

Fiber-optic researcher to deliver annual Scholes Lecture

4/03/02

Dr. David R. Walt, the Robinson Professor of chemistry at Tufts University and a noted researcher in fiber-optic chemical sensors, will deliver the annual Samuel R. Scholes Sr. Lecture at 11:20 a.m. April 18 in Holmes Auditorium, Harder Hall, on the Alfred University campus. Each year, the School of Ceramic Engineering and Materials Science selects a noted scientist to deliver the lecture in honor of Dr. Samuel R. Scholes Sr., who founded the glass science program at Alfred University 70 years ago. Alfred University is now the only U.S. institution to offer a Ph.D. degree in glass science, and only the third in the world to do so. Walt's topic is "High Density Optical Fiber Arrays as Platforms for Chemical Sensing." Optical fibers are used extensively in the telecommunications industry, but their ability to transmit multiple wavelengths of light simultaneously, coupled with their small size, has led to their use as substrates for chemical sensing, said Walt, whose work has involved creation of optical fiber arrays, called imaging fibers, introduced recently for endoscopic applications. His research has led to a better understanding of the fundamental principles involved in fiber-optic chemical sensors, as well as to development of sensors for various applications. His work involves surface, polymer, and materials chemistry, fluorescence resonance energy transfer, controlled release polymers, immunosensors, corrosion sensing, neurotransmitter sensing, combinatorial polymer synthesis, high-density arrays, genosensing, micro- and nano-sensors, carbon dioxide sensing, biosensors, and sensors based on the principles of the olfactory system. Walt has received numerous national and international awards and honors recognizing his work, including a National Science Foundation Special Creativity Award and the Biosensors and Bioelectronics Award. He was elected a Fellow of the American Association for the Advancement of Science in 2000. Funding for his work has come from the federal Department of Energy, the National Science Foundation, the National Institutes of Health, the Office of Naval Research, the Defense Advanced Research Projects Agency (DARPA) and the Environmental Protection Agency, as well as numerous foundations and corporations. He has published more than 125 papers, holds more than 30 patents and has given hundreds of invited scientific presentations. Walt serves on many government advisory panels and boards and chaired a National Research Council panel on new measurement technologies for the oceans. He is executive editor of Applied Biochemistry and Biotechnology, and serves on the editorial advisory board for numerous journals. He is the scientific founder of Illumina, Inc. He holds a B.S. in chemistry from the University of Michigan, and a Ph.D. in organic chemistry and pharmacology from the State University of New York at Stony Brook. After post-doctoral studies at Massachusetts Institute of Technology, he joined the chemistry faculty at Tufts, and chaired the department from 1989 to 1996.