Scott Kirkpatrick Biography

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Edward Scott Kirkpatrick (1941-) was born in the USA, the son of Edward Crane Kirkpatrick, a DuPont chemist and manager, and Mary McChesney Scott. He spent his childhood in Wilmington, Delaware, where he attended Tower Hill School, a private day school.

Kirkpatrick studied physics at Princeton, obtaining a AB in 1963, and pursued his graduate studies at Harvard, receiving a PhD in Physics in 1969 for a thesis entitled "Magnetic Properties of Transition Metal Alloys: Coherent Potential Approximation", under the supervision of Henry Ehrenreich. He was then a postdoc at the University of Chicago in the group of Morrel Cohen (1969-1971), before joining the IBM Research Division in 1971. There, Kirkpatrick held research appointments in various theoretical and experimental physics groups, and taking on various management roles from 1979 to 2000. During the 1980s and 1990s, he managed projects creating technologies and prototypes of advanced portable computing capabilities, such as Wi-Fi and tablets. Upon retiring from IBM, he took a professorship in the School of Engineering and Computer Science at the Hebrew University, in Jerusalem, where he still works.

Kirkpatrick's early research on theoretical solid state physics quickly took a computational track, which led him to work on various percolation models in the early '70s. This expertise made him a natural collaborator for David Sherrington during his 1975 visit to IBM Watson Lab. They then completed an initial study of the spin glass model now known as the Sherrington-Kirkpatrick model. Using computational insight from this and related work, Kirkpatrick—along with his IBM colleague Dan Gelatt—later formulated the landmark simulated annealing method of optimization. His interest in optimization led him to identify a key phase transition in the archetypical *k*-SAT model of Boolean satisfiability in the mid-1990s.

Kirkpatrick was elected fellow of American Physics Society (1985), of the American Association for the Advancement of Science (1989), of the Institute of Electrical and Electronics Engineers (1991), and of the Association for Computing Machinery (2011). Gelatt and Kirkpatrick jointly received the 1987-88 American institute of Physics Prize for Industrial Applications of Physics "for their discovery and subsequent development of the new method of simulated annealing for the optimization of the physical layout of complex integrated electrical circuits."