

# Advancing the Study and Treatment of Water Contaminants



**Christina Remucal**  
Assistant Professor, Civil and Environmental Engineering

## CURRENT RESEARCH


### Using chemistry and natural processes to remove harmful chemicals from water

Drinking water treatment plants remove large particles like dirt, while killing pathogens that can make us sick. Although these processes make the water safer to drink, they are not designed to remove many organic pollutants that are present in low concentrations and can lead to negative health effects when consumed. Dr. Christina Remucal, Assistant Professor of Civil and Environmental Engineering at University of Wisconsin-Madison, is using fundamental chemistry to study contaminant transformation, photochemistry, and reactive oxidant production in both engineered (drinking water treatment) and natural (lakes/ rivers) systems. As she researches the fate of chemicals in the aquatic environment, she aims to develop new ways to remove chemicals from drinking water through natural processes.

Common water contaminants include pesticides added to fields or urban environments, and pharmaceuticals and personal care products that pass through us to wastewater treatment plants, ending up in the environment. With her team of chemists and engineers, as well as collaborations with colleagues, Dr. Remucal's research includes extensive study about what happens when these chemicals end up in our water. In a natural environment, such as a lake or river, they explore how fast degradation happens through reaction with sunlight, and whether or not the contaminants turn into less toxic compounds when they degrade. Concerning drinking water, she and her team are investigating new ways to degrade chemicals that are not removed well by conventional drinking water treatment processes. These chemicals include endocrine-disrupting compounds, which can turn male fish into female fish, and are bioactive at the same levels found in the...

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## AFFILIATION

 University of Wisconsin-Madison

## EDUCATION

- Ph.D., Civil and Environmental Engineering, 2009, University of California, Berkeley
- M.S., Civil and Environmental Engineering, 2004, University of California, Berkeley
- B.S., Environmental Engineering Science, 2003, Massachusetts Institute of Technology

## AWARDS

- Environmental Science and Technology Excellence in Review Award, 2016
- Environmental Sciences: Processes and Impacts Top 10 Reviewer Award, 2016
- University Honored Instructor, 2016
- NSF CAREER Award, 2015
- ETH Postdoctoral Fellowship, 2010
- and 2 more...

## RESEARCH AREAS

Environment, Chemical, Clean Energy, Remediation

## FUNDING REQUEST

Your funding will help support the \$150K/year required to support a graduate student and postdoc, along with supplies, equipment, and travel for fieldwork and conferences. Help Dr. Remucal and her team continue their research and develop new water treatment systems using advanced oxidation processes and green infrastructure. If funded, she can continue her work and focus on removing dangerous chemicals from the water we consume. Support the mission toward cleaner water—fund Dr. Remucal.