



IN MEMORIAM

Jeffery Allan Winer
Professor of Molecular and Cell Biology
UC Berkeley
1945 – 2008

After a brief battle with cancer, neurobiologist Jeffery Allan Winer died peacefully at his home in Benicia, California, at 1:08 a.m. on December 9, 2008. His sister Jane was at his side.

Born November 16, 1945, in Minneapolis, Minnesota, Jeff grew up in Phoenix, Arizona, where he attended middle and high schools. He went on to earn a B.A. in psychology from the University of Arizona in Tucson in 1967, followed by a Ph.D. in physiological psychology from the University of Tennessee at Knoxville in 1974. It was during his postdoctoral studies, however, first with Irving Diamond at Duke University (1974-1977), and subsequently with Kent Morest at the University of Connecticut, in Farmington (1977-1979), that he discovered his passion for classical neuroanatomy and developed the skills that were to become the hallmark of his research. In 1979, he joined the University of California, Berkeley, faculty as an assistant professor in the Department of Physiology and Anatomy, then housed in the old Life Sciences Building. With the reorganization of the biosciences on campus, Jeff chose to join the Department of Molecular and Cell Biology and moved his laboratory to the Valley Life Sciences Addition in 1989.

At the time he was recruited, Jeff's goal was to decipher the connections and functions of the auditory thalamus. His approach was deeply rooted in the tradition of the great classical neuroanatomists of the 19th century: the Italian Camillo Golgi, who invented the eponymous technique for staining individual isolated neurons, and the Spaniard Santiago Ramón y Cajal, whose detailed drawings encompassed much of the central nervous system. What gave Jeff's work its particular currency, however, was the fact that, at his core, he was a functional neuroanatomist. His objective was not simply to elucidate neural architectures but to tease apart the excitatory and inhibitory circuits in the brain that underlie particular behaviors. To this end, he applied modern methods for differentiating neurons that secrete inhibitory transmitters from those that secrete excitatory ones. He also knew that for capturing the detailed structure of large networks of neurons, drawing was superior to high- power photomicrography, with its limited field and depth of focus. Serendipitously, he possessed extraordinary skills as an artist and loved nothing better than to work at the microscope.

Jeff was a meticulous pointilliste, a practitioner of that technique by which a whole picture is created out of individual dots. He liked to say that, for him, a point, a dot, a punctum, is not merely a dimensionless geometric object but something having character, shape, content — a life and meaning of its own. Only through an understanding of each dot's character could a faithful drawing be constructed. He must have been right, because using that technique he produced thousands of drawings of astonishing accuracy and rare beauty that comprise the most complete and systematic neuroanatomical account of the central auditory system in existence. They lay out the detailed functional architecture of the auditory pathways from the auditory medulla to the midbrain, the thalamus and, in a final series of papers, the auditory cortex with the

many specialized subdivisions that he helped identify. The importance and quality of his work was recognized in 1993 when he was named a Claude D. Pepper Neuroscience Investigator by the National Institute on Deafness and Other Communication Disorders.

Among Jeff's most important discoveries was a hitherto unrecognized inhibitory pathway from the auditory midbrain to the thalamus, a switching center that relays signals from the senses to various parts of the cerebral cortex. It was later confirmed physiologically that this "feed- forward" inhibition reaches the thalamus first, just ahead of the excitatory signal, as if to quiet the "auditorium" for the incoming sound to fill. This type of pathway appears to be unique to the sense of hearing and may have arisen as a way to gauge more accurately the timing and position of a sound so that, if the sound heralds danger, the body's "fight or flight" system can be quickly mobilized.

In sum, Jeff's work ranks among the highest achievements in his field, comparable with those of its most illustrious contributors. As his long- time collaborator, University of California, San Francisco, Professor Christoph Schreiner said, "Anybody who wants to understand the auditory system cannot bypass his work; he has left a guidebook for physiologists like myself, a long- lasting and profound contribution."

Of course, there is much more to being a professor than being a successful researcher; and in that wider field of activity, Jeff also set high standards. He was an inspirational teacher who enjoyed a special rapport with students. He empathized with them, encouraged them and treated them with unfailing fairness and respect. Yet he never compromised in his requirement that they endeavor to meet the highest standards of scholarship. If he was in his office, he would likely be sitting at his desk, advising students. His door would remain open until the last student had left, no matter how long that took. Not surprisingly, students liked him and trusted him, as an indication of which he regularly wrote more letters of recommendation in a month than many faculty members would be asked to write in a year. Two years ago, Chancellor Robert Birgeneau honored Jeff's generosity as a mentor to students by declaring him one of the campus's "everyday heroes," an accolade reserved for a staff or faculty member who has made extraordinary efforts to help an undergraduate, either academically or personally.

Perhaps the most remarkable thing for those who knew him well, however, was Jeff's encyclopedic knowledge of so many things. He was an old- school intellectual, a voracious and critical reader on a wide variety of subjects. His office offered clues to this. A bookcase on the north wall was filled with scores of scientific texts, and when he needed a reference, he would unfailingly reach for the right one and open it at the correct page. He did this so routinely, it was clear that he had read every one of them. In his home, a wall full of books by, or about, Shakespeare explained his seemingly inexhaustible knowledge of the Bard's work. English literature, fine art, history (particularly the Second World War), baseball statistics — these were areas about which he seemed all- knowing. But it was classical music, perhaps, that rivaled neuroanatomy as his greatest passion. His record collection was vast and included multiple performances of the standard works plus arcana from all periods. He enjoyed nothing more than to discuss the strengths and weaknesses of different performances of a given work. The joy he took in outlining the smallest details of a musical performance or the underlying meaning of a Shakespearean sonnet echoed the meticulous attention to detail that characterized all of his scientific work. He never did anything by half- measures.

Jeff's scientific legacy is secure. It will continue to be a resource and an inspiration to neurobiologists for many years to come. And his personal legacy — the memory of his generosity and kindness, his empathy and compassion — will continue to enrich the lives of his friends, colleagues and students.

Jeff is survived by his mother, Eileen Winer; sister, Jane Winer; and his sister's partner, Carol Galbraith, of Columbia, Maryland.

W. Geoffrey

Owen
2009

David T. Larue
Christoph Schreiner