

**Tribute to William S. Mason, written by Dr. Jon Chernoff, Director, Cancer Center Director and Stanley P. Reimann Chair in Oncology Research, Fox Chase Cancer Center**

Over the course of our rich history, Fox Chase Cancer Center has been home to many luminaries of science—pioneers in their fields who have made significant contributions to what we know and understand about cancer and beyond. One of these outstanding figures was William S. Mason, PhD, Professor Emeritus. I am saddened to share news of his recent passing on September 19, 2022. He was 79.

A longtime member of the Fox Chase faculty until his retirement in 2010, Bill joined us in 1975 after completing postdoctoral training with Peter Vogt, PhD, at the University of Southern California at Los Angeles. His work there studying the fundamental aspects of retroviruses helped lay the foundation for a stellar career in which he published research over a span of 50 years.

Bill is perhaps most widely known for discovering how the hepatitis B virus (HBV) replicates, a process referred to as reverse transcription. Together with his collaborator Jesse Summers, PhD, a former director of the Institute for Cancer Research, he showed, in a major breakthrough paper published in *Cell* in 1982, that RNA is used to make DNA molecules in hepatitis B. Until that time, it was largely thought that this process was only associated with retroviruses such as HIV. Mason and Summers broadened the thinking around replication of hepatitis B, which is known to be a leading cause of liver cancer.

Bill's passion for understanding the mechanisms of chronic hepatitis B infection—for which there is no cure—was fueled by this work and guided his desire to find a means for developing curative therapies. He developed novel animal models, using the woodchuck and the duck, to study this disease in the absence of effective mouse and other animal models in the HBV research community. In fact, Fox Chase had colonies of both at one time, mainly for Bill's studies. Such models helped him to study the effects of antivirals on HBV infection. He also served for decades on our Institutional Animal Care and Use Committee, a federally mandated committee that research institutions employ for the ethical and humane treatment of animals.

Bill also developed mathematical modeling studies in collaboration with biostatistician Samuel Litwin, PhD, to look at such things as the speed with which an HBV cell might replicate, what proportion of liver cells are infected with HBV, and how long it would take to cure an infection while leaving a functional liver intact. Such an approach proved interesting in contrast to the classic experimental approach taken by many colleagues and complemented work by other virologists in the field. His work led to the discovery of new hepadnaviruses—a group of animal DNA viruses including viruses of ducks, woodchucks, and squirrels as well as the virus causing hepatitis B in humans—and how such infections can be eliminated from the liver of their hosts.

For any good investigator, success is measured not only in the quality of science produced, but also in the caliber of people developed. A gracious mentor, Bill regularly afforded his trainees the freedom to pursue projects of their own interest. He cared a great deal about supporting the early careers of his trainees and encouraging their independence. Many of his former trainees have become very successful researchers in their own right, working in both academia and industry, as members of the HBV research community. Just last week, many of them paid tribute to Bill at the International HBV Meeting in Paris, celebrating his tremendous contributions and legacy.

Outside of the lab, Bill loved music and played both in a marching band as well as his church group. He also loved a good meal and enjoyed biking, having taken multiple bike trips to Europe throughout his life and completing a long-distance ride in New York just this past spring.

We mourn the loss of this remarkable scientist, colleague, mentor, and friend. We are honored and humbled to count Bill among the great scientists who have stewarded the Fox Chase mission.