

Pioneering Women In Computer Science

by

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Although their contributions are not well documented, women have played an important role in the development of computer science. A survey of women pioneers demonstrates their influence in designing and programming the first electronic computers and languages, while laying the groundwork for women's expanding involvement in science.

the pioneering women computer scientists described here, and readers will take advantage of the wealth of information available on women pioneers in computing and perhaps further document their contributions.

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Sister Mary Kenneth Keller

Sister Mary Kenneth Keller, from Cleveland Ohio, was one of the first women, and very likely the first woman to receive a Ph.D. in computer science in the United States. Keller entered the Sisters of Charity, a Catholic religious order, in 1932 and professed her vows in 1940. Later she studied at DePaul University, where she received a B.S. degree in mathematics and an M.S. degree in mathematics and physics. In 1965 she received a Ph.D. in computer science from the University of Wisconsin. Her dissertation work involved constructing algorithms that performed analytic differentiation on analytic expressions, written in CDC Fortran 63 [9].



Sister Mary Kenneth Keller was one of the first women to receive a Ph.D. degree in computer science in the United States. (Courtesy Mount Carmel Archives)

As a graduate student, Keller also studied at Dartmouth, Purdue, and the University of Michigan. At Dartmouth, the university broke the "men only" rule and allowed her to

work in the computer science center, where she participated in the development of BASIC.

After receiving her Ph.D. degree, Keller accepted an offer of a faculty position at Clarke College in Dubuque, Iowa. Keller founded the computer science department there and chaired it for 20 years. She also established a master's degree program for computer applications in education.

Keller felt that women should be involved in computer science and especially in the field of information specialist. In her words, "We're having an information explosion, among others, and it's certainly obvious that information is of no use unless it's available." Keller's vision extended beyond education and reached toward artificial intelligence. "For the first time we can now mechanically simulate the cognitive process. We can make studies in artificial intelligence. Beyond that, this mechanism (the computer) can be used to assist humans in learning. As we are going to have more mature students in greater numbers as time goes on, this type of teaching will probably be increasingly important." Sister Mary Keller died at the age of 71 but has left a legacy of computers and education at Clarke College.

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