Legacy and Emerging Environmental Pollutants

Chad Jafvert
Professor
School of Civil Engineering
Purdue University

Date and Time: October 30, 2013; 11:30 am – 1:00 pm
Location: 315 Stinson-Remick Hall
Pizza and soft drinks will be served at 11:30 am. Seminar starts at 12:00 pm.

The natural environment has an astounding capacity to assimilate and process chemicals that continuously bombard it due to human activity, but this capacity has limits. As a result, legacy pollutants still exist in our waterways and new emerging contaminants continue to be discovered. With an eye on the future, nanomaterials are being developed rapidly, yet their persistence in the environment and effect on the environment remain largely unknown. In this presentation, environmental processes that control the fate of several chemicals and nanomaterials in the environment will be discussed. In the first example, the properties and photoreactivity of fullerene nanomaterials in the environment will be discussed. In the second example, the persistence of numerous polycyclic aromatic hydrocarbons (PAHs) within a nonaqueous phase liquid (NAPL) that has contaminated a river sediment in northwest Indiana for decades will be discussed. In the third example, the measurement of steroid hormones in the water in agricultural ditches adjacent to manure-applied farm fields will be presented. And finally, a few slides regarding drinking water quality in rural Colombia will be presented.

Biosketch of Prof. Jafvert
Prof. Jafvert holds a bachelor’s degree in biochemistry, Iowa State University and master’s and doctoral degrees from the University of Iowa. He was a National Research Council Postdoctoral Fellow and Research Engineer for United States Environmental Protection Agency before joining Purdue University, where he is now a full professor. Prof. Jafvert has a broad interest in environmental chemistry research and education, including chemical speciation and distribution in engineered and natural systems, environmental photochemistry, environmental monitoring and assessment, sediment remediation, and water disinfection.