

MEMORIAL RESOLUTION**JAMES EDWIN RANDALL****(July 27, 1924 — July 27, 2013)**

James Edwin Randall died at home in the same town, Bloomington, Indiana, and on the same day as his birth. He moved to Bedford with his parents, Thomas and Blanche Randall, in 1926. Following his graduation from high school there, his enthusiasm for ham radio led him to study electrical engineering. He served in the Navy during World War II as a radio operator. He met Barbara Louise Feucht in 1948, had a long courtship including the summer she spent in Georgia, and they married in 1949. He even sold a prized shortwave radio so that he could buy a car so he could see her. They were married for sixty-three years.

Jim received a BS from Purdue in 1947 and worked for Collins Radio in Iowa, where he became interested in the intersection of physics and biology. His first research effort involved helping the University of Iowa Department of Physiology design instruments to measure effects of microwaves. Jim received an MS in physiology from the University of Iowa in 1952 and a PhD in biophysics from Ohio State in 1955. He then moved to the University of Missouri and taught a new course in the emerging field of biophysics. He published two editions of a book titled *Elements of Biophysics* in 1958 and 1962. In 1963, he moved to Northwestern University School of Medicine as a full professor of physiology, and he received National Institute of Health funding for a Laboratory Instrumentation Computer, a forerunner of modern laboratory technology, and used it for research on body tremors. In 1968, Jim moved his family back to Bloomington when he joined Indiana University as a professor of physiology and biophysics.

With the development of personal computing, Jim pioneered use of computers for research and teaching simulations. He even built his own Altair computer, which used toggle switches to input data in binary code. He began developing programs to simulate body processes as teaching aides, mailed via floppy disc to hundreds of physiology instructors around the world. This work resulted in two editions of *Microcomputers and Physiological Simulations*

that were published in 1980 and 1986. Although he retired in 1989, Jim's passion for computing continued.

One of his last papers was published in 1997 in the *American Journal of Physiology*. "Advances in Physiology Education" discussed teaching physiology and the World Wide Web: electrochemistry and electrophysiology on the internet. This seminal paper indicated that medical education can be very effective when using accurate simulation exercises coupled with access to knowledge available through the Web.

As a teacher, Jim effectively demonstrated how the engineering approach to problem solving could be used in biology and medicine. His graduate students published important observations of physiologic tremors that changed the course of tremor research in several tremor disorders. Medical and graduate students viewed him as an invaluable resource who was genuinely interested in their success.

He will be missed by his wife of sixty-three years, Barbara; their children, David, Chris, Karen, and Sara; grandson, James Ian; and cousin, Susan Bartlett.

In recognition of his devotion to the university and his profession, this resolution of appreciation is presented to the Bloomington Faculty Council to become part of the minutes of that body. Copies of the resolution will be sent to his wife Barbara.

John B. Watkins III
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