

About Stephen Wolfram

Stephen Wolfram is a well-known scientist and the creator of *Mathematica*. He is widely regarded as one of the world's most original scientists, as well as a leading innovator in scientific and technical computing.

Born in London in 1959, Wolfram was educated at Eton, Oxford, and Caltech. He published his first scientific paper at the age of 15, and had received his Ph.D. in theoretical physics from Caltech by the age of 20. Wolfram's early scientific work was mainly in high-energy physics, quantum field theory, and cosmology, and included several now-classic results. Having started to use computers in 1973, Wolfram rapidly became a leader in the emerging field of scientific computing, and in 1979 he began the construction of SMP—the first modern computer algebra system—which he released commercially in 1981.

In recognition of his early work in physics and computing, Wolfram became in 1981 the youngest recipient of a MacArthur Prize Fellowship. Late in 1981 Wolfram then set out on an ambitious new direction in science: to develop a general theory of complexity in nature. Wolfram's key idea was to use computer experiments to study the behavior of simple computer programs known as cellular automata. And in 1982 he made the first in a series of startling discoveries about the origins of complexity. The publication of Wolfram's papers on cellular automata led to a major shift in scientific thinking, and laid the groundwork for a new field of science that Wolfram named "complex systems research."

Through the mid-1980s, Wolfram continued his work on complexity, discovering a number of fundamental connections between computation and nature, and inventing such concepts as computational irreducibility. Wolfram's work led to a wide range of applications—and provided the main scientific foundations for the popular movements known as complexity theory and artificial life. Wolfram himself used his ideas to develop a new randomness generation system and a new approach to computational fluid dynamics—both of which are now in widespread use.

Following his scientific work on complex systems research, Wolfram in 1986 founded the first research center and the first journal in the field. Then, after a highly successful career in academia—first at Caltech, then at the Institute for Advanced Study in Princeton, and finally as Professor of Physics, Mathematics, and Computer Science at the University of Illinois—Wolfram launched Wolfram Research, Inc.

Wolfram began the development of *Mathematica* in late 1986. The first version of *Mathematica* was released on June 23, 1988, and was immediately hailed as a major advance in the field of computing. In the years that followed, the popularity of *Mathematica* grew rapidly, and Wolfram Research became established as a world leader in the software industry, widely recognized for excellence in both technology and business. Wolfram has been president and CEO of Wolfram Research since its inception, and he continues to be personally responsible for the design of the core *Mathematica* system.

Following the release of *Mathematica* Version 2 in 1991, Wolfram began to divide his time between *Mathematica* development and scientific research. Building on his work from the mid-1980s, Wolfram made a sequence of major discoveries that have been published in his book, *A NEW KIND OF SCIENCE* (May 2002). In addition to solving some fundamental existing scientific problems, Wolfram's recent work points the way to a whole new approach to science and mathematics.