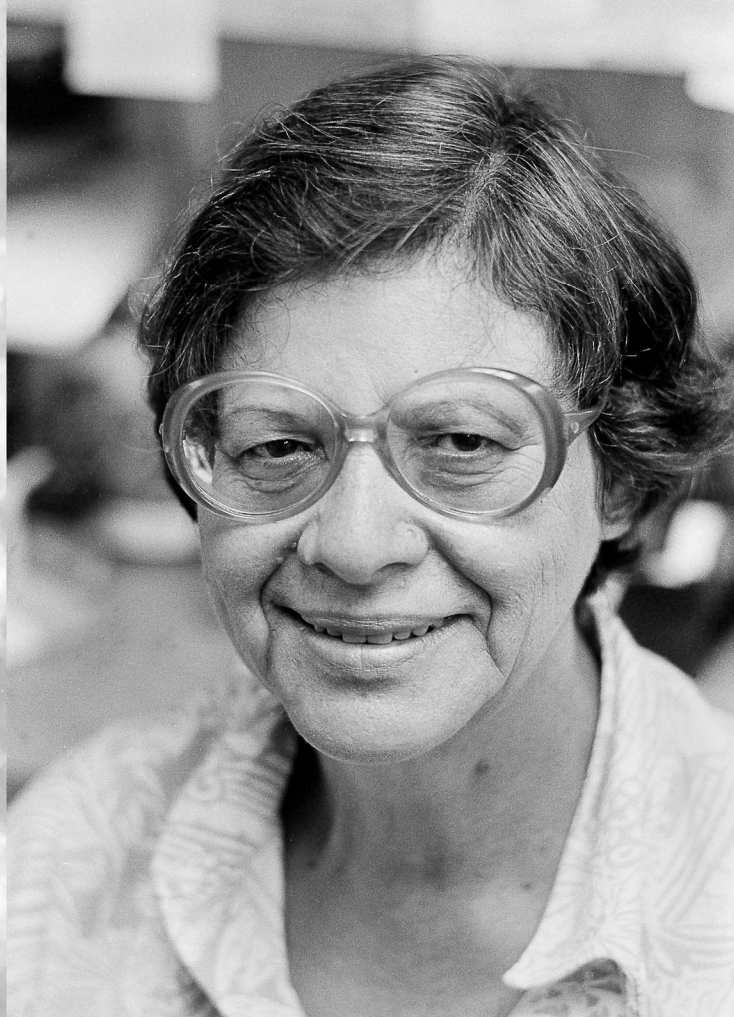


Esther Lederberg

(1922 - 2006)

Pioneer of Genetics



Main: Esther Lederberg, Stanford Stories From the Archives [© Stanford University]
Background: Bacterial Phages, Dr Graham Beards [CC Attribution-SA 3.0 Unported]

Esther Lederberg originally intended to study French and Literature but switched to biochemistry at Hunter College in New York, against the advice of her teachers. She then studied genetics at Stanford University, followed by the University of Wisconsin, receiving her PhD in 1950. That same year she discovered phage lambda, a virus that infects *E. coli* bacteria. Lederberg's research laid the groundwork for demonstrating how phages can transfer genes between bacteria and her findings were crucial to advancing understanding of gene regulation.

Lederberg went on to make major contributions to many other areas of science and genetics, including developing replica plating methods to produce bacterial colonies en masse in the same configuration as the original agar plate. Scientists had been struggling to achieve this for more than a decade. Lederberg used store-bought velveteen fabric, realising that the hundreds of tiny fibres could act as inoculating needles, transferring the pattern of bacteria in the same orientation to another surface.

Despite her contributions, Lederberg was excluded from writing a chapter in the 1966 commemoration of molecular biology, Phage and the Origins of Molecular Biology. Her husband, Joseph Lederberg, with whom she had worked closely, won the Nobel Prize for Physiology or Medicine at the age of 33 for discoveries on how bacteria mate.

