

# BOOK REVIEWS

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## AUTOBIOGRAPHY

**A Life Decoded: My Genome: My Life.** By J. Craig Venter. 2007. Viking. (ISBN 978-0-670-06358-1). 390 pp. Hardcover. \$25.95.

Craig Venter (born 1946) is one of the most important biologists of our time as well as a larger-than-life character. Venter is best known for his important role in sequencing the human genome in that he led a private effort to compete with a publicly-funded project by the National Institutes of Health (NIH). Venter, along with his NIH rival Francis Collins and President Bill Clinton, announced the mapping of the human genome in 2000. Humans have about 20,500 genes, far fewer than originally estimated, and the sequencing of the genome has important implications for basic biology and medicine.

**A Life Decoded** is an autobiography in which Venter outlines his unconventional and interesting life. Growing up in California, Venter says he was a terrible student in middle and high school. He enlisted in the Navy, was sent to Vietnam during the war in 1967, and served as a medic. Returning to the U.S. in 1969, he had a renewed sense of purpose and became an “A” student in college. He participated in research as an undergraduate and eventually published his results in a paper in the prestigious *Proceedings of the National Academy of Sciences*—quite a feat for an undergraduate student! So, his life was turned around. By the time he finished his Ph.D. in 1975, Venter had submitted 12 papers for publication and was off to a great academic career.

Venter was on the faculty of State University of New York at Buffalo from 1976 to 1982 and then joined the National Institutes of Health in 1984, which he called “scientific heaven, bureaucratic hell.” By 1992, he became director of The Institute for Genomic Research (TIGR), which was an unconventional nonprofit

research organization. Currently, he is head of The J. Craig Venter Institute.

Venter clearly has had, and continues to have, ideas that border on the heretical. Some of his ideas do not work out, but a few do—and perhaps this is why he is so creative and moves biology forward. One of these ideas was the “shotgun” approach to sequencing DNA which involves fragmenting the genome into many small fragments and then using the sequences of individual fragments to reconstruct the genome by overlapping DNA sequences. At the time it was proposed, this technique was considered too sloppy to get an accurate human genome, but in fact the method was successfully used to accelerate the human genome project. The key was that Venter utilized the most powerful computers to make shotgun sequencing successful.

This book outlines Venter’s struggles with the scientific establishment. Venter clashed with many influential scientists including James Watson, famous for his discovery of the double helix nature of DNA. The reader gets the impression that Venter is brilliant but perhaps a bit too aware of his intelligence.

Venter’s autobiography also gives us glimpses into the nature of modern research—particularly large, multidisciplinary, expensive scientific projects. This part of modern science is rarely apparent to students who might read this book. His writing style is very direct, and he tries to be accessible to non-scientists as well.

Can a high school or college biology teacher use this book in one of his or her classes? I think that biographies of prominent scientists can be used as supplements to biology courses, especially in AP or honors classes. A teacher could assign Venter’s autobiography as a reading, and it then could serve as the basis for excellent classroom discussion. As much as reading the James Watson’s memoir *The Double Helix*, students would get a glimpse into all

of the complexities of modern biology and learn about the sociological and cultural context of science.



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## EVOLUTION OF LIFE

**Life As It Is: Biology for the Public Sphere.** By William F. Loomis. 2008. University of California Press. (ISBN 978-0-520-25357-5). 247 pp. Hardcover. \$24.95.

William Loomis, Distinguished Professor of Biology at the University of California, San Diego, and former President of the Society for Developmental Biology, has written an interesting book discussing some of the most important biological issues that affect human life today. These issues include abortion, euthanasia, genetic engineering, genomics, cooperativity, human evolution, and the sustainability of life on Earth.

He introduces many of these topics through the lens of basic biological research pointing out how the biology of bacteria and simple organisms, such as cellular slime molds, have genes and behaviors exhibited by higher organisms. He does note, “We are the only beings on the planet who carry on a continuous internal conversation with ourselves, the only ones with a movie-in-the-brain that plays images of people and things from the past, the present, and the future ... Only when we see life on earth as a grand and precarious creation that we are a part of, not apart from, will we be able to pass our resources and knowledge to future generations” (p. 2).

Loomis clearly provides some of the historical background for some of today’s thorniest biological questions. Before