

UNIVERSITY of HOUSTON

CULLEN COLLEGE of ENGINEERING

Department of Civil & Environmental Engineering

Professor David Reckhow

University of Massachusetts

Engineering Approaches for Reducing Exposure to Harmful DBPs

Monday, May 7, 2012

11:15 a.m. Refreshments

11:30 – 12:30 p.m. Seminar

Room 102D, Engineering Bldg. 1, UH

About the speaker:



Abstract

Since the publications of Rook and Bellar & Lichtenberg in the early 70s we've been acutely aware of the presence of organic disinfection byproducts (DBPs) in finished drinking waters. It is now well accepted that these compounds are associated with bladder cancer and other adverse health effects in the public. For the past 30 years, the research community has been studying methods for control of DBPs and implementing changes in water treatment, all aimed at reducing the concentration of regulated compounds; trihalomethane (THM) and haloacetic acid (HAA). However, recent insights into the nature and toxicology of the other, unregulated, DBPs has led us to the conclusion that we should pay much greater attention to these compounds. In addition, new data on impacts of home water heating shows that DBP concentrations at the point of human exposure can be very different from the monitored concentrations in the distribution system.

Research at UMass has focused on the occurrence of non-regulated DBPs such as halonitriles, halopropanones, haloamides, halobenzoquinones as well as related parameters such as TOX. We are currently working with a dozen utilities across the US, representing a wide range of disinfection scenarios and raw water qualities. Our objective is to characterize the range of concentrations, degradation rates, ultimately leading to a better understanding of the impacts of treatment, distribution system characteristics and raw water quality and the public's exposure to non-regulated DBPs. As part of this work we are also exploring the changes in formation rate and degradation that occurs in home water heaters.

Dr. David Reckhow has been on the Faculty of the University of Massachusetts since 1985. Prior to coming to UMass, he was a Post-Doctoral Research Associate with the Compagnie Générale des Eaux in Paris. Dave has degrees from Tufts University (BSCE), Stanford University (MSCE) and the University of North Carolina at Chapel Hill (PhD). His current research interests include general aquatic chemistry, chemical oxidation of organic compounds in water, coagulation processes, removal of chemical pollutants in water, and aquatic organic matter in natural systems and drinking waters. He has special interests in trace organic compounds, disinfection byproducts and ozonation processes for drinking water treatment. Dave served for several years as North American Technical Editor of the international journal, *Ozone: Science and Engineering*. He was also a co-editor of the widely-used reference book, *Ozone in Water Treatment: Application and Engineering*, and a major contributor to the most recent edition of AWWA's *Water Quality & Treatment*. Dave has authored over 80 research publications. Several of these have been recognized with AWWA and IOA publication awards. He was also a recipient of an NSF Presidential Young Investigator Award. Dave has an active research program (currently PI on 5 research grants), and he regularly serves as a consultant to engineering firms, and industrial and governmental groups.

Parking: Go to UH Entrance No. 1 (Exit I-45 South to Spur 5 and take a right at University Blvd.). At the Visitors Information Center, ask for the Cullen College of Engineering and parking instructions. For more information call Elaine Gildea at (713) 743-4251.

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