Mathematics People

Dirac Medals Awarded

The International Center for Theoretical Physics (ICTP) in Trieste, Italy, announced last August that the 1996 Dirac Medals would go to TULLIO REGGE of the Polytechnic of Turin and MARTINUS VELTMAN of the University of Michigan.

Tullio Regge was honored "for crucial contributions in theoretical and mathematical physics starting with his seminal investigation of the asymptotic behavior of potential scattering processes through the analytic continuation of the angular momentum to the complex plane. This technique has found many applications in the study of differential equations, while in the physics of the strong interactions, the so-called Regge trajectories have helped in the classification of particles and resonances by grouping together entities with different spin. The so-called Regge behavior was, and still is, an important ingredient in the construction of string theories. In addition, Regge is also known for having introduced the first discretization of space-time with a simple Einstein dynamics (the so-called Regge calculus) and for its formulation of supergravity theories in the geometric language of differential forms."

Martinus Veltman was honored "for his pioneering investigations on the renormalizability of gauge theories and consequently, his analysis of the sensitivity of radiative corrections to both the mass differences in fermion doublets and the Higgs particle mass. These calculations provided the basic prediction in the search for the top quark mass. Towards this goal, Veltman was one of the first to use the computer in Feynman diagram calculations. His software package for manipulations of algebraic symbols has been a privileged tool for a full generation of physicists."

The ICTP instituted the Paul Adrien Maurice Dirac Medals in 1985. These medals are awarded yearly for contributions to theoretical physics and mathematics. The announcement is made on P. A. M. Dirac's birthday (8 August), and the awarding ceremony takes place at a later date at the ICTP. The medalists also receive a cheque for $5,000.

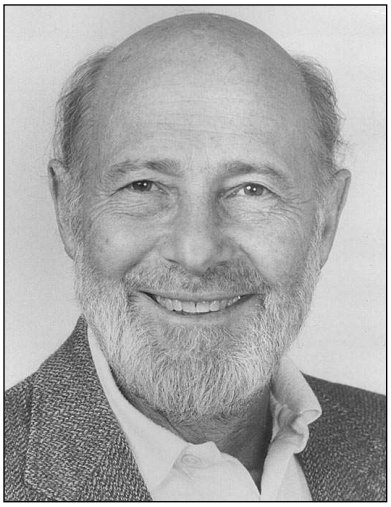
A selection committee including N. Cabibbo, S. Lundqvist, Y. Nambu, S. Weinberg, E. Witten, and Abdus Salam selects the winners from among nominated candidates. The committee invites nominations from anyone working in the areas of theoretical physics or mathematics.

—ICTP Press Release

Keller and Sinai Receive 1997 Wolf Prize

JOSEPH KELLER of Stanford University and YAKOV G. SINAI of the Landau Institute and Princeton University will share the 1997 Wolf Prize in Mathematics.

Keller received the prize for "his profound and innovative contributions, in particular to electromagnetic, optical, acoustic wave propagation and to fluid, solid, quantum and statistical mechanics." Keller is a preeminent applied mathematician in the classical tradition. He has brought a deep understanding of physics and a superb skill at asymptotics to an astonishing range of problems. These include reflection, scattering, and diffraction of waves, whether acoustic, electromagnetic, elastic, or fluid. His outstanding contributions cover problems in mechanics, quantum mechanics, thermodynamics, and statistical mechanics, and include the so-called Keller-Maslov index, the Keller-Rubinov formula for forward scattering, and pioneering work on random media. He is really the model of what a mathematician interested in a wide variety of physical phenomena can and should be.



Joseph Keller

Keller was born in 1923 in Paterson, New Jersey. He received his B.A. in physics in 1943, his M.S. in physics in 1946, and his Ph.D. in mathematics in 1948, all from New York University. He was on the faculty of the Courant Institute of Mathematical Sciences at NYU until 1979. He was a visiting professor at Stanford during 1969–1970 and 1976–1978 before moving there permanently in 1978. He was a Fairchild Scholar at the California Institute of Technology (1973–1974) and has been a research associate at the Woods Hole Oceanographic Institute since 1969. Among Keller's awards and honors are the Lester R. Ford Award of the Mathematical Association of America (1976, 1977), the von Karman Prize of the Society for Industrial and Applied Mathematics (1979), and the Timoshenko Medal of the American Society of Mechanical Engineers (1984). In 1988 he received the National Medal of Science, the highest honor given by the U.S. for scientific achievement. Keller is a member of the Royal Society, the National Academy of Sciences, and the American Academy of Arts and Sciences.

Yakov G. Sinai

Sinai received the prize for "his fundamental contributions to mathematically rigorous methods in statistical mechanics and the ergodic theory of dynamical systems and their applications in physics." Sinai brings to bear on the problems of mathematical physics the powerful tools of dynamical systems and probability theory, often developing new tools for this purpose. He is generally recognized as the world leader in the mathematics of statistical physics. Working in the tradition of the Kolmogorov school, he first formulated the rigorous definition of the invariant entropy for an arbitrary measure-preserving map. His subsequent work covers areas from the ergodicity of the motion of billiards to spectral properties of quasi-periodic Schrödinger operators. Statistical mechanics is one of the most active and rewarding areas of modern mathematics, and Yakov Sinai is its recognized leader today.

Sinai was born in 1935 in Moscow. He received his B.S. (1957), his Ph.D. (1960), and his doctorate (1963) from Moscow State University. He was a scientific researcher there until 1971, when he became a professor. Also in 1971 he took his present position as senior researcher at the Landau Institute of Theoretical Physics. Since 1993 he has also held a professorship at Princeton University. Among Sinai's awards and honors are the Boltzmann Gold Medal (1986), the Heineman Prize (1989), the Markov Prize (1990), and the Dirac Medal of the International Center for Theoretical Physics, Trieste (1992). He is a member of the American Academy of Arts and Sciences and the Russian Academy of Sciences. He is also an honorary member of the London Mathematical Society and a foreign member of the Hungarian Academy of Sciences.

—from Wolf Foundation News Release

Deaths

L. V. AHLFORS, professor emeritus of Harvard University, died on October 11, 1996. Born in April 1907, he was a member of the Society for 60 years.

GRACE E. BATES, professor emeritus of Mt. Holyoke College, died on November 19, 1996. Born August 13, 1914, she was a member of the Society for 51 years.

GARRETT BIRKHOFF, of Water Mill, NY, died on November 22, 1996. Born January 10, 1911, he was a member of the Society for 63 years.

JEFFREY R. BUTZ, professor at Bridgewater State College, died on October 18, 1996. Born August 27, 1947, he was a member of the Society for 26 years.

J. A. CHAO, professor at Cleveland State University, died on December 6, 1996. Born July 8, 1941, he was a member of the Society for 25 years.

RICHARD J. DUFFIN, professor at Carnegie Mellon University, died on October 29, 1996. Born October 13, 1909, he was a member of the Society for 58 years.

ALEXANDER PEYERIMHOFF, professor at the University of Ulm, Germany, died on August 13, 1996. Born March 5, 1926, he was a member of the Society for 42 years.

ERIC REISSNER, professor emeritus of the University of California, San Diego, died on November 1, 1996. Born January 5, 1913, he was a member of the Society for 57 years.

STEFAN SCHWARZ, of the Slovak Academy of Sciences, died on December 6, 1996. Born May 18, 1914, he was a member of the Society for 1 year.

EDWIN H. SPANIER, professor emeritus of the University of California at Berkeley, died on October 11, 1996. Born August 8, 1921, he was a member of the Society for 50 years.