Mathematics People

MAA Writing Awards Presented

The Mathematical Association of America (MAA) presented several awards for excellence in expository writing at its Summer Mathfest in Providence in July 1999.

The Carl B. Allendoerfer Awards are given for articles published in *Mathematics Magazine* and carry a cash award of $500. Two awards were given for 1999. VICTOR KLEE of the University of Washington and JOHN R. REAY of Western Washington University received one award for their article "A surprising but easily proved geometric decomposition theorem", *Mathematics Magazine*, volume 71 (1998). DONALD G. SAARI of Northwestern University and FABRICE VALOGNES of the University of Caen, France, received an award for their article "Geometry, voting, and paradoxes", also in volume 71 (1998) of *Mathematics Magazine*.

The Trevor Evans Award is given to authors of exceptional articles that are accessible to undergraduates and that were published in *Math Horizons*. This prize carries a cash award of $250. The award for 1999 went to RAVI VAKIL of the Massachusetts Institute of Technology for the article "The youngest tenured professor in Harvard history", *Math Horizons*, September 1998.

The Lester R. Ford Award honors articles published in *The American Mathematical Monthly* and carries a cash prize of $500. Three awards were made for 1999 to the following mathematicians, all for articles that appeared in the *Monthly*, volume 105, 1998: YOAV BENYAMINI of the Technion-Israel Institute of Technology for the article "Applications of the universal surjectivity of the Cantor set"; JERRY L. KAZDAN of the University of Pennsylvania for the article "Solving equations, an elegant legacy"; and BERND STURMFELS of the University of California, Berkeley, for the article "Polynomial equations and convex polytopes".

The George Pólya Award is given for articles published in *The College Mathematics Journal* and has a cash prize of $500. Two awards were made for 1999. AARON KLEBANOFF and JOHN RICKERT received an award for their article "Studying the Cantor dust at the edge of the Feigenbaum diagrams", *College Mathematics Journal*, volume 29 (1998). DAVID BLEECKER and LAWRENCE J. WALLEN were selected for their article "The world's biggest taco", also in *College Mathematics Journal*, volume 29 (1998).

—Mathematical Association of America

London Mathematical Society Prizes Awarded

The London Mathematical Society (LMS) has announced the awarding of several prizes for 1999.

The Pólya Prize, given in recognition of outstanding creativity in, imaginative exposition of, or distinguished contribution to mathematics within the United Kingdom has been awarded to SIMON DONALDSON of Imperial College, London, for his groundbreaking work in geometry and topology. Early in his career he showed how the Yang-Mills equations in four dimensions could be used as a tool for analyzing four-manifolds themselves. This led to completely unexpected results in low-dimensional topology, for which he won a Fields Medal in 1986, and to a whole new and very active area of mathematical progress. By using moment maps in symplectic geometry, he has found a number of new models for important moduli spaces in geometry and mathematical physics. In his current work these methods promise to yield new results in complex three-dimensional geometry. Another recent achievement is a deep theorem which has made possible the use in symplectic geometry of Lefschetz's fruitful method of studying algebraic varieties by pencils of hyperplane sections.

The Senior Whitehead Prize, given in recognition of work in, influence on, or service to mathematics or of outstanding lecturing in mathematics has been awarded to M. J. D. POWELL of the University of Cambridge. He is one of the founders of the modern field of numerical optimization, and he has also had profound influence on the field of numerical approximation of functions. He was one of the originators of the first quasi-Newton iterative method in nonlinear optimization, now known as the Davidon-

Fletcher-Powell (DFP) update. His contributions to the field of approximation of functions have been equally extensive. Perhaps his greatest impact in this area has come with his investigations of radial basis functions for multivariate approximation in the past decade. With various students and collaborators he has developed unexpectedly fast and powerful algorithms for this kind of data fitting and an extensive and elegant mathematical theory that have become the standard tools in use today for the interpolation of scattered multivariate data.

The Junior Berwick Prize was awarded for an outstanding piece of mathematical research that was published by the LMS during the four years ending December 31, 1998, to a mathematician under the age of forty years who is not a Fellow of the Royal Society. The Junior Berwick Prize for 1999 was given to DAVID BURNS of King's College, London, for his article "Adams operations and wild Galois structure invariants", published in the *Proceedings of the London Mathematical Society*. In the article Burns provided a completely new insight into Galois structure theory. He has been at the forefront of recent developments in the study of certain algebraic structures that arise in arithmetical algebraic geometry, particularly the special values of L-functions. This work provides an equivariant generalization of the work of Bloch-Kato.

The Junior Whitehead Prizes are given for work in and influence on mathematics to mathematicians who are under the age of forty years, were educated mainly in the United Kingdom, and are not Fellows of the Royal Society. They are intended to include all aspects of mathematics, including applied mathematics, mathematical physics, and mathematical aspects of computer science. The 1999 Junior Whitehead Prizes were awarded to MARTIN BRIDSON and GERO FRIESECKE (Oxford University), NICHOLAS HIGHAM (University of Manchester), and IMRE LEADER (University College London). Bridson received the prize for his outstanding work in geometric group theory. Much of his work has concerned cocompact groups of isometries of nonpositively curved spaces, the so-called CAT(0) spaces. He has also been at the forefront of applications of formal languages to group theory. Friesecke was awarded the prize in recognition of important contributions to the mathematical analysis of problems in continuum mechanics, materials science, and mathematical physics. In the analysis of microstructure, he obtained a necessary and sufficient condition for the attainment of a minimum in scalar-valued variational problems, and he and J. B. McLeod proved results concerning the unexpected difference between the dynamic behavior of solutions to a model of one-dimensional viscoelasticity and the behavior of minimizing sequences for the corresponding variational problem. He and J. A. D. Wattis proved the existence of solitary waves on a lattice without invoking integrability, and he and R. L. Pego showed that these waves are stable. More recently he has studied the foundations of density functional theory and has given a rigorous proof of the famous formula of Dirac for exchange energy. Higham received the prize for his work in the field of numerical linear algebra. Among the problems in this field that his work has advanced are symmetric indefinite systems of equations, Vandermonde systems, tridiagonal and triangular systems, least-squares and constrained least-squares, eigenvalues, generalized eigenvalues, singular value decomposition, polar decomposition, pseudospectra, iterative refinement, condition number estimation, matrix square roots, the Sylvester equation, and fast matrix multiplication by Strassen's algorithm. Leader was awarded the prize for major contributions to several areas of combinatorics. Among his results are the first known exact isoperimetric inequality for which the extremal sets are not nested, powerful results in infinite Ramsey theory concerning monochromatic solutions to systems of linear equations, and the solution of the notoriously difficult bounded graph conjecture.

—From an LMS announcement

B. H. Neumann Awards Given

The B. H. Neumann Awards for 1999 have been awarded by the Board of the Australian Mathematics Trust to KEITH HAMANN of the South Australian Department of Education, HOWARD REEVES of the Tasmanian Department of Education, and MARTIN WARD of the Australian National University.

The awards, named for Bernhard H. Neumann, are presented each year to mathematicians who have made important contributions over many years to the enrichment of mathematics learning in Australia and its region.

—Board of the Australian Mathematics Trust

Deaths

HERBERT ALEXANDER, of the University of Illinois at Chicago, died on August 27, 1999. Born on December 24, 1940, he was a member of the Society for 29 years.

JOHAN J. DE IONGH, of Nijmegen, The Netherlands, died on June 9, 1999. Born on July 13, 1915, he was a member of the Society for 38 years.

MANUEL KEEPLER, of North Carolina Central University, Durham, died on July 2, 1999. Born on November 4, 1944, he was a member of the Society for 27 years.

ROLF R. MANTEL, of the University of San Andres, Buenos Aires, died on February 7, 1999. Born on December 19, 1934, he was a member of the Society for 2 years.

JOHN R. MCMULLEN, of Netscape Comm. Corp., Mountain View, CA, died on June 23, 1999. Born on May 1, 1947, he was a member of the Society for 29 years.

JERZY POPENDA, of Poznan University of Technology, Poland, died on May 31, 1999. Born on November 4, 1948, he was a member of the Society for 8 years.

GAIL S. YOUNG, professor emeritus of the University of Rochester, died on August 29, 1999. Born on October 3, 1915, he was a member of the Society for 55 years.