OBITUARY

Charles B. Wilson, MD, 1929–2018

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Charles Byron Wilson was born August 31, 1929, in Neosho, Missouri, a small farming community near the Ozark Mountains. His parents were Margaret Francis Polson Wilson and Byron Sanders Wilson. His father owned the local drugstore and instilled a strong work ethic in Wilson from the time he was a boy. His maternal grandfather, Henry Polson, was of the Native American Cherokee tribe and this heritage remained an important part of Wilson’s identity throughout his life.2

As a child, Wilson excelled at music, athletics, and academics. His natural talent and tremendous self-discipline and work ethic earned him both academic and football scholarships to Tulane University upon graduation from high school in 1947. As an undergraduate, he completed the pre-med curriculum and graduated summa cum laude in 1950. He then entered Tulane University School of Medicine (Fig. 1).2

Tulane

As in high school and college, Wilson excelled in medical school. As a senior, he won the Borden undergraduate research award and the medical book award for scholarship. He also won the Isadore Dyer Memorial Prize for the highest grade point average over 4 years, graduating first in his class from Tulane School of Medicine in 1954.2

Following graduation, he completed a 1-year internship on the Tulane Service at Charity Hospital, followed by a 1-year residency in pathology. During his pathology residency, he became skilled at conducting autopsies and worked with neuropathologist John Moossy. Over time, Wilson became especially interested in neuropathology and diseases of the brain, particularly gliomas.

In the spring of 1956, with his pathology residency coming to an end, Wilson decided to pursue neurosurgery, later explaining, “I was deeply interested in neuropathology, the art of diagnosis, and the precision of surgery. Neurosurgery brought all my interests together, and it just felt right.”2

FIG. 1. Charles B. Wilson, MD. Copyright UCSF Department of Neurological Surgery Archives. Published with permission.
He entered the Ochsner-Tulane neurological surgery residency program in 1956, training under Dean Echols at the Ochsner Clinic for 2 years and learning standard neurosurgical procedures for trauma, vascular and infectious disorders, and congenital and neuropathic pain syndromes. He also learned selective rhizotomy for trigeminal neuralgia, which was developed by Echols.

In 1958, Wilson became the first neurosurgical resident at the VA Medical Center of New Orleans, working under Raeburn Llewellyn and maintaining his interest in both pathology and gliomas. He personally analyzed the tissue of all of his tumor cases to confirm diagnosis after surgery. If the patient died, he removed the brain and brainstem and dissected them for microscopic analysis. “He became known both at the VA and later on at the neurosurgical service at Charity Hospital as the ‘neuropathologist with operative privileges.’”

At the end of his neurosurgical residency, he returned to Charity Hospital as chief resident. During this time, most brain tumors were still treated very conservatively, typically only with a biopsy to confirm the diagnosis, but there were some experiments being done using nitrogen mustard gas as a chemotherapeutic agent. Wilson hypothesized that intraarterial infusion of nitrogen mustard chemotherapy could help avoid the systemic side effects of venous administration, and he began testing this in his patients with malignant brain tumors. The regimen was better tolerated but wasn’t effective against the tumor. This was Wilson's first experience with chemotherapy, which would later become a major focus in his search for a cure for malignant gliomas.

Louisiana State University

After graduating from neurosurgical residency in 1960, Wilson accepted a position as a faculty instructor at Tulane Medical School, but he soon left to join the faculty at Louisiana State University (LSU). It was at LSU that he developed his first laboratory experiments, learning to culture tissue in vitro and implanting tumors into rodents. With these methods, he devised the first animal model for testing intraarterial chemotherapy against brain tumors.10,11 In the spring of 1963, he received the Best Teacher Award from the LSU medical students. Shortly after, he took his board exams in neurosurgery and passed with the highest score ever recorded.2

University of Kentucky

Later in 1963, he was recruited by the chair of surgery, Benjamin Eiseman, to the University of Kentucky to become the first chair of a new division of neurosurgery. It was here that he met researcher Marvin Barker, who would become a lifelong friend and colleague. He and Barker began to develop a variety of cell and animal models for neurological conditions, including meningioma cell cultures and hydrocephalus and spinal cord compression models in dogs. In 1964, he and Barker applied for and received one of the first NIH grants for brain tumor research.

While at the University of Kentucky, Wilson organized one of the first-ever national conferences devoted to brain tumors: The Kentucky Conference on Brain Tumor Chemotherapy.4 This highly significant event was the first to foster cooperation among academic neurosurgeons, scientists, and the NIH on the treatment of brain tumors. It was also a precursor to the International Conference on Brain Tumor Therapy and Research, which continues today.

University of California, San Francisco

Wilson was recruited to the University of California, San Francisco (UCSF), as chair of the Division of Neurosurgery in 1968, at just 39 years of age. His appointment put him in prestigious company; previous chairs included the illustrious neurosurgeons and educators Howard Naffziger, John Adams, and Edwin Boldrey. But over the next 28 years, Wilson would turn the already well-regarded division into one of the nation’s most sought-after academic neurosurgery training programs and an internationally recognized center for research and treatment of brain tumors (Fig. 2).

Brain Tumor Research Center

When Wilson arrived in 1968, he became director of the Howard C. Naffziger Laboratories for Neurosurgical Research and expanded them to include basic scientists from a variety of fields, including experimental therapeutics; cell biology, kinetics, and culture; radiation biology; and pharmacology. Among these were Takao Hoshino, an internationally recognized scientist famous for his work with cell cultures of human brain tumors, and Wilson’s research partner in Kentucky, Marvin Barker. In parallel, he established the Clinical Chemotherapy Service, which was the clinical research counterpart to the basic science labs. He also recruited clinical investigators from a variety of disciplines, including neurosurgery, neurology, oncology, radiology, radiation oncology, pharmaceutical chemistry, and many others. In doing this, the Naffziger Labs and the Clinical Chemotherapy Service became the first concentrated scientific effort devoted exclusively to CNS tumors and one of the first examples of translational research in the United States.

In 1970, Wilson sought support from the NCI, writing