



Photo: Marco Martens

## John Willard Milnor

**John Willard Milnor** was born on 20 February 1931 in Orange, New Jersey, in the USA. Milnor is a Distinguished Professor and Co-director of the Institute for Mathematical Sciences at Stony Brook University in New York.

John Milnor was educated at Princeton University, where he received his A.B. in 1951. He began research at Princeton after graduating and displayed such exceptional brilliance that in 1953 he was appointed to the faculty at Princeton before completing his doctorate. In 1954, Milnor received his Ph.D. with Ralph Fox serving as his thesis advisor.

Milnor remained on the faculty at Princeton, where he was an Alfred P. Sloan fellow from 1955 to 1959. He was promoted to professor in 1960, and in 1962 he was appointed to the Henry Putman chair.

He held an appointment at Princeton University until 1967. After holding brief positions at the University of California at Los Angeles, and the Massachusetts Institute of Technology, Milnor joined the faculty of the Institute for Advanced Study at Princeton in 1970. In 1989, he became the first Director of the Institute for Mathematical Sciences at Stony Brook University in New York, where he is now Co-director.

John Milnor has played a major role in the American Mathematical Society and served a term as Vice President of the AMS (1975–76). For many years he was editor of the *Annals of Mathematics*.

**John Milnor's** profound ideas and fundamental discoveries have largely shaped the mathematical landscape of the second half of the 20th century. He receives the 2011 Abel Prize “for pioneering discoveries in topology, geometry and algebra,” to quote the Abel committee. All of Milnor's work display features of great research: profound insights, vivid imagination, striking surprises and supreme beauty.

In the course of 60 years, John Milnor has made a deep mark on modern mathematics. Numerous mathematical concepts, results and conjectures are named after him. In the literature we find for instance Milnor exotic spheres, Milnor fibration, Milnor number, Milnor-Thurston kneading theory, and Milnor Conjectures in knot theory, K-theory, combinatorial group theory, and holomorphic dynamics.

Yet the significance of Milnor's work goes far beyond his own spectacular results. He has also written tremendously influential books, which are widely considered to be models of fine mathematical writing. His publications include *Differential Topology* (1958), *Morse Theory* (1963), *Lectures on the h-cobordism theorem* (1965), *Singular points of complex hypersurfaces* (1968), *Introduction to algebraic K-theory* (1971), *Dynamics in one complex variable* (1999) and *Characteristic Classes* (with J. Stasheff) (1974).

**Awards and honours:** John Milnor has received many awards and honours. He received the Fields Medal in 1962 for his work in differential topology when he was only 31. Recently he was awarded the 2011 Leroy P. Steele Prize for Lifetime Achievement by the American Mathematical Society. According to the selection committee "Milnor stands out from the list of great mathematicians in terms of his overall achievements and his influence on mathematics in general". Milnor has previously won two other Steele Prizes from the AMS; for Mathematical Exposition (2004) and for Seminal Contribution to Research (1982).

In 1989 Milnor received the Wolf Prize in Mathematics, an international prize intended to promote science and the arts for the benefit of mankind. The Wolf Foundation praised Milnor "for ingenious and highly original discoveries in geometry, which have opened important new vistas in topology from the algebraic, combinatorial, and differentiable viewpoint."

John Willard Milnor received the US National Medal of Science in 1967. He was elected as a member of the National Academy of Sciences in 1963. Milnor is also a member of the American Academy of Arts and Sciences and of the American Philosophy Society. Since 1994, he has been a foreign member of the Russian Academy of Sciences, and in 2004 he became a member of the European Academy of Sciences, Arts and Letters.