Remembering a pioneer of environmental health science

Colleagues honor Bernard "Bernie" Weiss (1925-2018)—a remarkable scientist, thinker, visionary and writer

One rarely is lucky enough to drive the early evolution of a new scientific discipline, but Bernard (Bernie) Weiss was there, always at the forefront as the field of behavioral toxicology took shape.

And along with the many students he inspired, he remained there throughout his career. Blending psychology, toxicology, and technology, Bernie Weiss shaped this discipline using new methods to explore the subtle, and not so subtle, effects of environmental chemicals on behavior and the nervous system.

He was a remarkable scientist, thinker, visionary, and writer. Bernie Weiss passed away on the morning of January 22, 2018.

Bernie was born in Brooklyn, NY, in 1925 and served in the Air Force from 1944-45. He earned a Bachelor of Arts degree in Psychology from New York University in 1949, and a Ph.D. in Experimental Psychology in 1953 from the University of Rochester. From Rochester, he took a job at Johns Hopkins School of Medicine, but was recruited back to University of Rochester in 1965 by Dr. Harold Hodge to explore the behavioral consequences of exposure to toxicants, such as inorganic mercury vapor.

Bernie was a pioneer. In the 1960s he was one of the first to use LINC (Laboratory Instrument Computer) and Digital Equipment Computer (DEC). Computer systems would later allow researchers to perform incredibly complex experiments and collect data at a level of detail never before imagined, thereby revealing subtle effects of chemicals on behavior.

Bernie's lab led the way in computer-controlled experiments in behavioral toxicology, as well as to assess the effects of low levels of drugs and metals on the sensory systems of vision, touch and hearing. Many of these testing capabilities were transferred to and shared with other research laboratories.

Bernie also addressed the investigation of rare, idiosyncratic toxicity, such as food additives and multiple chemical sensitivity. By their nature, these investigations require less traditional study designs in which the subjects are not randomly assigned to the
exposure group (most people would never respond), but the exposures are randomly applied in a blinded fashion to people believed to have the conditions.

Bernie was a master of technical details, but he also kept his eye on the big picture. Just one example: he pioneered the idea that small decreases in the average IQ of a population could lead to big decreases in intellectual stars, and big increases in people with individual cognitive disabilities.

Population level effects have consequences.

As the science of behavioral toxicology and related research methods evolved, Bernie continued to champion the scientific facts demonstrating that low levels of exposure to chemicals could have profound effects on the developing nervous system. He encouraged others to take on this work, pursuing for him what became a lifelong goal: to make the world a safer, more resilient place for all.

Bernie was a generous and enduring collaborator. One notable example is his long-term collaboration with Victor Laties (Ph.D. Psychology University of Rochester, '54). Together they shepherded the discipline of behavioral toxicology from its origins in behavioral pharmacology to its distinguished and impactful status today.

Bernie was also a great mentor, who created a unique atmosphere of stability with flexibility that gave his students, staff and collaborators support and encouraged creativity necessary for good science and to explore new ways to answer research questions. He always made himself available to students and staff to discuss problems and scientific challenges, and to explore new methods to try to answer questions.

Bernie wasn't satisfied to remain quietly within the cloistered halls of academia. He saw the human implications of his work and while always the scientist, he pushed hard to apply that science to protect human and environmental health. Many of Bernie's students went on to have important and impactful careers in academia, government and industry.

The family encourages gifts of remembrance be donated to the University of Rochester Weiss Endowment Fund, supporting the Weiss Toxicology Scholar Award for pre-doctoral and postdoctoral trainees. The Fund has supported 8 scholars since 2014.

Pete Myers, Environmental Health Sciences; Richard W. Stahlhut, University of Missouri at Columbia; Joan Cranmer, University of Arkansas for Medical Sciences; Steven G. Gilbert, Institute of Neurotoxicology & Neurological Disorders; Shanna H. Swan, Icahn School of Medicine at Mount Sinai.