



## **Water Environment Federation Honors Outstanding Published Papers, Public Education Efforts**

ALEXANDRIA, Va.— The Water Environment Federation (WEF) proudly announces the 2021 WEF Awards recipients for published papers and education. The WEF Published Papers and Education Awards recognize members for significant accomplishments in promoting awareness and understanding of water environment issues through the development of peer-reviewed research, public outreach, and academic curricula. “Supporting the spread of knowledge both inside and outside the gates of water resource recovery facilities is a core tenet of WEF’s mission,” said Lynn Broaddus, WEF President. “This year’s class of WEF Published Papers and Education Award winners represent excellent examples of thinking outside-the-box to further that mission.” The 2021 recipients for Published Papers and Education are:

### **WEF Canham Graduate Studies Scholarship:** Yian Sun

This scholarship, honoring former WEF Executive Director Robert Canham, provides \$25,000 for a post-baccalaureate student in the water environment field. Yian Sun is currently a PhD student at University of California, Irvine (UCI), in the department of Civil and Environmental Engineering, and expects to obtain her degree in 2023. Yian is a graduate student researcher in the Water-Energy Nexus Research Center, where she is currently investigating the targeted removal of microplastics in water reuse, an important and emerging topic of concern. As a researcher in the UCI Environmental Chemistry Laboratory, she has also contributed to work on titanium dioxide nanoparticles in aqueous environments.

**Fair Distinguished Engineering Educator Medal:** Dr. Joel J. Ducoste. The Fair Medal recognizes accomplishments in the education and development of future engineers. This award honors Gordon Maskew Fair, a professor of sanitary engineering at Harvard University. For more than 20 years, Dr. Joel J. Ducoste of North Carolina State University has consistently taught a variety of engineering courses in mechanical engineering, while constantly endeavoring to impart a desire for environmental harmony in his students. He has inspired independent study among his many students and encouraged students to research areas of emerging concern in the mechanical engineering field. Ducoste led the development and application of computational fluid dynamics to examine the intersection of transport and physical, chemical, and biological processes in water and wastewater treatment. Over time, he has extended his research portfolio to address challenges in other process related fields including algal cultivation, sewer collection system sustainability, metabolic pathway modeling, modeling of environmental systems, and even heat accumulation in landfills.

**Gascoigne Wastewater Treatment Plant Operational Improvement Medal:** The Gascoigne Medal is awarded to the author(s) of an article that presents the solution to an important and complicated operational problem within a full-scale water resource recovery facility. “Fear Grease No More,” Sircello, *Water Environment & Technology*, Vol. 32, No. 5, (May 2020), pg. 42. Author: Stan Sircello. This article details how the staff at Brevard County’s South Central Regional Wastewater Facility (SCRWTF) in Viera, Florida, developed a method for rendering grease harmless to belt filter presses, thereby allowing grease to be dewatered along with solids on the plant’s belt filter presses. Through a trial-and-error, in-plant effort, staff studied the physical characteristics of the grease coming from the local community. They then investigated methods of chemically breaking the “trouble” constituents of the grease down so that they might not cause binding problems for the filter belts. They found that by mixing the grease with a phosphate-free laundry detergent, the sticky Triglyceride molecules in grease could be broken down to non-sticky constituents. A new treatment system based on this principle reduced the facility’s grease-disposal costs by 67%.

**McKee Groundwater Protection, Restoration or Sustainable Use Award:** The McKee Award recognizes significant contributions to groundwater science or engineering research published in a WEF or WEF Member Association periodical. “Trichloroethylene degradation performance in aqueous solution by Fe (II) activated sodium percarbonate in the presence of surfactant sodium dodecyl sulfate”, WER, August 2020, v. 92, no. 8, pp.

1142-1151. Authors: Jingyao Huang, Muhammad Danish, Xihao Jiang, Ping Tang, Qian Sui, Zhaofu Qiu, Shuguang Lyu. This article reports a study on the treatment of groundwater contaminated with Trichloroethylene (TCE) using a relatively new technology based on a transition metal (iron based)-activated percarbonate process. The authors followed well-designed, detailed experimental procedures and elaborated on mechanistic insights to evaluate the potential of ferrous iron (Fe(II))-activated sodium percarbonate (SPC) in the presence of surfactant sodium dodecyl sulfate (SDS) to destroy TCE. The effects of various water quality and process operational parameters were investigated and discussed well in the paper. The experimental results show some very interesting results for the Fe-SPC-SDS system such as the extent to which hydroxyl radicals and reactive oxygen species both contributed (approximately equally) to TCE degradation.

**Rudolfs Industrial Waste Management Medal:** The Rudolfs Medal recognizes noteworthy accomplishments in any aspect of industrial waste management research published in WEF or WEF Member Association periodicals. "Renewable Diesel-Unique Wastewater Treatment Challenges", 2020 WEFTEC Proceedings. Authors: Michael E. Mecredy, Jonathan A. Kusowski, Russell R. Freda, T. Houston Flippin, Ronald W. Ballard. This popular WEFTEC 2020 conference proceeding demonstrated large-scale data related to treatment challenges and potential solutions associated with the emerging renewable diesel market in the industrial space. This market, the judging panel wrote, represents a significant opportunity to address new industrial wastewater treatment challenges that are being driven by broad manufacturing trends in the energy industry. Judges note that the paper itself was well-written and included excellent data development and validation.

**Public Communication and Outreach Program Awards:**

The WEF Public Communication & Outreach Program Awards recognize members for significant accomplishments in promoting public awareness and the understanding of water environment issues through the development and implementation of outreach, education, and/or communication programs.

1. Lott Clean Water Alliance WET Science Center Program
2. Central Contra Costa Sanitary District Pipe Protectors Program
3. DC Water, *Wendy Water Drop Book*

Serving Olympia, Washington, and its surrounding communities, the LOTT Clean Water Alliance has operated its Water Education and Technology (WET) Center for 10 years. The WET Center, a centerpiece of the LOTT Clean Water Alliance's extensive public outreach strategy, offers interactive water environment exhibits and classroom spaces, and annually hosts some 17,000 visitors per year. Educational efforts by the organization, bolstered by a partnership with local schools and regional colleges that involves an average of 3,900 students per year, have led many schools to incorporate LOTT into their formal curricula.

Over many years, California's Central Contra Costa Sanitary District (CCCSD) noticed a void in wastewater education for kindergarten, first, and second grade students, and a shortage of high-quality educational programming for this age group for science and environmental learning. Central San's Pipe Protectors Program was designed to fill this void. The program intends to bring the work of wastewater treatment to young students in a way that they can easily understand, using the expertise of CCCSD staff alongside animated characters. In response to pandemic distancing requirements, Central San created three distance learning versions of the Pipe Protectors Program to support virtual classrooms.

In October 2020, DC Water published *Wendy, Where Does Our Wastewater Go?* – a look into the wastewater treatment process as taught by Wendy the Water Drop, a long-recognized DC Water mascot. The book carries a message about how the wastewater treatment process works, fosters discussion on infrastructure, and reinforces the importance of both to the environment with vocabulary, frequent questions, and related experiments for students to try. Illustrated and designed by two students from local Georgetown University, 10% of sales proceeds from the book are contributed to the SPLASH fund, a last-resort, charitable funding source for those facing disconnection. The partnership helps DC Water customers maintain critical water and sewer service in times of financial exigency while engaging early elementary-aged students in water conservation and wastewater treatment.

**WEF Operator Scholarship:**

Each year, the WEF Operator Scholarship program provides up to \$5,000 each for individuals who are seeking water sector operator education, training, or certification to enter the industry or to advance their knowledge,

skills, abilities, or license. This year's awardees include:

- Kylie Turner, Pacific Northwest Clean Water Association
- Mathew Tedla, Water Environment Association of Ontario
- Kisha Ortiz, Rocky Mountain Water Environment Association
- Nadine Robertson, Louisiana Water Environment Association
- Daniel O'Sullivan, New York Water Environment Association
- Leah Frances, California Water Environment Association
- Mitchell Washington, Arizona Water Environment Association
- Brian Carey, New Jersey Water Environment Association
- Clayton John Marriott, Water Environment Association of Utah
- Riley Cobb, New England Water Environment Association
- Kacie Rear, Alaska Water/Wastewater Management Association
- Todd Saums, Ohio Water Environment Association
- Ian Oyama, Hawaii Water Environment Association
- Elizabeth V. Jensen, Virginia Water Environment Association
- Isaiah Rosario, Pennsylvania Water Environment Association

Visit <https://www.wef.org/membership/awards-recognition/wef-awards/> for more details about this year's WEF Award winners. For more information about WEF's recognition programs, visit <https://www.wef.org/awards>.

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#### **About WEF**

The Water Environment Federation (WEF) is a not-for-profit technical and educational organization of about 30,000 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](http://www.wef.org).