



Reed Fundleach

ROBERT W. GUNDLACH

1926–2010

Elected in 1994

“For contributions to the development of xerographic copying and printing, including manifold inventions.”

BY DAN A. HAYS
SUBMITTED BY THE NAE HOME SECRETARY

ROBERT W. GUNDLACH, a prodigious inventor of photocopying technology at Xerox Corporation, died on August 18, 2010, in Rochester, New York, at the age of 83.

Robert, or Bob as he was called by his many friends, was born in Ebenezer, New York, a small town near Buffalo, on September 7, 1926. His father, Emanuel, was a chemist who invented the hair-dressing Wildroot Cream-Oil. His grandfather was a minister in the German Reformed Church, but Emanuel and his family became members of a pacifist organization called the Fellowship of Reconciliation. Bob attended the University of Buffalo but was drafted after the end of his freshman year. After a year in conscientious objector camps, he returned to the University of Buffalo and switched his initial major from chemistry to physics. He obtained a B.S. degree in 1949 and continued graduate work in physics toward an M.S. degree.

In seeking a job, Bob was interested in companies that did not do war work. He found a job at Durez Plastics and Chemicals in the physical testing laboratory. In 1952 he learned from a University of Buffalo classmate that the Haloid Company, a small photographic firm in Rochester, New York, was hiring for work on a new dry electrophotographic process for copying

documents. He applied for a job and was immediately hired after obtaining an exceptional score on a written physics test and a promise from the firm's president that he would not work on military projects.

Bob quickly had a large impact on the company by coming up with three patentable ideas within his first year. His early inventions in electrophotography had a profound influence in enabling the firm to generate a new revenue stream through the leasing of equipment to produce masters for offset printing machines. When Chester Carlson, inventor of electrophotography, saw one of Bob's early inventions, he was compelled to remark, "Bob, you are an inventor!" This positive reinforcing statement from Carlson had a profound motivating effect on Bob. In Bob's lifetime he received 163 patents.

Rapid growth in the new electrophotographic business of the Haloid Company led to its ultimate transformation into the Xerox Corporation. The success of electrophotography was propelled by the introduction of automatic copiers, as exemplified by the Xerox 914 brought to market in 1959. Bob contributed many technological advances required for higher speed electrophotographic copying and printing, for not only black-and-white but also color printers. Perhaps Bob's most novel patent disclosed a process for producing black and colored prints in a single-pass printer that was introduced to the market in 1991.

Beyond Bob's many technical contributions to the Xerox Corporation, he played a central role in a number of patent litigation lawsuits. The combination of his broad knowledge of electrophotographic technology and his excellent communication skills proved to be effective in obtaining favorable verdicts for Xerox.

Bob's passion was to solve technical problems through laboratory experiments. As such, he was not interested in pursuing a managerial career. Due to Bob's many technical achievements over the years, Xerox's management decided to institute a dual-ladder promotion system, whereby the significant achievements of individual contributors could be

recognized in a manner similar to the recognition afforded those in management. Bob was among four to first be recognized as a “principal scientist” in 1963. In 1966 he was named Xerox’s first research fellow. In 1978 he was appointed the first senior research fellow—the highest recognition bestowed on an individual contributor by the company.

Bob’s many honors and awards included the Charles E. Ives Award for “Best Paper of the Year” in 1963, the Inventor of the Year Award granted by the Rochester Patent Law Association in 1974, the Kosar Memorial Award from the Society of Photographic Scientists and Engineers in 1976, the Johann Gutenberg Prize from the Society for Information Display in 1993, the Carlson Memorial Award from the Society of Photographic Scientists and Engineers in 1986, the Fellowship Award from the Society of Imaging Science and Technology in 1991, the Clifford C. Furnal Award from the University of Buffalo in 1992, the Xerox President’s Award in both 1979 and 1995 for Lifetime Achievement, and the Lifetime Achievement Award from the Electrostatics Society of America in 1997. He was elected to the National Academy of Engineering in 1994 and inducted into the National Inventors Hall of Fame in 2005.

Bob was a positive role model to all who knew him. He was kind and charming to all, regardless of their station in life. He had close relationships spanning the full range of employees from those at entry-level jobs to the chief executive officers of Xerox. His interesting presentations were always a delight to audience members, as evidenced by the attentive glow on their faces.

Bob always exhibited much self-confidence regardless of his particular interest. He loved challenges, such as those provided by the many technical problems in electrophotography. His love of challenges extended to a variety of sports, including downhill skiing (often with family members), cross-country skiing, jogging, canoeing, tennis, swimming, walking on his hands, and windsurfing. He was always physically fit by virtue of aerobic exercises, strength training such as chin-ups, and a healthy diet. Bob always looked for ways to make a

game of whatever he was doing. In driving to work during the spring, the challenge was to see how many different birds one could identify. My son said that Bob could even make fun out of going over speed bumps. The challenge was to apply the brakes at the right moment to minimize the car bounce.

Bob had a deep love of mankind and nature. In his mind, greater efforts in diplomacy were needed to circumvent wars between nations. He marveled at the variety of life in animals and birds. He was an enthusiastic bird watcher with a lifetime list of 138 species. He enjoyed spending time at a wooded Gundlach family retreat south of Buffalo called "Starlit," which provided much solace and family fellowship in a natural setting.

Bob had excellent leadership skills due to his breadth of knowledge and pleasant personality. Soon after he joined the Haloid Company, he was asked to lead a Boy Scout troop from the city of Rochester on a camping trip to the Adirondacks. Bob knew he could not take that much time off having just started work, but the president of Haloid recognized the importance of Bob's scouting leadership and granted him the time off. Another example of Bob's many talents and interest in helping others was his willingness to serve on the National Advisory Board for the Children's Television Workshop from 1979 to 1984.

Much of electrophotographic technology exploits various applications of electrostatics. Bob had a well-grounded understanding of electrostatics principles. Due to this expertise, he was one of the charter members of the Electrostatics Society of America, which formed in 1970. He was president of ESA from 1977 to 1981 and served on the Board of Advisors from 1981 to 1994. Bob had an uncanny ability to listen to an ESA presentation and then suggest several applications of the technology that might be patentable.

Consistent with his love of nature, Bob was passionate about conserving natural resources. He had the means to be a lavish consumer, but he chose to live a frugal life. He drove a diesel Volkswagen Rabbit (about 50 mpg!) in the 1970s and made every effort to carpool. He would temporarily repair

the rusty exhaust system with cans and wire to extend its life. His passion for conservation was the motivation for inventing more efficient snow-making machines and heat pump systems during his postretirement years.

Bob is survived by his wife of 60 years, Audrey B. Gundlach; his brother, Arthur Gundlach; sons Gregory E. Gundlach of Vermont, Eric R. Gundlach of Maryland, and Kurt B. Gundlach of Massachusetts; and 10 grandchildren.