

Interview with Carver A. Mead

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Abstract

An interview in July 1996 with Carver Andress Mead, Gordon and Betty Moore Professor of Engineering and Applied Science (as of 1999, Moore Professor emeritus). Dr. Mead received his undergraduate and graduate education at Caltech (BS, 1956; MS, 1957; PhD, 1960). He joined the Caltech faculty in 1958, becoming a full professor in 1967. In this interview, he recalls growing up in the mountains east of Fresno, father's work for the Southern California Edison Company; early education in a one-room schoolhouse, then high school in Fresno. Early interest in electronics. Enters Caltech in 1952. Freshman courses with Linus Pauling, Richard Feynman, Frederic Bohnenblust; junior year focuses on electrical engineering. Stays on for a master's degree with the encouragement of Hardy C. Martel. PhD student with R. David Middlebrook and Robert V. Langmuir. Work on electron tunneling; grants from the Office of Naval Research and General Electric. Helps establish applied physics in the 1960s with Amnon Yariv and Charles Wilts. Discusses his friendship with Gordon Moore and work on design of semiconductors. Discusses the establishment of a computer science department at Caltech in the mid-1970s and the arrival of Ivan Sutherland: the Silicon Structures Project. Departure of Sutherland in 1978 and decline of computer science under Pres. Marvin L. (Murph) Goldberger. MOSIS [Metal Oxide Semiconductor Implementation Service] program. Teaching at Bell Labs, 1980; startup of fabless semiconductor companies. Discussion of Caltech's attitudes toward investment in small technology companies and licensing arrangements. His own consulting for Silicon Valley companies. MESFET [Metal Semiconductor Field Effect Transistor]. Formation of CNS [Computation and Neural Systems] program at Caltech with John Hopfield, early 1980s. Caltech's Center for Neuromorphic Systems Engineering; help from National Science Foundation; involvement of Christof Koch, Demetri Psaltis, Rodney M. Goodman, Pietro Perona, and Yaser Abu-Mostafa. The interview concludes with a discussion of his interest in the freshman and sophomore physics courses and his advocacy of greater flexibility in the curriculum.

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electrodynamics—that does not rely on Maxwell's equations, but rather uses the quantum nature of matter as its sole basis. Mead starts with Cramer's deterministic interpretation of quantum mechanics proven to be equivalent to the standard indeterminant interpretation. This alienates many scientists who have been taught that Einstein was wrong and God does play dice. "Carver Mead is a key pioneer of modern microelectronics. His 40-year academic and industry career touches all aspects of microelectronics, from spearheading the development of tools and techniques for modern integrated circuit design, to laying the foundation for fabless semiconductor companies, to catalyzing the electronic design automation field, to training generations of engineers, to founding more than twenty companies, including Actel Corporation, Silicon Compilers, Synaptics, and Sonic Innovations." "Carver's career is characterized by an endless string of "fir Introduction to VLSI systems. by. Mead, Carver; Conway, Lynn, joint author. Publication date. 1980. 0. Identifier. introductiontovl00mead. Identifier-ark. ark:/13960/t29895n78. An interview in July 1996 with Carver Andress Mead, Gordon and Betty Moore Professor of Engineering and Applied Science (as of 1999, Moore Professor emeritus). Dr. Mead received his undergraduate and graduate education at Caltech (BS, 1956; MS, 1957; PhD, 1960). He joined the Caltech faculty in 1958, becoming a full professor in 1967. In this interview, he recalls growing up in the mountains east of Fresno, father's work for the Southern California Edison Company; early education in a one-room schoolhouse, then high school in Fresno. Early interest in electronics. Enters Caltech in 1952. Fresh