

*International Centre for Theoretical Physics*

*P.A.M. Dirac Medals  
Presentation Ceremony*



*19 April 1994*

## *P.A.M. Dirac Medals*

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

The Selection Committee includes Professors S. Lundqvist, Y. Nambu, J. Schwinger, E. Witten, 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 and a staunch friend of the International Centre for Theoretical Physics in Trieste.*

## DIRAC MEDALISTS

- 1985 Professor Yakov Zeldovich  
(Institute for Space Research, Moscow, Russia)  
Professor Edward Witten  
(Princeton University, USA)
- 1986 Professor Yoichiro Nambu  
(Enrico Fermi Institute for Nuclear Studies, Chicago, USA)  
Professor Alexander Polyakov  
(Landau Institute for Theoretical Physics, Moscow, Russia)
- 1987 Professor Bryce DeWitt  
(University of Texas at Austin, USA)  
Professor Bruno Zumino  
(University of California at Berkeley, USA)
- 1988 Professor David J. Gross  
(Princeton University, New Jersey, USA)  
Professor Efim Samoilovich Fradkin  
(Lebedev Physical Institute, Moscow, Russia)
- 1989 Professor Michael B. Green  
(Queen Mary College, University of London, UK)  
Professor John H. Schwarz  
(California Institute of Technology, USA)
- 1990 Professor Ludwig Dmitriyevich Faddeev  
(Steklov Mathematical Institute, Leningrad, Russia)  
Professor Sidney Richard Coleman  
(Harvard University, Cambridge, Massachusetts, USA)
- 1991 Professor Stanley Mandelstam  
(University of California, Berkeley, USA)  
Professor Jeffrey Goldstone  
(Massachusetts Institute of Technology, Cambridge, USA)
- 1992 Professor N.N. Bogolubov (posthumously)  
(formerly of the Joint Institute for Nuclear Research, Moscow, Russia)  
Professor Yakov G. Sinai  
(Landau Institute of Theoretical Physics, Moscow, Russia)
- 1993 Professor Daniel Z. Freedman  
(Department of Mathematics, MIT, Cambridge)  
Professor Sergio Ferrara  
(Theory Division, CERN, Geneva)  
Professor Peter van Nieuwenhuizen  
(Department of Physics, SUNY, Stony Brook)

## Dirac Medal 1993

### Sergio Ferrara

Professor Sergio Ferrara is honoured :

*"for the discovery of supergravity theory and research in its subsequent development. Prior to his work in supergravity, he made important contributions to the development of globally supersymmetric field theories along with J. Wess and B. Zumino and to the discovery of extended superconformal algebras which played a major role in subsequent construction of superstring theories. In the spring of 1976, in a seminal paper with Daniel Z. Freedman and Peter van Nieuwenhuizen, the first supergravity theory was proposed. This theory combines, in a non-trivial fashion, the spin 2 graviton with a spin 3/2 particle called the gravitino to elevate supersymmetry to a local gauge symmetry. This led to an explosion of interest in quantum gravity and it transformed the subject, playing a significant role in very important developments in string theory as well as Kaluza-Klein theory. Professor Ferrara played a major role in the development of the subject, with his studies on coupling of supergravity to matter, super Higgs effect, extended supergravity theories and many other aspects of supergravity theories. After string theories came to eminence, he made significant contributions with his explorations of connections between low energy limit of superstrings and supergravity theories. Currently any grand unified theory incorporating gravity is based on a supergravity theory coupled to matter in four dimensions, a most general form of which Professor Sergio Ferrara has constructed in 1983 with E. Cremmer, L. Girardello and A. van Proeyen. These theories emerge most naturally from the compactifications of the ten dimensional heterotic string."*

Professor Sergio Ferrara was born in Rome (Italy) on 2 May 1945. In 1968 he obtained his degree in physics from the University of Rome. From 1969 to 1973 he was at first fellow and then staff member at the Frascati National Laboratory. From 1974 to 1979 he held different positions at CERN in the Theory Division and at the Ecole Normale Supérieure in Paris. In 1980 he became

full professor of theoretical physics in Italy. Since 1984 he has been permanent senior researcher at CERN. Since 1985 he has been full professor of physics at the University of California, Los Angeles. Professor Ferrara is member of INFN and official representative of the Italian Ministry of Industry. He is member of the Scientific Committee of CNRS for the Ecole Normale Supérieure in Paris. He has directed many international conferences and he is referee of international journals. Professor Ferrara was referee for the Nobel Committee for Physics from 1988 to 1991. He is author of more than two hundred scientific publications in international scientific journals and editor of several books. In 1991 he was awarded the Scientific Prize UAP (Union Assurance de Paris).

One of the 1993 Dirac Medals was awarded to Prof. Daniel Z. Freedman on 19 November 1993 and the third one will be awarded to Prof. P. van Nieuwenhuizen in July 1994.