



SANTA FE INSTITUTE

Biography of Geoffrey West

Geoffrey West is President and Distinguished Professor at Santa Fe Institute. A theoretical physicist, he is also a Research Professor of Biology at the University of New Mexico, a Fellow of the American Physical Society and a Senior Fellow at Los Alamos National Laboratory.

The Santa Fe Institute, an independent research and education center that is renowned as the international leader in cross-disciplinary research, attracts faculty unbound by the constraints of traditional science. Collaborations across fields as diverse as physics, biology, ecology, mathematics, computational science, economics, and even finance bring fresh insights to life's most compelling questions.

After collaborating with biologists at the Santa Fe Institute, Geoffrey West expanded from particle physics to biological physics, and resulted in a new framework to examine the fundamental structure and functional design of organisms — from molecular genomics up through mitochondria and cells to whole organisms and ecosystems.

Using a phenomena called biological scaling, which employs physics' one- or three- quarters power laws, West is trying to develop a formula to quantify evolution itself. These ideas are being employed at the Santa Fe Institute to understand quantitatively the structure and dynamics of social organizations, such as cities and corporations, and the relationships between efficiency and innovation.

In 2006, West was named one of TIME magazine's 100 most influential people and in 2007 Harvard Business Review cited him in *Breakthrough Ideas*. "[Geoffrey] West's feature, entitled "Innovation and Growth: Size Matters," details recent work on the application of well-known scaling phenomena to cities and social organizations, particularly the ramifications of the "superlinear" scaling phenomenon: "...by almost any measure, the larger a city's population, the greater the innovation and wealth creation per person."



As a theoretical physicist, West's primary interests have been in fundamental questions concerning the elementary particles, their interactions and cosmological implications. Among his many honors is the Mercer Award from the Ecological Society of America. The author of several books, he is an editor of *Comments in Theoretical Biology*. He was recently a visiting Professor and Fellow at Imperial College, London, and at Oxford University.

West received his BA from Cambridge University in 1961 and his doctorate from Stanford University in 1966, where he returned in 1970 to become a member of the faculty. He was named SFI President in July 2005. He is married to Jacqueline West, a psychologist in private practice and they have two children.

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