

## RONALD A. HITES

Distinguished Professor Ron Hites retired as an Indiana University distinguished professor emeritus in January 2020, after a prominent 51-year career. Dubbed a “founding father of environmental chemistry,” Ron is a product of the Detroit public schools, where his interest in science emerged. He worked his way through school, starting from age 12 as a paperboy and later as a bagboy in a supermarket, with a goal of saving for college. However, during his adolescence, he spent these savings on building a sailboat from scratch under his father’s guidance. Luckily, Ron was given a full-ride scholarship at Oakland University, which was located near his home, so he lived at home and worked his way through college. He graduated from Oakland University with a degree in chemistry and decided to continue his education at the graduate level. He was accepted at the Massachusetts Institute of Technology (MIT) in 1964, where he studied analytical chemistry and focused on mass spectrometry. He graduated from MIT in 1968 and took a brief postdoctoral position with the United States Department of Agriculture in Peoria, Illinois.

In 1969, he returned to MIT to work on the Viking project, which landed a mass spectrometer on Mars in 1976. At about this time, the United States Environmental Protection Agency was formed as a result of the environmental movement that had taken hold in the United States and Europe. Ron realized that his background in mass spectrometry could be useful for the analysis of pollutants in the environment. He started with a simple project, studying water taken once a week from the Charles River in front of MIT. Analyses showed the presence of polycyclic aromatic hydrocarbons, and he published these results in *Science* in 1971. His research on the identification and quantitation of previously unsuspected pollutants in environmental samples was immediately recognized as novel and significant.

In 1972, Ron was appointed as an assistant professor of chemical engineering at MIT, where he realized that to be a successful faculty member in a technical department, one needed to have substantial external research funding. This meant big grants from federal agencies. His main idea was to apply mass spectrometry to the identification of



compounds that should not be in the environment. After two years, he had sufficient external funds to expand his laboratory, and by 1978, he had a research group of seven postdoctoral associates and one doctoral student.

In 1979, Ron was recruited to join Indiana University’s new School of Public and Environmental Affairs, and he was delighted to move to Bloomington. He continued to be successful with extramural federal research support, mostly from the U.S. Environmental Protection Agency and the Department of Energy. His research asked simple questions: What persistent organic compounds are in the environment, and what are their sources and fates in the environment? One of the famous stories in environmental chemistry is based on Ron’s research on dioxins, a group of ubiquitous toxic environmental pollutants. By 1979, it was clear that dioxins were byproducts of the production of chlorinated phenols, but the finding of dioxins in municipal waste combustion effluents led Dow Chemical researchers to suggest that “dioxins have been with us since the advent of fire.” By measuring dioxins in dated sediment cores from the Great Lakes, Ron was able to demonstrate either that fire had begun in this area in 1935 or, more likely, that dioxins were produced by the combustion of chlorinated phenol-contaminated waste. This finding led to measurements of dioxin concentrations in atmospheric samples, of their deposition fluxes to water and land, and of their gas-phase reaction kinetics. During the last 20 years, Ron has concentrated his research on the

atmospheric transport of pollutants to the Great Lakes. His work has had an effect on environmental policy and, as a result, the Great Lakes are cleaner now than they were 50 years ago.

Over his 40 years at Indiana University, Ron brought in over \$30 million of external funding. He has more than 400 scientific papers, and in total, they have been cited over 23,000 times. He has trained almost 80 doctoral students and postdoctoral associates, many of whom are now professors in their own right. He served as the president of the American Association for Mass Spectrometry in the late 1980s. He is a fellow of the American Association of the Advancement of Science, a charter fellow of the American Chemical Society, and a charter fellow of the Society for Environmental Toxicology and Chemistry. He is a co-author of a widely used textbook, *Elements of Environmental Chemistry*, which is now going into its third edition.

Ron is beloved by generations of students and colleagues for being a strong leader, a great teacher, and a supportive mentor. His colleagues, who appreciate his dry sense of humor and admire his brilliant mind, are lucky that he will be around as a distinguished professor emeritus.

*Amina Salamova  
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