



MONTCLAIR STATE
UNIVERSITY

Montclair State University
**Montclair State University Digital
Commons**

Sustainability Seminar Series

Sustainability Seminar Series, 2018

Feb 13th, 4:00 PM - 5:00 PM

Emergency Water Supply in Response to Natural Disasters

Yang Deng
Montclair State University

Follow this and additional works at: <https://digitalcommons.montclair.edu/sustainability-seminar>



Part of the [Environmental Sciences Commons](#)

Deng, Yang, "Emergency Water Supply in Response to Natural Disasters" (2018). *Sustainability Seminar Series*. 9.

<https://digitalcommons.montclair.edu/sustainability-seminar/2018/spring2018/9>

This Open Access is brought to you for free and open access by the Conferences, Symposia and Events at Montclair State University Digital Commons. It has been accepted for inclusion in Sustainability Seminar Series by an authorized administrator of Montclair State University Digital Commons. For more information, please contact digitalcommons@montclair.edu.



MONTCLAIR STATE
UNIVERSITY

The MSU Sustainability Seminar Series Presents:
**Emergency Water Supply in Response to
Natural Disasters**

WHEN: February 13, 4:00 pm

WHERE: CELS 120 lecture hall

Dr. Yang Deng, Ph.D. P.E.
Montclair State University



Dr. **Yang Deng** is an Associated Professor of Environmental Engineering in the Department of Earth and Environmental Studies at Montclair State University. He is also a licensed Professional Engineer registered in the State of Florida. His research centers on innovation in water treatment technology. He has strong fundamental and applied research interests in the development of new technologies and engineering designs for supporting urban and agricultural water sustainability. Dr. Deng's group has been awarded over \$1.7 million external grants from various funding sources such as US EPA, USDA, NSF, Dept. of the Interior, Sea Grant, DOT, Environmental Research and Education Foundation, and DuPont Corp. Over the past ten years, he has published more than 100 peer-reviewed publications with a total citation number over 4,400 (h-index = 34).

Frequency and magnitude of natural disasters (e.g. hurricanes) increased globally over the past century. Clean water is a top priority for disaster-affected populations. However, existing emergency water treatment (EWT) methods are not all feasible or technically effective at many emergency situations. The recent Puerto Rican water crisis after Hurricane Maria highlights research needs and new challenges for new EWT technologies. This presentation will provide an overview of currently available EWT methods and then introduce the state of EWT research at MSU. Ferrate(VI) as an emerging treatment agent was recently investigated for the treatment of simulated disaster-polluted water. Results show that ferrate(VI) treatment could simultaneously and effectively inactivate bacterial indicators, remove metal and metalloid contaminants, degrade dissolved organic matters, and reduce turbidity, while insignificantly increasing total dissolved solids (TDS) to ensure an acceptable $TDS \leq 1,000$ mg/L (the recommended minimum TDS standard for emergency water supply). Different from many traditional water treatment agents (e.g. chlorine), ferrate(VI) does not produce toxic disinfection byproducts (DBPs). Therefore, ferrate(VI) opens a new opportunity for EWT to provide safe and sufficient water for disaster-affected populations and rapid disaster relief.