

# FACULTY RESEARCH TALKS

LISTEN. LEARN. COLLABORATE.

Zoom talk | Friday, March 25, 2022 | Noon to 1 p.m.



PRESENTER 1:

**A H M ANWAR  
SADMANI**

Assistant Professor,  
Civil, Environmental  
and Construction  
Engineering

## Remediation of Contaminants of Emerging Concern (CEC) in Environmental Matrices

Trace concentrations of contaminants of “emerging” concern (CECs) occur in streams and rivers, surface water sources that are used for potable water production, wastewater treatment plant effluents, sludges, and even in finished drinking waters. Recent research regarding adverse impacts of CEC exposure on nontarget aquatic and terrestrial organisms, and human via different routes, has fueled considerable public concerns. In this talk, Dr. Sadmani will showcase advanced physicochemical treatments including membrane-based hybrid processes to remove CECs from various environmental matrices.

Dr. Sadmani received his Ph.D. in civil engineering from the University of Toronto, Canada, followed by a postdoctoral fellowship at the same institute. He received his M.S. from the UNESCO-IHE Institute for Water Education, Delft, the Netherlands and B.S. from Bangladesh University of Engineering and Technology (BUET). Dr. Sadmani’s current research focuses on advanced water and wastewater treatment processes including novel media filtration, membrane treatment of contaminants of emerging concern, membrane fouling and nanoparticle-enhanced, membrane-based hybrid processes to treat and reclaim water from impaired and unconventional sources.



PRESENTER 2:

**PAUL  
GAZZILLO**

Assistant Professor,  
Computer Science

## Making Highly-Configurable Software Reliable and Secure

Highly-configurable software underpins much of our computing infrastructure. It allows software to be customized for a large variety of devices and systems without the need for new software development. But this reuse comes at a cost to maintenance. Flaws in software can hide in untested variations that are too numerous to check exhaustively. Dr. Gazzillo’s lab develops automated reasoning techniques for analyzing software configuration automatically.

Dr. Gazzillo received his Ph.D. from New York University and previously worked as a postdoc at Yale University and a research scholar at Stevens Institute. His research aims to make it easier to develop safe and secure software, and it spans program analysis, software engineering and security. Projects include analysis of configurable software, side-channel attack detection and corporate entity tracking. His work has been published in venues such as PLDI, ESEC/FSE and ICSE and has been recognized with a DARPA Young Faculty Award, an NSF CAREER Award, and an ACM SIGPLAN Research Highlight.



PRESENTER 3:

**TOM O’NEAL**

Professor,  
Industrial Engineering  
and Management  
Systems

## Introduction of the Engineering for One Planet Initiative

Engineering for One Planet (EOP) is a global initiative working to equip all future engineers across all disciplines with the fundamental skills and principles of environmental sustainability. Mobilized by The Lemelson Foundation and VentureWell with input from hundreds of stakeholders across sectors, the EOP initiative seeks to create systemic change by establishing environmentally sustainable engineering as a core tenet of the profession. To achieve this, the initiative provides a roadmap for integrating fundamental principles of sustainability into engineering education to support the health of the planet and the lives it sustains.

Dr. O’Neal has served as the associate vice president for research and commercialization at UCF. He is the founder of the UCF Business Incubation Program (UCFBIP), executive director of the Florida Economic Gardening Institute (GrowFL), and the principal investigator of I-Corps at UCF, Florida’s first I-Corps site. Dr. O’Neal is also the past president and co-founder of the UCF Chapter of the National Academy of Inventors.