Girls Who Grew Up to Change the WORLD

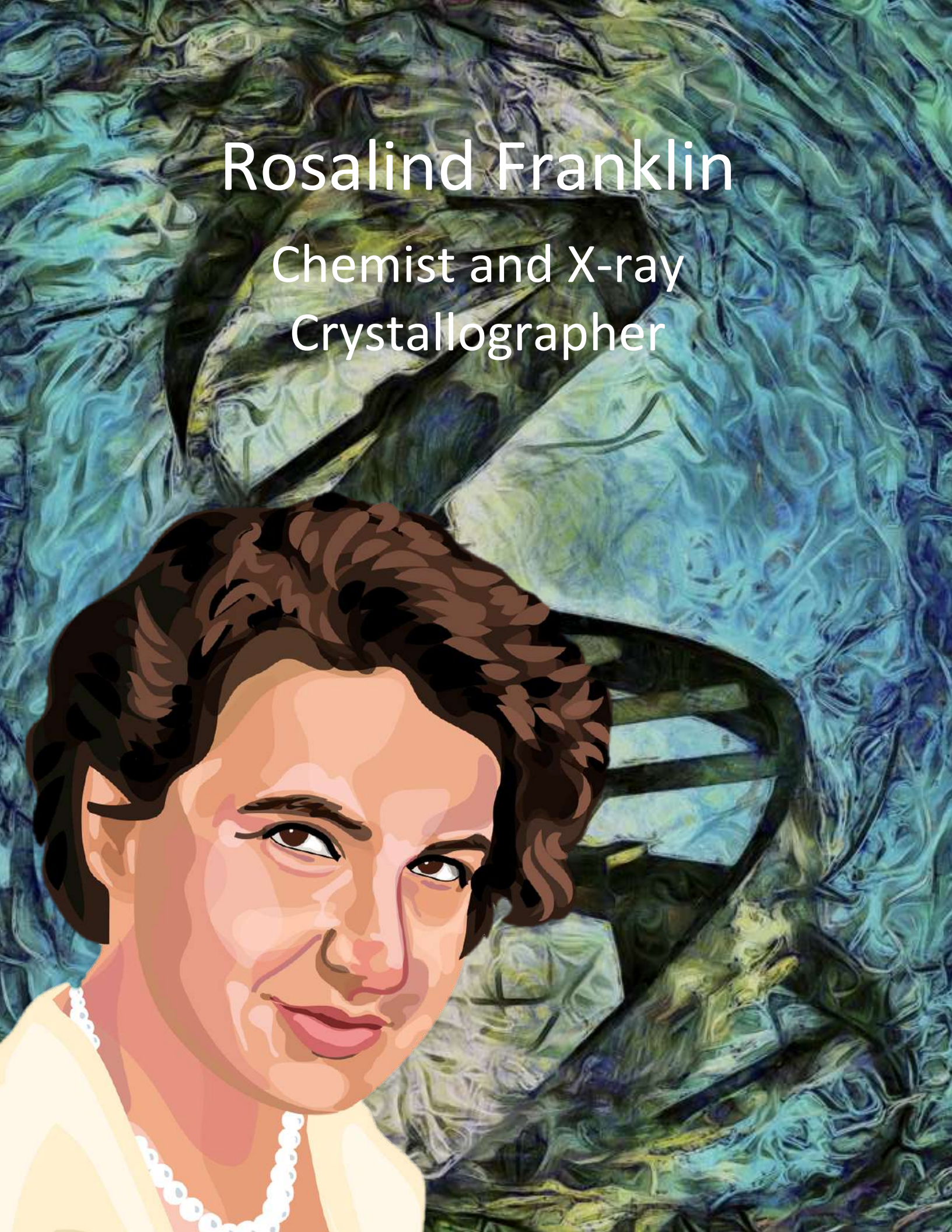
THINK
DIGITAL ACADEMY

Rosalind Franklin

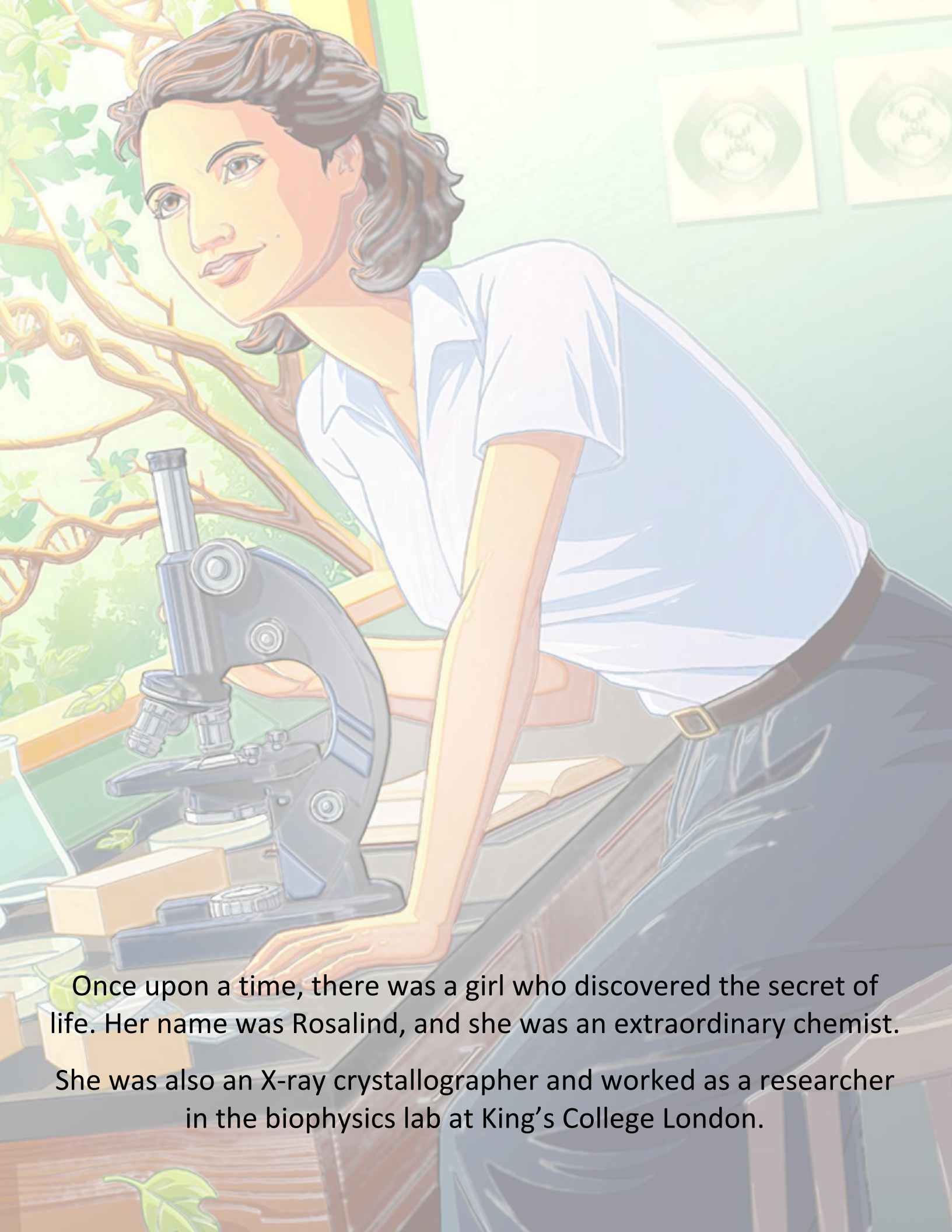
Samantha Cristoforetti

Rosalind Franklin

Chemist and X-ray Crystallographer



“Science and everyday life cannot and should not be separated.”

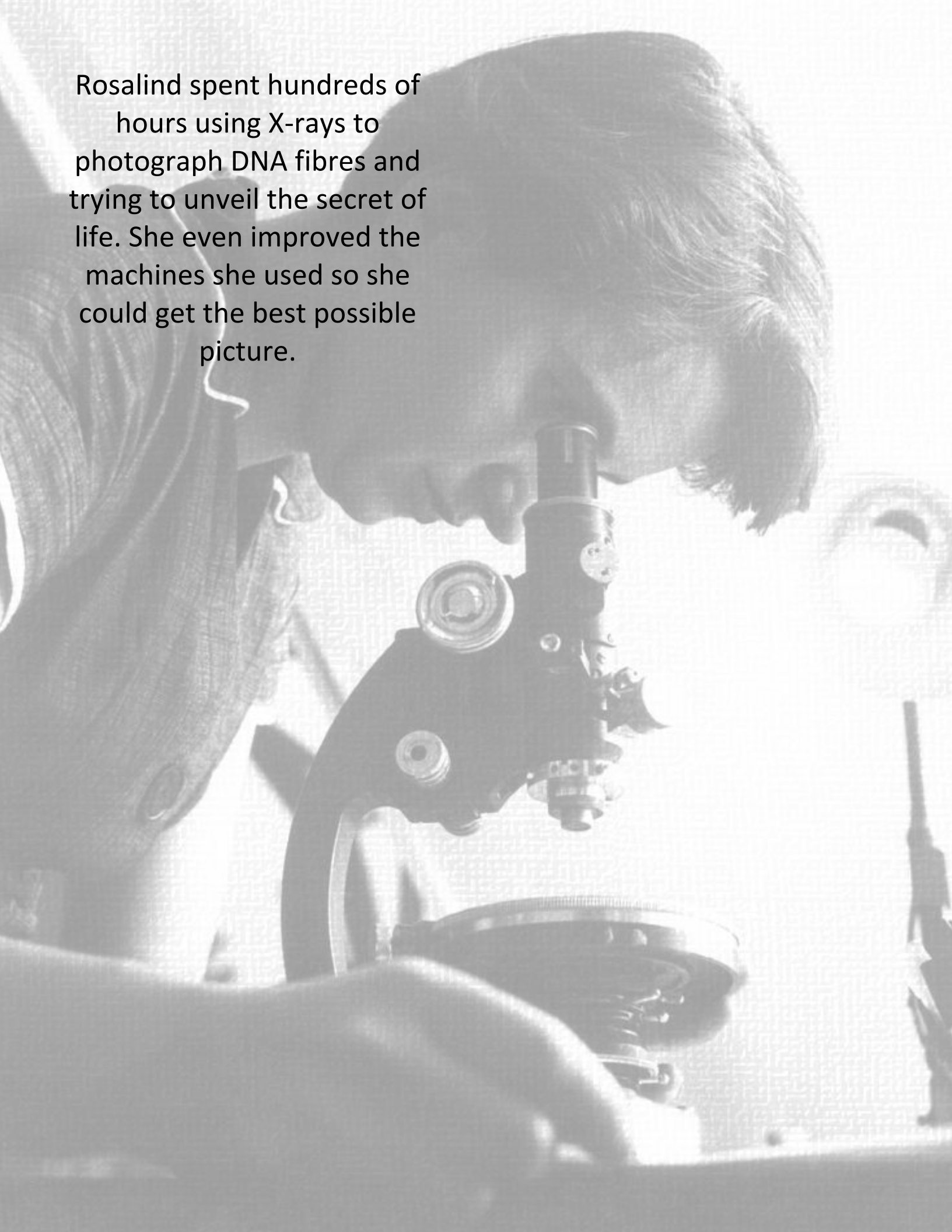


Once upon a time, there was a girl who discovered the secret of life. Her name was Rosalind, and she was an extraordinary chemist.

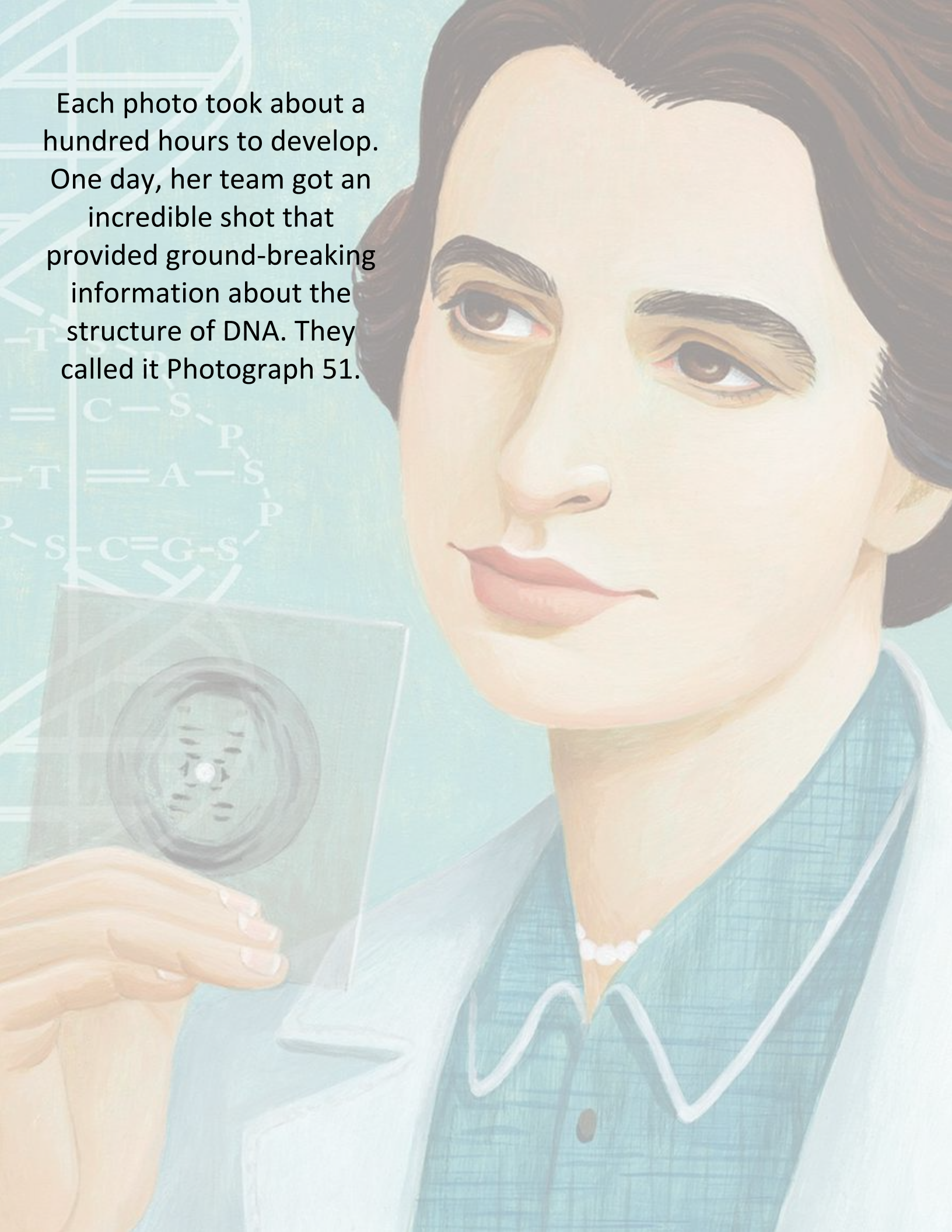
She was also an X-ray crystallographer and worked as a researcher in the biophysics lab at King's College London.

Rosalind studied DNA, a molecule carrying information that tells our bodies how to develop and function.

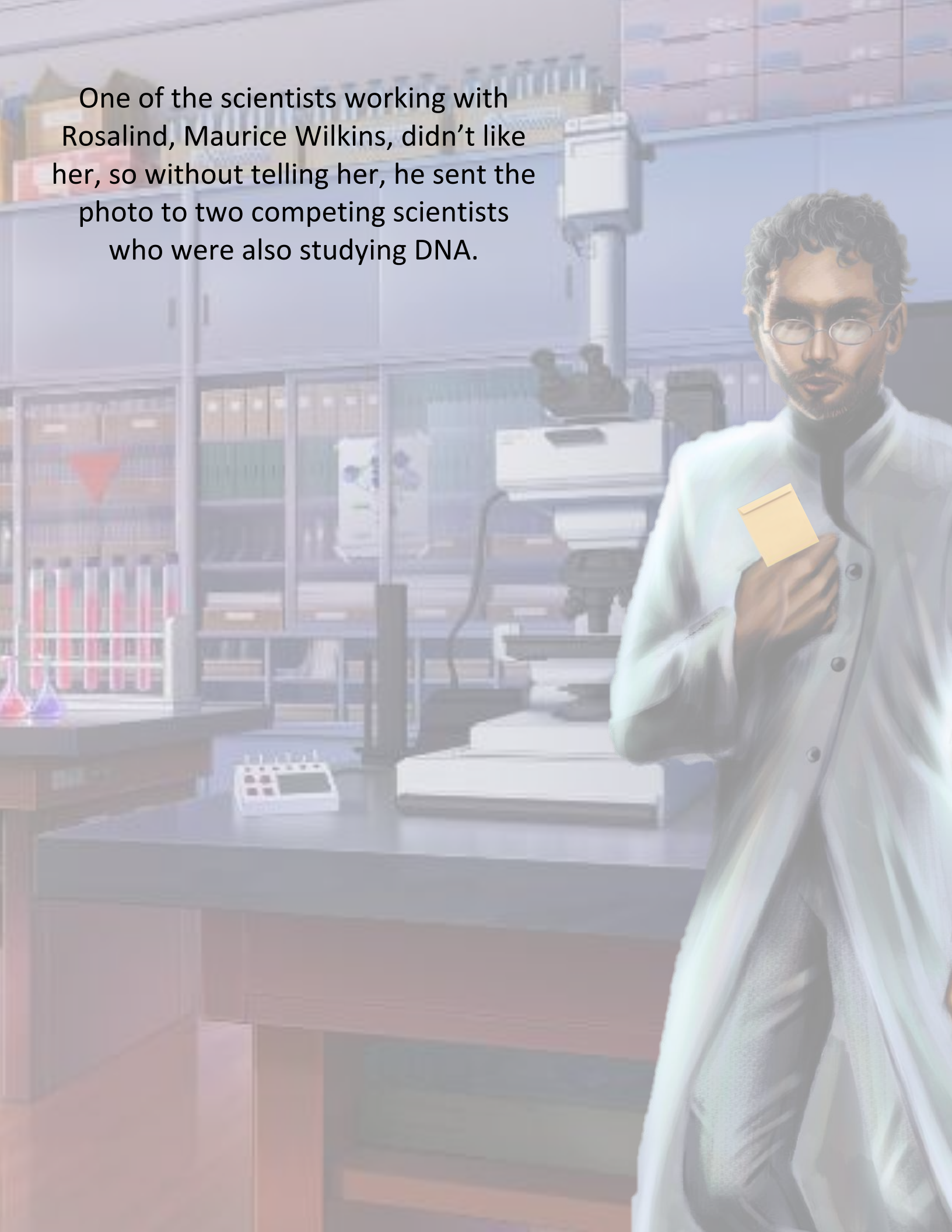
Today, we know that DNA is shaped like a double helix – basically a twister ladder – but in Rosalind's time, the scientific community had no idea what DNA looked like.

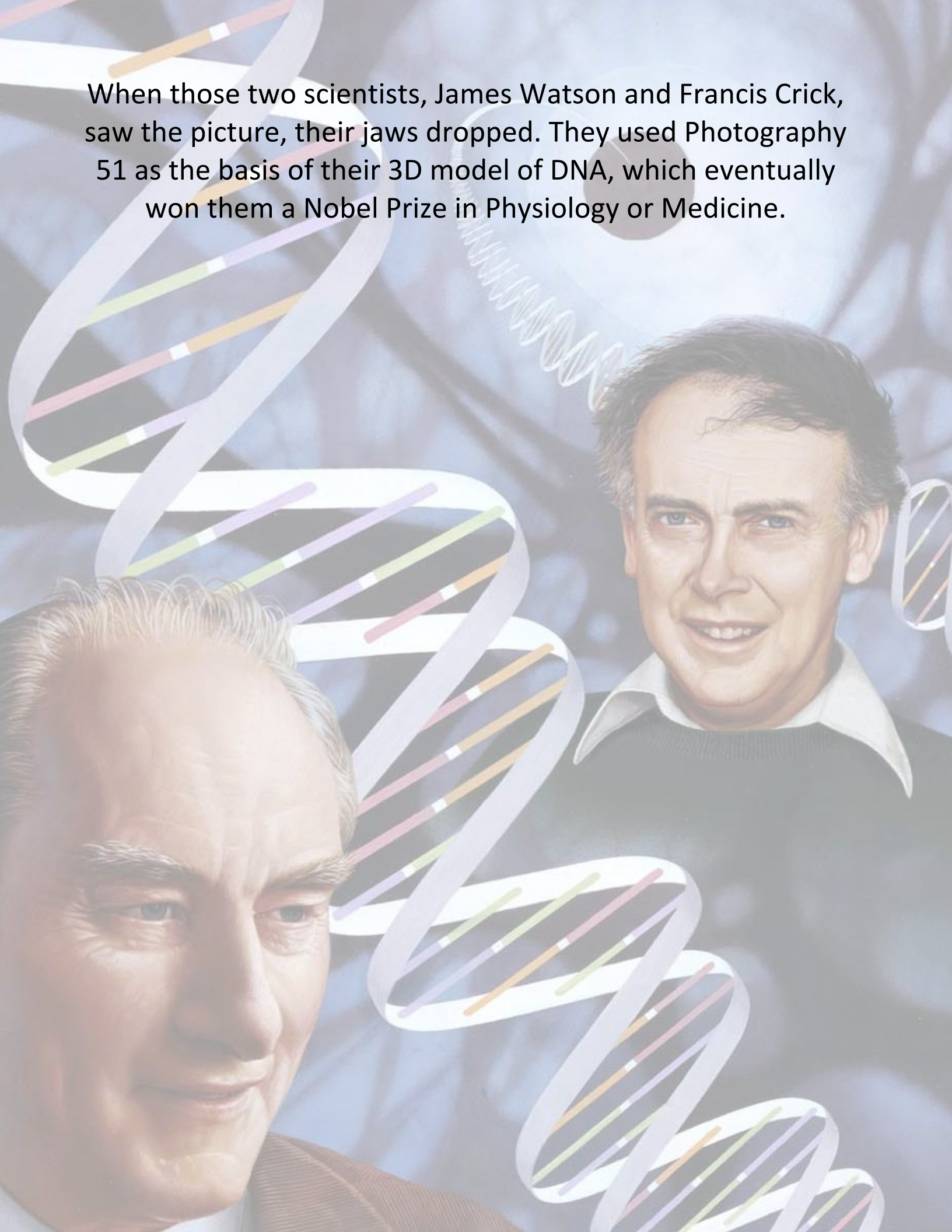


Rosalind spent hundreds of hours using X-rays to photograph DNA fibres and trying to unveil the secret of life. She even improved the machines she used so she could get the best possible picture.

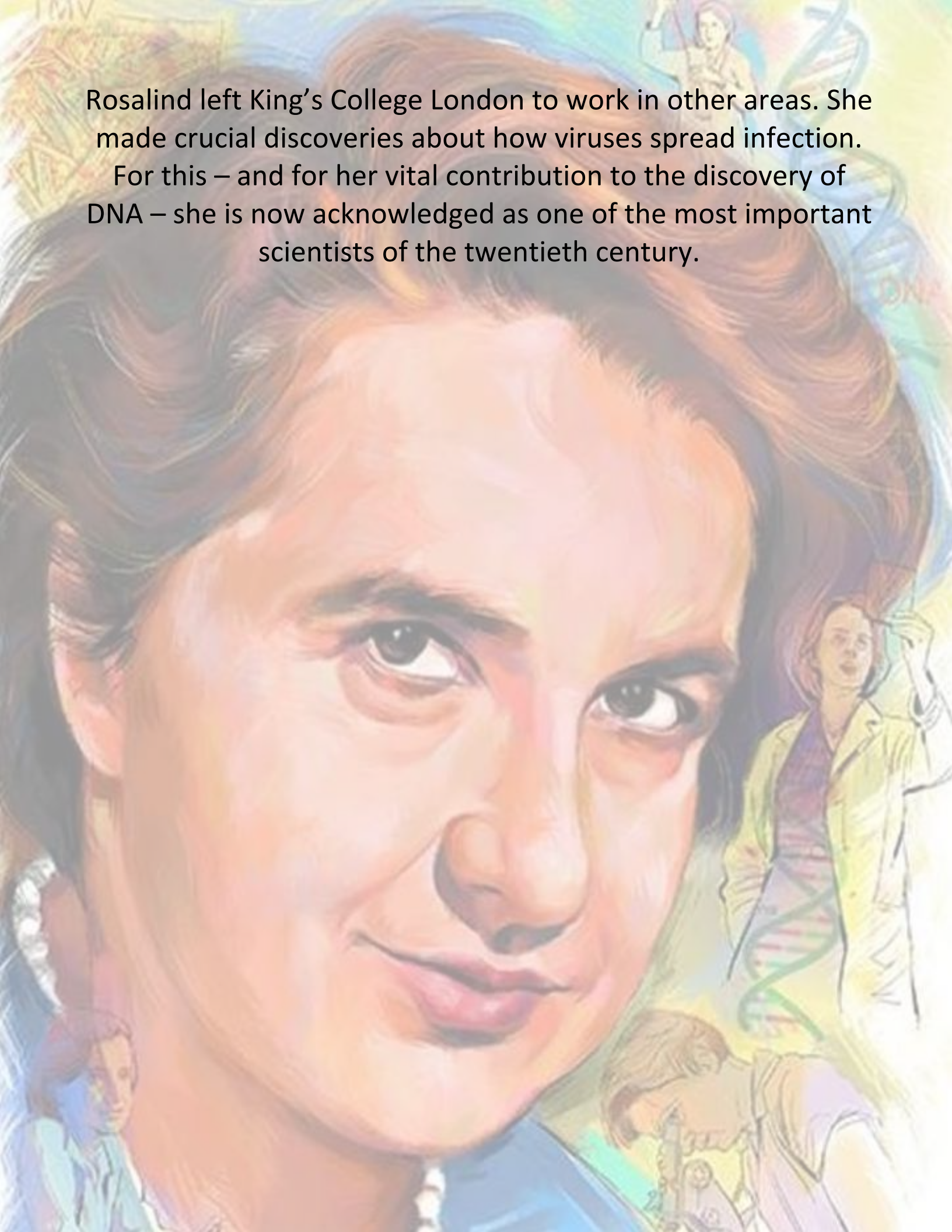


Each photo took about a hundred hours to develop. One day, her team got an incredible shot that provided ground-breaking information about the structure of DNA. They called it Photograph 51.


One of the scientists working with Rosalind, Maurice Wilkins, didn't like her, so without telling her, he sent the photo to two competing scientists who were also studying DNA.



When those two scientists, James Watson and Francis Crick, saw the picture, their jaws dropped. They used Photography 51 as the basis of their 3D model of DNA, which eventually won them a Nobel Prize in Physiology or Medicine.



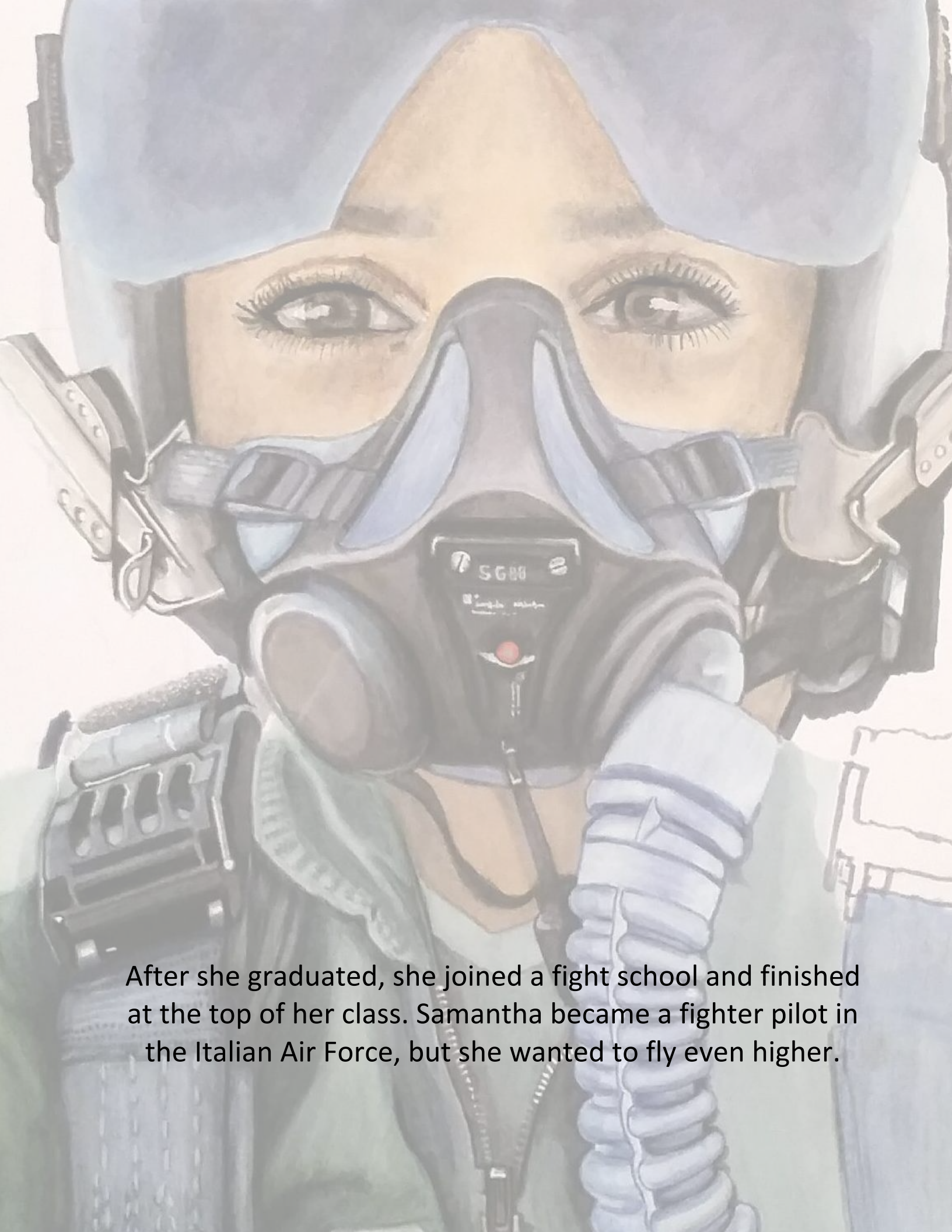
Rosalind left King's College London to work in other areas. She made crucial discoveries about how viruses spread infection. For this – and for her vital contribution to the discovery of DNA – she is now acknowledged as one of the most important scientists of the twentieth century.


Samantha Cristoforetti
Astronaut

“Always remember if you have to choose between an easy thing and a hard thing, the hard thing is usually a lot more fun.”

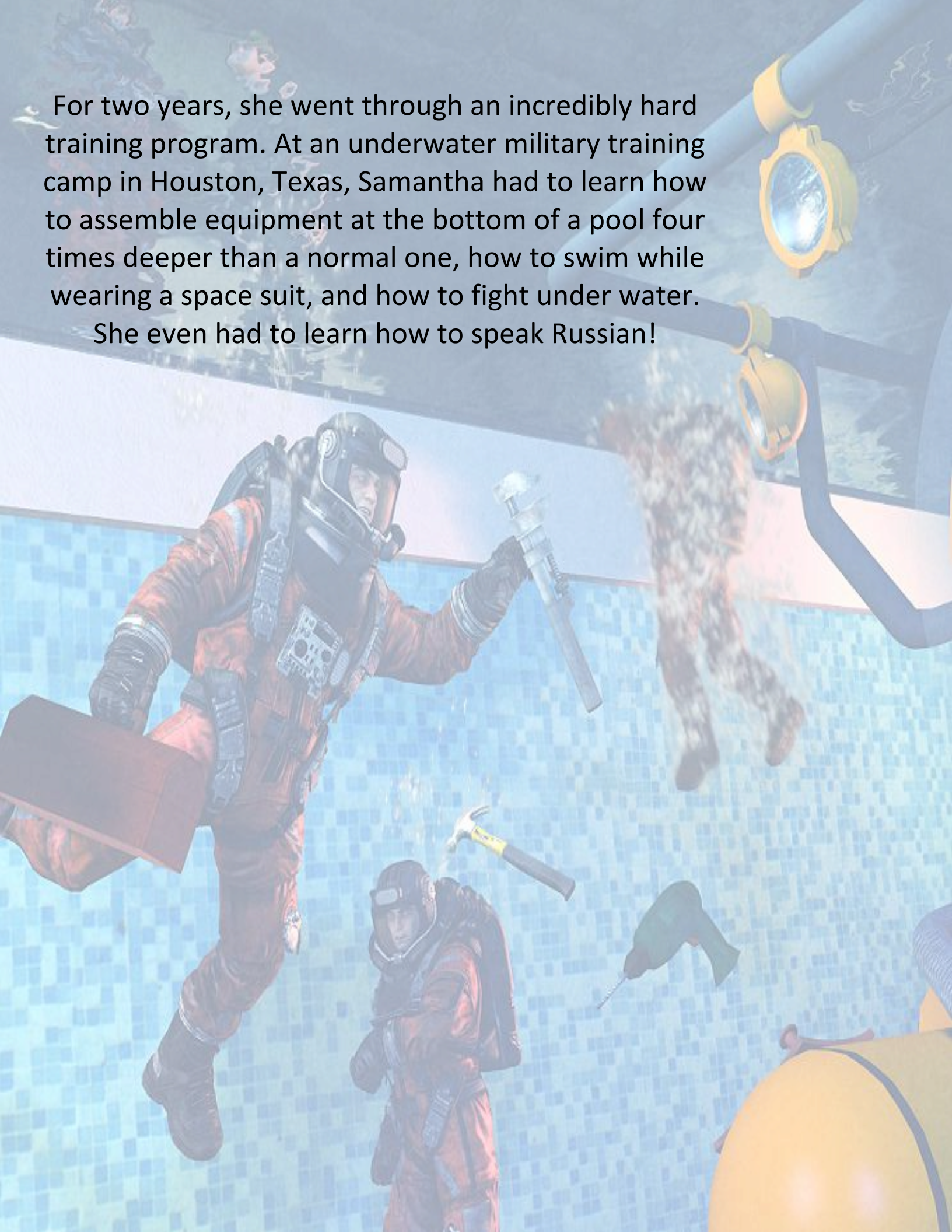
Once upon a time, there was an engineer who brewed coffee in outer space. Her name was Samantha, and she was also an astronaut.

Samantha had studied mechanical engineering and aeronautics at university.



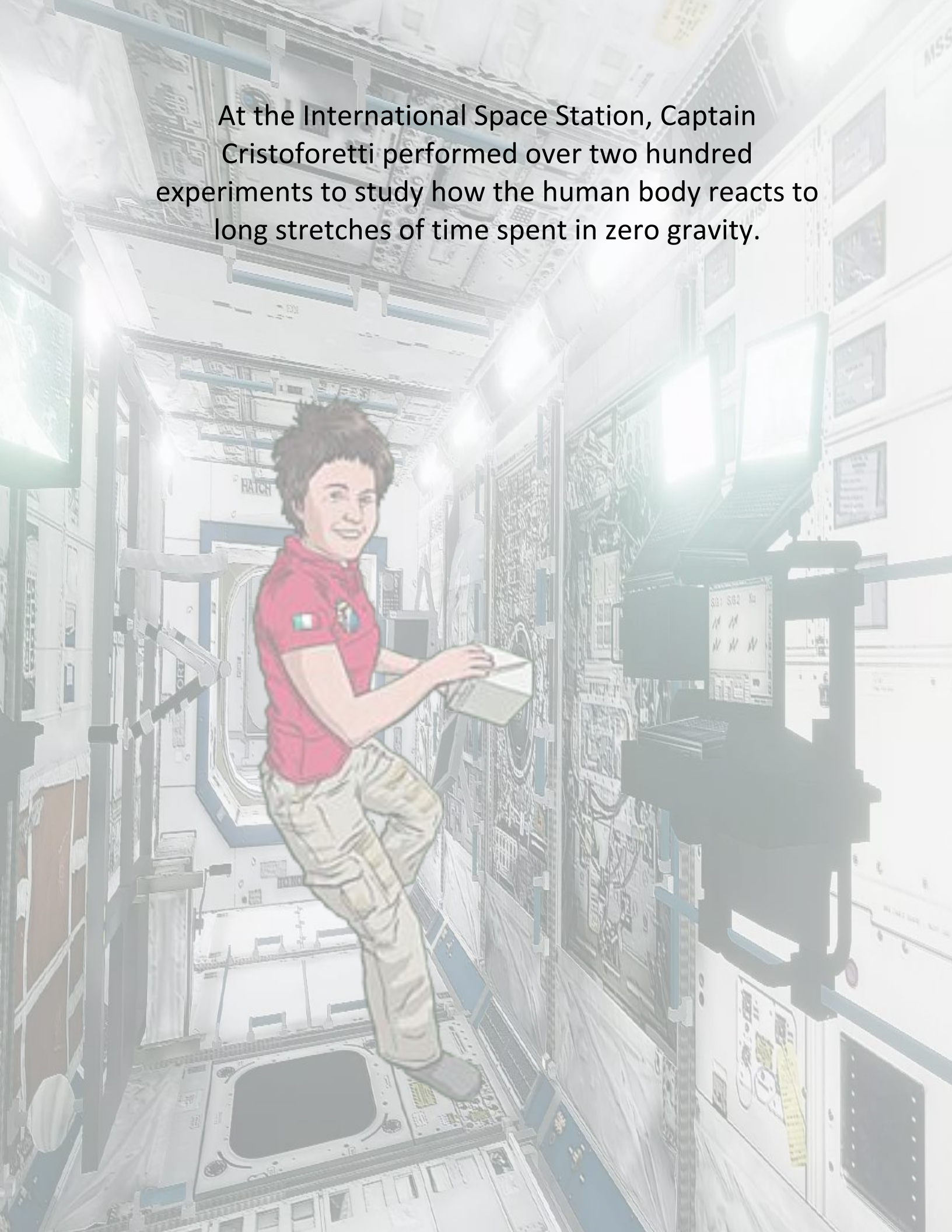
After she graduated, she joined a fight school and finished at the top of her class. Samantha became a fighter pilot in the Italian Air Force, but she wanted to fly even higher.

So, she applied to the European Space Agency to join its space program. Only six pilots out of more than eight thousand applicants were selected: Samantha was one of them.

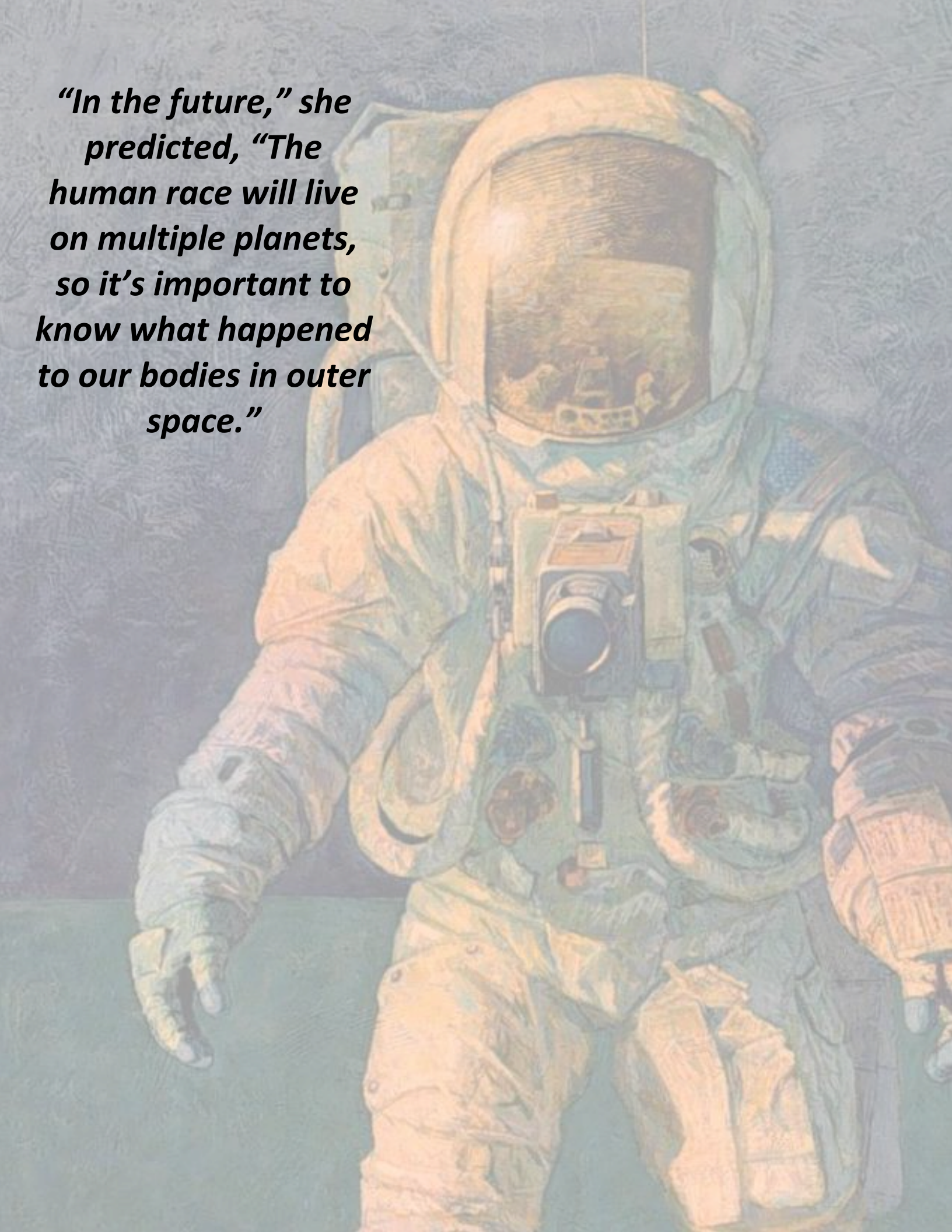


For two years, she went through an incredibly hard training program. At an underwater military training camp in Houston, Texas, Samantha had to learn how to assemble equipment at the bottom of a pool four times deeper than a normal one, how to swim while wearing a space suit, and how to fight under water. She even had to learn how to speak Russian!

Once she had mastered all that, she was ready to go.

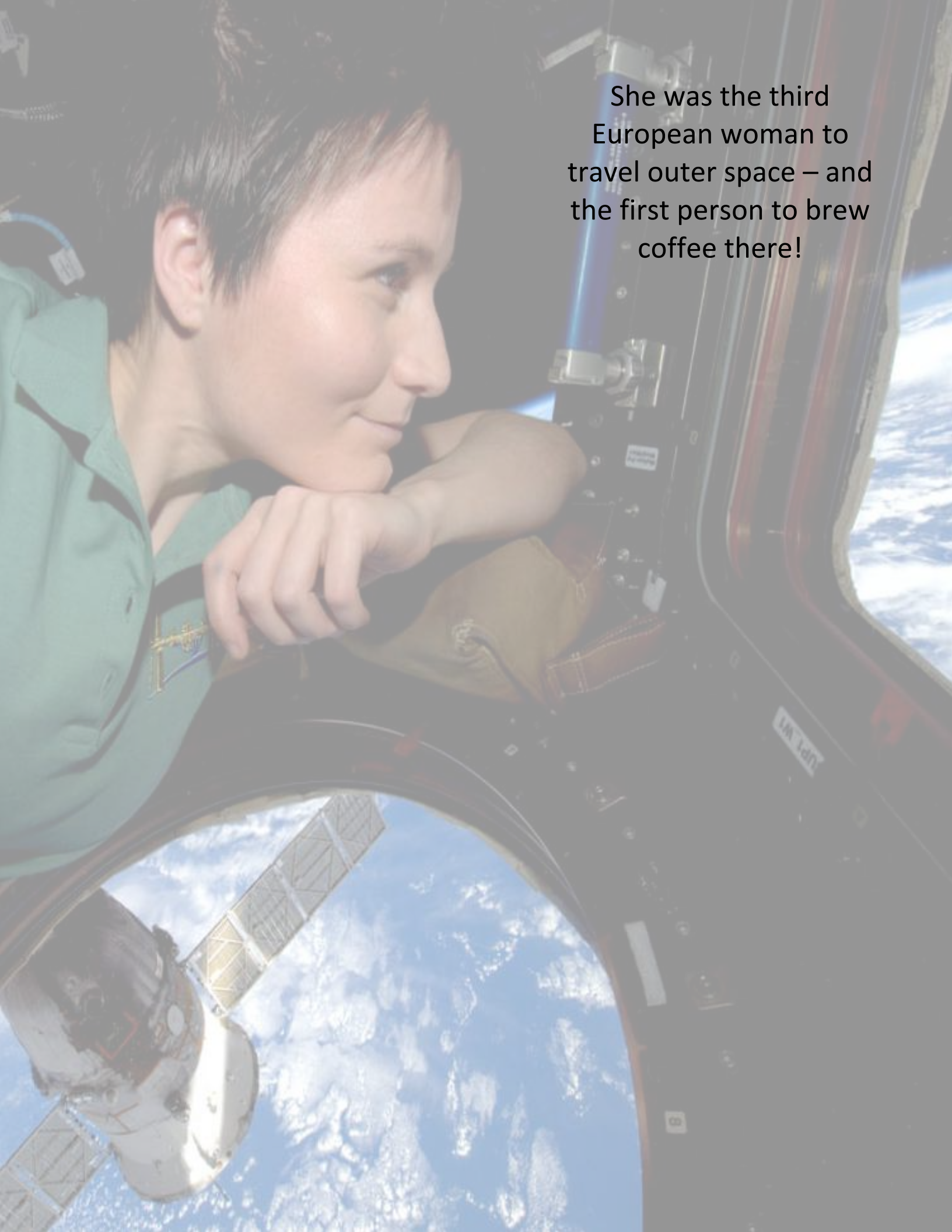


At the International Space Station, Captain Cristoforetti performed over two hundred experiments to study how the human body reacts to long stretches of time spent in zero gravity.



“In the future,” she predicted, “The human race will live on multiple planets, so it’s important to know what happened to our bodies in outer space.”

During the mission, Samantha also experimented with different kinds of food. “Who would want to live on Mars,” she asked, “if they could only eat stuff squeezed out of a table?”



She was the third European woman to travel outer space – and the first person to brew coffee there!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