



IAIN FINNIE

1928–2009

Elected in 1979

“For contributions in high temperature design, erosion, and brittle fracture of materials.”

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IAIN FINNIE, professor emeritus of mechanical engineering at the University of California, Berkeley, and one of the world’s leading experts on the fracture of materials, died on December 19, 2009, from pneumonia and complications of Parkinson’s disease. He was 81.

Finnie was a leading expert on engineering materials. The textbook he coauthored with William R. Heller, *Creep of Engineering Materials* (McGraw-Hill, 1959), is a classic.

“His pioneering work on erosion of materials has been emulated, but never equaled, by generations of subsequent researchers,” said Ian Hutchings, professor of manufacturing engineering at the University of Cambridge in England. “His early papers remain very highly cited.”

In the course of his 32-year career at UC Berkeley, Finnie mentored more than 40 doctoral students with whom he wrote more than 185 papers on fatigue of metals, crack propagation, and erosion of materials. He served as chair of the Department of Mechanical Engineering from 1979 to 1987. He held a strong record for recruiting some of UC Berkeley’s top talent and for encouraging underrepresented minorities to pursue careers in engineering. Many of the faculty members he hired have become university presidents, deans, and distinguished faculty worldwide. He remains beloved by all of them.

Iain Finnie was born on July 18, 1928, to Scottish parents in Hong Kong, where his father worked as director of a British-owned dockyard. In 1940, Finnie, with his mother and sister, moved to British Columbia when British civilian women and children were ordered to evacuate Hong Kong during World War II.

After graduating from high school after only two years, Finnie left Canada to attend Scotland's University of Glasgow, where he graduated in 1949 with a bachelor of science degree with first-class honors. He completed his M.S. and Sc.D. degrees in mechanical engineering at the Massachusetts Institute of Technology (MIT) in 1950 and 1953. While at MIT he was trained by such luminaries as Jacob Pieter Den Hartog, a world expert on mechanical vibrations; Wallodi Weibull, author of what is widely considered the world's most popular probability model for life data; and Milton C. Shaw, a renowned materials expert.

After graduating from MIT, Finnie moved to Emeryville, California, to work for Shell Oil Development Company. In 1961, Finnie joined the faculty at UC Berkeley as an associate professor and was promoted to full professor just two years later.

In 1965, as part of a UC team led by Erich Thomsen, a recently deceased Berkeley emeritus faculty member, Finnie helped establish the engineering department at Universidad Católica in Santiago, Chile.

In 1967 he received a Guggenheim Award, a rarity for engineers, to study brittle solids—research that took him from a South African gold mine to a rock drilling site in Switzerland. In 1974 he received an honorary D.Sc. degree from the University of Glasgow.

Iain Finnie was elected to the National Academy of Engineering in 1979 and was honored with recognition by appointment to honorary membership in the American Society of Mechanical Engineers International (ASME) in 1983. He received the ASME Nadai Medal in 1982. When he retired from UC Berkeley in 1993, Finnie received the Berkeley Citation, the highest honor the campus bestows.

In 1969, Finnie married Joan Roth McCorkindale, a widow with two young daughters, Carrie and Katie. The couple had a daughter, Shauna. All three daughters pursued graduate degrees, including two in mechanical engineering, and each credits her father's influence for her academic and professional drive.

Finnie spent two sabbatical leaves, in 1976 and 1987, in Lausanne, Switzerland, where he was a visiting professor at L'École Polytechnique Fédérale de Lausanne (EPFL).

"Iain was a great scientist and engineer, highly intelligent and of great originality," said Wilfried Kurz, EPFL professor emeritus of materials science. "He gave lectures of outstanding clarity. He was a gentleman, and he had great humor. Often, I was laughing to tears with him."

Finnie remained close to his students over the years, sharing his humor, passion for skiing, and hospitality, his colleagues and family recalled. At one of many gatherings at Finnie's Berkeley home, his graduate students wore T-shirts labeled "Finnie's Flaws" in honor of their research on fracture mechanics, and gave him a "Master Flaw" T-shirt.

His wife, Joan, wrote:

"Iain Finnie had dancing eyes, always with a twinkle and always with jokes and puns on words. It kept anyone close to him listening attentively.

His passion was skiing. He managed to include trips to Alta, Utah, en route to or by return from conferences or consulting. He was asked to be a ski instructor at several ski resorts, and he was tempted. However, his passion for engineering was greater. Even when he served me tea in bed in the morning (a Scottish tradition he maintained almost to his last days), he often would explain some engineering problem or talk about his most recent paper. He could get carried away. His students laughed that he wrote equations and diagrams on napkins when they went out for coffee, also a daily tradition he enjoyed. They saved the napkins and found they were helpful when studying for exams. His exams usually included

actual occurrences. One student groaned when he saw the exam, 'Oh, no, this was Mireille's cracked Pyrex container.'

He traveled a great deal from his early age going to and from Hong Kong and Scotland. He enjoyed describing his flying boat experiences when the amphibious planes landed on water, and the few travelers stayed in exotic places and pleasant hotels. He once counted that he had visited over 70 countries. We were fortunate to be invited by the Chinese government in 1979 to visit China with nine professors and their wives from Engineering, UC Berkeley. The group remained close friends. Former students and colleagues invited us, and we had superb trips to Turkey, Greece, Egypt, Israel, Japan, Indonesia, and Europe. Many of these friends traveled to Berkeley in Sept., 2010, for the Symposium in his memory at UC Berkeley. Even a former UC B forestry student who helped Iain in the garden came from Australia.

He was totally committed and involved with our family life. He liked puttering with household projects, working in the garden, and especially loved our parties. We regularly gave a Robbie Burns party, complete with haggis and poetry readings by the guests. He was an incredible dad, tough but fair, claiming to be a 'benevolent dictator,' ready to assist with homework. He could solve problems easily, but outnumbered by females, he said topics on hair and diets were outlawed at the dinner table. When the girls were young, he told night-time stories, even going to the library to authenticate his stories. They still remember 'Nanook of the North.' One of his early papers was about put-put boats. He took his little boats and water tub to each of the girls' classrooms. The grandchildren also delighted in his demonstration and explanation. He was an avid reader of history and a great storyteller, making it come alive.

When he no longer could ski, his passion became swimming. He swam every day and loved when we went to Maui to swim in the ocean. He loved good food and good wine. He loved life!”

Iain is survived by his wife, Joan Finnie (of Berkeley); three daughters, Carrie McCorkindale (of Fremont, California), Katie Croxdale (of Edina, Minnesota), and Shauna McIntyre (of Encinitas, California); three grandchildren (a fourth was born in February 2010); and his sister, Jean Mackie (of Hong Kong).