

## TRIBUTE

## Charles Bishop '46M (PhD): Biochemist, Inventor

I met Charles Bishop '46M (PhD) and his wife, Beverly '46 (MA), when they invited me to visit them in Buffalo in the spring of 2008 after they learned of my appointment as the first Bishop Professor.

They welcomed me warmly, served a lunch that Charles prepared, and then gave me a tour of their house. I was awestruck to learn that they had built the house, primarily with their own labor, from plans that Charles drew up in consultation with Beverly. I later had the privilege of entertaining Charles and Beverly at my house in Rochester. Over risotto and wine, they regaled me with stories about their remarkable adventures as scientists and as a couple.

Charles loved science and medicine and dedicated much of his professional life to making organized sense of knowledge. He enjoyed a career in medicine that spanned more than 60 years.

His earliest success was the creation of Coden, an alphanumeric bibliographic code designed as a standard citation system to make all references and bibliographies interchangeable.

As Charles recalled, the idea for his system came about because he had written a paper and sent it to a journal. In order to submit the paper to another journal, he had to completely change the format of all the references because the two journals used different citation formats.

Charles envisioned a universal system. He created his system of abbreviations and in 1953 published his proposal in a paper entitled "An Integrated Approach to the Documentation Problem." His system was subsequently adapted and expanded by the American Society for Testing and Materials and later by the American Chemical Society.

Charles was born in Elmira, N.Y., on June 30, 1920. As a young boy, he enjoyed scouting and music. He sang in a cappella group and played saxophone and oboe, in his words, "not very well." Given his exacting standards, I suspect that Charles was actually quite a talented musician. He was awarded a scholarship to attend Syracuse University and earned a bachelor's and a master's degree in chemistry.

He and his beloved wife, the late Beverly Petterson Bishop, first met in a comparative anatomy class. When they announced their intention to marry, Beverly's parents warned

that if she married, they would stop paying tuition. On May 2, 1944, they graduated in the morning and were married in the afternoon.

Charles was accepted at the School of Medicine and Dentistry to conduct research related to the Manhattan Project. Charles finished his PhD in biochemistry in 1946. He joined the Department of Medicine at the University of Buffalo in 1947, where his research focused on the etiology of gout and the metabolism of red cells. These studies resulted in over 65 publications, including a pioneering book which he coedited entitled *The Red Blood Cell*. Charles served as chief

gave generous funding to undergraduates to pursue research opportunities in brain and cognitive sciences.

Later, they established a remarkable personal legacy by endowing a professorship in brain and cognitive sciences in appreciation of Beverly's master's degree in psychology. The Bishop Professorship was celebrated in 2008.

Their complete devotion to one another was evident when, during the ceremony, Beverly lost her voice. Charles stepped up to the microphone and to the delight of everyone delivered Beverly's remarks in the first-person narrative, recalling "because



**A MARRIAGE IN SCIENCE:** Bishop (left) poses with his wife, the late Beverly Petterson Bishop, and Michael Tanenhaus, who holds the professorship the couple endowed.

of the chemistry lab at Buffalo General Hospital from 1967 to 1980. By 1981 he had returned to the University of Buffalo, where he taught in the biochemistry and medicine departments and retired as associate professor of medicine.

As computer technology evolved, his earlier work in documentation sparked a new interest in designing systems that could organize all medical knowledge and make it readily accessible to physicians. His notion that "computers and medicine were made for each other" led him to become a passionate advocate for "a single comprehensive patient medical record from birth to death." He created a computer-based system that he called Framemed.

Charles and Beverly loved to travel and enjoyed piloting their single-engine plane on many adventures. Many at the University got to know Charles when he and Beverly

of the strong and enduring influences the University has had on our scientific lives, Charles and I feel it is payback time."

When Charles later hesitated, Beverly immediately surmised that he had lost his place. As she stood to help him, he gave her a slight smile, signaling that he "had this," and then proceeded smoothly to finish the remarks.

Charles was a teacher, a researcher, and a scholar whose impact, influence, and generosity enriched the lives of his students, colleagues, and friends. Charles died in his sleep last January at his Amherst, N.Y., home. He was 93.

—Michael Tanenhaus

*Tanenhaus holds the Beverly Petterson Bishop M '46 and Charles W. Bishop PhD '46 Endowed Professorship in Brain and Cognitive Sciences and Linguistics.*