

## THE ABEL PRIZE



The Norwegian Academy of Science and Letters has decided to award the ABEL Prize for 2004, jointly to SIR MICHAEL FRANCIS ATIYAH, University of Edinburgh and ISADORE M. SINGER, Massachusetts Institute of Technology,

*for their discovery and proof of the index theorem, bringing together topology, geometry and analysis, and their outstanding role in building new bridges between mathematics and theoretical physics.*

The ATIYAH-SINGER index theorem is one of the great landmarks of twentieth century mathematics, influencing profoundly many of the most important later developments in topology, differential geometry and quantum field theory. Its authors, both jointly and individually, have been instrumental in repairing a rift between the worlds of pure mathematics and theoretical particle physics, initiating a cross-fertilization which has been one of the most exciting developments of the last decades.



SINGER and ATIYAH receiving the ABEL Prize from KING HARALD V of Norway. Oslo, 2004.



QUEEN SONJA of Norway, SINGER, ATIYAH and KING HARALD V of Norway. Oslo, 2004

The ABEL Prize is named after the exceptional Norwegian mathematician NIELS HENRIK ABEL. Abel died in 1829 at the young age of 26, but he had already managed to produce a large amount of brilliant work before his untimely death. The ABEL Prize has been called the mathematicians's Nobel.



NIELS HENRIK ABEL (1802-1829)

### The NIELS HENRIK ABEL Memorial Fund

Established on January 1st 2002, its main objective was to award an international prize for outstanding scientific work in the field of mathematics. The prize is meant to contribute towards raising the status of mathematics in society and stimulating the interest of children and young people in mathematics.

The Niels Henrik Abel Memorial Fund is administered by the Norwegian Ministry of Education and Research. On its establishment the Fund had an initial capital of NOK 200 million. The annual return on this capital is allocated to the Norwegian Academy of Science and Letters which is responsible for the award to the Abel laureate and for other uses of the funds, such as events targeting children and young people.

### ATIYAH'S CV

Born in London 22 April 1929, oldest son of EDWARD ATIYAH and JENA ATIYAH (née Levens).

Married 30 July 1955 to LILY BROWN. Three sons: JOHN, DAVID and ROBIN.

Knight Bachelor 1983.

### Education

Primary: Diocesan School, Khartoum, Sudan 1934-41.

Secondary: Victoria College, Cairo & Alexandria, Egypt, 1941-45; Manchester Grammar School, 1945-47.

National Service R.E.M.E. 1947-49.

University: Trinity College, Cambridge. B.A., 1952, Ph.D. 1955.

### Academic positions

Research Fellow, 1954-58.

Commonwealth Fund Fellow. The Institute for Advanced Study, Princeton, 1955-56.

Tutorial Fellow, Pembroke College, Cambridge, 1958-61.

Assistant Lecturer, Cambridge University, 1957-58, Lecturer 1958-61.

Reader, Oxford University and Professional Fellow of St. Catherine's College, 1961-63.

Savilian Professor of Geometry, Oxford University and Professional Fellow, New College, 1963-69.

Professor of Mathematics, Institute for Advanced Study, Princeton, 1969-72.

Royal Society Research Professor, Oxford University and Professorial Fellow of St. Catherine's College, 1973-1990.

Honorary professor, Edinburgh University 1997—

### Institutional and academic service

President, London Mathematical Society 1975-77, Mathematical Association 1981-1982, Vice-President Royal Society 1984-85.

Master, Trinity College, Cambridge 1990-97.

Director, Isaac Newton Institute for Mathematical Sciences 1990-96.

President, The Royal Society 1990-95.

Chancellor, Leicester University 1995-2007.

President, Pugwash Conferences on Science and World Affairs 1997-2002.

President, Royal Society of Edinburgh, 2005-2008

### Main awards

Fields Medal, Moscow, 1966.

Order of Merit 1992.

Abel Prize 2004.

### Fellow of the Royal Society and Foreign member of:

National Academy of Sciences USA, American Academy of Arts and Sciences, Academie des Sciences (France), Akademie Leopoldina, Royal Swedish Academy, Royal Irish Academy, Royal Society of Edinburgh, American Philosophical Society, Indian National Science Academy, Chinese Academy of Science, Australian Academy of Science, Russian Academy of Science, Ukrainian Academy of Science, Georgian Academy of Science, Venezuela Academy of Science, Norwegian Academy of Science and Letters, Royal Spanish Academy of Science, Accademia dei Lincei, Moscow Mathematical Society.

### Doctor honoris causa of the Universities of:

Bonn, Warwick, Durham, St. Andrews, Dublin, Chicago, Cambridge, Edinburgh, Essex, London, Sussex, Ghent. Reading, Helsinki, Salamanca, Montreal, Wales, Lebanon, Queen's (Canada), Keele, Birmingham, UMIST, Brown, Heriot-Watt, Mexico, Oxford, Hong Kong (Chinese University), The Open University, American University of Beirut, Scuola Normale de Pisa, Universitat Politècnica de Catalunya.

### Sources

The text on this poster is extracted from the press release on the ABEL Prize web page, except for ATIYAH'S CV, which is extracted from his Collected Works. The pictures are from ATIYAH'S Abel Prize book, except for Abel's portrait, which was obtained from the MacTutor archives.