




OBITUARIES

Applied Mathematics, Emeritus. “They loved it so much that they mimicked it. Hans knew it, but he didn’t mind.”

Friends and colleagues fondly remembered his endless string of anecdotes and his wit. Colleague Robert Liebeck told one story that took place at the cafeteria, where Bill Sears (PhD '38) turned a blind corner and almost bumped into Liepmann, who was carrying a tray. “My God, I almost hit you,” Sears said. Without missing a beat, Liepmann answered, “I told you not to call me that in public.” According to Von Kármán Professor of Aeronautics, Emeritus, Anatol Roshko (MS '47, PhD '52), he was also known for his penchant for “the friendly insult, of which he was a master.”

Roshko added that he was never politically correct. “He disliked bombast and self-importance, and here his agility with a polite insult often came in handy.”

Liepmann inspired and encouraged generations of students, but his message to the class of 1982 is applicable to us all: “Remember that there is an outside world to see and enjoy. Add a fourth dimension: to know, to understand, to do—and to dream.” —MW 

R. DAVID MIDDLEBROOK

1929-2010

R. David Middlebrook, emeritus professor of electrical engineering, died on April 16. He was 80.

Middlebrook passed away at his home with family by his side. Born in 1929, he was raised in Newcastle, England, and came to the United States in 1952 on the Queen Mary.

Middlebrook wrote a pioneering transistor textbook that included mathematical models to help engineers use transistors in their circuit designs; a later book focused on differential amplifiers. In 1970, he founded the Caltech Power Electronics Group, which graduated 36 PhD students, many of whom are now leaders in the power electronics field.

A distinguished international lecturer, Middlebrook was particularly noted for presenting complex material in a simple, interesting, effective, and entertaining manner. He was especially interested in design-oriented circuit analysis and measurement techniques, and his Structured Analog Design course was attended by design engineers and managers from the United States, Canada, and Europe.

Middlebrook also taught in-house analog-design courses for more than 20 years, working with companies such as AT&T, Boeing, Ericsson, Hewlett Packard, Hughes Aircraft, IBM, Motorola, Philips, Tektronix, TRW, and many others.

He is well known for his Extra Element Theorem, which describes the effects of adding a single element to a


circuit. This theorem and its variations are widely used in circuit design and measurements.

Middlebrook received his BA and MA degrees from the University of Cambridge, and his MS and PhD degrees from Stanford University. He joined Caltech as an assistant professor in 1955; he was named associate professor in 1958, and professor in 1965. He became emeritus in 1998.

In 1996, the Caltech student body recognized him as an outstanding educator with its Feynman Prize for Excellence in Teaching.

“For more than 40 years, Dr. Middlebrook taught his students a way of thinking, not just a body of knowledge,” the award’s citation noted. “[H]e demonstrated to thousands of delighted students how to simplify complex subjects and how to marry theory and experiment. He also taught them a lesson in scientific modesty, as he constantly adopted the best solutions generated by his students.”

Middlebrook was a Life Fellow of the IEEE and a Fellow of the IEE (UK). In addition to the Feynman Prize, he was the recipient of the Franklin Institute’s Edward Longstreth Medal, the IEEE’s Millennium and Centennial medals and its William E. Newell Power Electronics Award, and the Award for Excellence in Teaching, presented by the Board of Directors of the Associated Students of the California Institute of Technology.

He leaves behind a wife, Val, sons John Garrison and Joe Middler, daughter Trudy Wolsky, and grandchildren Chad and Teagan.—JW 



EDWIN S. MUNGER

1921-2010

Edwin S. Munger, professor of geography, emeritus, died on June 15 at his home in Pasadena, California. He was 88.

Munger was a renowned specialist on Africa, particularly race and ethnic relations. In his dozens of trips to the continent, he visited every African country, even living there for a decade.

Born in La Grange, Illinois, Munger received his BS, MS, and PhD degrees from the University of Chicago. He was a visiting lecturer at Caltech throughout the 1950s before becoming professor of geography in 1961. He became professor emeritus in 1988.

Munger took his first trip to Africa in 1947—financed by his Army poker winnings—and his second in 1949 as the first Fulbright Fellow to Africa, attending Makerere University, Kampala, Uganda. He was an Institute of Current World Affairs (ICWA) fellow in Africa from 1950 to 1954, and from 1955 to 1961 was an American Universities Field Staff member, during which time he lived a year each in Ghana, Nigeria, Kenya, and South Africa, while at the same time serving on the faculty of the University of Chicago.

He was an evaluator for the Peace Corps in Uganda (1966) and Botswana (1967) and chairman of the U.S. State Department Evaluation Team in South Africa (1971).

“One of the joys of being a geographer is that the world is my oyster,

world travel my most stimulating teacher,” he said.

His passion for the region led to his founding of the African Studies Association and the U.S.–South African Leader Program, and later, he served as a board member of the South African Institute of Race Relations. For 14 years he served as president of the L.S.B. Leakey Foundation, working to increase scientific knowledge and public understanding of human origins and evolution. He was also instrumental in launching the foundation’s Baldwin Fellowships, which have helped more than 40 Africans obtain advanced degrees in archaeology. In 1985, Munger founded the Cape of Good Hope Foundation to help mostly black universities in southern Africa, and subsequently sent more than \$3 million worth of books to help those institutions. He edited the *Munger Africana Library Notes* (1969–1982) and amassed a library of over 60,000 volumes on sub-Saharan Africa, the largest private collection in the U.S., and a unique cultural resource.

He was president of the Pasadena Playhouse (1966) and one of the founders of Caltech’s Friends of Beckman Auditorium.

A respected teacher, Munger in 1976 received the top teaching prize given by Caltech’s student body and in 1980 was made an honorary member of the Caltech Alumni Association. He continued to be a presence on the Caltech campus by joining notable faculty members at the campus faculty club—the Athenaeum—“round table,” a lunchtime gathering of scientific leaders from various disciplines who meet to socialize and hold discussions of the highest order.

In 1993 he received the Alumni Citation Award for public service from the University of Chicago.

Later in life, he began collecting chess sets and at one point had amassed more than 400 ethnic chess sets, from the more than 250 countries and islands that he had visited.

Munger was a prolific author, producing numerous books on Africa.

Munger leaves behind his wife of 40 years, Ann Boyer Munger; daughter Betsy Owens from his first marriage with the late Elizabeth Nelson Munger; nephews Christopher and Roger; and nieces Jennifer, Trudie, and Sarah.—*JW* **ess**