

Robert Shoemaker Memorial Plaque

The Sierrans for Responsible Resource Development (Sierrans) is pleased to present a Memorial Plaque to the City of Grass Valley to honor Robert S. "Bob" Shoemaker for his world-renowned contributions to mining industry, as well as his role in preserving the mining history and culture in Grass Valley and Nevada County. The Sierrans is a 501(c)(4) non-profit social welfare organization formed to educate the community about the benefits of responsible natural resource industries in the Sierra Nevada Mountain Region. This includes projects to maintain the historic and cultural identity of Sierra Nevada communities. Through organizations like the Nevada County Historical Society and Sierrans for Responsible Resource Development, Bob played a major role in educating residents and visitors from around the world about the local mining industry, its history, and its culture – the reason Grass Valley became known as the "*City with the Heart of Gold*".

Bob is likely best known locally for his activities at the North Star Powerhouse and Pelton Wheel Museum in Grass Valley managed by the Nevada County Historical Society. He started there as a docent, eventually succeeding Glenn Jones as Director of the Museum. When the City of Grass Valley could no longer fund a position to run the museum, Bob personally recruited over a dozen talented, highly skilled, and hardworking volunteers to keep the museum open. Under Bob's guidance and direction, these volunteers not only staffed the museum, welcoming thousands of visitors each year, but also restored and continue to maintain several pieces of historic mining equipment such as the Pelton Wheel and Cornish Pump. Because of his background and experience, Bob was able to identify and explain the function and purpose of some equipment that no one else could. In 2013, Bob was named "Citizen of the Year" and Director Emeritus of the Museum by the Nevada County Historical Society "in recognition of his years of service in the preservation and interpretation of Nevada County history and particularly the role of gold mining therein."

What many people don't know locally in Grass Valley is that Bob was an international expert in the field of metallurgy and was a major contributor to the development of heap leach mining technology, technology to process refractory ores, and technology using carbon adsorption systems for metal recovery from cyanide solutions. These processes, developed in the 1970s through the 1990s, are used throughout the mining industry on a worldwide basis today. As an engineer, Bob was involved in the design of over 80 heap leach and 40 milling operations around the world. In 2015, Bob enabled the Society of Mining, Metallurgical, and Exploration (SME) to promote education in the mining, mineral processing, and metallurgical sciences by donating \$1M for that purpose thereby contributing to future generations of engineers to follow in his footsteps. In 2016, recognizing his contribution to the mining industry, he was inducted into the National Mining Hall of Fame located in Leadville, Colorado.

The plaque is made possible by the generous donations of the Sierrans for Responsible Resource Development, Society and Mining Metallurgy, and Exploration, and individual donations by John and Dana Marsden, Jim and Laurie Arnold, and Bob and Arlene Wilder. The Sierrans recognize the assistance of the City of Grass Valley, Nevada County Historical Society, and North Star Powerhouse and Pelton Wheel Museum docents in this project. A brief biography of Bob Shoemaker is provided in the attachment.

A dedication ceremony will be held at the Museum at 933 Allison Ranch Road, Grass Valley on June 3, 2017 at 4 p.m. The Sierrans for Responsible Resource Development and Nevada County Historical Society will unveil the plaque to Bob's family, friends, and to the public at that time. A reception will be held outside in the Glenn Jones Park after the dedication.

Biographical Summary

Robert S. Shoemaker (1925-2016)



Robert S. “Bob” Shoemaker was a world-renowned metallurgist who passed away in Grass Valley in 2016 at 90 years of age. Bob was born on July 3, 1925, in Roseburg, Oregon. He graduated from Roseburg High School in June of 1943. The day after his 18th birthday, he enlisted in the U.S. Army Corps of Engineers. Following basic training he served for 2½ years in the Pacific Theatre in New Guinea, New Britain, the Philippine Islands, and Japan, achieving the rank of Acting First Sargent. After returning home from the Service, he enrolled at Oregon State College where he studied Inorganic Chemistry. In 1948, he married Barbara Jean Wiley to whom he was married for 65 years. After earning both B.S. and M.S. degrees at Oregon State University (1950 and 1951 respectively), he pursued a Masters in Science in Metallurgical Engineering at the University of Wisconsin, graduating in 1953.

Following graduation, he joined the Minerals Research Department of the Union Carbide Research Laboratories in Niagara Falls, New York, as a research metallurgist. In 1957 he was transferred to the headquarters of Union Carbide Ore Company in New York City where he worked as a metallurgist on numerous projects in Norway, Australia, and the U.S. In early 1962, he joined Bechtel Corporation in San Francisco where he progressed from Supervising Engineer to Manager of the Division of Mining & Metals. Over the course of his career, Bob was responsible for the design of many mineral-processing plants including those for iron, copper, nickel, molybdenum, coal, rare earths, manganese, uranium, gold, and silver. He worked in 25 different countries. In 1981, he left Bechtel to form his own consulting business, R.S. Shoemaker Ltd. After a 2½-year association with San Francisco Mining Associates, he moved his business to Grass Valley, California, where he continued consulting until his retirement in 2002 at the age of 77.

Bob was active in many technical societies including:

- Society of Mining, Metallurgy, and Exploration - SME (President)
- American Institute of Mining, Metallurgical and Petroleum Engineers - AIME (Vice President, President, and Director)
- Mining and Metallurgical Society of America – MMSA (President)
- Canadian Institute of Mining and Metallurgical Engineers – CIM (Member)
- Institution of Mining and Metallurgy – MIMM ((Fellow)
- South African Institute of Mining and Metallurgy (Fellow)

In 1974, Bob was awarded the AIME Richards Award for “Proficiency as a Leader of Technical Innovation and Its Application to the Engineering Design of Many Major Metallurgical Processing Facilities.” The following year, the Montana College of Mineral Science and Engineering (Montana Tech) awarded him the degree of Metallurgical Engineer honoris causa. In 2007, he was awarded the SME Presidential Citation. At Hydrometallurgy 2008 - Proceedings of the Sixth International Symposium, he was recognized for the substantial contributions he made to the field of hydrometallurgy.

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During his professional career, Bob published 28 technical papers, authored one technical volume, co-authored three technical volumes with Frank McQuiston, and co-edited two other technical volumes on metallurgy. These books are used today by universities to train new metallurgical engineers and used by the mining industry as reference manuals. His books include:

- International Symposium on Hydrometallurgy, 1973 (co-editor)
- Gold and Silver Cyanidation Plant Practice Volume I, 1975 (co-author)
- Primary Crushing Plant Design, 1978 (co-author)
- International Laterite Symposium, 1979 (co-editor)
- Gold and Silver Cyanidation Plant Practice Volume II, 1981 (co-author)
- The Circulating Load – Practical Mineral Processing Plant Design by and Old-Tie Ore Dresser, 2002

Bob spent his career mentoring and developing young metallurgical engineers. In 2015, he donated one million dollars to the SME for Ph.D. Fellowship and Academic Career Development Grants. The grant program focuses on rebuilding the U.S. mining school faculty pipeline to address the decline of viable tenure-track candidates at universities offering degrees in mining engineering, mineral processing, or extractive metallurgy.

Bob was also involved in many local organizations after his retirement including:

- North Star Powerhouse and Pelton Wheel Museum (Docent, Director)
- Nevada County Historical Society (Member, Treasurer)
- Sierra Nevada Mining and Industry Council (Member)
- Sierrans for Responsible Resource Development (Member)
- Empire Club (Member)
- Senior Citizens Foundation (Trustee)
- Nevada County Grand Jury (Member)
- Loma Rica Homeowners Association (Member)

Bob was predeceased by his wife, Jean B. Shoemaker, and his daughter, Molly Shoemaker Schaechtele. His two sons, Steve and Scott Shoemaker, his daughter, Jan Shoemaker, four grandchildren and one great-grandchild, survive him.