Environmental Engineering
UNIVERSITY OF COLORADO **BOULDER**

2015 Fall Environmental Engineering Seminar Series

Title: Perspectives on Microbial Interactions in (Re-) Engineered Biological Nitrogen Removal Processes

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Date: Friday, November 13th, 2015
Time: 12:00 PM – 1:00 PM
Place: ECCR 1B40

Abstract

Engineered wastewater treatment systems can provide an interesting framework to pose and answer questions relating to the structure and metabolic function of the microbes involved in the nitrogen cycle. While the traditional approach to wastewater treatment has involved nitrification and denitrification using wastewater organic carbon, increasingly stringent effluent limits coupled with the need for energy efficiency has given rise to approaches such as partial nitrification and nitritation followed by either denitrification using external organic electron donors or even autotrophic nitrogen removal via anaerobic ammonia oxidation. These developments have resulted in a drastically different version of the engineered N-cycle in advanced wastewater treatment systems. In this presentation, some recent findings related to the impact of engineering strategies on the resulting microbial ecology and function of anammox based wastewater treatment systems are presented, with a specific focus on drivers that shape the microbial ecology, metabolic pathways and community genomics.

Dr. Kartik Chandran is Associate Professor in the Department of Earth and Environmental Engineering and Director of the Wastewater Treatment and Climate Change Program and the CUBES Program at Columbia University. Kartik received a B.S. from the Indian Institute of Technology at Roorkee (formerly, University of Roorkee) and a Ph.D. from the University of Connecticut. He was a senior technical specialist with Metcalf and Eddy before returning to academia as a research associate at Virginia Tech. The main focus of Dr. Chandran's work is on the microbial N-cycle and its links to the water, energy and carbon cycles. Dr. Chandran is a 2015 recipient of the prestigious MacArthur Fellowship "Genius" Award. More details on Dr. Chandran's work can be found at www.columbia.edu/~kc2288

Questions? Contact Professor Karl Linden, karl.linden@colorado.edu