

The Code Breaker, by Walter Isaacson

Reviewed by Cindy Kennedy

Walter Isaacson has written several biographies of famous men including Leonardo da Vinci, Benjamin Franklin, and Steve Jobs. In his latest book, *The Code Breaker: Jennifer Doudna, Gene Editing, and the Future of the Human Race*, Isaacson profiles a woman for the first time.

From an early age, Jennifer Doudna was fascinated by the mysteries of the natural world. In 1971, when she was seven years old, the Doudna family moved to Hawaii from Washington DC for her father's University of Hawaii professorship. Hawaii's "lush and diverse" landscape piqued the young girl's interest in biology. With her parents' and biology teacher's encouragement, she decided on a career in science. She majored in biology and chemistry at Pomona College in California and went on to Harvard for her PhD. Dr. Doudna currently heads the chemistry department at UC Berkeley.

In *The Code Breaker*, Isaacson delineates Dr. Doudna's groundbreaking career, particularly her role in creating the gene-editing technology known as CRISPR. (The acronym stands for "clustered regularly interspaced palindromic repeats.") As Isaacson explains, "In their DNA, bacteria develop CRISPR sequences that can remember and destroy viruses that attack them.... A CRISPR-editing tool can cut up targeted and unwanted genes in a strand of DNA."

Since the 1980s, scientists have known about the possibility of creating genomic vaccines. In 2012 Dr. Doudna and French scientist Emmanuelle Charpentier developed their CRISPR technology, opening the door for future genetic vaccines. When the global Covid-19 pandemic emerged in early 2020, CRISPR researchers were in the forefront of developing tests and vaccine trials.

For their efforts in "the development of a method for genome editing," Jennifer Doudna and Emmanuelle Charpentier were awarded the 2020 Nobel Prize in Chemistry, becoming the sixth and seventh women to do so. During the virtual global press conference celebrating their award, many questions focused on the pairs' win as a breakthrough for women. "For many women," Dr. Doudna responded, "there's a feeling that, whatever they do, their work may not be as recognized as it might be if they were a man. This award is a step in the right direction."

In his book's epilogue, Walter Isaacson, addressing the ethical and moral challenges of gene-editing, concludes: "Like our species, my thinking evolves and adapts with changing situations. I now see the promise of CRISPR more clearly than its peril. If we are wise in how we use it, biotechnology can make us more able to fend off viruses, overcome genetic defects, and protect our minds and bodies."

(Note: *The Code Breaker* is part of the Heritage Hills Library and Somers Library collections. For a list of new books at the Heritage Hills Library, please see page 8.)