

Department of

Chemical and Environmental Engineering

2014—2015 Seminar Series

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9:10—10:00 AM

WCH 205/206



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Environmental Designer Drugs: When Transformation Does Not Eliminate Risk

Environmental transformation processes, including those occurring in natural and engineered systems, do not necessarily drastically alter molecular structures of bioactive organic contaminants. While the majority of generated transformation products are likely benign, substantial conservation of structure in transformation products can imply conservation or even creation of bioactivity across multiple biological end points and thus incomplete mitigation of ecological risk. This talk explores these phenomena for endocrine-active steroid hormones, focusing on examples of conserved bioactivity and related implications for fate assessment, regulatory approaches, and research opportunities.

Biosketch: David M. Cwiertny is an Associate Professor in the Department of Civil and Environmental Engineering at the University of Iowa, where he also holds an appointment in the Department of Chemical and Biochemical Engineering. He joined the faculty at Iowa in the Fall of 2011 after four years as an Assistant Professor in the Department of Chemical and Environmental Engineering at the University of California, Riverside. David has a B.S. in Environmental Engineering Science and minor in Chemistry from the University of California, Berkeley (2000), a Ph.D. from the Department of Geography and Environmental Engineering at Johns Hopkins University (2006), and he previously conducted post-doctoral research at the University of Iowa in a joint appointment between the Departments of Civil and Environmental Engineering and Chemistry. His research group broadly focuses on pollutant fate in natural and engineered systems, with a particular emphasis on emerging pollutant transformation pathways and the development of materials-based treatment technologies that promote water sustainability. At the University of Iowa, he is a core faculty member in the campus-wide Water Sustainability Initiative, developing interdisciplinary research, outreach and education programs intended to increase water awareness at the University and across the state of Iowa. He is also an associate research engineer at IIHR—Hydroscience & Engineering. In 2014, David became the Editor-in-Chief of *Environmental Science: Water Research & Technology*, a new RSC journal devoted to water research and technology in the built environment, and he also serves on the editorial advisory board for *Environmental Science and Technology*.