



JAMES D. LIVINGSTON

1930–2019

Elected in 1994

“For developing the relationship between microstructure and the superconducting, ferromagnetic, and mechanical properties of metals and alloys.”

BY CHRISTOPHER A. SCHUH, CAROLINE A. ROSS,
AND RACHEL A. KEMPER

JAMES DUANE LIVINGSTON III threw himself enthusiastically into careers as a researcher, educator, and author.

He was born June 23, 1930, in Brooklyn, New York, to James Duane and Florence Bouleee Livingston. He died May 10, 2019, at age 88, alongside his wife Sherry Penney, in Sarasota, Florida, victims of carbon monoxide poisoning from a new car with a keyless ignition.

Jim was educated at Cornell University, where he graduated with a bachelor of engineering physics (1952), and at Harvard University, where he earned a master of arts (1953) and PhD (1956), both in applied physics. He then embarked on a 33-year career as a research physicist at General Electric Corporate Research and Development in Schenectady, where he focused on magnetic, superconducting, and mechanical properties of metals and alloys. He also held periodic visiting faculty appointments at Göttingen University, Rensselaer Polytechnic Institute, and Massachusetts Institute of Technology.

His research was reported in several papers and patents, and he was proud that his findings were useful to other scientists and cited in publications from the 1960s to the present. His work on structural materials (including CoSi eutectoid alloys) and the mechanical and electronic properties of materials resulted in the publication of *Effect of Metallurgical Variables*

on *Superconducting Properties* (with H.W. Schadler; Pergamon Press, 1965).

In 1985 he married Sherry Hood Penney and soon after they moved to the Boston area where she had been appointed chancellor of the Boston campus of the University of Massachusetts.

In 1989 Jim left GE and for the next 9 years was a senior lecturer in MIT's Department of Materials Science and Engineering, teaching electrical, optical, and magnetic properties of materials in the core MSE curriculum. The resulting *Electronic Properties of Engineering Materials* (Wiley, 1999) was based on his undergraduate lectures.

Although the position was part-time, he was fully committed to the students and their needs and to the institute. He remained active in research and clearly enjoyed collaborating with colleagues, mentoring graduate and undergraduate students, and offering his expertise and industrial experience to MIT's teaching and research enterprise. He taught a variety of classes, was an advisor to first-year students (for which he received the Best First-Year Advisor Award) and thesis advisor for graduate students, participated in professional education programs, and generally served as an ambassador for materials science and STEM education.

His contributions over the decades were recognized by a Coolidge Fellowship, GE's highest scientific award; election as a member of the NAE and fellow of the American Physical Society and of ASM International; and a Distinguished Career Award from AIME.

Jim's engaging conversational style translated well on the page, and later in his career he expanded his writing to reach a broader audience: *Driving Force: The Natural Magic of Magnets* (1996) and *Rising Force: The Magic of Magnetic Levitation* (2011, both published by Harvard University Press) are popular science books on magnetism.

He was keenly interested in history and genealogy, and wrote *A Very Dangerous Woman: Martha Wright and Women's Rights* (with his wife Sherry H. Penney; University of Massachusetts Press, 2004) and *Arsenic and Clam Chowder: Murder in Gilded*

Age New York (State University of New York Press, 2010), historic accounts of two of Jim's ancestors.

He was also active in local politics, serving 12 years as Democratic committeeman in the town of Glenville (1963–75), and in the campaign against the Vietnam War. In addition to being an accomplished tennis player, he was active on the stage in town drama productions and, at GE, in the annual Christmas musicals, for which he often wrote the libretto and lyrics. In fact, he even wrote songs and poems to help convey scientific principles. His creativity and sense of humor were appreciated and enjoyed by his students, colleagues, friends, and family.

Jim said many times that, of all his professional accomplishments, he was proudest of the NAE election—but even prouder of his daughters, Barbara, Joan, and Susan. He is survived by his three daughters from his first marriage, to Nancy Lee Clark, and one granddaughter; and by Sherry's children Michael and Jeff Penney and two grandchildren. He will be greatly missed by them and by many more family members, friends, and colleagues.