Biography

David A. Kidwell, Ph.D.

Dr. Kidwell received his B.S. in chemistry from the University of North Carolina at Greensboro in 1978, *Magna cum laude*. He received his Ph.D. in 1982 from the Massachusetts Institute of Technology in organic chemistry applying mass spectrometry, NMR, and HPLC to the structural analysis of organic biomolecules. At MIT, for relaxation, he took up assembly language programming on an Apple IIe and wrote several commercial programs as well as designed interfaces to attach other hardware. This cemented his life-long interest in electronics and programming. After MIT, he received an NRC-NRL Post Doctoral Associateship at the Naval Research Laboratory (NRL) in the area of Secondary Ion Mass Spectrometry, applying this technology to the detection of drugs of abuse.

For the initial part of his career at NRL, he worked at developing better screening tests, better immunoassays, and novel mass spectrometric confirmation tests for drugs of abuse in the diverse matrices of saliva, urine, hair, and sweat. Dr. Kidwell was one of the first to propose new mechanisms by which drugs of abuse bind to hair, observe bias in hair testing, and point out the inadequacies of decontamination procedures to remove inadvertent environmental contamination. He is a court certified expert on hair testing for drugs of abuse, a field in which he is well known. He is also known for his work on determining drug use by sweat testing, where like in hair analysis, environmental contamination can play a role in generating false positives.

As a member of the Surface Nanoscience and Sensor Technology Section of the Surface Chemistry Branch, Dr. Kidwell developed small, multi-diverse sensor packages for deployment in the environment and field use. More recently, continuing with the theme of trace analysis in diverse matrices, he developed an ICP-MS technique for detection of Pr in Pd at the PPQ levels and tested the theory of transmutation of Cs into Pr by LENR. He has constructed a number of instruments and software packages for the study of heat production in LENR experiments and applied them to the study of gas loading. With precision calorimetry, he found unusual results in gas loading using sub-nanometer palladium particles in zeolites or alumina supports where some of the energy

evolved during gas loading could not be explained by conventional chemistry.
He has published over 80 technical papers and book chapters, made over 100 presentations on his work, and holds seventeen patents.