Department of Civil Engineering
The University of Hong Kong

Distinguished Public Lecture (ONLINE)

Atmospheric Water Harvesting – Can we produce enough water of the right quality in arid regions?

Date: May 17, 2024 (Friday)

Time: 9:00 a.m. to 10:30 a.m. (Hong Kong Time)

Zoom: https://hku.zoom.us/j/97773467160
(Meeting ID: 977 7346 7160)

Professor Paul Westerhoff
School of Sustainable Engineering and the Built Environment
at Arizona State University

Abstract

Imagine a pipeless water factory. The western USA relies upon extensive water infrastructure in the form of mega-sized reservoirs, canals, and pipelines to transport water to urban areas where clean water is critical not only for drinking but also drives the economic engine through water for commercial, industrial and institutional water uses. Many arid regions are not located near oceans and are currently facing decadienal-scale droughts. For example, in Arizona large scale water infrastructure projects are being considered to import water from the Great Lakes, Columbia River, Mississippi River, Sea of Cortez or Pacific Ocean, and will cost tens of billions of dollars. Our Global Center for Water Technology and new NSF Southwest Sustainability Innovation Engine is exploring the potential for Atmospheric Water Harvesting (AWH) to provide high quality water for fit-for-purpose water uses – averting costly infrastructure. The challenge, of course, is the low relative humidity in arid regions. This presentation will present state-of-the-art methods to achieve AWH, present field data on water yield/energy requirements/water quality, describe how and who is considering using AWH, and provide a path forward for this technology and field.

About the Speaker

Dr. Paul Westerhoff is a Regents Professor in the School of Sustainable Engineering and the Built Environment at Arizona State University and the Fulton Chair of Environmental Engineering. He joined ASU in 1995 and after serving as the Civil and Environmental Engineering Department Chair he was the Founding Director for the School of Sustainable Engineering and the Built Environment. Since then he has served as an Associate Dean of Research in Engineering, ASU Vice Provost for Academic Programming, and Vice Dean for Research and Innovation in Engineering. He is the Deputy Director of a National Science Foundation Nanosystems Engineering Research Center for Nanotechnology Enabled Water Treatment (newtcenter.org), co-Deputy Director of the NSF Science and Technologies for Phosphorus Sustainability Center (steps-center.org), Director of the Global Center for Water Technology and Water-Innovation co-lead for the NSF Southwest Regional Sustainability Innovation Engine. He has over 410 journal publications (H-index>110) and multiple patents on his research related to fate of nanomaterials in water, developing novel technologies for water and reuse treatment, and understanding reactions related to the fate of pollutants during treatment or in natural systems with a focus on oxo-anions, natural organic matter and micropollutants. He is the recipient of several awards including the recipient of the 2020 A.P. Black award from the American Water Works Association, 2019 NWRI Clarke Prize for excellence in the fields of water science and technology, 2017 Sustainable Nanotechnology Organization Annual Achievement Award, ASU Outstanding Doctoral Mentor for 2015, 2013 ARCADIS/AEESP Frontier in Research Award, 2006 Paul L. Busch Award, and was inducted into the National Academy of Engineering in 2023.

Note: This Distinguished Lecture also serves as a Plenary Lecture of the The 3rd Greater Bay Area Symposium on Membranes and Membrane Processes (GBA-MMP). More information about GBA-MMP is available at **https://www.membest.hku.hk/gba2024**.

Registration is required only for participants who require attendance certificate:
https://hkuems1.hku.hk/hkuems/ec_hdetail.aspx?guest=Y&ueid=93935

An electronic certificate of attendance will be issued to registered participants after the public lecture.

FREE ADMISSION
ALL ARE WELCOME