

In Loving Memory of Eldon Ray McClure



Eldon Ray McClure

Livermore — Dr. Eldon Ray McClure (Ray) passed away on August 27, 2019 in Livermore, California, at age 85 of natural causes. He was preceded by first wife, Amelia Lillian McClure (Cesar) of Livermore (originally Juneau, Alaska); his second wife Cathy McClure (Shumate); brothers Col. Edwin B. Laub, W.Neyl McClure, and A.C. Alton McClure. He is survived by his brothers Alan McClure and Duane Anderson and sister Lola Eagle; sons Michael Dean McClure and Steven Scott McClure; and grandsons Matthew McClure and Ian Haley McClure.

Ray was born in Carson, North Dakota on December 31, 1933 to the late Edwin Laub, Sr. and Rose Magdeline McClure (Anderson). He took his stepfather, M. Sgt. Clarence N. McClure's, last name in his teens.

Ray received his Doctor of Science in Mechanical Engineering at the University of California, Berkeley in 1967. He had a long career at the Lawrence Livermore Laboratory, where he rose to the Deputy Head of the Mechanical Engineering Department, Division Leader of the Energy Systems Division and Program Leader of the Precision Engineering Program which proposed and oversaw the development of the Large Optics Diamond Turning Machine (LODTM). LODTM became operable in 1983 and "turned" high precision optics for space telescopes and other

space components. He retired from LLNL in 1988 and joined the Moore Special Tool Company as Vice President for Engineering and Technical Director. He retired from Moore in 1996.

A significant contributor to his field, Dr. McClure has been recognized for his efforts to define the field of precision engineering, his leadership in the creation of the American Society for Precision Engineering (ASPE) and his technical contributions in the area of thermal effects on manufacturing accuracy, for which he received the Lifetime Achievement Award. Ray has been a passionate spokesman for precision engineering and his technical and organizational skills have had a profound impact on the field and those involved in it.

Aside from his technical insight and accomplishments, Ray was unique with respect to his insight into people and his philosophical outlook on both technology and current events. With respect to LODTM, it could not have been considered, engineered, built, or used without a very unique collection of people who had the right personalities and skills. Ray assembled this team and set the standard for the culture that was necessary to achieve this best-in-the-world result. And in spite of the technical rigor and pressure to succeed, the culture that Ray encouraged was based on his belief in his people and sincere concern for their welfare.

A memorial service will be held on Saturday November 23, at 12:00 noon at the Unitarian Universalist Church in Livermore, California. A reception with refreshments will follow the service at the same location. Directions can be found at <http://uucil.org>

Additional/Source Info – Optional

<http://aspe.net/about-aspe/obituaries/>

<http://aspe.net/about-aspe/lifetime-achievement-awards/>

From ASPE (American Society for Precision Engineering)

E. Ray McClure

2001 Lifetime Achievement Award

Dr. McClure has been recognized for his efforts to define the field of precision engineering, his leadership in the creation of the ASPE and his technical contributions in the area of thermal effects on manufacturing accuracy. Ray has been a passionate spokesman for precision engineering and his technical and organizational skills have had a profound impact on the field and those involved in it.

Ray was born on December 31, 1933, in North Dakota. He moved around because he was an Air Force brat. He finished high school in Spokane, Washington, in 1951 and entered Washington State College with the intent of getting an Air Force commission via the ROTC. After failing the eye exam, he had to lower his sights to only a BSME degree in 1955. Ray was employed at Boeing in Flight Test until he received a fellowship to Ohio State University in 1957. While at

OSU, Columbus, he worked at North American Aviation (now Rockwell/Boeing) and Battelle Institute.

Before graduating with a MSME, he was appointed to the faculty of Mechanical Engineering at Oregon State University. While an Assistant Professor at Oregon State University, took a summer job at the Lawrence Livermore National Laboratory and received a NSF grant that allowed him to pursue a doctorate at the University of California, Berkeley, finishing in 1969. His doctoral dissertation was entitled "Manufacturing Accuracy Through Control of Thermal Effects." Over 500 copies of this thesis has been distributed worldwide and has served as a reference for several standards pertaining to machine tool performance testing and metrology environments, especially the ASME B89.6.2. Before graduation from UCB, he joined the Mechanical Engineering Department at LLNL in the Metrology Group, headed by Jim Bryan. Over the next twenty-five years, he had several positions within LLNL, including Deputy Head of the Mechanical Engineering Department, Division Leader of the Energy Systems Division and Program Leader of the Precision Engineering Program. He retired from LLNL in 1988 and joined the Moore Special Tool Company as Vice President for Engineering and Technical Director. He retired from Moore in 1996.

Measurement, testing and design have always been key elements of his work. While a consultant to the Bureau of Mines in 1963, he developed a fringe counting laser interferometer dilatometer to make the first measurements of thermal expansion of Columbium (now Niobium) at 1500 degrees Celsius. The actual "fringe counting" was done by a graduate student, who counted the wiggles of a line on a strip chart recording. The original light source for this instrument was an "ozone" lamp from a clothes dryer. This was replaced with a prototype HeNe 130 mm laser from Spectra Physics, which at that time had only three employees working in a rented garage.

He met his wife, Amelia, at Boeing and was married in 1956. Amelia passed away after a fight with cancer on September 1, 2001. They have two sons, Michael and Steven.

https://prabook.com/web/eldon_ray.mcclure/377067

Education

Bachelor of Science in Mechanical Engineering, Washington State University, 1955. Master of Science in Mechanical Engineering, Ohio State University, 1959. Doctor of Engineering California, Berkeley, 1969.

Career

Mechanical engineer. Boeing Airplane Company, Seattle, 1955-1957, Battelle Memorial Institute, Columbus, Ohio, 1957-1958. Assistant professor, Oregon State University, Corvallis, 1957-1963. Mechanical engineer, deputy department head, division leader, Lawrence Livermore National Laboratory, Livermore, California, 1965-1978, precision engineer, program leader, since 1979, also chairman steering committee machine tool task force, 1978-1980.

Member, machine tool panel, National Academy of Engineering, Washington, 1980-1983. Member advisory board, adjunct professor, precision engineering laboratory North Carolina State University, Raleigh, since 1984.

Achievements

- Eldon Ray McClure has been listed as a noteworthy mechanical engineer by Marquis Who's Who.

Membership

Member, American Society of Mechanical Engineers (~~senior~~), Society of Manufacturing Engineers, American Association for the Advancement of Science, Japan Society for Precision Engineering, American National Standards Institute (vice chairman, standards committee B46 since 1979), National Tooling and Machine Association (Distinguished Service award 1986).

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