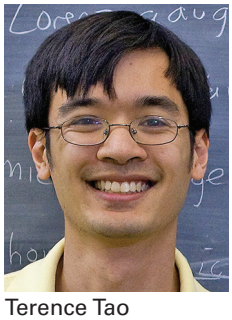
Mathematics People

Tao Receives Inaugural Riemann Prize


Terence Tao

Terence Tao of the University of California, Los Angeles, has been awarded the inaugural Riemann Prize of the Riemann International School of Mathematics (RISM). His work focuses on harmonic analysis, partial differential equations, geometric combinatorics, arithmetic combinatorics, analytic number theory, compressed sensing, and algebraic combinatorics.

Tao was born in Adelaide, Australia, in 1975 and received his PhD from Princeton University in 1996 under the direction of Elias Stein. He joined the faculty at UCLA in 1996 and was appointed full professor in 1999, the youngest person to attain that rank at the University. With Ben Green, he proved the Green–Tao theorem in 2004. He was awarded a Fields Medal in 2006. His many other awards and honors include: the Salem Prize (2000), the Bôcher Memorial Prize (2002), the Clay Research Award (2003), the Australian Mathematical Society Medal (2005), the Ostrowski Prize (2005), the AMS Conant Prize (2005), MacArthur and Sloan Fellowships (2006), the SASTRA Ramanujan Prize (2006), the Alan T. Waterman Award (2008), the Onsager Medal (2008), the Nemmers Prize in Mathematics (2010), the King Faisal International Prize (2010), the Pólya Prize (2010), the Crafoord Prize (2012), the Joseph I. Lieberman Award (2013), the Royal Medal of the Royal Society (2014), and the Breakthrough Prize in Mathematics (2015). He was chosen as a Simons Investigator in 2012. He is a Fellow of the Royal Society (2007) and a member of the American Academy of Arts and Sciences (2009), and he was elected to the inaugural class of AMS Fellows in 2013. He is a foreign associate of the National Academy of Sciences and a corresponding member of the Australian Academy of Science.

The Riemann Prize was established in 2019 to mark the tenth anniversary of RISM. It will be awarded every three years by an international committee to outstanding mathematicians ages forty to sixty-five who have reached breakthrough achievements.

—From a RISM announcement

Sulem Awarded 2020 CRM-Fields-PIMS Prize

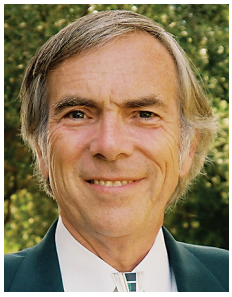

Catherine Sulem

Catherine Sulem of the University of Toronto has been awarded the CRM-Fields-PIMS Prize for outstanding achievement in the mathematical sciences "for her numerous and influential contributions to the study of nonlinear partial differential equations." The prize citation reads: "Her deep results on the nonlinear Schrödinger equation resolved multiple questions that had resisted analysis for years. In particular, her work is central to the understanding of self-focusing singularities to this equation. Her analysis of water waves introduced powerful new probabilistic ideas to that field." She is a Fellow of the AMS and of the Royal Society of Canada. Her honors include the 1998 Krieger–Nelson Prize of the Canadian Mathematical Society and the 2019 AWM–SIAM Sonia Kovalevsky Lectureship. She has been the recipient of a Simons Foundation Fellowship and a Killam Research Fellowship of the Canada Council for the Arts. She is also an accomplished violinist.

The CRM-Fields-PIMS Prize is awarded jointly by the Centre de Recherches Mathématiques (CRM), the Fields Institute, and the Pacific Institute for the Mathematical Sciences (PIMS). It is the premier Canadian award for research achievements in the mathematical sciences.

—From a CRM announcement

Megginson Receives SACNAS Award


Robert E. Megginson

Robert E. Megginson of the University of Michigan received the 2019 SACNAS Distinguished Mentor Award at the 2019 Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) National Diversity in STEM Conference. He was recognized for his achievements in helping to engage more minorities in mathematics. Megginson received his PhD in mathematics in 1984 from the University of Illinois and was a member of the faculty of Eastern Illinois University before joining the University of Michigan in 1992. From 2002 to 2004 he was deputy director of the Mathematical Sciences Research Institute (MSRI). His research interests include functional analysis, problems related to rotundity and smoothness in Banach spaces, and the mathematics of climate science. His honors include the US Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring and the Mathematical Association of America's Distinguished Service Award. He is a Sequoyah Fellow of the American Indian Science and Engineering Society and has been a recipient of that society's Ely Parker Award. He has been active in conducting summer mathematics enrichment programs for Native American students at various sites, including the Turtle Mountain Chippewa reservation in North Dakota. He is a Fellow of the AMS and of the American Association for the Advancement of Science (AAAS). He has a passion for mountain climbing and tells the *Notices:* "As a Native American, I respect my ancestors' belief that high places are sacred to the Creator, and one should leave tobacco, one of our sacred herbs, in such places when climbing up to them. So far I have done so on the summits of thirty-six of Colorado's fifty-three 'Fourteeners,' the mountains in Colorado with summit elevations over 14,000 feet, and in many cases on multiple visits to those mountaintops."

—From a SACNAS announcement

Prizes of the New Zealand Mathematical Society


David Simpson

David Simpson of Massey University has received the 2019 Research Award of the New Zealand Mathematical Society (NZMS) "for combining algebra, analysis, combinatorics and traditional dynamical systems to make fundamental advances in the bifurcation theory of piecewise smooth differential equations and maps." He received his PhD in 2008 from the University of Colorado at Boulder, held a postdoctoral fellowship at the University of British Columbia from 2009 to 2012, and is currently a senior lecturer at Massey University. He has received early career awards from Massey University and from the NZMS and was a Simons Visiting Researcher in Barcelona in 2016. He was an invited lecturer in the Summer Program on Dynamics of Complex Systems at the International Centre for Theoretical Sciences in Bangalore, India, in June 2018. He created a daily crossword puzzle for the *New York Times* that appeared on April 29, 2010, and contained only words with an odd number of letters. He says, "Perhaps amusingly, it's my most read publication, by far."


Alexander Melnikov

Alexander Melnikov of Massey University was awarded the NZMS 2019 Kalman Prize for Best Paper for his paper, coauthored with Keng Meng Ng, "Computable Torsion Abelian Groups," *Advances in Mathematics* **325** (2018), 864–907. He received his PhD in 2013 from the University of Auckland and did postdoctoral research with Antonio Montalban at the University of California, Berkeley, before joining the faculty at Massey. He has been the recipient of the Early Career Award from the NZMS (2008) and the Massey University Early Career Research Excellence Medal (2017).

Martin Bachraty of the University of Auckland was awarded the 2019 NZMS Aitken Prize for Best Talk by a Student for his talk at the New Zealand Mathematics Colloquium titled "Skew Morphisms of Finite Groups."

—From NZMS announcements

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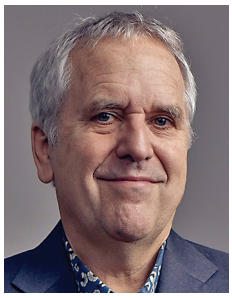
IEEE Awards Announced


Michael I. Jordan

The Institute of Electrical and Electronics Engineers (IEEE) has honored two researchers whose work involves the mathematical sciences. **Michael I. Jordan** of the University of California, Berkeley, has been awarded the John von Neumann Medal "for contributions to machine learning and statistics." Jordan received his PhD in cognitive science from the University of California, San Diego, in 1985. He was a member of the faculty at the Massachusetts Institute of Technology from 1988 to 1998 before joining the faculty at Berkeley. His honors include the Allen Newell Award of the Association for Computing Machinery and the Association for the Advancement of Artificial Intelligence (2009), the David E. Rumelhart Prize of the Cognitive Science Society (2015), and the *International Journal of Artificial Intelligence* Research Excellence Award (2016). He was a plenary lecturer at the International Congress of Mathematicians in 2018, is a member of the National Academy of Sciences, the National Academy of Engineering, and the American Academy of Arts and Sciences, and is a Fellow of the American Association for the Advancement of Science. He has been awarded the Medallion Lectureship (2004) and the Neyman Lectureship (2011) of the Institute of Mathematical Statistics. He speaks four languages fluently and has played drums in a number of bands, including faculty bands named The Positive Eigenvalues and Errors in Bars.


Anders Lindquist

Anders Lindquist of Shanghai Jiao Tong University received the 2020 Control Systems Award "for contributions to optimal filtering, stochastic control, stochastic realization theory, and system identification." Lindquist was born in Lund, Sweden, and received his PhD from the Royal Institute of Technology (KTH) under the direction of Lars Erik Zachrisson. After holding several visiting positions, he joined the faculty at the University of Kentucky. In 1983 he returned to KTH. Between 1989 and 2009 he was also an affiliate professor at Washington University in St. Louis. He is currently Zhiyuan Chair Professor and a Qian Ren Scholar at the Shanghai Jiao Tong University. He was awarded the 2003 George S. Axelby Outstanding Paper Award of the IEEE Control Systems Society (CSS) and the 2009 W. T. and Idalia Reid Prize in Mathematics of the Society for Industrial and Applied Mathematics (SIAM). He is a member of the Royal Swedish Academy of Engineering Sciences and a foreign member of the Chinese Academy of Sciences and of the Russian Academy of Natural Sciences, a Life Fellow of the IEEE, and a Fellow of SIAM and the International Federation of Automatic Control. He is a Knight Commander with Star of the Order of the Holy Sepulchre.

—Elaine Kehoe

Rosenthal Prize Awarded

The National Museum of Mathematics has awarded its 2019 Rosenthal Prize for Innovation and Inspiration in Math Teaching to **Nat Banting** of the University of Saskatoon for his lesson "Dice Auction: Putting Outcomes of the Dice Up for Sale." Banting is also a high school mathematics teacher, and in the lesson he created, students test their intuitive probabilistic reasoning of dice throws with a dynamic "outcomes auction." Reality—and mathematics—then provide feedback. Banting was the recipient of the 2019 Margaret Sinclair Memorial Award of the Fields Institute in recognition of innovation and excellence in Canadian mathematics education. The Rosenthal Prize carries a cash award of US$25,000. **Matt Roscoe** of the University of Montana was named runner-up for his lesson "Building the City of Numbers: An Exploration of Unique Prime Factorization." He received a cash award of US$15,000.

—From a National Museum of Mathematics announcement

Wallenberg Fellowships Awarded

Three mathematical scientists have been awarded fellowships by the Wallenberg Academy for 2019. **Wushi Goldring** of Stockholm University was selected for a project investigating the role that group theory plays in mathematics and, more specifically, determining the extent to which groups give rise to geometry. **Klas Modin** of Chalmers University of Technology received support for work on the mathematics of shapes. He has developed mathematics that can calculate distances in a more abstract world and that can be used to analyze complicated shapes, such as that of a protein or organ. **Sara Zahedi** of KTH Royal Institute of Technology works on improving tools for computer simulations and is developing a new generation of computational models that will better simulate processes in which multiple objects have changeable shapes.

The Wallenberg Fellows program was established by the Knut and Alice Wallenberg Foundation in close cooperation with five learned academies and sixteen Swedish universities to give the most promising young researchers a

work situation that enables them to focus on their projects and address difficult research questions over an extended period of time.

—From a Wallenberg Academy announcement

AAAS Fellows Elected

The American Association for the Advancement of Science (AAAS) has elected its new Fellows for 2019.

The new Fellows of the Section on Mathematics are:

- **David M. Bressoud,** Macalester College
- **Lisa J. Fauci,** Tulane University
- **John S. Lowengrub,** University of California, Irvine
- **Michael J. Miksis,** Northwestern University
- **Kavita Ramanan,** Brown University
- **Jinchao Xu,** Pennsylvania State University
- **Kevin Zumbrun**, Indiana University

The new Fellows of the Section on Statistics are:

- **F. DuBois Bowman,** University of Michigan
- **Ronald D. Fricker, Jr.,** Virginia Tech
- **Jiming Jiang**, University of California, Davis
- **Nandini Kannan**, Indo-US Science and Technology Forum (IUSSTF)
- **J. Jack Lee,** University of Texas
- **Kathryn Roeder,** Carnegie Mellon University
- **Susan M. Shortreed**, Kaiser Permanente Washington Health Research Institute

—From an AAAS announcement

Rhodes Scholars Announced

The Rhodes Trust has announced the names of the American scholars chosen as Rhodes Scholars for 2020. Following are the names and brief biographies of the scholars whose work involves the mathematical sciences.

Neil B. Band of Omaha, Nebraska, is a Harvard senior majoring in computer science. His academic research in quantitative biomedicine applies economics frameworks and artificial intelligence techniques to improve drug discovery and organ donation. He is a campus leader on issues of technology and entrepreneurship and serves as the founding technology chair of the Harvard Undergraduate Blockchain Group. He is the cofounder of multiple social ventures, including the development of a cryptocurrency that aims to improve payment security in the world's largest Syrian refugee camp. He is also an accomplished dancer with Harvard College Bhangra and has choreographed original dances for competition performance. At Oxford, he will do an MSc in computer science and an MSc in pharmacology.

Anna C. Esenther of Ashland, Massachusetts, graduated from Michigan State University in May with degrees in economics, education, statistics, psychology, and history. She completed honors theses in psychology and history. She is currently a first-grade teacher at Inca Elementary in Buckeye, Arizona. Her work and research at the intersection of economics and education provides a powerful toolkit to improve education on a broad scale. She is also passionate about challenging the field of economics to become more inclusive, changing the perception of what economics is and who economists are. At Oxford, she will pursue an MPhil in economics.

Prathm Juneja of Edison, New Jersey, is a senior at the University of Notre Dame, graduating in December with majors in political science and computer science. Through his undergraduate studies and his work, he grapples with how technology and policy can work together to make government more equitable. His undergraduate thesis statistically analyzes the Interstate Voter Registration Crosscheck Program and its impact on voter turnout rates. He worked as a Legislative and Innovation Intern for the South Bend Mayor's Office. He is a Truman Scholar. At Oxford, Juneja will pursue an MSc in social data science, as well as the master of public policy.

Luke G. Melas-Kyriazi of New York City is a Harvard senior pursuing a BA in mathematics and an MS in computer science. His research agenda on machine learning has included work analyzing demographic diversity and blood laboratory data in order to improve clinical decision making. As treasurer of the Harvard Student Agencies, the largest student-run company in the world, he manages a $1.2 million reserve fund to support educational and business opportunities for students. He also organizes hackathons for computer science undergraduates across the United States and Canada. At Oxford, he will do the DPhil in computer science.

Francisca Vasconcelos of San Diego, California, is a senior at the Massachusetts Institute of Technology majoring in physics and electrical engineering and computer science. She researches and publishes at the intersection of computer science, quantum physics, and quantum information theory. Her creative and groundbreaking research endeavors to improve computer vision by mimicking the human visual system through preprocessing visual inputs. She serves as technology chair of the MIT Society of Women Engineers and is a member of the MIT Women's Club Soccer. At Oxford, she will pursue an MSc in mathematics and foundation of computer science and an MSc in statistical science.

Vilhelm L. Andersen Woltz of Logan, Ohio, is a senior at the Massachusetts Institute of Technology, where he is pursuing majors in physics and electrical engineering and

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computer science. His research focuses on the challenge of building larger quantum processors. He is an advocate for expanding access to science and technology education and founded a computer science camp for students at his former high school in rural southeastern Ohio. An Eagle Scout, he is also captain of the varsity track and field and cross-country team at MIT. He plans a career that will allow him to apply his technical knowledge of quantum computing in advising policymakers on science and technology issues. At Oxford, he will do the BA in philosophy, politics, and economics.

Megan A. Yamoah of Davis, California, is a senior at the Massachusetts Institute of Technology majoring in physics and electrical engineering. Megan's research expertise is in quantum computing, for which she has received competitive funding awards. She serves on the executive board of MIT Undergraduate Women in Physics and as the president of the MIT Society of Physics Students. The daughter of immigrants, she is passionate about connecting entrepreneurs from around the world with the resources required to scale their ideas to impact. At Oxford, she will pursue an MPhil in economics to study how innovation can positively affect emerging economies.

—From a Rhodes Trust announcement

Credits

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