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Craig Venter, a uniquely powerful scientist and personality, has died..

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Editorial

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When Craig Venter died on April 29, 2026, the world lost one of its most dynamic researchers in life sciences, and I lost a unique friend. When we last met in person in November 2025 in La Jolla, he and his wife, Heather Kowalski, took me and my life companion, Elsebeth Welander-Berggren, by his high-quality, speedy car to the center of San Diego to show us the building for a new J. Craig Venter Institute at the IQHQ Research and Development District. The location allowed a splendid view of the harbor, and Craig also pointed out a nice separate space for the family's two dogs, one of which is called Darwin. However, this grand new project never came to materialize with Craig as its leader, but it illustrates how intensively forward-looking he was. He always reflected on how he could break new frontiers in life sciences and the proper means to execute this. There were always new acquisitions of knowledge to be made and new organizations to develop.

It was often forgotten at incidental encounters that behind Craig's forceful personality, often referred to as having a maverick character, there was an individual with rich emotions. I had the privilege of learning to know this disguised side of him in many privileged personal encounters. In the late 1990s, I had become Permanent Secretary of the Royal Swedish Academy of Sciences. In that role, I frequently hosted him in Stockholm when he presented the impressive advances in identifying the complete nucleotide base sequence of increasingly larger genomes using carefully refined advanced methodology based on his introduction of the 'shot-gun' technique and the development of advanced computer algorithms to identify the complete nucleotide sequence of complex genomes. A very important collaborator in these endeavors was Hamilton (Ham) Smith, who had received a shared Nobel Prize in Physiology or Medicine in 1978 'for their discoveries concerning restriction enzymes and their application to problems of molecular genetics'. The first breakthrough in Craig's endeavors was the total sequencing of the genome of the bacterium *Haemophilus influenzae.* When the results of this study were presented at a conference of the American Microbiological Society, there were standing ovations. Thereafter, several complete genomes of ever more complex organisms were fully characterized, crowned by the presentation of the complete human genome. It turned out that our genome did not contain some 100,000 genes as speculated but only of the order of 19,000. The story of the competition with the Human Genome Project has been told many times, but without Craig and his collaborators pushing the field, it would never have been concluded at the time it was made. The story has been presented in a personal way in Craig's 2007 book *A Life Decoded. My Genome: My Life* (Venter, 2007).

Ham continued to be a crucial collaborator of Craig's, and he stayed with him until he finally had to retire in 2020 at the age of 89 years. Before that, Craig had intervened in a way that prolonged Ham's life by several years. In June 2016, Craig had arranged for Ham and me to receive, free of charge, a full-day noninvasive health examination at a company, Human Longevity Inc., that he was involved in creating. The examinations included a complete genome analysis, a whole-body examination using noninvasive techniques, and a complete biochemical analysis. In these examinations, a lemon-sized tumor was found in the central part of Ham's lungs. This was surgically removed, and follow-up radiation therapy successfully managed to secure its elimination.

The number of additional critical discoveries following the refinement of techniques for 'reading' and 'writing' the 'books of life' is too long to be fully presented here. Identification of the genome of meningococcal bacteria allowed the development of a subgroup B vaccine; synthesizing in the laboratory a DNA virus genome opened new vistas but making a similar synthesis of a genome of a mycoplasma genome (473 genes) gave possibilities of gaining insights into the highly complex world of metabolism of cells. This important research field continues to be intensively studied, potentially leading to a final understanding of intermediary metabolism, the playing of a huge orchestra without a conductor. In part, these additional fundamental discoveries have been described in a second 2013 book by Craig entitled *Life at the Speed of Light: From the Double Helix to the Dawn of Digital Life* (Venter, 2013).

Craig had many major interests besides his obsession with research. For a time, he had an impressive collection of well-maintained old cars. And he was a fast driver. Later in life, he also acquired an Air Operators Certificate and could use that when flying his own plane. I have flown with him back and forth from San Diego to a second home of his in Borrego Springs, where we picked up some handicraft carpenter products that he had made for his father-in-law. He also

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used his plane to fly across the American continent to his two nearby second homes in Maine, one on a rocky island, where he could build a sauna. The cross-American flight took him by Mount Rushmore, where he could wave at the Presidents carved in stone.

But Craig's number one involvement in life was sailing, and with an early ocean-going boat, Sorcerer I, he won a transatlantic race. Eventually he was able to combine science and sailing when the Institute acquired Sorcerer II, a very charming 100-foot sailing boat. Between 2003 and 2006, this was used for Global Ocean Sampling, circumnavigating the world. Every 200 nautical miles, two cubic meters of water were collected and passed through multiple filters, which were deep-frozen and shipped to the home laboratory for characterization of all genes present. An immense amount of important new data was collected, and this unique adventure has been described in a third book (in collaboration with David E. Duncan) published in 2023. Its title was *The Voyage of Sorcerer II: The Expedition that Unlocked the Secrets of the Ocean's Microbiome*, and I had the privilege of writing the Foreword to this book. It was in the context of joint long-distance sailing that I had the unique opportunity to become a particularly close friend of Craig. Besides his competitive management of human relations, he also had a rich and sensitive emotional side. There were unique opportunities to talk when crossing the oceans.

I tempted Craig to take the boat to the Baltic to sample a low-salinity, large stretch of water. We crossed the Atlantic in 12 days from Bermuda to Horta in the Azores, from where I left the boat and flew home. Craig generously let me use his captain's cabin since he could not join in this trans-Atlantic sailing. He connected with the boat in Copenhagen and sailed to the island of Sandhamn in the Stockholm archipelago. The time of arrival of Sorcerer II coincided with that of the boats that were finishing the around-the-world ocean race. Craig and I were allowed to join one of the boats participating in the competition on its voyage to Stockholm, and we learned speed tacking on the way. In Stockholm, the boats docked at the Old Town, where we held a scientific conference in the presence of the Swedish King, Carl XVI Gustaf. The King then paid an extended visit to Sorcerer II. Eventually all the boats returned to Sandhamn, and the racing boats had a final contest on their way to Helsinki.

Sorcerer II stayed in the Stockholm archipelago and enjoyed visiting some selected islands out of the 24,000 that form this unique piece of nature. The summer conditions were ideal, and the idyllic and harsh rock islands greeted the boat with warmth. When setting out for the final leg, taking the boat to our summer place on the eastern coast of the island of Blidö, Craig proposed that he and a crew member should kayak to our place. Off they went, and we picked them up along their way some 3 hours later. Then Craig said, 'Erling, I have found the essence of life!'. To which I, of course, answered, 'Isn't that wonderful, tell me what it is'. The answer was, 'The essence of life is naked skin against a smooth rock!'. To fully appreciate this insightful statement, one needs to know that some 10,000 years ago, the thick ice that covered Scandinavia polished many granite rocks to become smooth as silk.

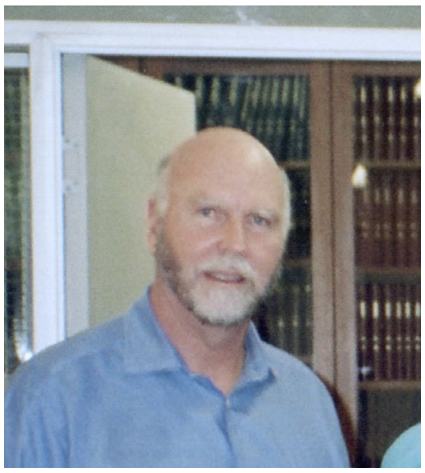


Figure 1.

Craig richly enjoyed close contact with nature. This became obvious also when we later sailed in Baja California. In this inlet of water, we enjoyed watching impressive schools of dolphins and learned about the discreet breeding of whales. Craig enjoyed strolling the beaches of uninhabited islands stark naked, obsessively observing with his Darwinian eyes the particulars of nature. I am very grateful to have been privileged to get to know Craig's warm emotional sides. These were amplified by his third marriage to Heather, who had been a very efficient press secretary of his during the 1990s. She and her charming parents, Joe and Sara, whom I also have had the great pleasure of learning to know, provided the emotional balance that his extremely intense and competitive life needed. The emptiness he leaves behind is immense.

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