

# Evelyn Fox Keller (1936–2023)

Physicist and feminist scholar of science

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Evelyn Fox Keller, scientist, feminist scholar, and author of influential publications on genetics, developmental biology, and scientific language, died on 22 September. She was 87. After training in physics and working in mathematical biology, Evelyn turned her attention to understanding how societal constructs, especially gender, guide science. She brought feminist insights into the history and philosophy of biology and sparked broader interdisciplinary conversations about the role of metaphor and rhetoric in science.



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Born in New York City on 20 March 1936 to Russian Jewish immigrant parents, Evelyn was the youngest of three children. Her siblings, biologist Maurice Fox and political scholar–activist Frances Fox Piven, brought Evelyn into contact with prominent intellectuals. At age 16, she was contacted by physicist Leo Szilard in his restless search for scientific talent. In 1957, she received a bachelor’s degree in physics from Brandeis University, under the mentor-ship of Silvan Schweber. Evelyn went on to graduate school at Harvard University, aiming to become a theoretical physicist, but found herself treated as an oddity there. She felt profoundly isolated as a woman in physics, surrounded by a “sea of seats” even in a full classroom.

Spending time at Cold Spring Harbor Laboratory, she saw a path forward in molecular biology. Evelyn began conducting experiments on bacteriophages, first with Frank Stahl and then with Matthew Meselson, and produced a dissertation formally advised by Walter Gilbert (then appointed in physics). After earning her PhD from Harvard in 1963, she began teaching physics at Cornell University Medical College and working as a research assistant for Joseph B. Keller, whom she married in 1963. She then began a productive collaboration with applied mathematician Lee Segel on slime mold aggregation. Although their joint papers were widely cited, Evelyn had difficulty finding an academic position.

In 1972, a new interdisciplinary branch of the State University of New York in Purchase provided Evelyn with what she has called “an intellectual and professional harbor.” She was one of several academic feminists on that campus. Evelyn taught courses on women and science and started paying attention to how scientists drew on gender ideology, which resulted in privileging attributes, such as objectivity, that were associated with masculinity, while devaluing those, such as empathy, associated with femininity.

Evelyn’s widely read biography of Barbara McClintock, *A Feeling for the Organism*, drew on these feminist insights and emphasized how McClintock was a maverick, one who denied that her sex accounted for her originality. The book was published in 1983; McClintock received the Nobel Prize in Physiology or Medicine the same year, heightening the biography’s impact. Many readers misunderstood Evelyn to be saying that women do science differently than men, inferring that she promoted a “feminine” science. Evelyn strove to clarify that masculinity and femininity were cultural constructs, not biological realities. Her second book, *Reactions on Gender and Science*, published in 1985, honed her feminist arguments by applying them to examples from the history of science, from the masculinist language of Robert Boyle in early modern England to the nonhierarchical thinking behind her own slime mold research. Addressing gender biases, she believed, could lead to better science.

Evelyn’s growing prominence brought new recognition and opportunity. After several years of teaching at Northeastern University, in 1988 she was appointed professor in the Department of Rhetoric at University of California, Berkeley. She was interviewed by Bill Moyers in 1990 for his PBS show “A World of Ideas” and explained to a broader audience how science is shaped by human language and by gender norms. In 1991, she received an honorary doctorate, the first of many, from Mount Holyoke College. The following year she was named a MacArthur Fellow and hired by the Massachusetts Institute of Technology (MIT) to join the faculty of its Program in Science, Technology, and Society. She remained at MIT, as professor emerita, until her death. Retaining her keen sensitivity to gender, Evelyn turned to broader questions about how conceptions of life and heredity had changed over time.

In her books *Regarding Life* (1995), *The Century of the Gene* (2000), and *Making Sense of Life* (2002), Evelyn focused on how geneticists discussed causation. American geneticists in the early- to mid-20th century often described phenotypes in terms of “gene action.” Molecular biologists of the 1950s through the 1970s adopted this same idiom, reinforcing the activity of genes. Yet, as molecular biologists moved from working on bacteria and viruses to flies, frogs, and mice, and as they tackled older problems such as tissue differentiation, their language changed. Eric Davidson’s 1968 book *Gene Activation in Early Development*, she noted, registered their shift in terminology from gene action to gene activation. The rewording exposed the fundamental circularity of genetic notions of agency—where are the agents that control the genes, so that the genes can control development? Evelyn argued that newer metaphors, many based on comparing the organism to the computer, made way for an understanding of distributed agency and networks of action rather than simple causation.

In the 2000s, Evelyn turned her attention to the crisis of climate change and to communicating with a skeptical public. In 2017, she and Philip Kitcher published *The Seasons Alter: How to Save Our Planet in Six Acts*. It was one of many collaborations—with scientists, feminist scholars, philosophers, and historians—that she undertook over her career.

I got to know Evelyn during her early years at MIT, when I was a postdoctoral fellow. We met regularly to discuss scientific papers from the 1950s and 1960s. How biologists used language, she showed me, revealed how they understood life. I came to see that for all of her acclaim, she was never entirely at home in the world of academic disciplines. She always saw her writing about science as an extension of her work as a scientist.

A habitual boundary-crosser, Evelyn worked to open up the fields she traversed to other participants and other voices. Her death deprives us of a brilliant critic and commentator on the life sciences.