

Professor John H. Schwarz was born in North Adams, Massachusetts, USA, on 22 November 1941. He studied at Harvard College for his A.B. and at the University of California, Berkeley, where he received his Ph.D. He worked at Princeton University as an instructor and lecturer (1966-69) and as Assistant Professor (1969-72); at the California Institute of Technology as a Research Associate (1972-81) and Senior Research Associate (1981-85). In 1985, he was appointed as Professor of Theoretical Physics at Caltech. He has spent leaves of absence at the Laboratoire de Physique Théorique de l'Ecole Normale Supérieure, Paris (France) in 1978-79; at Queen Mary College, University of London (1983), and at the Institute for Theoretical Physics of U.C. Santa Barbara (1986). Prof. Schwarz currently holds a MacArthur Fellowship (1987-92). In the past, he has held a National Science Foundation Fellowship (1962-66) and a John Simon Guggenheim Fellowship (1978-79).

Honours bestowed include: elected Fellow of the American Physical Society (1986), Leigh Page Prize Lectures at Yale University (1987) and Esquire Register (1987). Prof. Schwarz is a Member of the Board of Trustees and Treasurer of the Aspen Center for Physics and a Member of the Editorial Board of several international journals. He has published 84 original research articles, 35 articles in conference, workshop and school proceedings, 19 review articles and popularizations and two books.

The other Dirac Medal 1989 was awarded to Professor Michael B. Green (Queen Mary College, University of London) on 24 April 1990.

International Centre for Theoretical Physics

P.A.M. Dirac Medals

Presentation Ceremony



4 July 1990

*Strada Costiera, 11
34136 Trieste*

The Dirac Medals of the International Centre for Theoretical Physics were instituted in 1985. These are awarded yearly, on Dirac's birthday - 8th August - for contributions to theoretical physics.

The 1985 Dirac Medals were awarded to Professor Yakov Zeldovich (Institute for Space Research, Moscow, USSR) and Professor Edward Witten (Princeton University, USA) and in 1986 to Professor Yoichiro Nambu (Enrico Fermi Institute for Nuclear Studies, Chicago University, USA) and Professor Alexander Polyakov (Landau Institute for Theoretical Physics, Moscow, USSR). In 1987, they were awarded to Professor Bryce DeWitt (University of Texas at Austin, USA) and Professor Bruno Zumino (University of California at Berkeley, USA). The 1988 Medals were awarded to Professor David J. Gross (Princeton University, New Jersey, USA) and to Professor Efim Samoilovich Fradkin (Lebedev Physical Institute, Moscow, USSR). The recipients of the 1989 Dirac Medals are Professor Michael B. Green (Queen Mary College, University of London, UK) and Professor John H. Schwarz (California Institute of Technology, USA).

The Selection Committee includes Professors S. Lundqvist, R. Marshak, J. Schwinger, L. Van Hove, S. Weinberg and Abdus Salam. The Dirac Medals are not awarded to Nobel Laureates or Wolf Foundation Prize winners.

P.A.M. Dirac (1902 - 1984)

Paul Adrien Maurice Dirac was born in Bristol in 1902. He studied engineering in his hometown, and obtained his degree in physics and mathematics at Cambridge University where he became professor in mathematics in 1932 in the Lucasian chair which was once of Sir Isaac Newton. After his retirement, Professor Dirac went to live in Tallahassee, Florida, where he taught at the University from 1971 until his death in 1984. A Member of the Royal Society since 1930, he won the Royal Medal in 1939 and the Copley Medal in 1952. He shared the Nobel Prize for Physics with E. Schrödinger in 1933.

Professor Dirac was an honoured guest at and a staunch friend of the International Centre for Theoretical Physics in Trieste.

Dirac Medal 1989

John H. Schwarz

Professor John H. Schwarz is honoured

for research in the area of elementary particles and gravitation. After making several important contributions in the initial period of research on string theory as a theory of strongly interacting particles, he continued to work in this area through the late 1970's, a time when almost everyone else had abandoned string theory. He developed the theory of superstrings in a series of classic papers written in collaboration with Michael Green between 1979 and 1984. Such theories are candidates for unified theories of all the physical forces and elementary particles and are based on a radical modification of conventional supersymmetric field theories in which pointlike fundamental particles are replaced by Planck-length relativistic strings. In 1981, they showed that certain superstring theories are probably free of ultra-violet divergencies and in August 1984 they showed that these theories are also free of the chiral gauge anomalies that plague conventional field theories with chiral fermions. This indicated that superstring theory with a specific gauge symmetry may provide a consistent unified quantum theory of gravitation together with all the other physical forces and particles. These results led to an explosion of interest in string theory which has transformed the study of unified quantum theories of particles and their forces.