Mathematics People

Venkatesh Awarded 2008 SASTRA Ramanujan Prize

AKSHAY VENKATESH of Stanford University has been awarded the 2008 SASTRA Ramanujan Prize. This annual prize is given for outstanding contributions to areas of mathematics influenced by the Indian genius Srinivasa Ramanujan. The age limit for the prize has been set at thirty-two, because Ramanujan achieved so much in his brief life of thirty-two years. The prize carries a cash award of US$10,000.

The 2008 SASTRA Prize Citation reads as follows: "Akshay Venkatesh is awarded the 2008 SASTRA Ramanujan Prize for his phenomenal contributions to a wide variety of areas in mathematics, including number theory, automorphic forms, representation theory, locally symmetric spaces, and ergodic theory, by himself and in collaboration with several mathematicians. The prize recognizes the enormous influence his work has had, involving an interplay of number theoretic and analytic techniques. In particular, the prize recognizes his pathbreaking work on subconvexity of automorphic L-functions by himself and with Philippe Michel; his fundamental paper with Jordan Ellenberg in *Inventiones Mathematicae* (2007) on representing integral quadratic forms by quadratic forms—a problem having its roots in the work of Ramanujan; his work with Harald Helfgott in the *Journal of the American Mathematical Society* (2006) providing the first nontrivial upperbounds of 3-torsion in class groups of number fields; his seminal paper with Jordan Ellenberg in the *Annals of Mathematics* (2006) on bounds for the number of number fields with a bounded discriminant; his work with Elon Lindenstrauss on general Weyl laws, which establishes a conjecture of Sarnak; and his work with Lior Silberman establishing partial results towards a conjecture of Rudnick and Sarnak for higher rank arithmetic locally symmetric spaces. The prize also recognizes his recent work with Manfred Einseidler, Elon Lindenstrauss, and Philippe Michel on Duke's theorem for cubic fields, among others."

Akshay Venkatesh was born in New Delhi in 1981 but was raised in Perth, Australia. He showed his brillance in mathematics very early and was awarded the Woods Memorial Prize in 1997, when he finished his undergraduate studies at the University of Western Australia. He did his doctoral studies at Princeton under Peter Sarnak, completing his Ph.D. in 2002. He was C.L.E. Moore Instructor at the Massachusetts Institute of Technology for two years and was selected as a Clay Research Fellow in 2004. He served as associate professor at the Courant Institute of Mathematical Sciences at New York University and received the Salem Prize and a Packard Fellowship in 2007. He is now professor of mathematics at Stanford University.

The 2008 SASTRA Ramanujan Prize Committee consisted of Krishnaswami Alladi (chair), Manjul Bhargava, Bruce Berndt, Jonathan Borwein, Stephen Milne, Kannan Soundararajan, and Michel Waldschmidt. Previous winners of the SASTRA Ramanujan Prize are Manjul Bhargava and Kannan Soundararajan (2005), Terence Tao (2006), and Ben Green (2007).

—From a SASTRA Ramanujan Prize announcement

Hansen Awarded 2008 CME/MSRI Prize

LARS PETER HANSEN of the University of Chicago has been awarded the 2008 Prize in Innovative Quantitative Applications of the Chicago Mercantile Exchange (CME) Group and the Mathematical Sciences Research Institute (MSRI). The prize carries a cash award of US$25,000 and a medal.

According to the prize citation, in the 1980s Hansen was "the leading contributor to the development and application of rigorous estimation and testing methods for financial data. His 1982 paper on generalized methods of moments fundamentally altered the way that empirical research is done in finance and macroeconomics. This new methodology led him, with Ken Singleton, to make one of the pioneering contributions to what became known as the 'equity premium puzzle'. Hansen continues to be

a prolific researcher. He is part of a team investigating how long-run risk tradeoffs are encoded in asset prices. Hansen has also collaborated with others to develop models in which investors guard their investments against possible model misspecification, which they have shown are reflected in security market values and contribute to price dynamics."

Hansen is a member of the National Academy of Sciences and of the American Academy of Arts and Sciences, and is a fellow of the Econometric Society and of the American Finance Association. He has also held a Guggenheim Fellowship and a Sloan Fellowship. He received the 2006 Erwin Plein Nemmers Prize in Economics from Northwestern University, a Faculty Award for Excellence in graduate teaching from the University of Chicago, and the Frisch Medal from the Econometric Society.

The 2008 CME Group/MSRI Prize Selection Committee consisted of Leo Melamed (CME Group), Anat Admati (Stanford Graduate School of Business), Robert Bryant (Mathematical Sciences Research Institute), Darrell Duffie (Chair, Stanford University), John Gould (University of Chicago), Sanford Grossman (Quantitative Financial Strategies, Inc.), Stephen A. Ross (Massachusetts Institute of Technology Sloan School of Management), Jose A. Scheinkman (Princeton University), and Hugo Sonnenschein (University of Chicago). The previous recipients of the prize are Stephen A. Ross (2006) and David M. Kreps (2007).

The annual CME Group/MSRI Prize is awarded to an individual or a group to recognize originality and innovation in the use of mathematical, statistical, or computational methods for the study of the behavior of markets and, more broadly, of economics.

—From a CME Group announcement

Faltings Receives von Staudt Prize

The Otto und Edith Haupt-Stiftung of the Universität Erlangen-Nürnberg has presented the 2008 Karl Georg Christian von Staudt-Preis to GERD FALTINGS of the Max-Planck-Institut für Mathematik, Bonn. The prize was given at the annual meeting of the Deutsche Mathematiker-Vereinigung (German Mathematical Society) in September 2008 in Erlangen.

—DMV announcement

Burban and Oppermann Receive ICRA Awards

IGOR BURBAN of the University of Bonn and STEFFEN OPPERMANN of NTNU Trondheim, Norway, received awards from the International Conference on Representations of Algebras (ICRA) at its thirteenth conference in Sao Paulo, Brazil.

According to the prize citation, Burban was honored "for his work on derived categories of coherent sheaves and modules and their relation to the Yang-Baxter equation. He developed new techniques for explicit calculation in such derived categories of modules and coherent sheaves. His main results were obtained in terms of strings and bands, linking the topic to the representation theory of finite-dimensional algebras and matrix problems." Oppermann was recognized "for his highly original, inventive and influential work on representation dimension of finite-dimensional algebras. He has introduced completely new and far-reaching methods to determine lower bounds for representation dimension. He also applied his methods to obtain deep results in a broad variety of problems including representations of algebras, finite groups and coherent sheaves."

The series of conferences was established in 1974 to exchange results in the field of representations of finite-dimensional algebras. The next conference will be held in Tokyo, Japan, in 2010.

—From an ICRA announcement

NDSEG Fellowships Awarded

Fourteen young mathematicians have been awarded National Defense Science and Engineering Graduate (NDSEG) Fellowships by the Department of Defense (DoD). As a means of increasing the number of U.S. citizens trained in disciplines of military importance in science and engineering, DoD awards fellowships to individuals who have demonstrated ability and special aptitude for advanced training in science and engineering. The fellowships are sponsored by the United States Army, Navy, and Air Force.

The following are the names of the fellows in mathematics, their institutions, and the offices that awarded the fellowships: ALLISON BISHOP (University of Texas at Austin), Office of Naval Research (ONR); ELETTE BOYLE (Massachusetts Institute of Technology), Army Research Office (ARO); REX CHEUNG (Yale University), ARO; MICHAEL CHMUTOV (University of Michigan, Ann Arbor), Air Force Office of Scientific Research (AFOSR); ROSS KRAVITZ (University of Michigan, Ann Arbor), ARO; BRANDON LEVIN (Stanford University), ARO; ERIC MARBERG (Massachusetts Institute of Technology), ONR; JEFFREY MILLER (Brown University), AFOSR; JOHN PATE (University of Arizona), AFOSR; AARON SILBERSTEIN (Harvard University), AFOSR; CHARLES STAATS (University of Chicago), AFOSR; GEORGE TUCKER (Massachusetts Institute of Technology), High Performance Computing Modernization Program (HPCMP); GABRIEL ZAYAS-CABAN (Cornell University), ARO; JULIETTE ZERICK (University of California, Davis), ONR.

—From an NDSEG annoucement

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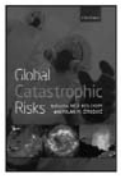

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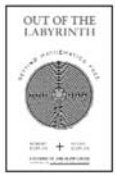

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Masayoshi Nagata (1927–2008)

Masayoshi Nagata, professor emeritus of Kyoto University, passed away in Kyoto on August 27, 2008, at the age of 81. Nagata played outstanding roles, especially in the 1950s and 1960s, in the development of commutative algebra and algebraic geometry. Many of his contributions were through a result of producing crucial counterexamples. The most famous among them is a nonfinitely generated ring of invariants for a group acting on a polynomial ring, thereby negatively solving Hilbert's 14th problem in 1958. Another is a complete nonsingular 3-dimensional algebraic variety that cannot be embedded in any projective space.

His book *Local Rings*, published in 1962, remains one of the basic references in commutative algebra and algebraic geometry. "Pseudo-geometric rings", treated in the book, are now called "Nagata rings" and form an important class of Noetherian rings. This concept too resulted from his earlier examples of Noetherian rings not enjoying properties of those appearing in connection with algebraic varieties.

A series of papers in the late 1950s on algebraic geometry over Dedekind domains laid the foundation for later developments of algebraic geometry in terms of schemes. The concept of the Henselization of rings, developed in a series of papers in the 1950s, turned out to be fundamental for algebraic spaces and étale topology.

The completion of algebraic varieties—that is, embedding of algebraic varieties as open subvarieties of complete varieties—published in his paper in 1962, remains one of the basic techniques in algebraic geometry.

I. Shestakov and U. Umirbaev finally confirmed in 2004 Nagata's conjecture of 1972 to the effect that a certain automorphism of the polynomial ring in three variables is not a composite of "elementary" ones. Recent increased interest in this topic is an indication of Nagata's lasting influence in commutative algebra and algebraic geometry.

Nagata was born on February 9, 1927, and graduated in 1950 from Nagoya Imperial University, where he was a student of Tadasi Nakayama. After serving as an assistant at Nagoya University, a lecturer, and then an assistant professor at Kyoto University, he was promoted to professor in February 1963 and held the position until his retirement on March 31, 1990.

He played quite active roles in the mathematical community in Japan by serving as a trustee of the Mathematical Society of Japan and as a member of the Science Council of Japan, among others.

At the International Mathematical Union he served as a member of the Executive Committee between 1975 and 1978 and as vice president from 1979 to 1982.

He was awarded the Chunichi Cultural Prize in 1961, the Matsunaga Prize in 1970, and the Japan Academy Prize in 1986. The Order of the Sacred Treasure, Gold and Silver Star was conferred on him in November 1998.

—Masaki Maruyama, Masayoshi Miyanishi, Shigefumi Mori, and Tadao Oda, on behalf of Nagata's students