

Christina Keenan Remucal, Ph.D.

Assistant Professor | DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

University of Wisconsin, Madison | 141 Water Science and Engineering Laboratory | 660 N. Park St.,
Madison, WI 53706, USA

T: (608) 262-1820 | E: remucal@wisc.edu | Twitter: @remucal

EDUCATION

University of California, Berkeley	Ph.D. in Civil and Environmental Engineering Dissertation advisor: Prof. David L. Sedlak Dissertation title: Reactive oxidant generation by nanoparticulate zero-valent iron: Contaminant oxidation and toxicity Minors: Material Science and Engineering, Public Health	2009
University of California, Berkeley	M.S. in Civil and Environmental Engineering	2004
Massachusetts Institute of Technology	B.S. in Environmental Engineering Science Thesis advisor: Prof. Bettina M. Voelker Thesis title: The effect of additional hydrogen peroxide on solar water disinfection	2003
Cambridge University	Junior year in Department of Engineering Participant in the Cambridge-MIT Institute exchange program	2001-2002

APPOINTMENTS

UNIVERSITY OF WISCONSIN, MADISON | Madison, WI

Assistant Professor	Department of Civil and Environmental Engineering; Environmental Chemistry and Technology Program; Limnology and Marine Science Program; Molecular and Environmental Toxicology Center	2012-present
	<ul style="list-style-type: none"> Research: Photochemistry, advanced oxidation processes, dissolved organic matter chemistry 	

ETH – SWISS FEDERAL INSTITUTE OF TECHNOLOGY | Zürich, Switzerland

Postdoctoral Associate	Institute of Biogeochemistry and Pollutant Dynamics	2009–12
	<ul style="list-style-type: none"> Prof. Kristopher McNeill research group Research: Enhanced visible-light solar water disinfection with riboflavin and its derivatives; High-resolution mass spectrometry of natural organic matter 	

UNIVERSITY OF MINNESOTA | Minneapolis, MN

Postdoctoral Associate	Department of Chemistry	2009
	<ul style="list-style-type: none"> Prof. Kristopher McNeill research group Research: Photoinactivation of fecal indicator bacteria and human viruses in surface water 	

PROFESSIONAL EXPERIENCE

- PARSONS | Walnut Creek, CA
Associate Environmental Engineer 2004-2005
- LOS ALAMOS NATIONAL LABORATORY | Los Alamos, NM
Environmental Generalist | Dynamic Experimental Division 2002

ADDITIONAL RESEARCH EXPERIENCE

- CAMBRIDGE UNIVERSITY | Cambridge, UK
Undergraduate Researcher | Department of Engineering 2001-2002
- Research: Solidification and stabilization of heavy metals in mine tailings
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY | Cambridge, MA
Undergraduate Researcher | Department of Earth, Air and Planetary Science 2001
- Research: Water chemistry of the large rivers of Tibet and China
- LOS ALAMOS NATIONAL LABORATORY | Los Alamos, NM
Undergraduate Researcher | Biosciences Division 2000
- Research: Single nucleotide polymorphism detection using flow cytometry

PUBLICATIONS

Peer-Reviewed Journal Articles

23. Barazesh J.M., Prasse C., Wenk J., Berg S., **Remucal C.K.**, Sedlak D.L. (2017) Trace element removal in distributed drinking water treatment systems by cathodic H₂O₂ production and UV photolysis. *Environ. Sci. Technol.* DOI: 10.1021/acs.est.7b04396.
22. Golub M., Desai A.R., **Remucal C.K.**, McKinley G.A., Stanley E.H. (2017) Large uncertainty in estimating pCO₂ from carbonate equilibria in lakes. *J. Geophys. Res. B.* 122 (11), 2909 – 2924.
21. Maizel, A., Li, J., **Remucal C.K.** (2017) Relationships between dissolved organic matter composition and photochemistry in lakes of diverse trophic status. *Environ. Sci. Technol.* 51 (17), 9642 – 9632.
20. Maizel, A., **Remucal C.K.** (2017) The effect of probe choice and solution conditions on the apparent photoreactivity of dissolved organic matter. *Environ. Sci. Processes Impacts.* 19, 1040 – 1050. Included in the Natural Organic Matter Showcase Collection.
19. McConville, M., Mezyk, S.P., **Remucal C.K.** (2017) Indirect photodegradation of the lampricides TFM and niclosamide. *Environ. Sci. Processes Impacts.* 19, 1028 – 1039.
18. Maizel, A., **Remucal C.K.** (2017) The effect of advanced secondary municipal wastewater treatment on the molecular composition of dissolved organic matter. *Water Res.* 122, 42-52.
17. McConville, M., Cohen, N., Lantz, S., Nowicki, S., Hixson, J. Ward, A.S., **Remucal C.K.** (2017) Lampricide photodegradation in Great Lakes tributaries: A field analysis. *Environ. Sci. Processes Impacts.* 19, 891 – 900.
16. Balgooyen, S.B., Alaimo, P.J., **Remucal C.K.**, Ginder-Vogel M. (2017) Mineralogical transformation of MnO₂ during the oxidation of bisphenol A. *Environ. Sci. Technol.* 51, 6053-6062.
15. Jane S.F., Winslow L.A., **Remucal C.K.**, Rose K.C. (2017) Long-term trends and synchrony in dissolved organic matter characteristics in Wisconsin, USA lakes. *J. Geophys. Res. B.* 122, 546-561.
14. Maizel A., **Remucal C.K.** (2017) Photochemical reactivity and molecular composition of size-fractionated dissolved organic matter. *Environ. Sci. Technol.* 51 (4), 2113-2123.

13. Li W., Jain T., Ishida K., **Remucal C.K.**, Liu H. (2016) A mechanistic understanding of the degradation of trace organic contaminants by UV/hydrogen peroxide, UV/persulfate and UV/free chlorine for water reuse. *Environ. Sci. Water Res. Tech.* 3, 128-138.
12. McConville M., Hubert T.D., **Remucal C.K.** (2016) Direct photolysis rates and transformation pathways of the lampricides TFM and niclosamide in simulated sunlight. *Environ. Sci. Technol.* 50, 9998-10006.
11. **Remucal C.K.**, Manley, D. (2016) The efficacy of chlorine photolysis as an advanced oxidation process for drinking water treatment. *Environ. Sci. Water Res. Tech.* 2, 565-579.
Invited for a special issue on *The Drinking Water Exposome* and featured on the issue's cover. Also included in the *Emerging Investigator Series*.
10. Chu C., Lundeen R.A., **Remucal C.K.**, Sander M., *McNeill K.* (2015) Enhanced indirect photochemical transformation of histidine and histamine through association with chromophoric dissolved organic matter. *Environ. Sci. Technol.* 49 (9), 5511–5519.
9. **Remucal C.K.**, Ginder-Vogel M. (2014) A critical review of the reactivity of manganese oxides with organic contaminants. *Environ. Sci. Process. Impacts.* 16 (6), 1247 – 1266.
Invited for the *Emerging Investigator* special issue.
8. **Remucal C.K.** (2014) The role of indirect photochemical degradation in the environmental fate of pesticides: A review. *Environ. Sci. Process. Impacts.* 16 (4), 628 – 653.
Invited for a special issue on *Environmental Photochemistry*.
7. **Remucal C.K.**, Cory R. M., Sander M. and *McNeill K.* (2012) Low molecular weight components in an aquatic humic substance as characterized by membrane dialysis and Orbitrap mass spectrometry. *Environ. Sci. Technol.* 46 (17), 9350-9359.
6. **Remucal C.K.** and *McNeill K.* (2011) Photosensitized amino acid degradation in the presence of riboflavin and its derivatives. *Environ. Sci. Technol.* 45 (12), 5230-5237.
5. **Keenan C.R.**, Goth-Goldstein R., Lucas D. and *Sedlak D.L.* (2009) Oxidative stress induced by zero-valent iron nanoparticles and Fe(II) in human bronchial epithelial cells. *Environ. Sci. Technol.* 43 (12), 4555-4560.
4. **Keenan C.R.** and *Sedlak D.L.* (2008b) Ligand-enhanced reactive oxidant generation by nanoparticulate zero-valent iron and oxygen. *Environ. Sci. Technol.*, 42 (18), 6936-6941.
3. Lee C., **Keenan C.R.** and *Sedlak D. L.* (2008) Polyoxometalate-enhanced oxidation of organic compounds by nanoparticulate zero-valent iron and ferrous iron. *Environ. Sci. Technol.*, 42 (13), 4921-4926.
2. **Keenan C.R.** and *Sedlak D.L.* (2008a) Factors affecting the yield of oxidants from the reaction of nanoparticulate zero-valent iron. *Environ. Sci. Technol.*, 42 (4), 1262-1267.
1. Fisher M.B., **Keenan C.R.**, Nelson K.L. and *Voelker B.M.* (2008) Speeding up solar disinfection (SODIS): Effects of hydrogen peroxide, temperature, pH, and copper plus ascorbate on the photoinactivation of *E. Coli*. *J. Water Health*, 6 (1), 35-51.

Invited Book Chapter

1. **Remucal C.K.** and *Sedlak D.L.* (2011) The role of iron coordination in the production of reactive oxidants from ferrous iron oxidation by oxygen and hydrogen peroxide. In P. Tratnyek, T. Grundl, S. Haderlein (Eds.), *Aquatic Redox Chemistry*. (Vol. 1071, pp. 177-197). Washington, DC: American Chemical Society.

Non-Peer Reviewed Articles

11. Cushman W. "Glass half full: Improving the world's water." *Perspective*. Spring 2017: 10-15. Print.
10. *Sedlak D.L.* (2016) *Environmental Science and Technology* presents the 2016 reviewer awards. *Environ. Sci. Technol.* 50, 11433-11434.

9. Bowley L. "Emerging investigator series: Christy Remucal." *Environmental Science: Water Research & Technology Blog*. 6 June 2016. <http://blogs.rsc.org/ew/2016/06/07/emerging-investigator-series-christy-remucal/>
8. Harrington M. "Wisconsin Sea Grant announces \$3.9 million to fund Great Lakes research, including six projects at UW-Madison." *University of Wisconsin Sea Grant Institute Press Release*. 22 February 2016. <http://www.seagrant.wisc.edu/Home/AboutUsSection/PressRoom/Details.aspx?PostID=2275>
7. Lepisto M. "Water research helps manage critical resource in ever-changing world." *In Common*. Spring/Summer 2015. <http://nelson.wisc.edu/news/in-common/spring-summer2015/story.php?s=1492>
6. Gordon S. "Christy Remucal receives NSF CAREER Award." *University of Wisconsin Engineering Newsnotes*. 30 January 2015. <http://www.engr.wisc.edu/news/archive/2015/jan03-remucal-career-award.html>
5. Zhuikov M. "Turning a Water Nuisance into a Water Cleanser: Water Resources Institute Project Looks at Manganese in the Madison Water System." *Water Resources Institute Newsletter*. 23 January 2015. <http://www.wri.wisc.edu/pressroom/Details.aspx?PostID=1200>
4. Delgado-Saborit J. M., Park, H.-D., and Cwiertny D. M. (2014) Emerging investigators: profiles of the contributors. *Environ. Sci. Process. Impacts*. 16, 1171-1181, DOI: 10.1039/C4EM90019G.
3. McNeill K. (2014) Themed issue on aquatic photochemistry. *Environ. Sci. Process. Impacts*. 16, 626-627, DOI: 10.1039/C4EM90009J.
2. **Remucal, C. K.** "A new perspective: Applying aquatic chemistry to solve our water quality problems." *Perspective*. Spring 2013: 34-25. Print.
1. Meiller, R. "Focus on new faculty: Christy Remucal, optimizing ways to remove contaminants from water." *University of Wisconsin Engineering Newsnotes*. 30 April 2013. <http://www.engr.wisc.edu/news/archive/2013/Apr30.html>.

HONORS AND AWARDS

<i>ESPI</i> HOT Article; Among top 10 percent of papers in 2017	2017
McConville, M., Cohen, N., Lantz, S., Nowicki, S., Hixson, J. Ward, A.S., Remucal C.K. (2017) Lampricide photodegradation in Great Lakes tributaries: A field analysis. <i>Environ. Sci. Processes Impacts</i> . 19, 891 – 900.	
<i>Environmental Science and Technology</i> Excellence in Review Award	2016
<i>Environmental Sciences: Processes and Impacts</i> Top 10 Reviewer Award	2016
University Honored Instructor	2016
NSF CAREER Award	2015
<i>ESPI</i> HOT Article; Among top 20 most downloaded articles in 2014	2014
Remucal C.K. , The role of indirect photochemical degradation in the environmental fate of pesticides: A review. 2014. <i>Environ. Sci. Process. Impacts</i> . 16 (4), 628 – 653.	
ETH Postdoctoral Fellowship	2010
Project: Enhancement of visible-light solar water disinfection with riboflavin and its derivatives	
U. C. Berkeley Outstanding Graduate Student Instructor Award	2008
American Chemical Society Division of Environmental Chemistry Graduate Student Paper Award	2008
Paper: Factors affecting the yield of oxidants from the reaction of nanoparticulate zero-valent iron and oxygen	
National Science Foundation Graduate Research Fellowship	2003

RESEARCH GRANTS AND FUNDING

Extramural Research Grants Funded (total at University of Wisconsin, Madison = \$1,382,384)

10. Wisconsin Sea Grant | 2016 \$230,562
The role of indirect photolysis in the environmental fate of pesticides and pharmaceuticals in the St. Louis River Estuary (PI: Remucal, Wammer)
9. National Science Foundation – Environmental Engineering | 2015 \$328,059
Applying surface chemical approaches to elucidate the oxidation mechanisms of organic pollutants by manganese oxides (PI: Ginder-Vogel, Remucal), Award No. 1509879.
8. National Science Foundation – CAREER | 2015 \$500,064
CAREER: An adaptive approach to oxidize emerging contaminants in our drinking water (PI: Remucal), Award No. 1451932.
7. Great Lakes Fishery Commission | 2015 \$117,896
Demonstration of the photodegradation of lampricides to form benign products during in situ dosing (PI: Remucal, Hubert)
6. National Science Foundation | 2014 \$4,012,651*
ILTER: Comparative study of a suite of lakes in Wisconsin (PI: Stanley; Remucal is one of 20+ co-PIs)
5. Great Lakes Fishery Commission | 2014 \$50,069
The aqueous photolysis of niclosamide (PI: Remucal, Hubert)
4. Wisconsin Groundwater Coordinating Council | 2013 \$105,734
Effect of source chemistry on Mn-bearing solid dissolution and reactivity (PI: Ginder-Vogel, Remucal)
3. Wisconsin Sea Grant | Development Grant | 2011 \$50,000
The role of indirect photochemical degradation in the environmental fate of lampricides (PI: Remucal)
2. ETH Zürich | Postdoctoral Fellowship | 2010 \$300,000
1. National Science Foundation | Graduate Research Fellowship | 2003 \$119,000

*The LTER funding is not included in award total.

Intramural Research Grants Funded

(total at University of Wisconsin, Madison = \$246,342)

14. University of Wisconsin, Madison Graduate School | Fall Competition | 2017 \$42,170
The role of dissolved organic matter composition in the formation of disinfection by-products during chlorination (PI: Remucal)
13. University of Wisconsin, Madison Graduate School | Travel Award | 2017 \$1,000
ACS Conference, March 2018, New Orleans, LA
12. University of Wisconsin, Madison | Hilldale Undergraduate Research Fellowship | 2017 \$1,000
Degradation of bisphenol A by manganese oxides (Campagnola)
11. University of Wisconsin, Madison Graduate School | Fall Competition | 2015 \$38,823
Molecular composition and photochemical reactivity of dissolved organic matter in the St. Louis River Estuary (PI: Remucal)

10. University of Wisconsin, Madison | Anna Grant Birge Award | 2015 \$1,000
Sampling campaign for lampricide photochemical experiments (McConville)
9. University of Wisconsin, Madison Graduate School | Travel Award | 2015 \$1,000
AEESP Conference, June 2015, New Haven, Connecticut
8. University of Wisconsin, Madison Graduate School | Fall Competition | 2014 \$39,424
An adaptive approach to oxidize emerging contaminants in our drinking water (PI: Remucal)
(This award was insurance against an NSF CAREER proposal and was declined.)
7. University of Wisconsin, Madison | Anna Grant Birge Award | 2014 \$1,179
Sampling campaign for DOM photochemical experiments (Maizel)
6. University of Wisconsin, Madison Graduate School | Fall Competition | 2013 \$33,844
The effect of water chemistry on the photodegradation of pesticides and pharmaceuticals (PI: Remucal)
5. Sustainability Innovation in Research and Teaching (SIRE) | 2013 \$50,000
Water, sustainability and green infrastructure: A model 21st century campus by 2025 (PI: LaGro, Co-PIs: Ginder-Vogel, Harrington, Likos, Loheide, Remucal)
4. University of Wisconsin, Madison | Holstrom Environmental Scholarship | 2013 \$1,000
Photodegradation of 3-trifluoromethyl-4-nitrophenol and 5-chloro-N-(2-chloro-4-nitrophenyl)-2-hydroxy-benzamide (Linde)
3. University of Wisconsin, Madison | Anna Grant Birge Award | 2013 \$790
Sampling campaign for lampricide photochemical experiments (McConville)
2. University of Wisconsin, Madison Graduate School | Travel Award | 2013 \$1,000
American Chemical Society Spring Meeting, April 2013, New Orleans, Louisiana
1. University of Wisconsin, Madison Graduate School | Fall Competition | 2012 \$34,112
The photochemical behavior of dialysis-isolated size fractions of dissolved organic matter in natural waters

PRESENTATIONS

Invited Research Seminars

	<u>Location</u>	<u>Department</u>	<u>Seminar Date</u>
1.	University of Wisconsin-Madison	Wisconsin Idea Seminar	May 21, 2013
2.	University of St. Thomas	Chemistry Department	Oct. 11, 2013
3.	University of Wisconsin-Milwaukee	School of Freshwater Sciences	Apr. 3, 2014
4.	Marquette University	Environmental Engineering	Apr. 15, 2015
5.	Gustavus Adolphus College	Department of Chemistry	May 8, 2015
6.	Northwestern University	Environmental Engineering	May 29, 2015
7.	University of Wisconsin-Madison	Chemistry Department	Oct. 13, 2016
8.	University of Iowa	Environmental Engineering	Oct. 21, 2016
9.	University of Michigan	Environmental Engineering	Oct. 28, 2016
10.	University of Minnesota	Civil, Environmental, and Geo- Engineering	Nov. 11, 2016
11.	US Geological Survey	Middleton, WI	Dec. 5, 2016
12.	Stanford University	Environmental Engineering	Apr. 6, 2017
13.	University of Wisconsin-Madison	Water@UW-Madison Symposium	May 9, 2017

Conference Presentations

(* denotes the presenting author, Remucal advisees are underlined)

28. Mooney R. J.*, McKinley G.A., Gloege L., **Remucal C. K.**, McConville M., McIntrye P. B. *Extensive spatiotemporal variation in nutrient concentrations of Lake Michigan's tributaries* | Society of Freshwater Science National Meeting | Raleigh, NC | June 7, 2017.
27. **Remucal C. K.***, McConville M., and Ward A. | *Photochemical fate of lampricides in tributaries of the Great Lakes* | American Chemical Society National Meeting | San Francisco, CA | April 5, 2017.
26. Balگوoyen S.*, **Remucal C. K.**, and Ginder-Vogel M. | *Mineralogical transformation of MnO₂ during redox reactions with organic contaminants* | American Chemical Society National Meeting | San Francisco, CA | April 3, 2017.
25. **Remucal C.K.***, Maizel A., and Berg S. | *Characterization of dissolved organic matter during municipal wastewater treatment* | American Chemical Society National Meeting | San Francisco, CA | April 3, 2017.
24. Manley D.* and **Remucal C. K.** | *Effect of solution conditions on reactive oxidant production during chlorine photolysis* | American Chemical Society National Meeting | San Francisco, CA | April 2, 2017.
23. Balگوoyen S.*, Ginder-Vogel M.*, and **Remucal C. K.** | *Characterization and use of manganese in Madison's drinking water aquifers* | American Water Works Association (Wisconsin Section) | Madison, WI | September 15, 2016.
22. Ginder-Vogel M.*, Balگوoyen S., and **Remucal C. K.** | *Mechanisms and products of BPA oxidation by Mn(IV) oxide* | American Chemical Society National Meeting | Philadelphia, PA | August 23, 2016.
21. Chu C.*, Lundeen R. A., **Remucal C. K.**, Sander M., and McNeill K. | *Enhanced indirect photochemistry of dissolved free and combined histidine through association with chromophoric dissolved organic matter* | American Chemical Society National Meeting | San Diego, CA | March 17, 2016.
20. Maizel A.* and **Remucal C. K.** | *Effect of experimental parameters on the apparent photochemical properties of dissolved organic matter* | American Chemical Society National Meeting | San Diego, CA | March 16, 2016.
19. **Remucal C. K.*** and Maizel A. | *Photochemical formation of reactive oxidants by size-fractionated dissolved organic matter* | American Chemical Society National Meeting | San Diego, CA | March 16, 2016.
18. Balگوoyen S.*, Chhouk B., Ginder-Vogel M., and **Remucal C. K.** | *Oxidative transformation of bisphenol A in the presence of synthetic δ -MnO₂* | American Chemical Society National Meeting | San Diego, CA | March 16, 2016.
This presentation received a Certificate of Merit for the presentation of an oral paper from the ENVR division of ACS.
17. Balگوoyen S.*, Chhouk B., Ginder-Vogel M., and **Remucal C. K.** | *Mineral surface modification of δ -MnO₂ decreases bisphenol A oxidation rate* | Soil Science Society of America | Minneapolis, MN | November 17, 2015.
16. Ginder-Vogel M.*, Balگوoyen S., Chhouk B., and **Remucal C. K.** | *Mechanisms and kinetics of organic contaminant transformation by Mn(IV) oxides* | Goldschmidt | Prague, Czech Republic | August 21, 2015. (Invited)
15. **Remucal C. K.*** and Maizel A. | *Photochemical formation of reactive oxidants by size-fractionated dissolved organic matter* | Goldschmidt | Prague, Czech Republic | August 21, 2015.
14. Chu C.*, Lundeen R. A., **Remucal C. K.**, Sander M., and McNeill K. | *Enhanced indirect photochemistry of dissolved free and combined histidine through association with chromophoric dissolved organic matter* | American Chemical Society National Meeting | Boston, MA | August 20, 2015.

13. McConville M. and **Remucal C. K.*** *Balancing the use of pesticides with protecting commercial fisheries: The role of photolysis in the fate of lampricides in the Great Lakes.* | Association of Environmental Engineering and Science Professors Meeting | New Haven, CT | June 16, 2015.
12. Golub M.*, Desai A. R., **Remucal C. K.**, McKinley G. A., and Stanley E. H. | *The effect of random parameter errors on predictability of long-term change in freshwater pCO₂ calculated from thermodynamic equilibria* | Society for Freshwater Science Meeting | Milwaukee, WI | May 2015.
11. Maizel M.*, Kamp W., and **Remucal C. K.** | *Comparing triplet reaction mechanisms for DOM characterization* | American Chemical Society National Meeting | Denver, CO | March 24, 2015.
10. McConville M.* and **Remucal C. K.** | *Characterizing lampricide photoproduct formation under laboratory based and field based conditions* | American Chemical Society National Meeting | Denver, CO | March 22, 2015.
9. McConville M. and **Remucal C. K.*** | *Assessing direct & indirect photochemical pathways impacting fate & transport of lampricides in tributaries of the Great Lakes* | Emerging Contaminants (EmCon) | Iowa City, IA | August 20, 2014.
8. Golub M.*, Desai A. R., McKinley G. A., **Remucal C. K.**, Stanley E. H. | *Random measurement uncertainties effect on CO₂ emissions from north temperate lakes.* | Joint Aquatic Sciences Meeting | Portland, OR | May 2014.
7. McConville M.* and **Remucal C. K.** *Assessing the role of natural organic matter in the photochemical degradation of lampricides.* | American Chemical Society National Meeting | Indianapolis, IN | September 12, 2013.
6. McConville M. and **Remucal C. K.*** *Photochemical degradation of lampricides in the presence and absence of dissolved organic matter.* | Association of Environmental Engineering and Science Professors Meeting | Golden, CO | July 16, 2013.
5. McConville M. and **Remucal C. K.*** *UV photolysis of lampricides in the presence and absence of dissolved organic matter.* | American Chemical Society National Meeting | New Orleans, LA | April 9, 2013.
4. **Remucal C. K.***, Cory R. M., Sander, S. and McNeill K. *Low molecular weight components in an aquatic humic substance as characterized by membrane dialysis and Orbitrap mass spectrometry.* | American Chemical Society National Meeting | New Orleans, LA | April 9, 2013.
3. **Remucal C. K.*** and McNeill K. *Enhancement of visible-light solar water disinfection with riboflavin and its derivatives.* | American Chemical Society National Meeting | Anaheim, CA | March 29, 2011.
2. **Keenan C.R.*** and Sedlak D.L. *Factors affecting the yield of oxidants from the reaction of nanoparticulate zero-valent iron and oxygen.* | American Chemical Society National Meeting | Philadelphia, PA | August 19, 2008.
1. **Keenan C.R.***, Dueterberg C., Waite T.D. and Sedlak D.L. *Hydroxyl radical production by the reaction of zero-valent iron and oxygen.* | American Chemical Society National Meeting | Chicago, IL | March 24, 2007.

Conference Poster Presentations

23. Manley D. and **Remucal C.K.** *Effect of solution conditions on reactive oxidant production during chlorine photolysis* | Water@UW-Madison Poster Session | Madison, WI | October 24, 2017.
22. Regan C., Leverich E., Ginder-Vogel M., and **Remucal C.K.** *Oxidation of phenolic compounds by iron-containing manganese oxides* | University of Wisconsin SURE-REU Poster Session | Madison, WI | August 2, 2017.
21. **Remucal C.K.** and Manley D. *Effect of solution conditions on reactive oxidant production during chlorine photolysis* | Association of Environmental Engineering and Science Professors Meeting | Ann Arbor, MI | June 21, 2017.

20. Hixson J.L., Ward A.S., Schmadel N.M., McConville M., and **Remucal C.K.** *Interaction of physical and chemical processes controlling the environmental fate and transport of lampricides through stream-hyporheic systems* | American Geophysical Union National Meeting | San Francisco, CA | December 14, 2016.
19. Balgooyen S., Alaimo P.J., **Remucal C.K.**, and Ginder-Vogel M. *Transformation of manganese oxides during bisphenol A oxidation* | Water@UW-Madison Poster Session | Oct. 28, 2016.
18. McConville M., Hubert T., Ward A., and **Remucal C.K.** *Photochemical fate of lampricides in tributaries of the Great Lakes* | Water@UW-Madison Poster Session | Oct. 28, 2016.
17. Maizel A. and **Remucal C.K.** *Photochemistry of size-fractionated dissolved organic matter* | Water@UW-Madison Poster Session | Oct. 28, 2016.
16. **Remucal C.K.**, Balgooyen S., Alaimo P.J., and Ginder-Vogel M. *Transformation of manganese oxides during bisphenol A oxidation* | Gordon Research Conference on Environmental Sciences: Water | Holderness, NH | June 29, 2016.
15. McConville M., Hubert T., Ward A., and **Remucal C.K.** *Photochemical fate of lampricides in tributaries of the Great Lakes* | Gordon Research Conference on Environmental Sciences: Water | Holderness, NH | June 28, 2016.
*This poster received the "Best Student Poster Presentation Award" at the GRC.
14. Maizel A. and **Remucal C.K.** *Photochemistry of size-fractionated dissolved organic matter* | Gordon Research Conference on Environmental Sciences: Water | Holderness, NH | June 27, 2016.
13. Chu C., Lundeen R. A., **Remucal C. K.**, Sander M., and McNeill K. | *Enhanced indirect photochemistry of dissolved free and combined histidine through association with chromophoric dissolved organic matter* | Gordon Research Conference on Environmental Sciences: Water | Holderness, NH | June 27, 2016.
12. **Remucal C.K.**, McConville M. and Ward A. *Evidence of lampricide photodegradation during field applications to tributaries of the Great Lakes* | American Chemical Society National Conference | San Diego, CA | March 16, 2016.
11. McConville M., Ward A. and **Remucal C.K.** *Evidence of lampricide photodegradation during field applications to tributaries of the Great Lakes* | Midwest Regional SETAC Chapter Meeting | Madison, WI | March 15, 2016.
10. Maizel A., Kamp W. and **Remucal C.K.** *Photochemical production of reactive species by low molecular weight components of Suwannee River fulvic acid* | Gordon Research Conference on Environmental Sciences: Water | Holderness, NH | June 24, 2014.
9. Linde L., McConville M. and **Remucal C.K.** *Indirect photodegradation of lampricides.* | University of Wisconsin-Madison Undergraduate Research Symposium | Madison, WI | May 16, 2014.
8. Chhouk B., Mejia J., Ginder-Vogel M. and **Remucal C.K.** *Kinetics of bisphenol A and 17 β -estradiol oxidation by manganese(IV) oxides.* | SACNAS National Conference | San Antonio, TX | October 5, 2013.
7. Linde L., McConville M. and **Remucal C.K.** *Photodegradation dependence of 3-trifluoro-4-nitrophenol and 5-chloro-N-(2-chloro-4-nitrophenyl)-2-hydroxybenzamide on pH.* | WI Earth and Water Student Conference | Whitewater, WI | September 20, 2013.
6. **Remucal C. K.**, Cory R. M., Sander M. and McNeill K. *Low molecular weight components in an aquatic humic substance as characterized by membrane dialysis and Orbitrap mass spectrometry.* | Gordon Research Conference on Environmental Sciences: Water | Holderness, NH | June 27, 2012.
5. **Remucal C. K.** and McNeill K. *Enhancement of visible light solar water disinfection with riboflavin and its derivatives.* | Gordon Research Conference on Environmental Sciences: Water | Holderness, NH | June 22, 2010.

4. **Keenan C.R.** and Sedlak D.L. *Ligand-enhanced reactive oxidant generation by nanoparticulate zero-valent iron and oxygen.* | Gordon Research Conference on Environmental Sciences: Water | Holderness, NH | June 24, 2008.
3. **Keenan C.R.**, Lee C. and Sedlak D.L. *Generation of oxidants from the reaction of nanoparticulate zero-valent iron for the use in contaminant remediation.* | American Geophysical Union National Meeting | San Francisco, CA | December 11, 2007.
2. **Keenan C.R.**, Duesterberg C.K., Waite T.D. and Sedlak D.L. *Use of oxidants produced by nanoparticulate zero-valent iron in contaminant remediation.* | Superfund Basic Research Program Annual Meeting | San Diego, CA | December 11-12, 2006.
1. **Keenan C.R.** and Sedlak D.L. *Contaminant oxidation by zero-valent iron nanoparticles.* | Gordon Research Conference on Environmental Sciences: Water | Holderness, NH | June 28, 2006.

CONFERENCES ATTENDED

Professional Conferences Attended

AEESP Meeting, Ann Arbor, MI	June 2017
ACS National Meeting, San Francisco, CA	Mar. 2017
Gordon Research Conference on Environmental Sciences: Water, Holderness, NH	June 2016
ACS National Meeting, San Diego, CA	Mar. 2016
AEESP Meeting, New Haven, CT	June 2015
ACS National Meeting, Denver, CO	Mar. 2015
EmCon, Iowa City IA	Aug. 2014
AEESP Meeting, Golden, CO	July 2013
ACS National Meeting, New Orleans, LA	April 2013
Gordon Research Conference on Environmental Sciences: Water, Holderness, NH	June 2012
ACS National Meeting, Anaheim, CA	Mar. 2011
Gordon Research Conference on Environmental Sciences: Water, Holderness, NH	June 2010
ACS National Meeting, Philadelphia, PA	Aug. 2008
Gordon Research Conference on Environmental Sciences: Water, Holderness, NH	June 2008
AGU National Meeting, San Francisco, CA	Dec. 2007
ACS National Meeting, Chicago, IL	Mar. 2007
Superfund Basic Research Program Annual Meeting, San Diego, CA	Dec. 2006
Gordon Research Conference on Environmental Sciences: Water, Holderness, NH	June 2006

EXTERNAL PROFESSIONAL SERVICE

Grant Proposal Reviewer

National Institutes for Water Resource & U. S. Geological Survey (1)
 Innovational Research Incentives Scheme Veni (2)
 National Science Foundation (3 panels, 2 ad hoc)
 Innovation and Technology Commission Hong Kong Special Admin. Region (1)
 UW-Madison 2020 Competition (3)

Manuscript Reviewer

2009–present

Chemical Engineering Journal; Chemosphere; Environmental Engineering Science; Environmental Science & Technology; Environmental Science & Technology Letters; Environmental Sciences: Process & Impacts; Environmental Science: Water Research & Technology; Journal of Agricultural and Food Chemistry; Organic Geochemistry; Pedosphere; Science of the Total Environment; Water Research

Conference Organizer

Poster Chair, Gordon Research Conference on Environmental Sciences: Water June 2012

Poster Judge, AEESP Conference	July 2013
Session co-chair with Michael Sander and Christopher Gorski. Session: Environmental Redox and Reactive Oxygen Species Chemistry. Goldschmidt, Prague, Czech Republic	August 2015
Session Leader, Water@UW-Madison Symposium	May 2017
Session Moderator. Session: Fate and Presence of Environmental Contaminants in Communities. AEESP Conference, Ann Arbor, MI.	June 2017

Service to Professional Societies

Liaison between the Association of Environmental Engineering and Science Professors (AEESP) and the Gordon Research Conferences	2017 – present
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INTERNAL PROFESSIONAL SERVICE

Departmental Service

EC&T Academic Planning committee chair	2017-present
CEE accountant search & screen committee member	2017
Byron Bird Award for Excellence in a Research Publication selection committee	2017
CEE search & screen committee member (CEM search)	2016, 2017
Water@UW-Madison ad hoc committee member	2016-2017
EC&T Academic Planning committee member	2015-2017
CEE search & screen committee member (CEM search)	2015-2016
Robyn Ryan Scholarship Award committee member UW Madison	2015
EC&T safety committee	2014-present
CEE qualifying exam organizer	2014
CEE Panelist for Pre-Engineering (EGR) undergraduates	2013
Society of Women Engineers faculty advisor	2013-present
Celebrating Women in Engineering Event CEE representative	2013, 2015
CEE Panelist for the Day on Campus Event hosted by the Society of Women Engineers	2013, 2015
CEE Alternate Senator to Faculty Senate UW Madison	2013-2016
Anna Grant Birge Award committee member UW Madison	2013
CEE Faculty Search Committee Graduate Student Panel Member UC Berkeley	2008
Environmental Engineering Friday Seminar Series Organizer UC Berkeley	2007

Invited Workshop Presentations

Water@UW Madison Symposium	May 2015
Delta Workshop on “Developing an Excellent Education Plan for your CAREER Proposal: Ideas and Advice from Successful CAREER Awardees”	June 2015

Outreach

Expanding Your Horizons workshop organizer	Nov. 2013, 2015, 2016, 2017
Women in Science and Engineering program seminar guest	Nov. 2013, 2015, 2016
Half-day: Wisconsin Louis Stokes Alliance for Minority Participation (WiscAMP) Excel program	June 2013
Episode on water purification for Blue Sky Science (partnership of the Morgridge Institute and Wisconsin State Journal). https://morgridge.org/question/how-do-we-purify-dirty-water/	July 2015
Science outreach at Midvale Elementary	May 2017, Dec. 2017
Invited presenter for the Institute for Chemical Education at UW-Madison	June 2017

Graduate Student Examination Committee

Masters Defense Committees: 4 total	2013-present
PhD Qualifying Exam Committees: 6 total	2013-present
PhD Preliminary Exam Committees: 9 total	2012-present
PhD Defense Committees: 10 total	2013-present

TEACHING AND MENTORING EXPERIENCE

University of Wisconsin, Madison Courses

CEE 320 <i>Introduction to Environmental Engineering</i>	Spring 2014, 2016, 2017
CEE 322 <i>Environmental Engineering Processes</i>	Fall 2017
CEE 609-001 <i>Current Topics in Environmental Chemistry</i>	Fall 2014
CEE 700 <i>Chemistry of Natural Waters</i>	Fall 2012, 2013, 2016
CEE 704 <i>Environmental Chemical Kinetics</i>	Spring 2013, Fall 2015
CEE 909 <i>Water Chemistry Seminar</i>	Spring 2015

University of Wisconsin, Madison Guest Instructor

CEE 320 <i>Introduction to Environmental Engineering</i>	Fall 2013
MET 606 <i>Colloquium in Environmental Toxicology</i>	Spring 2014
CEE 631 <i>Toxicants in the Environment</i>	Spring 2015, 2016

Non-University of Wisconsin, Madison Courses

<i>Case Studies in Environment and Health</i> ETH-Zürich lecturer	Spring 2011
<i>Semester Paper on a Scientific Topic</i> ETH- Zürich student mentor	Spring 2010
<i>Introduction to Environmental Organic Chemistry</i> ETH- Zürich guest lecturer	Fall 2010
<i>Environmental Analytical Chemistry</i> UC Berkeley guest lecturer	Spring 2008
<i>Environmental Chemical Kinetics</i> UC Berkeley guest lecturer	Spring 2008
<i>Water Chemistry</i> UC Berkeley graduate student instructor & guest lecturer	Fall 2007

Current Graduate Research Students

UNIVERSITY OF WISCONSIN, MADISON | Madison WI

Erin Ostrem | Molecular and Environmental Toxicology Program 2013-present

- Research: Biodegradation of PAHs by fungi
- Co-advised by Dr. Jae-Hyuk Yu (Bacteriology)
- EPA STAR Fellowship (\$132,000; 2016).

Sarah Balgooyen | Environmental Chemistry and Technology Program 2014-present

- Research: Oxidative properties of manganese oxides
- Co-advised by Dr. Matthew Ginder-Vogel
- NSF Graduate Research Fellowship Program Award (\$126,000; 2015); Becker Travel Supplement (\$250; 2016); UW Graduate School Travel Grant (\$600; 2016); Certificate of Merit for the presentation of an oral paper (ACS; Spring 2016).

Devon Manley Bulman | Environmental Chemistry and Technology Program 2015-present

- Research: Contaminant transformation and disinfection by-product formation during chlorine photolysis
- NWRI Graduate Fellowship Award (\$10,000; 2016)

Emma Leverich | Environmental Chemistry and Technology Program 2016-present

- Research: Oxidative properties of manganese oxides
- Co-advised by Dr. Matthew Ginder-Vogel

Stephanie Berg | Environmental Chemistry and Technology Program 2016-present

- Research: Photochemistry of dissolved organic matter in the Saint Louis River Estuary
- Anna Grant Birge Award (\$1,911; 2017).

Current Undergraduate Research Students

UNIVERSITY OF WISCONSIN, MADISON | Madison WI

- Gabrielle Campagnola** | Civil & Environmental Engineering Sept. 2015 - present
- Oxidation of contaminants by manganese oxides
 - Hilldale Undergraduate Research Fellowship (\$4,000; 2017)
- Keerthana Sreenivasan** | Civil & Environmental Engineering Sept. 2017 - present
- Oxidation of contaminants by manganese oxides

Former Graduate Research Students

UNIVERSITY OF WISCONSIN, MADISON | Madison WI

- Andrew Maizel** | Civil and Environmental Engineering 2013-2017
- Research: Characterization of dissolved organic matter by dialysis, mass spectrometry and photochemical behavior
 - Becker Travel Supplement (\$200; 2014); Environmental Chemistry & Technology Travel Award (\$300; 2014); Anna Grant Birge Award (\$1,179; 2014); Becker Travel Supplement (\$300; 2015); Becker Travel Supplement (\$250; 2016); UW Graduate School Travel Grant (\$1,200; 2016).
- Megan McConville** | Environmental Chemistry and Technology Program 2012-2017
- Research: The role of indirect photochemical degradation in the environmental fate of lampricides
 - Anna Grant Birge Award (\$790; 2013); NSF Graduate Research Fellowship Program Award (\$126,000; 2013); Becker Travel Supplement (\$250; 2013); Becker Travel Supplement (\$200; 2014); Environmental Chemistry & Technology Travel Award (\$300; 2014); Becker Travel Supplement (\$300; 2015), Anna Grant Birge Award (\$1,000; 2015), GRC on Environmental Sciences: Water "Best Student Poster Presentation Award" (2016).

ETH – SWISS FEDERAL INSTITUTE OF TECHNOLOGY | Zürich, Switzerland

- Sandra Rüd** | Institute of Biogeochemistry and Pollutant Dynamics 2010
- Master's Research Thesis (co-advised with K. McNeill and M. Ackermann): The wavelength dependence of singlet oxygen production and its role in photoinactivation

Former Undergraduate Research Students

UNIVERSITY OF WISCONSIN, MADISON | Madison WI

- Laura Linde** | Chemistry, Environmental Studies Oct. 2012 – Dec. 2014
- Chem 346 Research Project: Photochemical degradation of trifluoromethylphenol
 - Holstrom Environmental Scholarship (\$4,000; 2013)
- Billionrosannae Chhouk** | Environmental Studies | San Diego State University Summer 2013
- Integrated Biological Sciences Summer Research Program
 - Co-advised by M. Ginder-Vogel
- William Kamp** | Chemistry, Environmental Studies Feb. 2014 – May 2015
- Characterization of dissolved organic matter
- Sonia Chandra** | Chemical Engineering Jan. 2015 – May 2015
- Photodegradation of lampricides
- Jing (Juno) Li** | Civil and Environmental Engineering Jan. 2015 – May 2016

- Long-term changes in dissolved organic matter
- NSF REU fellow (\$5,000; 2015)

Taryn Davis | Civil & Environmental Engineering Jan. 2016 – May 2016

- Distribution of pesticides in US waterways

Natan Cohen | Civil & Environmental Engineering June 2016 – Dec. 2016

- Variability in DOM in Lake Michigan tributaries

Owen Walcott | Chemistry June 2016 – Aug. 2017

- Chlorine photolysis

Joseph Brunner | Civil & Environmental Engineering Jan. 2017 – Dec. 2017

- Variability in DOM in Lake Michigan tributaries

Quinn Whiting | Chemistry | University of St. Thomas summer 2017

- Photochemistry of dissolved organic matter in the Saint Louis River Estuary

Regan Cadena | Chemistry | New Mexico State University summer 2017

- SURE REU fellow
- Oxidative properties of manganese oxides

MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

American Chemical Society

American Geophysical Union

Association of Environmental Engineering and Science Professors

European Association of Geochemistry

Society of Women Engineers