At the Confluence: Nutrients, Trace Chemicals, and Sustainability in the Urban Water Sector

Friday, February 26, 11:00 am
Ben Parker Student Center (Ballrooms B-C)

Enhanced global urbanization coupled with the impacts of climate change on water infrastructure in cities will change how we design and operate urban water systems in the future. While climate change tends to be a discussion centered on carbon as the pollutant, the most critical decisions linked to achieving sustainable, energy efficient or net-energy neutral solutions in urban wastewater (or used water) systems tend to be driven by the need to manage nutrients (nitrogen and phosphorus). In turn, the current evolution in sustainable, energy recovering wastewater treatment or green infrastructure strategies are heavily influenced by the need to manage nitrogen and/or phosphorus, as much as if not more than carbon. Another area of tremendous focus regarding urban water infrastructure concerns the impact of trace chemical contaminants on environmental and human health. All these issues have reached a point of confluence. Implementing innovative and energy efficient nitrogen or phosphorus management approaches involves dramatic changes to the infrastructure in place today, and in some cases results in significant changes in the composition of wastewater or the redox environments imposed during treatment. In turn, these changes influence the ultimate fate of trace chemicals present in wastewater or stormwater and, ultimately, the risks to environmental and public health in urban systems. This is particularly important for cities located in countries with emerging economies. The nature of this confluence of issues and trends will be introduced, and opportunities for solutions proposed.

Co-hosted by the Environmental Engineering programs at the Colorado School of Mines and the University of Colorado - Boulder

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