UC SANTA BARBARA

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UCSB and MIT Professor Isadore Singer to Share Abel Prize, The 'Nobel Prize' of Mathematics

American mathematician Isadore Singer, who teaches at UC Santa Barbara, and British mathematician Sir Michael Atiyah have been selected to share the 2004 Abel Prize, considered the "Nobel Prize" in the field of mathematics.

The Norwegian Academy of Science and Letters chose the mathematicians "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." King Harold of Norway will present the prize on May 25.

Professor Singer currently holds two positions, one as Institute Professor of Mathematics at the Massachusetts Institute of Technology and another at UCSB where he teaches every winter quarter as a distinguished visiting professor.

The Abel Prize was instituted in 2002 by the Norwegian Academy of Science and Letters to enhance the visibility of mathematics. It is named as a memorial to the distinguished Norwegian mathematician Niels Henrik Abel. The Abel Prize was intended to be comparable in stature to the Nobel Prize, because there is no Nobel Prize in mathematics. Like the Nobel Prize, the Abel Prize comes with a substantial monetary award -- approximately $875,000.

"The Atiyah-Singer index theorem is one of the landmark results of twentieth century mathematics and, like much of Singer's work, unites many distinct fields, including geometry, topology and analysis, and has deep applications to theoretical physics," said Douglas Moore, chairman of UCSB's Department of Mathematics. "In fact, the result is such an important part of the mathematics underlying string theory that physicists have constructed their own proof of the index theorem using techniques from quantum field theory."

Said Singer: "It's very moving that Sir Michael and I have been recognized for the new insights in mathematics that broke barriers between different fields. One thing that this prize reinforces is how important mathematics is in science and engineering. One would never have expected the kind of applications that index theory brings ---- even 20 years ago."

Index theory is still a very active field of research, according to Moore. During UCSB's spring quarter of 2004, Xianzhe Dai, UCSB professor of mathematics, will give an introduction to the Atiyah-Singer theorem and index theorems in general. This course will help prepare graduate students for participation in winter seminars on geometry and physics that will be led by Professors Singer and Dai in future winter quarters at UCSB.

Singer was born in 1924 in Detroit and received his undergraduate degree from the University of Michigan in 1944. After obtaining his Ph.D. from the University of Chicago in 1950, he joined the faculty at MIT. Two years ago he joined the UCSB faculty as a distinguished visiting professor. Singer is active in several professional societies and has served on a number of boards and councils (including the White House Science Council). He has won a number of prominent awards including the National Medal of Science and American Mathematical Society's Award for Distinguished Public Service for his "outstanding contribution to his profession, to science more broadly, and to the public good."

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we

draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.