Rosalind Franklin.

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Biophysicist

- **Born:** July 25, 1920
- **Birthplace:** London, England
- **Died:** April 16, 1958
- **Place of death:** London, England

Rosalind Franklin was a British scientist who studied crystals. She was a pioneer in using X-rays to study matter. Franklin used X-rays to create detailed pictures of tiny crystals. Her work helped lead to the discovery of the DNA molecule. DNA is the material in the genes of all organisms. It stores information about the body and determines the body's features. It contains parts called chemical building blocks that make each organism unique.

Early Life

Franklin was fifteen when she decided to become a scientist. At the time, schools usually featured two sciences for girls: biology and botany. Franklin, however, enjoyed mathematics. She liked chemistry and physics. She excelled in both subjects. Franklin's father opposed his daughter's career goals. He believed that only men should get a university education. He refused to pay for college. Franklin's mother and aunt both supported her. Finally, her father gave in.

Coal and Carbon Fibers

In 1938, Franklin enrolled at Newnham College in Cambridge, England. She graduated in 1941. She then began work on her doctoral degree at Cambridge University. World War II had hit Europe in 1939. Franklin's work centered on a problem important to the war effort: the study of coal. During the war, coal was an important fuel. Coal products were used in several wartime products. For example, gas masks used charcoal filters. Knowing more about the structure of coal was important. Such knowledge could help scientists develop products that resisted heat, pressure, and other elements.

Franklin ran experiments on different coals. She ground samples into powders and measured their density. She heated them at different temperatures. She exposed them to water and gases. Franklin identified different types of coals and noted which ones held up best under

pressure. Her study was published in 1945. She now had her PhD. Her work helped launch the development of carbon fibers. This strong, lightweight material is used in many products, including spacecraft and bicycles.

Identifying DNA

After the war, Franklin spent three years in Paris, France. Here, she used X-rays to capture images of crystals. In 1950, Franklin went back to London to work with scientists at King's College. Franklin was assigned to work with DNA. At the time, research labs were staffed and run by men. Franklin was smart, successful, and outspoken. She often clashed with co-worker Maurice Wilkins. The early 1950s also saw worldwide competition among scientists over who would be the first to identify DNA. Some scientists shared ideas to speed up the process. Franklin and Wilkins, however, did not work well together. On her own, Franklin made a breakthrough and captured actual images of DNA.

Meanwhile, at Cambridge University, James Watson and Francis Crick were also racing to identify DNA. At one point, Wilkins showed Watson one of Franklin's X-ray images—without her knowledge. To Watson, it was the missing piece in the DNA puzzle. Immediately, he and Crick built a detailed model of DNA. The paper they wrote was published in 1953. Franklin was never given credit for her part in the work.

Franklin went on to study viruses. She published seventeen papers in five years on the structure of viruses. In 1956, Franklin became ill with ovarian cancer. She died two years later at the age of thirty-seven.

Bibliography

Books

Anderson, Lara. *Rosalind Franklin (Great Scientists)* . Chicago: Raintree, 2008. Print.

Polcovar, Jane. *Rosalind Franklin and the Structure of Life (Profiles in Science)* . Greensboro: Morgan Reynolds, 2006. Print.

Yount, Lisa. *Rosalind Franklin: Photographing Biomolecules (Trailblazers in Science and Technology)* . New York: Chelsea House, 2011. Print.

Holt, Jim. "Photo Finish: Rosalind Franklin and the Great DNA Race." *The New Yorker.* The New Yorker, 28 Oct. 2002. Web. 20 Jan. 2016. .

Websites

Holt, Jim. "Photo Finish: Rosalind Franklin and the Great DNA Race." *The New Yorker.* The New Yorker, 28 Oct. 2002. Web. 20 Jan. 2016. .

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