

UNIVERSITY of HOUSTON

CULLEN COLLEGE of ENGINEERING

Department of Civil & Environmental Engineering

Special Seminar

Maria Virginia Riquelme

Department of Civil & Environmental Engineering
Virginia Tech

Nanosensor-Enabled Detection of Emerging Environmental Biocontaminants

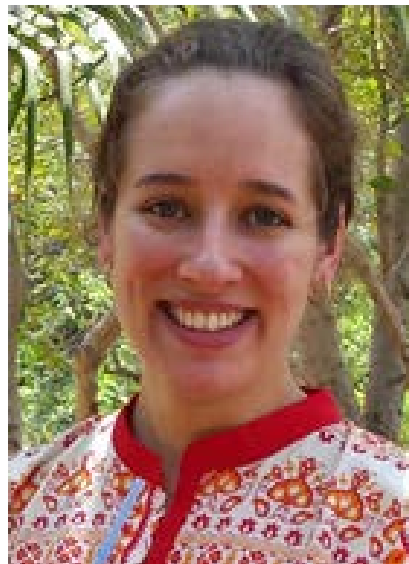
Friday, December 2, 2016

11:00AM-12:00PM

Agnes Arnold Hall-Room 202

Abstract: The pandemic propagation of antibiotic resistance calls for concerted interdisciplinary global action. The potential for antibiotic resistance emergence and dissemination in the aquatic environment, particularly through wastewater treatment plants, highlights the need for improved technologies that enable faster and more efficient detection of environmental biocontaminants of concern such as antibiotic resistant bacteria (ARB) and antibiotic resistance genes (ARGs). The work described in this seminar emphasizes the global aspects of antibiotic resistance emergence and describes the development and application of oligonucleotide-functionalized gold nanosensors as emerging technologies for the detection and monitoring of ARB and ARGs. The pathogen *Staphylococcus aureus* and a corresponding ARG (methicillin resistance *mecA* gene) were chosen as model biocontaminants of concern due to their environmental and public health relevance. Areas of potential promise and challenge associated with these nanosensors are also described.

About the speaker:



Maria Virginia Riquelme is a recent Ph.D. graduate from Virginia Tech, where she was co-advised by Dr. Peter Vikesland and Dr. Amy Pruden in the Department of Civil & Environmental Engineering and the VT Center for Sustainable Nanotechnology. She received a B.S. in Environmental Engineering from Colorado State University, and M.S. in Civil and Environmental Engineering from Virginia Tech.