Memorial Resolution for Professor Emeritus of Chemistry, Ned D. Heindel

"HOW CAN I HELP?"

That question defines the personal and professional life of Professor Emeritus of Chemistry Ned D. Heindel, who died at the age of 85 at his home, the Hexenkopf Baurenhof in Williams Township, on June 27, 2023. Everyone who worked with him on any of his wide-ranging activities knew that his offer of help was sincere, reliable, and without strings attached.

Ned began his career by obtaining a B.S. in chemistry and mathematics from Lebanon Valley College (1959), a Ph.D. in organic chemistry from the University of Delaware (1963), and an NSF postdoctoral fellowship at Princeton University in medicinal chemistry (1964). His teaching career began with successive appointments at the Wilmington Campus of the University of Delaware, Ohio University, Marshall University, and at Lehigh University, where he completed 52 years of teaching, research, and service to the community in 2018, whereupon he transitioned to the position Professor Emeritus, and immediately signed up as Distinguished Senior Research Scientist, a rank he held actively until his recent passing. This simple litany of degrees and dates, however, tells little of his story.

"How can I help?" -- service to science and humanity: from antimalarials to Homeland Security

Science creates knowledge, and Ned created chemical knowledge through a lifetime of vigorous research, resulting in over 300 journal articles and 20 patents. Upon his arrival at Lehigh in 1966, he began a study of synthetic approaches to antimalarial compounds. In the decade of the 1970s, he moved on in collaboration with physicians and scientists at Hahnemann Medical School (now Drexel University School of Medicine) to study the synthesis of site-specific radiopharmaceutical agents for the diagnostic imaging of tumors, then shifted in the 1980s to radiosensitizers for the eradication of tumors, adding to his collaborations emerging biotechnology firms such as Centacor, Inc. In the 1990s, he initiated what would be his longest running collaboration with scientists at the University of Medicine and Dentistry of New Jersey (UMDMJ), Robert Wood Johnson Medical School, in the study of photoactive compounds for the treatment of several proliferative diseases. During this period, his group at Lehigh also accomplished seminal work in the activation of dextran as a carrier for radiotherapeutic agents. Throughout the first two decades of the new century, Ned continued to work with colleagues at UMDNJ on agents targeted against the damage caused by vesicating agents used in warfare that are of high interest to the nation's homeland security efforts. Ned also directed the medicinal chemistry research of Azevan Pharmaceuticals, a start-up firm exploring the development of vasopressin antagonists, including their application for use to diminish aggressive behavior. All these explorations in the field of medicinal chemistry were aimed at helping to solve very human problems: malaria, the diagnosis and treatment of cancer and other proliferative diseases, and even the damage caused by agents of destruction in war.

"How can I help?" -- service to students in classroom and laboratory: at home and at a distance

The scope of the work outlined in the previous section must be viewed in the context of Ned's roles of educator and mentor to 40 doctoral students, 168 masters students, and 23 research scientists and postdoctoral associates, but his influence extended into the undergraduate realm as well. Over 40 years ago, Ned received the Briody Award from the University, in large part for leading a team at Lehigh to provide a program of guaranteed admission to medical school. He was pivotal in negotiations with two Philadelphia medical schools to establish the program and to make it work for Lehigh undergraduate students. True to the form which was his signature, his involvement did not end at the negotiating table or at the administrative level: he traditionally taught the special summer organic class for the pre-med students and personally advised most of the students as well.

In the area of delivering opportunities for advanced education to chemists, over 30 years ago Ned spearheaded the effort at Lehigh to launch a continuing education program, first via satellite TV and then by on-line video for asynchronous delivery, to chemists employed in industry. Lehigh's program was the first distance education program in the nation for employees in the chemical and pharmaceutical industry, and at its peak enrolled over 300 students from 51 companies nationwide.

"How can I help?" -- service to the profession: from museums to publications

From 1985 through 1996, Ned served as a member of the Board of Directors of the American Chemical Society (ACS), one of the largest science societies in the world, and as the nationally elected President of the Society in 1994. That honor alone merits recognition, but as was typical for Ned, he used the opportunity as a platform for productive work for the profession and its practitioners. While a Director, with three other colleagues, he was a science advisor to the exhibit 'Science in American Life' at the Smithsonian Institution in Washington, D. C. Ned was a most effective liaison between the disparate worlds of the chemist and the museum curator. He provided advice on science content but also was a conduit for the sometimes thorny and challenging communication between the staff at the Smithsonian and the ACS. When the sociologists stressed the doom and gloom of the bomb shelter and the evils of fertilizer while the chemists saw only 'better things for better living,' Ned helped find the common ground on which the exhibit was built. At that time, an estimated 6 million people visited the American History Museum at the Smithsonian annually; the exhibit, which ran from 1994 to 2011, was the first in the nation that combined a historical and sociological view of how science and American society shaped each other. Arguably no other public outreach activity of the ACS engaged so many people as this exhibit, and Ned was an all-important interface between the ACS and the Smithsonian and helped the two groups achieve consensus on the content of the final product.

Ned worked throughout his entire career to expand and improve the portfolio of ACS journals and to encourage the Society to broaden its horizons. He was among the first to encourage the Society to co-publish specialized, high-quality journals with other scientific societies. With his help, the Society and its governance recognized that a narrow definition of chemistry could not be sustained, and he guided the initial expansion of publications into areas of pharmaceutical chemistry, bioconjugate chemistry, and chemical health and safety without compromising the quality, strength, and impact of the Society's flagship journals.

Ned also served on the Board of Trustees of Keystone College (LaPlume, PA) and on the Boards of the Council for Chemical Research, the International Union of Pure and Applied Chemistry – American Division, the Chemical Sciences Roundtable of the National Academy of Sciences, the Pennsylvania Drug Discovery Institute, and CentCom Advertising. He chaired two task forces of the National Academy of Sciences / National Research Council which issued reports, one recommending laboratory safety procedures and safe handling techniques for hazardous materials by small chemical laboratories in developing countries, and a second addressing the setting of prices by publishers of chemical journals.

His avocational interest in history was reflected in his life outside chemistry and Lehigh. He published 16 articles and five books on topics of regional history, among them *Hexenkopf: History, Healing and Hexerei*, and *Iron, Armor, and Adolescents: A History of Redington and the Carter Junior Republic.* A life-long interest in patent medicines resulted in the book *Medicine, Music, and 'Money' Munyon*, the story of James Munroe Munyon, a patent medicine manufacturer and infamous quack whose firm was the first indicted after the passage of the Pure Food and Drug Act in 1906. With his wife, Linda, Ned directed the Williams Township Historical Society and published many articles in its newsletter, *The Pastfinder*. He served on the Boards or Executive Committees of several historical organizations including the Northampton County Historical and Genealogical Society, the Science History Institute and its Heritage Council, and the Division of the History of Chemistry of the ACS.

"How can I help?"

Everyone who knew Ned has stories to tell about how he helped them in times of need, in times of change, and in times when they just needed advice, counsel, or an ear to hear them. He had a seemingly boundless reserve of energy to devote to people and projects. A comment allegedly made about Winston Churchill by Franklin D. Roosevelt is pertinent to describe Ned, too, and only partially in jest. Roosevelt said, "Winston has 100 ideas every day, four of which are good." But how many of us have even one idea a day – good or not? The truth of the matter is simple: Ned percolated with ideas, information, and a startling drive to produce results, to help people in their daily lives, and to leave the world a better place. A level of productivity, an intensity of commitment to work, and a devotion to the ideal of service as a way of life all characterized every aspect of Ned's being. He was a generous and kind friend. There is certainly no one else quite like him, and we miss him now and always.

Ned is survived by his wife of 63 years, Linda (Heefner) Heindel (retired Dean of the Comenius College Division of Moravian College [now Moravian University]), four cousins and two nephews. We extend to them our heart-felt sympathy at this sad time.

Respectfully submitted,

Greg Ferguson
Bob Flowers
Natalie Foster
Jim Roberts