusetts Institute of Technology

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:

- Carnegie Mellon University (JOSHUA D. BRAKENSIEK, THOMAS E. SWAYZE, SAMUEL ZBARSKY)
- Princeton University (ERIC D. SCHNEIDER, ZHUO QUN SONG, XIAOYU XU)
- Harvard University (PAKAWUT JIRADILOK, DONG RYUL KIM, DAVID W. STONER)
- Massachusetts Institute of Technology (ROBERT C. SHEN, DAVID H. YANG, YUNKUN ZHOU)
- Stanford University (JIE JUN ANG, HUY T. PHAM, ALBERT R. ZHANG)

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 \$400; and for fifth place, US\$5,000 and US\$200.

SIMONA DIACONU of Princeton University was awarded the Elizabeth Lowell Putnam Prize for outstanding performance by a woman in the competition. She received an award of US\$1,000.

—*From an MAA announcement*

Tapia Receives AAAS Public Engagement Award

RICHARD TAPIA of Rice University has been named the recipient of the 2016 Public Engagement with Science Award of the American Association for the Advancement of Science (AAAS) for his “remarkable career blending world-class scholarship, admirable mentoring and profound contributions to science, technology, engineering and mathematics education and public engagement.” He has devoted much time and effort to inspiring and encouraging women, minorities, and young people from



Richard Tapia

been associated with the Baylor College of Medicine and the University of Houston. Among his many awards and honors is the 2011 National Medal of Science and the 2004 Distinguished Public Service Award of the AMS. He, along with David Blackwell, have been honored with a conference named after them, as well as the Blackwell–Tapia Prize, which honors a mathematician who has made significant contributions to research and to addressing the problem of underrepresentation of minorities in mathematics.

Tapia is the son of Mexican immigrants and was the first in his family to attend college. He and his twin brother, Robert, loved drag racing and worked on cars throughout high school. Tapia has used his knowledge of muscle cars and drag racing to connect with youth from communities underrepresented in the sciences and has delivered a popular talk titled “Math at Top Speed: Exploring and Breaking Myths in the Drag Racing Folklore” at many universities and professional conferences.

—From an AAAS announcement

Reiman and Williams Awarded 2016 von Neumann Theory Prize



Martin Reiman

theory and applications of ‘stochastic networks/systems’ and their ‘heavy traffic approximations.’ These profound contributions have been and have further led to breakthroughs in stochastic operations research in general, and queueing theory in particular. Their analysis of complex stochastic networks under conditions of heavy traffic has not only led to the discovery and rigorous articulations of properties of the networks and penetrating insights into the operational laws of real-world systems they model, but

economically challenged communities to achieve in mathematics and science and has served as a model for other mathematicians in public engagement. Tapia received his PhD in 1967 from the University of California Los Angeles and taught there, as well as at the University of Wisconsin, before joining the faculty at Rice University. He has also

also led to deep theoretical developments in the study of reflected diffusions.”

About Reiman’s work, the citation goes on to say, “Reiman’s research is characterized by deep intuition and penetrating understanding of the physical and mathematical laws that govern the systems that he studies.... In Reiman’s work, one sees real inventiveness combined with strong mathematical and expository skills, supported by a solid command of several distinct application domains. His research has influenced and inspired work by the very best people in stochastic OR, including several previous winners of the von Neumann Theory Prize.” Williams’s research, according to the citation, “is characterized by its mathematical depth and elegance. She has greatly influenced researchers in operations research, stochastic processes and mathematics, doing so through survey lectures and articles that are exemplary in clarity and insight. Her expositions have introduced the field to researchers and described challenging open problems and directions, which have spurred further research.”



Ruth J. Williams

American Academy of Arts and Sciences, and the American Association for the Advancement of Science, as well as a member of the National Academy of Sciences. She tells the *Notices*: “I grew up in Australia, where I received an excellent grounding in mathematics. I enjoy working on theoretical problems motivated by applications. For relaxation, I enjoy spending time outdoors, especially hiking.”

The John von Neumann Theory Prize is awarded annually to a scholar (or scholars in the case of joint work) who has made fundamental, sustained contributions to theory in operations research and the management sciences. It is the highest prize given in the field. It carries a cash award of US\$5,000.

—From an INFORMS announcement

Needell and Ward Awarded IMA Prize

DEANNA NEEDELL of Claremont McKenna College and RACHEL WARD of the University of Texas at Austin have been awarded the 2016 IMA Prize in Mathematics and Its Applications. The prize citation reads in part: “While Needell is recognized for her contributions to sparse approximation, signal processing, and stochastic optimization, and Ward is recognized for her contributions to



Deanna Needell

the mathematics of machine learning and signal processing, much of their research overlaps. Their 2013 joint paper, ‘Stable image reconstruction using total variation minimization,’ was published in the *SIAM Journal on Imaging Sciences*. Their work has applications in medical imaging such as magnetic resonance imaging (MRI) scans, as well as in sensor and distributed networks, statistical problems, compression, and image processing problems.”



Rachel Ward

Needell began her undergraduate studies as a veterinary science major. She tells the *Notices*: “After working as a vet tech, however, I realized it wasn’t for me and eventually changed my major seven times before discovering my passion for mathematics. Now my love for animals resides in our rescue dog named ‘Jacobi.’” Ward tells the *Notices*: “I had my first baby ... (a girl named Mara) just a couple months after this prize was announced.”

The prize is awarded annually by the Institute for Mathematics and Its Applications (IMA) to an individual or individuals within ten years of the PhD who have made a transformative impact on the mathematical sciences and their applications. The prize carries a cash award of US\$3,000.

—From an IMA announcement

Berners-Lee Receives ACM Turing Award

TIM BERNERS-LEE of the Massachusetts Institute of Technology and the University of Oxford has been named the recipient of the 2016 A. M. Turing Award of the Association for Computing Machinery (ACM). He was honored “for inventing the World Wide Web, the first web browser, and the fundamental protocols and algorithms allowing the Web to scale.” The Turing Award carries a cash prize of US\$1,000,000.

—From an ACM announcement

Guggenheim Fellowship Awards to Mathematical Scientists

The John Simon Guggenheim Memorial Foundation has announced the names of 173 scholars, artists, and scien-

tists who were selected as Guggenheim Fellows for 2017. Selected as fellows in mathematics and statistics were:

- DAVID BLEI, Columbia University
- HEE OH, Yale University
- GIGLIOLA STAFFILANI, Massachusetts Institute of Technology

Guggenheim Fellows are appointed on the basis of impressive achievement in the past and exceptional promise for future accomplishments.

—From a Guggenheim Foundation announcement

ANZIAM Prizes Awarded

Australia and New Zealand Industrial and Applied Mathematics (ANZIAM), a division of the Australian Mathematical Society, has awarded medals for 2017 to two mathematical scientists. KATE SMITH-MILES of Monash University has been awarded the 2017 E. O. Tuck Medal. According to the prize citation, she “has developed a broad toolkit of mathematical techniques, as well as the language and communication skills necessary to collaborate with researchers and industry partners, on problems from fields as diverse as manufacturing design, epidemiology, neural prosthetics, computer vision, finance, and stem cell modelling.” The Tuck Medal is a midcareer award given for outstanding research and distinguished service to the field of applied mathematics. ALYS CLARK of the University of Auckland was awarded the 2017 J. H. Michell Medal. According to the prize citation, she “works at the interface between mathematical modeling and the biological sciences with research interests in modeling the transport of nutrients in the complex and heterogeneous structures of the lungs, placenta and ovaries to guide clinicians in making medical decisions.” The medal recognizes an outstanding young researcher in applied/industrial mathematics.

—From an ANZIAM announcement

Balaguer Prize Awarded

ANTOINE CHAMBERT-LOIR of Université Paris-Diderot Paris 7, JOHANNES NICAISE of Imperial College London, and JULIEN SEBAG of Université Rennes 1 have been awarded the 2017 Ferran Sunyer i Balaguer Prize for their joint monograph, *Motivic Integration*. The prize is awarded by the Ferran Sunyer i Balaguer Foundation for a mathematical monograph of an expository nature presenting the latest developments in an active area of research in mathematics, in which the applicant has made important contributions. It carries a cash award of 15,000 euros (approximately US\$16,000). The winning monograph will be published in Birkhäuser’s series Progress in Mathematics.

—From a Balaguer Foundation announcement

2017 AAAS Fellows Elected

The American Academy of Arts and Sciences (AAAS) has elected 188 new fellows and 40 foreign honorary members

for 2017. Following are the new members whose work involves the mathematical sciences.

- MICHAEL AIZENMAN, Princeton University
- MANJUL BHARGAVA, Princeton University
- CHRISTOPHER D. HACON, University of Utah
- ROBERT V. KOHN, New York University
- MARYAM MIRZAKHANI, Stanford University
- VERA SERGANOVA, University of California Berkeley

Elected as a foreign honorary member was JOHANNES SJÖSTRAND, Université de Bourgogne.

—From an AAAS announcement

- GABOR STEPAN, Budapest University of Technology and Economics
- DANIEL B. SZYLD, Temple University
- JEAN E. TAYLOR, Courant Institute of Mathematical Sciences and Rutgers University
- MARC TEBoulLE, Tel Aviv University
- J. A. C. WEIDEMAN, Stellenbosch University
- CAROL S. WOODWARD, Lawrence Livermore National Laboratory
- KEVIN ZUMBRUN, Indiana University

—From a SIAM announcement

Watson Fellowship Awarded

DINA SINCLAIR, a senior math major at Harvey Mudd College, has been awarded a T. J. Watson Fellowship for her project, “High School Math Contests: Gender, Culture, and Access.” Sinclair will travel to seven countries to learn “how logistical and social choices affect student perception of math contests.” The Thomas J. Watson Fellowship is a one-year grant of US\$30,000 for purposeful, independent exploration outside the United States, awarded to graduating seniors nominated by one of forty partner colleges.

—From a Watson Foundation announcement

SIAM Fellows Elected

The Society for Industrial and Applied Mathematics has elected its class of fellows for 2017. Their names and institutions follow.

- ZHAOJUN BAI, University of California, Davis
- PETER BENNER, Max Planck Institute for Dynamics of Complex Technical Systems
- ANGELIKA BUNSE-GERSTNER, Universität Bremen
- EMMANUEL CANDÉS, Stanford University
- RAMA CONT, Imperial College London
- RICARDO CORTEZ, Tulane University
- LIEVEN DE LATHAUWER, KU Leuven
- BART DE MOOR, KU Leuven
- ANDREAS GRIEWANK, Yachay Tech University
- HELGE HOLDEN, Norwegian University of Science and Technology
- PANAYOTIS KEVREKIDIS, University of Massachusetts, Amherst
- VIPIN KUMAR, University of Minnesota
- KARL KUNISCH, Karl Franzens Universität Graz
- MONIQUE LAURENT, Centrum Wiskunde and Informatica
- MARK A. LEWIS, University of Alberta
- LOIS CURFMAN MCINNES, Argonne National Laboratory
- IGOR MEZIC, University of California, Santa Barbara
- MICHAEL KWOK-PO NG, Hong Kong Baptist University
- JAMES RENEGAR, Cornell University
- ANDREW J. SOMMESE, University of Notre Dame
- JOEL H. SPENCER, Courant Institute of Mathematical Sciences

Regeneron Science Talent Search

Three young scientists whose work involves the mathematical sciences are among the top winners in the 2017 Regeneron Science Talent Search.

AARON YEISER, eighteen, of Schwenksville, Pennsylvania, was awarded second place and US\$175,000 for his development of a new mathematical method for solving partial differential equations on complicated geometries. ARJUN RAMANI, eighteen, of West Lafayette, Indiana, received third-place honors and US\$150,000 for blending the mathematical field of graph theory with computer programming to answer questions about networks. LAURA PIERSON, seventeen, of Oakland, California, received the sixth-place award and US\$80,000 for her use of theoretical algebra to study the representation theory of mathematically symmetric groups.

The Regeneron (formerly Intel) Science Talent Search is the United States' oldest and most prestigious science and mathematics competition for high school seniors. It is administered by the Society for Science and the Public.

—From a Society for Science and the Public announcement

Hertz Foundation Fellows Announced

The Fannie and John Hertz Foundation has announced the awarding of twelve fellowships for graduate work in science and mathematics. Each fellow receives five full years of support toward their PhD degrees. The two new fellows in the mathematical sciences are LINUS HAMILTON of the Massachusetts Institute of Technology and HANNAH LARSON of Harvard University.

—From a Hertz Foundation announcement

*NSF Graduate Research Fellowships Awarded

The National Science Foundation (NSF) has awarded a number of Graduate Research Fellowships for fiscal year 2017. 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. Information about the solicitation for the 2018 competition will be published in the “Mathematics Opportunities” section of an upcoming issue of the *Notices*.

Following are the names of the awardees in the mathematical sciences selected so far in 2017, followed by their undergraduate institutions (in parentheses) and the institutions at which they plan to pursue graduate work.

- DYLAN AIREY (University of Texas at Austin), University of Texas at Austin
- COLIN C. AITKEN (Massachusetts Institute of Technology), Massachusetts Institute of Technology
- AYAH K. ALMOUSA (University of Wisconsin-Madison), Cornell University
- ETHAN E. ALWAISE (Emory University), Emory University
- BENJAMIN E. ANZIS (University of Idaho), University of Idaho
- ADAM A. ATANAS (Harvard University), Harvard University
- JESS BANKS (Oberlin College), University of California, Berkeley
- ROBERT J. BARALDI (North Carolina State University), University of Washington
- RAJENDRA BEEKIE (University of Minnesota-Twin Cities), University of Minnesota-Twin Cities
- DANIEL C. BOURGEOIS (Louisiana State University and Agricultural and Mechanical College), Louisiana State University and Agricultural and Mechanical College
- ELIZABETH C. CHASE (University of North Carolina at Chapel Hill), University of North Carolina at Chapel Hill
- KATHERINE G. CHRISTIANSON (Columbia University), University of California, Berkeley
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—NSF announcement

Ludvig Faddeev (1934–2017)



Ludvig Faddeev

LUDVIG FADDEEV, eminent Russian theoretical physicist and mathematician, was famous for his contributions to the quantum mechanical three-body problem and for his work on the quantization of non-abelian gauge field theories. He was one of the scientists to bridge the gap between mathematics and physics.

Faddeev served the International Mathematical Union for twelve years. As president (1987–1990), he worked tirelessly on improving cooperation among mathematicians from all regions of the world and fostering good relations with other scientists. Very recently, he was deeply involved in the Russian bid for a 2022 International Congress of Mathematicians in St. Petersburg.

For many years, Faddeev was head of the St. Petersburg Department of the Steklov Institute of Mathematics of the Russian Academy of Sciences, and he was founder of the Euler International Mathematical Institute in St. Petersburg. He received the 2006 Henri Poincaré Prize and the 2008 Shaw Prize.

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