J. Craig Venter—The Human Genome Project

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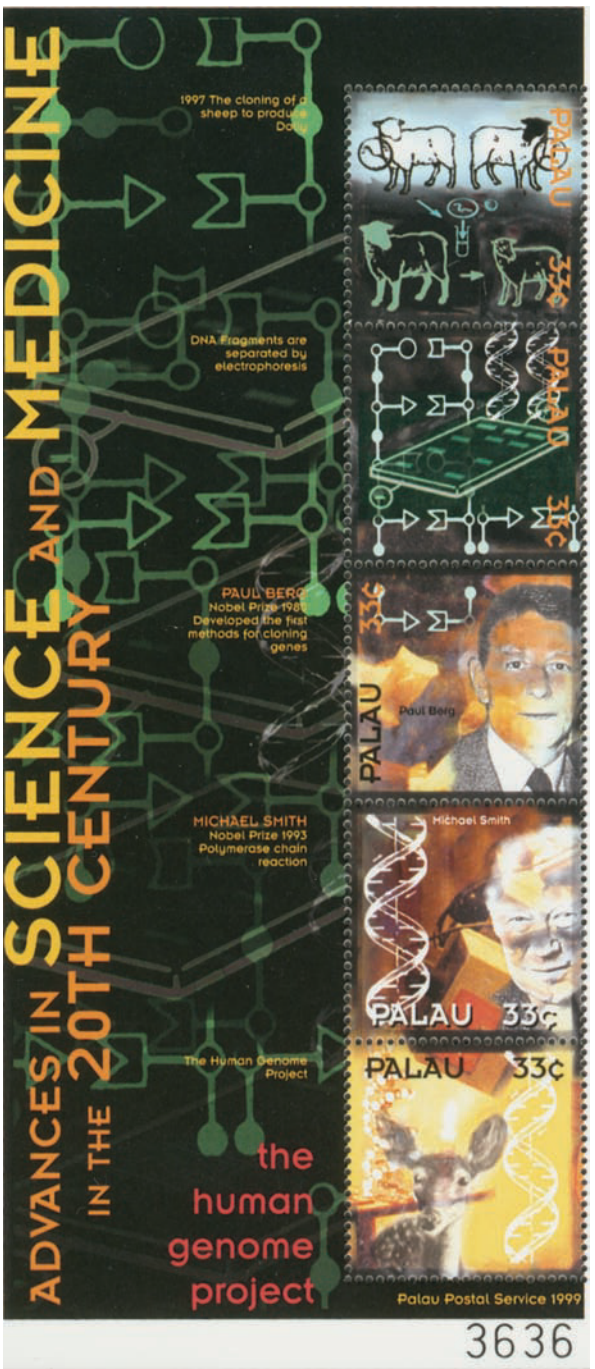

American-born biochemist-geneticist J. Craig Venter is acknowledged, along with geneticist Francis Sellers Collins (1950-), as being a primary force behind the Human Genome Project. Venter, with private funding, and Collins, with public funding, independently mapped and sequenced human DNA. Their reports appeared in 2001 (one in *Nature* and the other in *Science*). A sheet of 5 stamps (Scott No. 561) issued by Palau in 1999 provides an opportunity to honor J. Craig Venter indirectly. The sheet was issued to commemorate advances in science and medicine in the 20th century. One of the stamps representing the Human Genome Project shows the overall structure of DNA.

J. Craig Venter was born on October 14, 1946, in Salt Lake City, UT. He spent his youth in San Francisco, CA, where he attended high school. After high school, he joined the US Naval Medical Corps and served in Vietnam, where he provided medical care at an orphanage.

After Venter returned to the United States, he enrolled as a premedical student at the University of California, San Diego. However, he soon decided to pursue a career in research. He received a BS degree in biochemistry in 1972 and a PhD degree in physiology and pharmacology in 1975, both from the University of California, San Diego.

In 1976, Venter became an assistant professor of pharmacology and therapeutics at the State University of New York at Buffalo and also worked at the nearby Roswell Park Memorial Institute. His research focused primarily on the elucidation of the structure and function of adrenergic receptors and muscarinic cholinergic receptors. Venter was promoted to professor in the early 1980s. For his work on receptors, he received the Boehringer Ingelheim Muscarinic Receptor Research Award. In 1984, he became a section chief at the National Institute of Neurological Disorders and Stroke at the National Institutes of Health (NIH) in Bethesda, MD, where he worked until 1992. His work at the NIH concentrated on neurotransmitters, specifically on genes that encode for enzymes involved in the synthesis of neurotransmitters and receptors.

In July 1992, Venter left the NIH and became founder and chairman of the board of The Institute for Genomic Research (TIGR), a not-for-profit genomics research institution in Rockville, MD. He served as its president until 1998.

In 1998, Venter joined Applera Corporation and became president and chief scientific officer of the newly founded Celera Genomics. The goal of Celera Genomics was to become the definitive source of genomic and related medical and biological information. In January 2002, Venter stepped down as president of Celera Genomics but continued to chair its scientific advisory board. Currently, he is serving as president of J. Craig Venter Institute.

Venter pioneered the use of automated gene sequencers, and in 1990, he developed "expressed sequence tags" (ESTs), a new strategy for the discovery and tagging of genes that revolutionized biological science. In this approach, complementary DNA is partially sequenced, or "tagged," using an automated DNA sequencing machine. The resulting sequences (ESTs) are long enough for one to be distinguished from another. Venter has published more than 160 research articles and has received many awards, including being elected a fellow of several societies, such as the American Association for the Advancement of Science and the American Academy of Microbiology. In 1999, he received the Beckman Award and the Chiron Corporation Biotechnology Research Award.

Efforts to bring Collins and Venter together to complete the mapping of the human genome began in late 1999. In March 2000, US President Bill Clinton (1946-) and British Prime Minister Tony Blair (1953-) made a joint declaration that all genome information should be free to the public. This announcement led to cooperation between Collins and Venter, and on June 26, 2000, Venter and Collins jointly announced that, after nearly a decade of work, both the public Human Genome Project headed by Collins and Celera Genomics headed by Venter had deciphered essentially all the genes in human DNA. The importance of the cooperation between the 2 geneticists and the genome sequencing effort is far-reaching and may result in the discovery of keys to the diagnosis and treatment of numerous diseases, from diabetes to heart disease to Alzheimer disease.