



William D. Jones

WILLIAM A. GROSS

1924–2011

Elected in 1996

“For air bearings research leading to magnetic disk memories and low-cost video recording and for industrial and academic leadership.”

BY ERNEST S. KUH, FRANK E. TALKE,
TAMARA WILLIAMS, AND SHARON P. GROSS

WILLIAM ALLEN GROSS, former dean of the University of New Mexico School of Engineering and professor of mechanical engineering, died on February 20, 2011, at the age of 86. He is recognized for pioneering breakthroughs in computer and video recording technologies, for visionary leadership in industry and education, and for innovative programs to support nontraditional engineering students and engineering entrepreneurship.

Bill was born on November 17, 1924, in Los Angeles, to William Allen and Margaret (Hill) Gross. On the heels of Pearl Harbor, he enrolled in the US Coast Guard Academy because of his love of the sea and his commitment to saving lives. Upon graduating in 1945, he served for three years as an officer in the Pacific and then, a newlywed, resigned a secure commission to pursue further education. He received his PhD in applied mechanics at the University of California, Berkeley in 1951. He taught there and at Iowa State University until 1955, when he left to get industrial experience. He returned to academia in 1974 as dean of engineering at the University of New Mexico.

Friend and colleague Ernest Kuh writes that he first worked with Bill when they were new members of the technical staff at Bell Telephone Labs in Murray Hill, New Jersey, as part

of an amazing team charged with identifying and solving telecommunication problems. From that time forward, Ernie saw Bill “develop into a distinguished engineering scholar, a well-known researcher in his field of mechanics, an outstanding educator and university administrator, and a creative industrialist and leader.”

In 1956 Bill joined IBM as a member of the research staff and later manager of the Applied Mechanics Department at IBM’s newly opened research lab in San Jose, California. He worked with a small group of colleagues to develop the fundamentals that made computer disk memories possible, and published the first scientific papers on gas lubrication in magnetic recording disk drives. His book *Gas Film Lubrication* (1962) and papers were seminal for the development of a generation of engineers and for the development of the fields of computer-aided design and tribology.

Frank Talke recalls that, for his work on tape and disk technology, Bill was a source of excitement in those early years. And when Frank started at IBM in 1969, he read all of Bill’s research reports and studied his book on gas lubrication from cover to cover. He still cherishes that book, which was signed by Bill and has a special place in Frank’s office. Bill’s pioneering research on gas lubrication built the scientific basis for understanding how and why magnetic recording sliders fly in hard disk drives. Frank describes Bill as a leader in his field, a true icon, and very well respected by scientists and engineers who had the privilege of knowing him.

In 1961 Bill accepted the challenge to become director of research, and later vice president and general manager, of the Advanced Technology Division at Ampex Corporation. At that time Ampex was the world leader in audio recording, and Bill managed a team of engineers that made videotape recording feasible and affordable. His collaborative management style fostered innovation, and under his leadership Ampex produced the first terabit memory and a new line of microwave ferrites. His son Mark Gross recalls helping an Ampex engineer field test one of the first portable video recorders, a 90-pound monster backpack carried while filming. They did the test at a

Stanford university football game, and “instant replay” from the field was born.

At the University of New Mexico Bill served as dean from 1974 to 1980 and as professor and dean emeritus from 1982 to 1999. Among his many achievements as dean were doubling enrollment, adding the Department of Computer Science, and doubling research funding. He initiated and developed the political support to obtain a five-year, multimillion-dollar legislative commitment for science and engineering equipment. He also had the vision to develop innovative programs to increase the numbers of Native Americans, Hispanics, and women in the School of Engineering. He created and secured funding for NAPCOE (Native American Program in the College of Engineering), HEP (Hispanic Engineering Program), and the Engineering Program for Women, all of which evolved into national programs. A former student and Albuquerque entrepreneur notes that HEP, and the national program into which it evolved, “has been a critical aid to many hundreds of engineering students, providing scholarships, mentoring, tutoring, fellowship, and high school visits.”

As a professor, Bill was instrumental in creating curricula beyond the traditional engineering disciplines, including an entrepreneurial engineering class for engineering students, working engineers, and scientists. Many of these students credit him with giving them the tools and confidence to start companies or to use what they learned in their workplace. According to Bill Miera, founder and CEO of Fiore Industries—now a \$7.5 million engineering and technology company—Dr. Gross’ entrepreneurial engineering class at UNM not only opened his eyes to the possibilities of helping society through technology but also inspired him to start his own business. “I am thankful for knowing him and will remember him always,” he says.

Lem Hunter, another former student and serial entrepreneur, says that “Dr. Gross’s personal breadth and diversity were evident in his contributions to UNM and to the community.” He adds, “Not only was he an inspirational engineering professor, but he could tackle the intangibles of

entrepreneurialism and business. I learned how integrity and technological advances can work together to make a profit and improve the condition of mankind.”

Bill also developed interdisciplinary courses with other UNM faculty, including classes on Technology and Culture and on Technology and Social Change. From 1982 to 1986 he was codirector of the New Mexico Technology Innovation Program at UNM, a program of both the College of Engineering and UNM School of Management. Professor of American Studies Vera Norwood found Bill the “most interdisciplinary colleague I ever met.” And Mr. Miera observes that “Dr. Gross had the wisdom to recognize the value of diversity to an organization. This includes the diversity of interdisciplinary collaborations. We worked collectively on the Da Vinci corner, which brought together colleges to highlight projects demonstrating the marriage of engineering and art.”

Bill was recognized with many awards and honors for his leadership as an innovator and educator. These include election to the National Academy of Engineering (1996) and his selection as a Distinguished Alumnus, College of Engineering, University of California, Berkeley, and US Coast Guard Academy (1995 and 1997, respectively); Engineer of the Year, New Mexico Society of Professional Engineers (1991); Chief Manuelito Award of the Navajo Tribe (1982); Fellow, ASME, IEEE, and AAAS; Honorary Mention for the Paul Bartlett Ré Peace Prize (2007); and New Mexico Solar Energy Association Lifetime Achievement Award (1998).

From the late 1960s on, Bill was deeply concerned about energy sustainability and strongly committed to leaving the world a better place. He was active in efforts to support sustainability, renewable energy, and social change. As part of a leave of absence from UNM in 1980–1982, he developed international programs for supporting renewable energy in developing countries. He revitalized the New Mexico Solar Energy Association in the 1980s, served on the Albuquerque Energy Conservation Council, and worked with renewable energy programs in Kenya and Sudan. He created a joint UNM-University of Khartoum graduate program with

coursework in both the United States and Sudan and thesis topics of immediate energy value for Sudan.

He also volunteered his time and gifts in many ways, such as by serving on the Albuquerque Energy Conservation Council, Albuquerque Urban Enhancement Trust Fund Committee, Lovelace Inhalation Toxicology Research Institute Board, New Mexico Solar Energy Association Board, and Sigma Xi Board. He was a significant presence in the Albuquerque Friends Meeting and other Quaker entities. In addition to his family, he loved downhill skiing, hiking, and exploring nature and culture around the world. He trekked four times in the Himalayas, several times ascending to more than 18,000 feet and thrilling to glorious mountain views.

He is survived by his wife Sharon P. Gross, children Connie Jackson, Ellen Philo, Mark Gross, and David Gross, and thirteen grandchildren and great-grandchildren.