

At a meeting of the FACULTY OF ARTS AND SCIENCES on May 1, 2018, the following tribute to the life and service of the late Leonard Kollender Nash was spread upon the permanent records of the Faculty.

LEONARD KOLLENDER NASH

BORN: October 27, 1918

DIED: November 9, 2013

“He doesn’t really lecture—he dances and cajoles.” When Leonard K. Nash, William R. Kenan, Jr., Professor of Chemistry, *Emeritus*, died at age 95, droves of former students, across decades and countries, lauded his rare ability to inspire and enchant. A 1977 Harvard Crimson *Confé Guide* named him one of the “top ten lecturers teaching in the College,” a title that fails to capture the eccentric, passionate, and benevolent flair that stimulated generations of students to pursue chemistry.

Leonard enrolled in Harvard College in 1935, at the tender age of 16. After his undergraduate studies, he continued on at Harvard to earn his doctorate in analytical chemistry in 1944. He then taught briefly at the University of Illinois before returning to Harvard in 1948 as a faculty member. Here, he conducted research in thermodynamics and statistical mechanics, chaired the department from 1971 to 1974, and converted countless students to a love of chemistry.

Leonard commanded entry-level classes with contagious joy. Once, he swallowed a beaker of what appeared to be fresh blood, perhaps to capture the attention of a lethargic freshman class or demonstrate an obscure scientific point. Full of relentless energy, he would run across his amphitheater to set up his own slides or respond to a student’s incorrect answer with a playful jab. He often lingered after lectures to answer questions, held inexhaustible office hours for those struggling to understand, and invented memorable acts to demonstrate difficult concepts. He was a magnanimous performer.

Leonard attracted students from other disciplines and careers to pursue chemistry instead. Martin Karplus was one such student. A future Nobel Prize winner, he credits Nash for influencing his decision to study the “biology of people” rather than become a doctor. Another distinguished chemist, Kent R. Wilson, also cited Leonard for his decision to switch from political science to chemistry. His 1999 article “Summing Up” (*Journal of Physical Chemistry*) relates the moment when, during a lab contest, Leonard enraptured him. Wilson identified eight of ten unmarked liquid solutions. Unable to differentiate NaCl from KCl, he tasted them. Leonard was not impressed. Though Wilson’s method produced the correct

answers, Leonard reopened the competition and a second student eventually identified all solutions. During the next class, Leonard

placed the contest prize, a copy of the *Handbook of Chemistry and Physics*, upright on the lab bench. He said that he had a difficult problem, that Wilson had quickly gotten the right answer, but by a potentially dangerous method, and that “Smith” had gotten the correct answer, but had taken an hour longer and required hints. What to do about the prize? Surprising us all, he reached back for the fire axe and swung it to neatly split the book in two, handing half to each of us. I was crestfallen, my prize ruined. . . . Then, to perfect effect, after waiting just the right amount of time, he reached under the lab bench and took out two new copies of the *Handbook*. He had captured me. I switched my major to chemistry and physics.

During his four decades of teaching at Harvard, Leonard hosted lunches at Chinese restaurants, offered to fix the damaged roof of a former student’s new home, and traded an hour of tutoring for an hour of babysitting so his wife, Ava, could enjoy Harvard Square. Prized students learned his code name “Swordfish” granted them access to Leonard through his home phone, long after both class and office hours ended. “Swordfish” even held regular meetings with a dedicated group of students—including Martin Karplus and future Stanford Law Professor John Kaplan—to address questions far beyond those covered in his Elementary Chemistry course. Leonard gave his time and mind generously and delighted in the well-being and success of those around him.

Leonard’s rare talent for teaching did not eclipse his scientific achievements. He worked on the Manhattan Project during World War II and helped elucidate thermodynamics. He also gravitated to the philosophy of science and published *The Nature of the Natural Sciences*, which refuted scientific revolutions and promoted an evolutionary epistemology of science. In close partnership with J. B. Conant—chemist and President of Harvard from 1933 to 1953—and Thomas Kuhn, Leonard developed and then championed a course in Harvard’s nascent History of Science program. The course, which examined obsolete theories of science (geocentric, phlogiston, etc.) against their replacements, stimulated not only the students but its three pioneering leaders as well. In fact, Kuhn later dedicated his first book to Nash “for a vehement collaboration.” The course propelled Leonard’s future passion for metascience, philosophy, and the social dimensions of science.

Leonard’s scientific and philosophical research and publications enhanced his dedication to science education. He authored two successful textbooks that remain in print today: *Elements of Statistical Thermodynamics* and *Elements of Chemical Thermodynamics*. A review of his textbook *ChemThermo* from the *Journal of Chemical Education* praised his ability to demonstrate “‘advanced’ but fundamental concepts in a form accessible to the first-year student.” Though today’s first-year students miss the in-person splendor of his classes, they

can still benefit from Leonard's ability to synthesize the most challenging concepts for fledgling chemists.

An only child of Adolph and Carol Nash, Leonard was raised in New York City before he found a home near Cambridge, Massachusetts. Ava (née Byer), his wife of 63 years, balanced Leonard's energy with calm humor. Before her death, Ava developed dementia and Leonard, with a rare expression of sadness, grieved for the only other person who knew his memories. It was not meaningful, he remarked, to remember alone. With memories of extensive European travel, Maine canoe trips, lunches with fine red wines (until he lost his sense of smell in his eighties), Zipcars and Restaurant Week, Chinese food and balancing equations about pressure and volume, he had too much joy to lose. And Leonard's legacy lives on through his children and the many students—now professors, innovators, and pioneers—he awed and inspired.

Respectfully submitted,

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Charles Lieber
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