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Research Honored For Contribution to Water Management

ALEXANDRIA, Va.— The Water Environment Federation (WEF) proudly announces the 2018 WEF Awards recipients for published papers. The WEF Published Papers Awards recognize WEF members for valuable research that has the potential for broad contribution to industrial wastewater management.

“The Water Environment Federation is extremely proud to honor the incredible contributions of these individuals in protecting one of the world's most valuable resources and contributing to their communities,” said Eileen O’Neill, WEF Executive Director.

The 2018 recipients for Published Papers are:

Eddy Wastewater Principles/Processes Medal

“*Rethinking the Mechanisms of Biological Phosphorus Removal*”, James L. Barnard, Patrick Dunlap, Mark Steichen, *Water Environment Research*, Volume 89, p. 2043 (2017)

The authors have presented alternative process configurations of enhanced biological phosphorus removal (EBPR) which are superior to the conventional designs. These alternative process configurations are likely to support more diverse phosphate accumulating organisms over a range of environmental conditions and utilize higher carbon sources. These configurations are particularly relevant for plants that achieve both nitrogen and phosphorus control and utilize anoxic conditions. The findings of the authors will have significant impact on the future process design for EBPR and to achieve phosphorus control consistently and reliably.

The Eddy Medal honors Harrison Prescott Eddy, a prominent engineer and a pioneer in the field of wastewater treatment. The medal is awarded for research that makes a vital contribution to the existing knowledge of the fundamental principles or process of wastewater treatment, as comprehensively described and published in a federation periodical.

Gascoigne Wastewater Treatment Plant Operational Improvement Medal

“Marrying Step Feed with Secondary Clarifier Improvements to Significantly Increase Peak Wet Weather Treatment Capacity: An Integrated Methodology,” Glen T. Daigger, John S. Siczka, Thomas F. Smith, David A. Frank, J. Alex McCorquodale, *Water Environment Research*, v. 89, no. 8, August 2017, pg. 724

The authors detail how the staff (and consultants) at the City of Akron (Ohio) Water Reclamation Facility increased wet weather flow handling capabilities by maximizing the use of existing plant infrastructure. Using a combination of process simulation and computational fluid dynamics analysis of the plant’s existing secondary system, the wet weather capacity of the existing plant was rered up by approximately 65 percent without significant capital investment. The increased capacity potential at the plant was initially identified using simulation and fluid dynamic computational methods. The calculations directed the engineering activities (and costs) necessary to attain the potential increase in flow handling capacity. Based on the computational analysis, capital modifications to the existing equipment appeared to be minor, prompting the staff to install the required modifications to approximately 15 percent of the secondary system for subsequent full-scale testing. The full-scale testing program also incorporated a sensitivity analysis of critical parameter assumptions to establish corrective operating procedures should plant operation “fall apart” during an actual storm event. The approach detailed will result in significant capital savings for the city of Akron, which is in the process of modifying its entire facility to be able to attain the peak flow magnitudes piloted.

The Gascoigne Medal was established in recognition of George Bradley Gascoigne, a prominent consultant who exhibited a great deal of interest in the operation of wastewater treatment plants. The medal is awarded to the author(s) of an article that presents the solution of an important and complicated operational problem within a full-scale, operating wastewater treatment plant that is appropriately staffed.

McKee Groundwater Protection, Restoration or Sustainable Use Award

“Indicators of Groundwater Potential for Nitrate Transformation in a Reductive Environment”, Marija Perović, Vesna Obradović, Srd-an Kovac̄evic, David Mitrinović, Nevena Z̄ ivanc̄ev, Tanja Nenin, *Water Environment Research*, 2017, v. 89, no. 14

The study investigated potential nitrate transformation pathways and it also encompassed field tests, tracer studies, and physicochemical and microbiological analysis of groundwater. The Kovin-Dubovac area in Serbia was selected as a study site. To estimate different pathways of NO₃ reduction, the authors combined in-situ measuring and laboratory analysis of physicochemical properties and also conducted biological reactivity tests. This study comprehensively reported nitrate removal potential in an anoxic aquifer and thus the findings can be used to predict nitrogen transport and transformation. The results revealed the important transformation pathway of nitrate to ammonium together with respiratory denitrification.

The McKee Award recognizes significant contributions to groundwater science or engineering research published in a WEF or WEF Member Association periodical. The award is named in

honor of Dr. Jack McKee, the 1962-63 president of the Water Environment Federation, a founder of the consulting firm of Camp, Dresser and McKee, Inc., and a longtime professor at the California Institute of Technology.

These awards will be presented during WEFTEC® 2018, the Federation's 91st Annual Technical Exhibition and Conference, September 29 to October 3 in New Orleans.

For more information about the WEF Awards, visit <https://www.wef.org/awards>

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About WEF

The Water Environment Federation is a not-for-profit technical and educational organization of 34,000 individual members and 75 affiliated Member Associations representing water quality professionals around the world. Since 1928, WEF and its members have protected public health and the environment. As a global water sector leader, our mission is to connect water professionals, enrich the expertise of water professionals, increase the awareness of the impact and value of water, and provide a platform for water sector innovation. To learn more, visit www.wef.org.