

The Uncrowned Queen of the DNA

Rosalind Elsie Franklin

[25 July 1920 - 16 April 1958]



Special Scientific Achievements

Actual discoverer of the DNA (1953).
Important works about *graphite*, *carbons*,
and *viruses*.

Due to her untimely death in 1958, the
Nobel Prize in Medicine could not be
awarded to Rosalind Franklin.

1920 Rosalind Franklin is born on July 25. Until 1938 she attends the St. Paul's Girls School, one of the few girls' schools in London that teaches physics and chemistry.

1938 - 1945 She enrolls at Cambridge University and receives her doctorate in physical chemistry on her work on the fundamental studies of carbon and graphite microstructures. She also publishes her first scientific papers.

1947 Rosalind spends three years in Paris at the *Laboratoire Central des Services Chimiques de L'Etat*, where she learns x-ray diffraction techniques, where locations of atoms in any crystal can be precisely mapped by looking at the image of the crystal under an x-ray beam.

1950 Rosalind Franklin returns to England as a research associate in John Randall's laboratory at King's College, where she is given the job of elucidating the structure of DNA, using the x-ray diffraction techniques. In addition she is assigned to research in the area of DNA, although that causes difficulties with the senior researcher Maurice H. F. Wilkins due to unclear responsibilities.

1951 Together with a research assistant of Wilkins, they succeed in taking revealing x-ray pictures of the DNA to discover that the sugar-phosphate backbone of DNA lies on the outside of the molecule. She also elucidates the basic helical structure of the molecule by means of crystallographic pictures of DNA, but hesitates to publish her findings. She shows her findings to the biochemists Francis H. C. Crick and James D. Watson who work on DNA in Cambridge.

1953 Her colleague Wilkins gives the pictures (without Rosalind's knowledge) to James Watson from Cambridge: this enables Watson and his colleague Crick to take the speculative leap to the famous double helix structure of DNA by publishing it in the journal *Nature* and thus beating the King's College group to the solution.

1953 - 1958 Disappointed, Rosalind leaves Cambridge and takes her fellowship to the Birkbeck College in London. There she does pioneering work with the tobacco mosaic virus and starts studying polio.

1958 At the World Exhibition in Brussels, Rosalind Franklin tries to gain recognition for her discoveries in the field of DNA - to no avail.

In the same year Rosalind is diagnosed with cancer in an advanced state. Rosalind dies shortly after on April 16, at the age of 37.

Note:

Watson, Crick und Wilkins receive the Nobel Prize in Medicine and Physiology in 1962 for their discoveries concerning the molecular structure - a "double helix" - of nucleic acids and its significance for information transfer in living material. Two chains twisted around each other carry life's hereditary information. This discovery is regarded as the essential progress in Biology of the 20th century.

Rosalind Franklin's early death prevents her from receiving this honor - the Nobel Prize is not given posthumously.