



In Memoriam **Michael J. Weaver** **1947-2002**

MICHAEL J. WEAVER died suddenly on March 21, 2002. Surviving are his parents and a sister, all residing in London, England.

Mike, as he was known simply to many of us, was born March 30, 1947 in London. He completed his BSc degree from Birkbeck College, London University, in 1968 and his PhD degree from Imperial College, London University, in 1972. He was a postdoctoral research associate at the California Institute of Technology from 1972-1975, and began his academic career as an assistant professor at Michigan State University in 1975. He came to Purdue University as an associate professor in 1982 and was promoted to professor in 1985.

Originally, Mike pursued studies of adsorption and the structure of the electrical double layer, and heterogeneous and homogeneous redox. Explorations of chemical effects of solvent dynamics on electron transfer kinetics brought him widespread recognition in the condensed-phase as well as electrochemical communities. At Purdue, Mike championed the use of spectroscopic methods in conducting fundamental molecular-level studies of metal/solution interfaces. He extended the spectroscopic work to single crystals of platinum-group metals, and created templates for spectroscopic in situ characterization of electrochemical interfaces. He has contributed centrally to the use of scanning tunneling microscopy (STM) as a probe of atomic-level structure and dynamics. He demonstrated the tremendous possibilities for using vibrational methods, Fourier transform infrared (FTIR) spectroscopy and surface-enhanced Raman spectroscopy (SERS), for in situ surface characterization by combining new-generation spectrometers with novel new methods of single-crystal, SERS-active, and nanoparticle electrode surface preparations. His work also focused on exploring surface chemistry in gas-phase and ultra-high vacuum environments, including cryostatic measurements, thus leading to discovery of seminal correlations between small molecule adsorption in electrochemical cells and in ultra-high vacuum.

The productivity, originality, and creativity that characterized all of Mike's research endeavors were of the highest quality. His contributions appear in over 400 research articles (working with a group usually smaller than ten students), and his key publications are classic papers in electrochemistry. He educated many young scientists, who are both in academia and industry. He was indeed extremely dedicated to his students who will miss him immensely. He had a real joy in advising them, and most of all writing publications with them, displaying mastery in both discovery and style. Mike was a key member of the renowned Analytical Chemistry Division at Purdue, and was also associated with Purdue Physical Chemistry group. Among Mike Weaver's honors and awards, he was chairman of the Electrochemistry Gordon Conference in 1990, a Humboldt

Senior Research Scientist in 1991-92, and was the recipient of the 1989 D. C. Grahame Award of The Electrochemical Society, the 1995 Faraday Electrochemistry Medal of the Royal Society of Chemistry, the 1997 Carl Wagner Award of The Electrochemical Society, and the 1999 Electrochemistry Award of the American Chemical Society. He was most recently nominated for Purdue's Most Distinguished Professor award. As the pivotal testimony of his accomplishments, Mike was among the twenty most cited chemists worldwide in 1984-1991, and was recognized as one of the U.S.'s top 100 chemists from 1981-2000, according to a yearly report issued by the International Science Institute.

With Mike's death, we lost an excellent truthful peer and an uncompromised reviewer who always rewarded creativity and freedom of scientific pursuit. Mike was not only an excellent scientist, but also a power broker between various interests, and an influential speaker for electrochemistry as a whole. While he focused on physical and surface aspects of electrochemistry, he was open to other ideas this creative field always generates, having a unique sensitivity to effort and value. His loss set the community a decade back, and major efforts will be needed to restore the equilibrium. This tragic event is a big loss to fundamental electrochemistry, which may never be fully restored, at least by this generation of American electrochemists.

More specifically, his absence may have grave consequences for physical electrochemistry, especially in the U.S. As Phil Ross from Lawrence Berkeley Laboratory, in Berkeley, California, recently wrote to me after Mike's death, "We are afraid that the role of physical electrochemistry in the U.S. will decline, and the effect of this decline will be felt in national laboratories and in U.S. industry." I concur with his concerns. It is particularly tragic in the situation where there is an increasing awareness of the need for clean (and green) energy technologies, to which fuel cells and other related electrochemical devices offer the most straightforward path. This type of anxiety among us demonstrates the mission Mike Weaver had fulfilled; he was not only an excellent scientist, but also a "bridge" between various interests, and an influential speaker for electrochemistry as a whole.

While science has lost one of its most prominent and dedicated players, for me, Mike was a dear friend. I will miss him very much. ■

This obituary notice was contributed by Andrzej Wieckowski, past chairman of the Physical Electrochemistry Division and Professor of Chemistry at the University of Illinois at Urbana-Champaign.