


## Gordon Moore (1929–2023)

By James S. Clarke

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**Co-founder of Intel, creator of Moore's law and philanthropist.**

**G**ordon Moore was the co-founder of Intel, a giant of the technology industry and one of America's great philanthropists. Best known for Moore's law and the creation of the iconic semiconductor company, he spent the past two decades supporting the Gordon and Betty Moore Foundation, which has donated more than US\$5.1 billion to charitable causes. Moore died on 24 March 2023 at the age of 94.

Moore co-founded Intel with Robert Noyce in 1968 after the two worked closely for a decade in the fledgling California semiconductor industry. They built Intel on the idea of manufacturing complex, general-purpose chips in high volume – the basic model that underpins Intel's business today. Moore guided Intel's early lead in silicon memory, the invention of the microprocessor and the company's mid-1980s shift from memory to microprocessors.

Of all the tech industry titans Silicon Valley has minted over the past six decades, Moore was unique. Biographer Michael Malone described him as “easily the most beloved.”

Before establishing Intel, Moore and Noyce participated in the founding of Fairchild Semiconductor, where they played central roles in the first commercial production of diffused silicon transistors and later the world's first commercially viable integrated circuits. The two had previously worked together under William Shockley, the co-inventor of the transistor and founder of Shockley Semiconductor. When starting out on their own, Moore and Noyce hired future Intel chief executive officer (CEO) Andy Grove as the company's third employee. Together they became known as the ‘Intel trinity’. Their legacy continues today.

By all accounts, Moore was neither brash nor in-your-face like Grove. Nor was he charismatic and high energy like Noyce.

“All of Gordon's decisions were methodical, well-thought-out,” said Arthur Rock, the Silicon Valley venture capitalist widely credited with creating the venture capital model that gave rise to California's original tech industry explosion.

Moore's law – which was not self-proclaimed by Moore, but popularized by a Caltech



professor in the mid-1970s – may be Moore's best-known legacy. In the 19 April 1965 issue of the trade journal *Electronics*, Moore published the paper ‘Cramming more components onto integrated circuits’. In it, he predicted that the number of transistors in a circuit would double every year. A decade later, he revised his estimate to the doubling of transistors on an integrated circuit every two years for the next 10 years. Regardless of the time span, the idea of chip technology growing at an exponential rate – continually making electronics faster, smaller and cheaper – became the driving force behind the semiconductor industry and paved the way for chips in millions of everyday products.

“All I was trying to do was get that message across, that by putting more and more stuff on a chip we were going to make all electronics cheaper,” said a modest Moore in 2008.

Gordon Earle Moore was born on 3 January 1929 in San Francisco, and grew up in Pescadero, a small coastal town directly west of Intel's modern-day headquarters in Santa Clara, California. He was educated at San José State University, the University of California, Berkeley and the California Institute of Technology, where he was awarded a PhD in chemistry in 1954.

At Intel, Moore initially served as executive vice president until 1975, when he became

president. In 1979, he was named chairman of the board and CEO, posts he held until 1987, when he gave up the CEO position and continued as chairman. In 1997, he became chairman emeritus, stepping down in 2006.

The world took notice of Moore's accomplishments. In 1990, he received the National Medal of Technology. And in 2002, he was presented the Presidential Medal of Freedom, the highest civilian award in the United States. In 2008, he received the Institute of Electrical and Electronics Engineers (IEEE) Medal of Honor.

“There is position power and there is knowledge power,” said Les Vadasz, who was among Intel's first employees. “He did not exert his position power. He exerted, if anything, his knowledge power. People wanted to talk to him for his knowledge, for his instinct, not because he was the chairman of the company or the CEO. That was a unique capability of Gordon. It was very effective.”

Moore dedicated much of his life's focus and energy to philanthropy, particularly environmental conservation, science and patient care improvements. With his wife, Betty, Moore established the Gordon and Betty Moore Foundation in 2000.

Moore served as a member of the board of directors of Conservation International and Gilead Sciences Inc. He was a member of the National Academy of Engineering, a fellow of the Royal Society of Engineers and a fellow of the IEEE. And he served as chairman of the board of trustees of the California Institute of Technology from 1995 until 2001, continuing after as a life trustee.

In 2022, Intel CEO Pat Gelsinger announced the renaming of the Ronler Acres campus in Oregon – where Intel teams develop future process technologies – to Gordon Moore Park at Ronler Acres. The building that's home to much of Intel's Technology Development Group was also renamed The Moore Center and its café, The Gordon.

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