Daniel L. McCurry

Associate Professor
Dr. Shiao-Ping Siao Yen Early Career Chair
University of Southern California
213-740-0762

Department of Civil and Environmental Engineering
920 Downey Way, BHE 220, Los Angeles, CA 90089
dmccurry@usc.edu
mccurrylab.com

EDUCATION

Stanford University	**Ph.D., Civil and Environmental Engineering** *Minor: Chemistry*	June 2016
Yale University	**M.S., Environmental Engineering**	May 2013
University of Cincinnati	**B.S., Civil Engineering**	June 2011

APPOINTMENTS

UNIVERSITY OF SOUTHERN CALIFORNIA I Los Angeles, CA

Associate Professor (February 2024 –)
Astani Department of Civil and Environmental Engineering

Dr. Shiao-Ping Siao Yen Early Career Chair (August 2022 –)
Astani Department of Civil and Environmental Engineering

Assistant Professor (January 2017 – February 2024)
Astani Department of Civil and Environmental Engineering

STANFORD UNIVERSITY I Stanford, CA

Postdoctoral Associate (July 2016 – December 2016)
Department of Civil and Environmental Engineering

Graduate Research Assistant (July 2013 – June 2016)
Department of Civil and Environmental Engineering

YALE UNIVERSITY I New Haven, CT (August 2011 – June 2013)

Graduate Research Assistant
Department of Chemical and Environmental Engineering

U.S. ENVIRONMENTAL PROTECTION AGENCY I Cincinnati, OH (January 2008 – July 2011)

Undergraduate Research Assistant (Trainee/contractor)
Office of Research and Development

UNIVERSITY OF CINCINNATI I Cincinnati, OH (Summer 2007)
Undergraduate Research Assistant
Department of Civil and Environmental Engineering

PUBLICATIONS

Peer-Reviewed Journal Articles
(*indicates undergraduate advisee; **indicates graduate advisee; ***indicates postdoctoral advisee)

1. **Schammel, M.H.; *Gold, S.J.; **McCurry, D.L.** Metals in Wildfire Suppressants. *Environmental Science & Technology Letters,* **2024**, *11*, 1247-1253. (*ACS Editor's Choice Article)*

2. Kearney, R.N.; Braithwaite, S.G.; McCoy, S.W.; **McCurry, D.L.**; Reber, K.P.; Sivey, J.D. Methanol as a Carrier Solvent Can Influence Chlorination Rates of Phenolic Compounds in Chlorinated Waters. *Environmental Science & Technology Letters,* **2024**, *11*, 1110-1115.

3. Lieberman, M.; **McCurry, D.L.**; Marron, E.L. Overlooked Chlorination of Aqueous Alcohols: Aldehyde Formation and Artifactual Chlorine Consumption. *Environmental Science & Technology Letters,* **2024**, *11*, 1002-1007.

4. Abusallout, I.; Song, M.; Chan, A.; McKenna, E.; ***Van Buren, J.; McCoy, S.; Ledvina, Z.; Jeffrey, C.; **McCurry, D.L.**; Hanigan, D. Bacterial dealkylation of benzalkonium chlorides in wastewater produces benzyldimethylamine, a potent *N*-nitrosodimethylamine precursor. *Water Research*, **2024**, *260*, 121945.

5. **Plata, S.L.; Childress, A.E.; **McCurry, D.L.** Minimizing *N*-Nitrosodimethylamine Formation during Disinfection of Blended Seawater and Wastewater Effluent. *ACS ES&T Water*, **2024**, *4*, 1498-1507.

6. **Shi, J.L.; **Kim, E.; *Cardosa, G.B.; **McCurry, D.L.** Chloramination of Nitromethane: Incomplete Chlorination and Unexpected Substitution Reaction. *Environmental Science and Technology*, **2023,** *57*, 18856-18866. (*Invited contribution for special issue on Oxidative Water Treatment*)

7. Psoras, A.W.; McCoy, S.W.; Reber, K.P.; **McCurry, D.L.**; Sivey, J.D. Ipso Substitution of Aromatic Bromine in Chlorinated Waters: Impacts on Trihalomethane Formation. *Environmental Science and Technology*, **2023**, *57*, 18801-18810.

8. **Kim, E.; *Cardosa, G.B.; *Stanley, K.E.; Williams, T.J.; **McCurry, D.L.** Out of Thin Air? Catalytic Oxidation of Trace Aqueous Aldehydes with Ambient Dissolved Oxygen. *Environmental Science and Technology*, **2022**, *56*, 8756-8764

9. #Lim, S.; **#Shi, J.L.; von Gunten, U.; **McCurry, D.L.** Ozonation of Organic Compounds in Water and Wastewater: A Critical Review. *Water Research*, **2022**, *213*, 118053. (# = equal contributions)

10. **Kim, E.; Driessen, O.M.; **McCurry, D.L.**; Sivey, J.D. Intermural, Online Research Group Meetings as Professional Development Tools for Undergraduate, Graduate, and Postdoctoral Trainees. *Environmental Engineering Science,* **2022**, *39 (2),* DOI: https://doi.org/10.1089/ees.2021.0147.

11. Harb, M.; Zarei-Baygi, A.; Wang, P.; BouNehme Sawaya, C.; **McCurry, D.L**.; Stadler, L.B.; Smith, A.L. Antibiotic transformation and associated microbial activity in an anaerobic membrane bioreactor. *Environmental Research*, **2021**, *200*, 111456.

12. **Shi, J.L.; **Plata, S.L.; *Kleimans, M.; Childress, A.E.; **McCurry, D.L.** Formation and Fate of Nitromethane in Ozone-Based Water Reuse Processes. *Environmental Science and Technology*, **2021**, *55*, 6281-6289.

13. Choe, J.K.; Hua, L.-C.; Komaki, Y.; Simpson, A.M.-A.; **McCurry, D.L.**; Mitch, W.A. Evaluation of Histidine Reactivity and Byproduct Formation during Peptide Chlorination, *Environmental Science and Technology*, **2021**, *55*, 1790-1799.

14. #Hua, L.C.; **#Kim, E.; **McCurry, D.L.;** Huang, C.; Mitch, W.A. Novel Chlorination Byproducts of Tryptophan: Initial High-Yield Transformation Products Versus Small Molecule DBPs. *Environmental Science & Technology Letters,* **2020**, *7*, 149-155. (# = equal contributions)

15. **Shi, J.L.; **McCurry, D.L.** Transformation of *N*-methylamine Drugs during Wastewater Ozonation: Formation of Nitromethane, an Efficient Precursor to Halonitromethanes. *Environmental Science and Technology*, **2020**, *54,* 2182-2191.

16. McKenna, E.; Thompson, K.; Taylor-Edmonds, L.; **McCurry, D.L**.; Hanigan, D. Summation of Disinfection By-product CHO Cell Relative Toxicity Indices: Sampling Bias, Uncertainty, and a Path Forward. *Environmental Science: Processes & Impacts*, **2020,** *22*, 708-718.

17. Krasner, S.W.; Westerhoff, P.; Mitch, W.A.; Hanigan, D.; **McCurry, D.L.**; von Gunten, U. Behavior of NDMA Precursors at 21 Full-Scale Water Treatment Facilities. *Environmental Science: Water Research and Technology*, **2018**, *4*, 1966-1978.

18. *Huang, M.E.; **Huang, S.; **McCurry, D.L.** Re-examining the Role of Dichloramine in High-Yield NDMA Formation from *N,N*-dimethyl-α-arylamines. *Environmental Science & Technology Letters*, **2018**, *5*, 154-159. *(Cover Article of March 2018 Issue of ES&T Letters)*

19. **McCurry, D.L.**, Ishida, K.P., Oelker, G.L., Mitch, W.A. Reverse Osmosis Shifts Chloramine Speciation Causing Re-Formation of NDMA during Potable Reuse of Wastewater. *Environmental Science and Technology*, **2017**, *51*, 8589-8596.

20. **McCurry, D.L.**, Krasner, S.W., Mitch, W.A. Control of Nitrosamines During Non-Potable and de Facto Wastewater Reuse with Medium Pressure Ultraviolet Light and Preformed Monochloramine. *Environmental Science: Water Research and Technology*, **2016**, *2*, 502-510.
(*Editor's Choice Paper for 2016*)

21. **McCurry, D.L.**, *Quay, A.N., Mitch, W.A. Ozone Promotes Chloropicrin Formation by Oxidizing Amines to Nitro Compounds. *Environmental Science and Technology*, **2016**, *50*, 1209–1217.

22. Chuang, Y.H., **McCurry, D.L.,** Tung, H.H., Mitch, W.A. Formation Pathways and Tradeoffs Between Haloacetamides and Haloacetaldehydes During Combined Chlorination and Chloramination of Lignin Phenols and Natural Waters**.** *Environmental Science and Technology*, **2015**, *49*, 14432-14440.

23. **McCurry, D.L.,** Krasner, S.K., von Gunten, U.; Mitch, W.A. Determinants of Disinfectant Pretreatment Efficacy for Nitrosamine Control in Chloraminated Drinking Water. *Water Research*, **2015**, *84*, 161-170.

24. **McCurry, D.L.,** Bear, S.E., Bae, J., Sedlak, D.L., McCarty, P.L., Mitch, W.A. Superior Removal of Disinfection Byproduct Precursors and Pharmaceuticals from Wastewater in a Staged Anaerobic Fluidized Membrane Bioreactor Compared to Activated Sludge. *Environmental Science and Technology Letters,* **2014**, *1*, 459-464.

25. Krasner, S.W., Mitch, W.A., **McCurry**, **D.L.**, Hanigan, D., Westerhoff, P. Formation, precursors, control, and occurrence of nitrosamines in drinking water: A review. *Water Research,* **2013**, *47*, 4433-4450.

26. Sivey, J.D., Howell, S.C., Bean, D.J., **McCurry, D.L**, Mitch, W.A., and Wilson, C.J. Role of lysine during protein modification by HOCl and HOBr: halogen-transfer agent or sacrificial antioxidant? *Biochemistry*, **2013**, 52, 1260-1271.

27. Pressman, J.G., **McCurry, D.L.**, Parvez, S., Teuschler, L.K., Rice, G.E., Miltner, R.J., Speth, T.F. Validation of Disinfection Byproduct Formation in Reverse-Osmosis Concentrated and Lyophilized Natural Organic Matter. *Water Research,* **2012**, *46*, (16), 5343-5354.

28. **McCurry, D.L.**, Speth, T.F., Pressman, J.G. Lyophilization and Reconstitution of Reverse-Osmosis Concentrated Natural Organic Matter from a Drinking Water Source. *Journal of Environmental Engineering,* **2012**, *138* (4), 402-410.

29. Nadagouda, M.N., Pressman, J. White, C., Speth, T.F., **McCurry, D.L.** Novel thermally stable poly(vinyl chloride) composites for sulfate removal. *Journal of Hazardous Materials,* **2011**, *188*, 19-25.

Other Publications

1. Ryan, D.R.; McKay, G.; Cochran, J.; Adams, H.; **McCurry, D.L.**; Marfil-Vega, R. Organic Contaminants and Potable Reuse: Perspectives to 2050. *Journal of the American Water Works Association*, **2024**, *116*, 61-64, https://doi.org/10.1002/awwa.2267

2. Adams, H.; Hanigan, D.; Marfil-Vega, R.; Ryan, D.; **McCurry, D.L.**; Keen, O.; Ash, S.; Southard, M. Operators Need to Know Organic Contaminants. *OpFlow*, **2023**, *49* (6), 10-17.

3. McKenna, E.; Sharma, P.; **McCurry, D.;** Hanigan, D. A Layman's Guide to Non-target and High-resolution Mass Spectrometry. *Journal of the American Water Works Association*, **2020,** *112*, 32-41.

PRESENTATIONS

Seminars and Invited Presentations

"*Water in California*." Department of Water Resources and Drinking Water, Swiss Federal Institute of Aquatic Science and Technology (Eawag), Zürich, Switzerland, October 28th, 2024.

"*Catalytic Oxidation of Trace Aqueous Aldehydes with Ambient Dissolved Oxygen."* American Chemical Society National Meeting, James J. Morgan Early Career Award Symposium, New Orleans, LA, March 18th, 2024.

"*Formation and Transformation of Nitrogenous Byproducts in Recycled Wastewater*." Gordon Research Conference on Disinfection, Byproducts, and Health, South Hadley, MA, August 1st, 2023.

"*Formation and Fate of Unregulated Halonitromethane Disinfection Byproducts Promoted by Ozonation during Water Reuse*." American Water Works Association Potable Reuse Symposium, Salt Lake City, UT, July 24th, 2023.

"*Identifying and Mitigating Low Molecular Weight Pollutants in Recycled Water*." Department of Civil and Environmental Engineering, Seoul National University, Seoul, South Korea, May 26th, 2023.

"*Chloramination of Nitromethane: Incomplete Chlorination and Unexpected Substitution Reaction."* Environmental Chemistry Group, ETH Zürich, Zürich, Switzerland, October 18th, 2022.

"*Identifying and Mitigating Low Molecular Weight Contaminants in Recycled Water*." Department of Water Resources and Drinking Water, Swiss Federal Institute of Aquatic Science and Technology (Eawag), Zürich, Switzerland, October 17th, 2022.

"*Identifying and Mitigating Low Molecular Weight Pollutants in Recycled Water*." Department of Civil and Environmental Engineering, University of Minnesota, Minneapolis, MN, May 6th, 2022.

"*Identifying and Mitigating Low Molecular Weight Pollutants in Recycled Water*." Department of Civil and Environmental Engineering, Arizona State University, Tempe, AZ, April 22nd, 2022.

"*Identifying and Mitigating Low Molecular Weight Pollutants in Recycled Water*." Department of Civil and Environmental Engineering, University of California, Berkeley, Berkeley, CA, April 8th, 2022.

"*Identifying and Mitigating Low Molecular Weight Pollutants in Recycled Water*." Department of Civil and Environmental Engineering, Colorado School of Mines, delivered remotely, March 11th, 2022.

"*Identifying and mitigating low molecular weight pollutants in recycled water."* American Chemical Society National Meeting, James J. Morgan Early Career Award Symposium, delivered remotely (originally scheduled for San Antonio, TX), April 16th, 2021.

"*Disinfection Byproduct Formation in Drinking Water and Recycled Wastewater*" University of British Columbia WESTalks Series (hosted jointly with McGill University), delivered remotely, October 8th, 2020.

"*Understanding and Preventing Disinfection Byproduct Formation during Wastewater Reuse*" Department of Chemical and Environmental Engineering, University of Arizona, Tucson, AZ, November 8th, 2019.

"Environmental Mass Spectrometry at USC" Agilent Technologies, Santa Clara, CA, October 17th, 2019.

"*Environmental Organic Chemistry for Safe Water Reuse: Identifying Precursors and Formation Pathways of Priority Disinfection Byproducts in Recycled Water*" Department of Civil and Environmental Engineering, University of Colorado, Boulder, Boulder, CO, September 6th, 2019.

"*Understanding and Preventing N-DBP Formation in Recycled Wastewater*" Trussell Technologies, Pasadena, CA, November 9th, 2018.

"Applying Environmental Analytical Chemistry to Understand and Minimize Disinfection-Associated Carcinogens in Drinking Water and Recycled Wastewater" Los Angeles Metropolitan Mass Spectrometry Society, Los Angeles, CA, August 23rd, 2018.

"*Understanding and Minimizing Disinfection-Associated Carcinogens in Drinking Water and Recycled Wastewater*" CEE Department Seminar, University of Nevada, Reno, November 29th, 2017.

"*Understanding and Minimizing Disinfection-Associated Carcinogens in Drinking Water and Recycled Wastewater*" CEE Department Seminar, University of California, Los Angeles, June 1st, 2017.

Conference Oral Presentations (*Indicates Speaker)

***McCurry, D.L.**, "Ozonation of amines: products, mechanisms, and relevance to wastewater treatment." American Chemical Society National Meeting, Denver, CO, August 18th-22nd, 2024

*__McCurry, D.L.__, Kim, E.; Steck, S.; Van Burn, J. “Quantifying the contribution of amine precursors to nitrogenous disinfection byproduct formation in recycled wastewater by chemical derivatization.” American Chemical Society National Meeting, San Francisco, CA, August 13th-17th, 2023

*__McCurry, D.L.__, Shi, J.L. “Molecular Insights into N-DBP Formation in Recycled Water.” Association of Environmental Engineering & Science Professors Research and Education Conference, St. Louis, MO, June 28th-30th, 2022

*Schammel, M.H.; Yao, X.G.; Reber, K.P.; Sivey, J.D.; **McCurry, D.L.** “Mechanistic Insights of Haloform Formation via Chlorination of Isotopically Labelled Parabens.” American Chemical Society National Meeting, San Diego, CA, March 20th-24th, 2022

*Kim, E.; Cardosa, G.B.; **McCurry, D.L.** “Oxidation of carbonyl compounds in recycled wastewater with heterogenous catalysts and dissolved oxygen.” American Chemical Society National Meeting, San Diego, CA, March 20th-24th, 2022

*Van Buren, J.T.; Bluml, I.; Wadwhani, E.; Al Riyami, N.; **McCurry, D.L.** “Chemical derivatization of amines to determine disinfection byproduct formation potential in recycled wastewater.” American Chemical Society National Meeting, San Diego, CA, March 20th-24th, 2022

*Shi, J.L.; Kleimans, M.; **McCurry, D.L.** “Kinetics and Mechanism of Nitromethane Chloramination.” American Chemical Society National Meeting, delivered remotely, March 20th-24th, 2022

Shi, J.S.*; **McCurry, D.L.** “The Formation, Fate and Transformation of Nitromethane during Wastewater Reuse Processes.” American Chemical Society National Meeting, Atlanta, GA, August 22nd-26th, 2021

Schammel, M,*; Yao, X.; Reber, K.P.; Sivey, J.D.; **McCurry, D.L**. “Halogenation of parabens to form trihalomethanes: Implications for greywater reuse.” American Chemical Society National Meeting, Atlanta, GA, August 22nd-26th, 2021

Van Buren, J.*; Wadwhani, E.; Bluml, I.; **McCurry, D.L.;** “Identification of disinfection byproduct precursors in recycled wastewater by chemical derivatization.” American Chemical Society National Meeting, Atlanta, GA, August 22nd-26th, 2021

Roback, S.*; **McCurry, D.L.;** Kim, E. “Formation of *N*-nitrosoglyphosate from glyphosate and nitrite at neutral pH and occurrence in recycled wastewater.” American Chemical Society National Meeting, Atlanta, GA, August 22nd-26th, 2021

Shi, J.L*.; **McCurry, D.L.,** “Fate and transformation of nitromethanes during wastewater reuse processes.” American Chemical Society National Meeting, delivered remotely (originally scheduled for San Antonio, TX), April 6th, 2021.

Kim, E.*.; **McCurry, D.L.,** “Aqueous contaminant oxidation with heterogenous metal catalysts and dissolved oxygen.” American Chemical Society National Meeting, delivered remotely (originally scheduled for San Francisco, CA), August 17th-20th, 2020.

Shi, J.L*.; **McCurry, D.L.,** “Formation and fate of nitromethanes during wastewater reuse processes.” American Chemical Society National Meeting, delivered remotely (originally scheduled for San Francisco, CA), August 17th-20th, 2020.

McCurry, D.L.* “Advances in DBP measurement and control enabled by GC headspace sampling,” (Invited Presentation). American Water Works Association Annual Convention & Exposition, Orlando, FL, June 16th, 2020. (Not given due to conference cancellation)

McCurry, D.L.*, Shi, J.L. "Formation of Nitromethane during Wastewater Ozonation and Implications for Direct Potable Reuse." American Chemical Society National Meeting, Philadelphia, PA, March 22-26th, 2020. (Not given due to conference cancellation)

McCurry, D.L.*, Shi, J.L. "Transformation of *N*-methylamine stimulant drugs to (halo)nitromethanes during wastewater reuse." American Chemical Society National Meeting, San Diego, CA, August 25-29th, 2019.

Shi, J.L., **McCurry, D.L.*** "Transformation of Methamphetamine and Analogues to (Halo)nitromethane Carcinogens by Water Treatment with Ozone/Chlorine." International Water Association Leading Edge Technology Conference, Edinburgh, UK, June 10th-14th, 2019.

McCurry, D.L.*, Huang, S., Huang, M.E. "Nitrosamine Formation Pathway Re-revisited: Importance of Dichloramine and Relevance to Water Reuse." American Chemical Society National Meeting, Boston, MA, August 19-23rd, 2018.

McCurry, D.L.*, Mitch. W.A. "RO-induced shifts in chloramine chemistry cause nitrosamine regrowth at potable reuse plants." International Water Association International Conference on Water Reclamation and Reuse, Long Beach, CA, July 23-27th, 2017.

McCurry, D.L.*, Mitch. W.A. "Preventing Regrowth of Nitrosamines in Wastewater Reuse by Manipulating Chloramine Chemistry." American Chemical Society National Meeting, San Francisco, CA, April 2-6th, 2017.

McCurry, D.L.* "Formation of Chloropicrin by Ozone and Chlorine: Precursors and Reaction Pathway American Water Works Association Water Quality Technology Conference, Indianapolis, November 15, 2016.

McCurry, D.L.*, Mitch. W.A. "Polychromatic Light for Nitrosamine Control in Recycled Wastewater." American Chemical Society National Meeting, San Diego, CA, March 13-17, 2016.

McCurry, D.L.*, Quay, A.N., Mitch. W.A. "Primary and Secondary Amines Are Key Precursors of Halonitroalkanes, via Amine Ozonation to Nitro Compounds." Gordon Research Seminar on Drinking Water Disinfection Byproducts, South Hadley, MA, Aug. 8-9, 2015.

McCurry, D.L.*, Mitch. W.A. "Ozone promotes chloropicrin formation in natural waters by oxidizing amines to nitro compounds." American Chemical Society National Meeting, San Francisco, CA, August 11, 2014.

McCurry, D.L.*, Krasner, S.K., Mitch, W.A. "Preoxidative control of nitrosamine formation in chloraminated drinking water." American Water Works Association Water Quality Technology Conference, Long Beach, CA, November 6, 2013.

McCurry, D.L.*, Sivey, J.D., Mitch, W.A. "Understanding oxidative protein damage with LC/MS and computational redesign." Stanford Sunlight Symposium, Stanford, CA, April 2, 2013.

Pressman, J.G.*, **McCurry, D.L.**, Parvez, S., Rice, G.E., Teuschler, L.K., Miltner, R.J., Speth, T.F. "Lyophilization, Reconstitution, and DBP formation in RO Concentrated NOM from a Drinking Water Source." American Water Works Association Annual Conference and Exposition, Dallas, TX, June 10-14, 2012.

Parvez, S.*, **McCurry D.L.,** Rice, G.E., Teuschler, L.K., Speth, T.F., Miltner, R.J., Pressman, J.G. "Comparison of Chemical Composition of Complex Disinfection Byproduct (DBP) Mixtures Produced by Different Treatment Methods." Society for Risk Assessment Annual Meeting 2011, Charleston, SC, Dec. 4-7, 2011.

RESEARCH SUPPORT

Overall Total = $14.47M; McCurry Total = $2.89M

Department of Energy/National Alliance for Water Innovation, 9/1/23-8/30/25, $868,270 ($200,000 to DLM), "222 nm KrCl* Driven Advanced Oxidation for Reverse Osmosis Pretreatment: Fouling Control and Chemical/Pathogen Abatement" PI: Karl Linden (U. Colorado, Boulder), U. Colorado co-PI: Anthony Straub; USC co-PI: McCurry

U.S. Army Corps of Engineers, Engineering Research and Development Center, 5/17/23-5/16/27, $10,971,456 ($1,206,786 to DLM), "Potable Reuse for Water Resiliency and Self Sufficiency." PI: Amy Childress; co-PIs: Daniel McCurry, Adam Smith. (Phase 1 funded at $4.3M, Phase 2 in negotiation at $3.52M, Phase 3 recommended at $3.52M)

National Science Foundation, CHE-2304861, 08/1/23– 07/31/26, $576,536 ($275,536 to DLM), "Collaborative Research: Overlooked oxidation of aqueous alcohols: kinetics, mechanism, and relevance to water reuse." University of Utah PI: Emily Marron; USC PI: McCurry

USC Research and Innovation - President's Sustainability Initiative Award, 5/24/23-7/31/24, $433,310 ($39,481 to DLM), "PFAS ACT: Addressing the PFAS Drinking Water Crisis in Southern California." PI: Lida Chatzi; co-PIs: Max Aung, Lucy Golden, Ana Maretti-Mira, Adam Smith, Daniel McCurry

National Science Foundation, CBET- 2227273, 1/1/23– 12/31/25, $499,999 ($223,743 to DLM), "GOALI: Integrated Oxidation Vapor-gap Reverse Osmosis Systems for Water Reuse." PI: Anthony Straub (U. Colorado, Boulder); co-PI: McCurry

National Science Foundation, CHE-2003472, 9/1/20– 8/31/23, $368,804 ($195,129 to DLM), "Collaborative Research: Parabens as a Tool for Interrogating Halogenation in Environmental Systems: Products and Pathways." USC PI: McCurry; Towson U. PI: John Sivey, Towson co-PI: Keith Reber

National Science Foundation, CBET-1944810, 3/15/20– 2/28/25, $532,777, "CAREER: Establishing a New Retrosynthetic Framework for Identifying Precursors of Priority Disinfection Byproducts in Recycled Wastewater."

Rose Hills Foundation, 9/1/2019 – 8/31/21, $150,000, "Transformation of Stimulant Drugs to Genotoxic Byproducts during Water Reuse and Implications for Public Health in Southern California."

Orange County Water District, 7/1/19 – 6/30/20, $30,000, "Development of a new mass spectrometry-based total organic chlorine analytical method to assess the safety of the UV/chlorine advanced oxidation process."

Foundation for Cross-Connection Control and Hydraulic Research, 1/1/18 – 12/31/19, $39,452, "Formation of the Carcinogen Chloropicrin from Methamphetamine and Other Stimulant Drugs during Water Treatment."

AWARDS/RECOGNITION

Honorable Mention for 2024 ACS James J. Morgan Early Career Award	2024
Invited speaker for the 2023 GRC on Water Disinfection, Byproducts and Health	2023
Invited Participant for National Academy of Engineering US-EU Frontiers of Engineering Symposium in Bled, Slovenia	2022
40 Under 40 Award from American Academy of Environmental Engineers and Scientists (AAEES)	2022
Honorable Mention for 2021 ACS James J. Morgan Early Career Award	2021
NSF Faculty Early Career Development (CAREER) Award	2020
Rose Hills Foundation Research Fellowship	2019
Outstanding Young Engineer Award from Orange Country Engineering Council	2018
Editor's Choice Paper in *Environmental Science: Water Research and Technology* (McCurry et al., *ES:WRT*, **2016**, *2*, 502.)	2017
Outstanding Reviewer for *Environmental Science: Water Research and Technology*	2017
NSF Graduate Research Fellowship	2012-2015

TEACHING

Environmental Engineering Principles (ENE 200) University of Southern California	(Spring 2024)
Environmental Organic Chemistry (ENE 415) University of Southern California	(Fall 2023)
Introduction to Environmental Engineering (CE 110) USC Co-instructor (1/8th share)	(Fall 2022)
Environmental Engineering Principles (ENE 200) University of Southern California	(Spring 2023)
Aquatic Chemistry (ENE 562) University of Southern California	(Fall 2022)
Introduction to Environmental Engineering (CE 110) USC Co-instructor (1/3rd share)	(Fall 2022)
Environmental Engineering Principles (ENE 200) University of Southern California	(Spring 2022)
Environmental Organic Chemistry (ENE 415) University of Southern California	(Fall 2021)
Introduction to Environmental Engineering (CE 110) USC Co-instructor (1/6th share)	(Fall 2021)
Environmental Engineering Principles (ENE 200) University of Southern California	(Spring 2021)

Aquatic Chemistry (ENE 562) University of Southern California (Fall 2020)

Introduction to Environmental Engineering (CE 110) USC (Fall 2020)
Co-instructor (1/6th share)

Environmental Engineering Principles (ENE 200) University of Southern California (Spring 2020)

Aquatic Chemistry (ENE 562) University of Southern California (Spring 2019)

Environmental Organic Chemistry (ENE 599) University of Southern California (Fall 2018)

Aquatic Chemistry (ENE 562) University of Southern California (Spring 2018)

Aquatic Chemistry (ENE 599) University of Southern California (Spring 2017)

RESEARCH MENTORSHIP

CURRENT POSTDOCTORAL RESEARCHERS

Dr. Kristofer Isaacson (USC ENE postdoc) (Nov. 2023-)
Project: Nucleophilicity of aqueous disinfectants.

CURRENT PhD STUDENTS

Marella Schammel (USC ENE Ph.D. Student) (Fall 2020-)
Project: Halogenation of parabens by free and combined chlorine: kinetics, pathways, products, and implications for greywater reuse.

Aarti Visswanathan (USC ENE Ph.D. Student) (Summer 2022-)
Project: Quantification of ozone and hydroxyl radical exposure during wastewater ozonation.

Haotian Cai (USC ENE Ph.D. Student) (Fall 2022-)
Project: Formation of nitro compounds from amines during chlorination.

Xiao Yang (USC ENE Ph.D. Student) (Fall 2022-)
Project: Degradation of aldehydes in recycled wastewater by advanced oxidation processes.

Sanaiya Islam (USC ENE Ph.D. Student) (Fall 2023-)
(co-advised with Prof. Adam Simpson)
Project: Kinetics of chlorohydrin formation during lipid chlorination.

CURRENT UNDERGRADUATES

Sophia Steck (USC B.S. Student) (Fall 2021-)
Projects: Disinfection byproduct precursor identification in wastewater by chemical derivatization; Kinetics and mechanism of aqueous azole halogenation

Vidya Iyer (USC B.S. Student) (Fall 2022-)
Project: Catalytic oxidation of trace organic contaminants in recycled water with heterogeneous metal catalysts and molecular oxygen.

Samantha Gold (USC B.S. Student) (Fall 2023-)
Project: Metals in Wildfire Suppressants

Jill Carlisle (USC B.S. Student) (Fall 2023-)
Project: Quantification of ozone and hydroxyl radical exposure during wastewater ozonation

POSTDOCTORAL ALUMNI

Dr. Junseok Lee (USC ENE postdoc) (Jan. 2024-Sept. 2024)
(*co-advised with Prof. Adam Smith)*
Project: Quantification and transformation of PFAS in wastewater and recycled water.

Current position: Assistant Professor, Incheon National University, South Korea

Dr. Jean Van Buren (USC ENE postdoc) (Dec. 2019-April 2022)
Project: Disinfection byproduct precursor identification in wastewater by chemical derivatization and high-resolution mass spectrometry

Current position: Physical Scientist, United States Environmental Protection Agency, Office of Research and Development, Cincinnati, OH

Ph.D. ALUMNI

Dr. Euna Kim (USC ENE Ph.D. Student) (Graduated Spring 2024)
Thesis: “Catalytic Oxidation and Precursor Identification of Disinfection Byproducts in Recycled Water”

Current position: Postdoctoral Scholar, Harvard University, Cambridge, MA

Dr. Jiaming (Lily) Shi (USC ENE Ph.D. Student) (Graduated Fall 2021)
Thesis: “The Formation, Fate and Transformation of Nitromethane in Potable Reuse Processes”

Current position: Postdoctoral Scholar, Stanford University, Stanford, CA

Dr. Sophia L. Plata (USC ENE Ph.D. Student) (Graduated Summer 2021)
(co-advised with Prof. Amy Childress)
Thesis: “Integrated technologies, blending schemes, and reuse practices to address contaminant and energy challenges in water reclamation”

Current position: Assistant Professor, Harvey Mudd College, Claremont, CA

UNDERGRADUATE AND M.S. ALUMNI

Viktoriia Kurilenko (USC B.S. Student) (Spring 2024-)
Project: Transformation products of amines and aldehydes during water reuse

Olivia Sipes (Towson University B.S. Student) (Summer 2023)
Project: Halogenation of parabens by free and combined chlorine: kinetics, pathways, products, and implications for greywater reuse

Jasmine Gonzalez (USC B.S. Student) (Fall 2022-Spring 2023)
Project: Kinetics and mechanism of aqueous azole halogenation

Kevin Kumar (USC B.S. Student) (Fall 2022-Spring 2023)
Project: Disinfection byproduct precursor identification in wastewater by chemical derivatization

Sofija Radulovic (USC B.S./M.S. Student) (Fall 2021-Fall 2022)
Project: Halogenation of parabens by free and combined chlorine: kinetics, pathways, products, and implications for greywater reuse

Isabel Blüml (USC B.S. Student) (Spring 2021-Spring 2022)
Project: DBP precursor identification in wastewater by chemical derivatization and high-resolution mass spectrometry

Elana Wadwhani (USC B.S. Student) (Spring 2021-Spring 2022)
Project: Predicting Reverse-Osmosis Rejection with Molecular Collision Cross Section

Georgia Cardosa (USC B.S. Student) (Summer 2020-Spring 2022)
Project: Catalytic oxidation of trace organic contaminants in recycled water with heterogeneous metal catalysts and molecular oxygen.

Marco Kleimans (USC B.S./M.S. Student) (Fall 2019-Fall 2021)
Project: Transformation of stimulant drugs during wastewater reuse.

Zakiyyah Brown (USC M.S. Student) (Fall 2018-Spring 2021)
Project: Development of an ICP-MS based total organic chlorine method

Katarina Stanley (USC B.S. Student) (Spring 2019-Spring 2020)
Project: Catalytic oxidation of trace organic contaminants in recycled water with heterogeneous metal catalysts and molecular oxygen.

Miranda Leibig (USC B.S. Student) (Fall 2018-Spring 2019)
Project: Transformation of stimulant drugs during wastewater reuse.

Xinle (Grace) Yao (USC B.S. Student) (Spring 2018-Summer 2019)
Project: 1) Transformation of parabens during greywater reuse. 2) Development of a new combined THM/HAA GC/MS analytical method.

Codi Weisz (USC B.S. Student) (Fall 2018-Spring 2019)
Project: Transformation of parabens during greywater reuse.

Shiyang (Gary) Huang (USC M.S. Student) (Summer 2017-Spring 2018)
Project: Clarifying the formation mechanism of nitrosamines during chloramination

Jill Leva (USC B.S./M.S. Student) (Summer 2017)
Project: Environmental applications of oxygen activation with metals

Meredith Huang (USC B.S. Student) (Spring, Fall 2017)
Project: Clarifying the formation mechanism of nitrosamines during chloramination

HIGH SCHOOL STUDENTS

Gillian Roy (Spring 2018-Spring 2019); Andrew Sung (Summer 2019); Max Edelstein (Summer 2019); Grace Kim (Fall 2019-Spring 2020); Scarlett Pinkey (Summer 2020)

BEFORE USC

Adam M.-A. Simpson (Stanford Ph.D. Student) (Fall 2016)
Project: Formation mechanisms of beta-cyanoalaine and lysine nitrile by halogenation

Amanda N. Quay (Stanford Undergraduate) (Spring 2014-Spring 2016)
Project 2: Oxidative control of membrane fouling during wastewater recycling
Project 1: Formation mechanism of chloropicrin by ozone/chlorine

Kala Viswanathan (Stanford M.S. Student) (Spring, Fall 2014)
Project: Formation of oxidative byproducts of histidine

SELECTED AWARDS TO MENTORED STUDENTS

2024 Viterbi Best Research Assistant Award (one annually per department) to Euna Kim

2024 CEE Best Teaching Assistant Award (one annually for ENE) to Aarti Visswanathan

2024 Provost's Undergraduate Research Fellowship to Vidya Iyer

2023 CEE Best Research Assistant Award (one annually for ENE) to Euna Kim

2022 CEE Best Teaching Assistant Award (one annually for ENE) to Euna Kim

2022 Provost's Undergraduate Research Fellowship to Sofija Radulovic

2022 Provost's Undergraduate Research Fellowship to Georgia Cardosa

2021 CEE Best Research Assistant Award (one annually for ENE) to Lily Shi

2021 Provost's Undergraduate Research Fellowship to Georgia Cardosa (x3)

2020 Provost's Undergraduate Research Fellowship to Georgia Cardosa

2020 NSF Graduate Research Fellowship to Marella Schammel

2020 American Water Works Association (CA-NV Section) Graduate Scholarship to Euna Kim

2020 Provost's Summer Research Fellowship to Marco Kleimans

2020 Provost's Undergraduate Research Fellowship to Katarina Stanley

2019 T.F. Yen Fellowship to Lily Shi (one per year in CEE Department)

2019 NSF Graduate Research Fellowship to Zakiyyah Brown

2019 Provost's Undergraduate Research Fellowship to Katarina Stanley

2018 CEE Master's Student Research Award (one per year in CEE department) to Gary Huang

2017 Provost's Undergraduate Research Fellowship to Meredith Huang

ACADEMIC SERVICE

Within USC

Faculty Advisor for USC Engineers Without Borders	(2017-Present)
Organizer, USC CEE PhD Student Recruiting Weekend	(2017-Present)
Explore USC Viterbi undergraduate scholarship interviews (6-8/year)	(2019-Present)
Viterbi Best Dissertation Award Committee	(2024)
Science Advisor for USC School of Cinematic Arts student film "Concord"	(2023)
Keynote speaker for ExploreUSC undergraduate recruiting event	(2023)
Trip to Malibu Creek State Park with 'Peaks and Professors' student group	(2023)
Trip to Angeles National Forest with 'Peaks and Professors' student group	(2023)
Trip to Charmlee Wilderness Park with 'Peaks and Professors' student group	(2023)
CEE Faculty Search Committee	(2022)
Keynote speaker for ExploreUSC undergraduate recruiting event	(2022)
CEE M.S. Scholarship Application Interviews (16×)	(2022)
Trip to Topanga State Park with 'Peaks and Professors' student group	(2022)
CEE Faculty Merit Review Committee	(2021)
Traveling Mentor for USC EWB Trip to Antigua, Guatemala (May 8-14th, 2019)	(2019)
Viterbi EXPO lab tours (5×)	(2019)
Curriculum and Practical Training (CPT) advisor for Shuyang Kao	(2017-2018)

PhD Screening Exam Committees:

Sanaiya Islam [Advisor: Simpson/McCurry] (2024)
Xiao Yang [Advisor: McCurry] (2024)
Aarti Visswanathan [Advisor: McCurry] (2024)
Diego Montano [Advisor: Valery Fokin (Chemistry)] (2023)
Michael Saldana [Advisor: Smith] (2023)
Christelle Sawaya [Advisor: Smith] (2023)
Martijn Bindels [Advisor: Childress] (2023)
Haotian Cai [Advisor: McCurry] (2023)
Connor Sauceda [Advisor: Smith] (2022)
Marella Schammel [Advisor: McCurry] (2022)
Will Richards [Advisor: Valery Fokin (Chemistry)] (2021)
Bianca Costa [Advisor: Smith] (2021)
Shounak Joshi [Advisor: Childress] (2021)
Zakiyyah Brown [Advisor: McCurry] (2020)
Euna Kim [Advisor: McCurry] (2019)
Maria Morvillo [Advisor: de Barros] (2019)
Jinwoo Im [Advisor: de Barros] (2018)
Lily Shi [Advisor: McCurry] (2018)
Sophia Plata [Advisor: Childress] (2017)

PhD Qualifying Exam Committees:

Weijian Ding [Advisor: Childress] (2023)

Bianca Costa [Advisor: Smith] (2023)
Mohammad Aldekheel [Advisor: Sioutas] (2023)
Isabel Smith [Advisor: Josh West (Earth Sciences)] (2022)
Will Richards [Advisor: Valery Fokin (Chemistry)] (2022)
Phillip Wang [Advisor: Smith] (2022)
Euna Kim [Advisor: McCurry] (2022)
Ehsan Soleimanian [Advisor: Sioutas] (2020)
Xin Wei [Advisor: Childress] (2020)
Jiaming (Lily) Shi [Advisor: McCurry] (2020)
Jinwoo Im [Advisor: de Barros] (2019)
Ali Zarei Bagyi [Advisor: Smith] (2019)
Sophia Plata [Advisor: Childress] (2019)
Siming Chen [Advisor: Smith] (2018)
Yamrot Amha [Advisor: Smith] (2018)
Ryan Gustafson [Advisor: Childress] (2017)
Chris Morrow [Advisor: Childress] (2017)

PhD Thesis Defense Committees:

Bianca Costa [Advisor: Smith] (2024)
Weijian Ding [Advisor: Childress] (2024)
Mohammad Aldekheel [Advisor: Sioutas] (2024)
Euna Kim [Advisor: McCurry] (2024)
Phillip Wang [Advisor: Smith] (2022)
Lily Shi [Advisor: McCurry] (2021)
Sophia Plata [Advisor: Childress/McCurry] (2021)
Xin Wei [Advisor: Childress] (2021)
Ali Zarei Bagyi [Advisor: Smith] (2020)
Siming Chen [Advisor: Smith] (2019)
Yamrot Amha [Advisor: Smith] (2019)
Ryan Gustafson [Advisor: Childress] (2019)
Chris Morrow [Advisor: Childress] (2018)

Outside of USC

Vice Chair, Organic Contaminants Research Committee, American Water Works Assn. (2023-Present)

Member, Organic Contaminants Committee, American Water Works Association (2018-Present)

NSF Proposal Review Panelist for SBIR (6×), ENE (3x), and ECS (1×) programs (2016-Present)

Journal Reviewer (~15-20/yr): *Science; PNAS; Environ. Sci. Technol.; Environ. Sci. Technol. Letters; Environ. Sci. Technol. Water; Environ. Sci. Technol. Eng; Water Research*; *Environmental Science: Water Research & Technology*; *J. Am Water Works Assn.; etc* (2014-Present)

Proposal ad hoc reviewer for Canada Foundation for Innovation, State of Minnesota, Deutsche Forschungsgemeinschaft (German Research Foundation), and Israel Science Foundation (2019-Present)

External MS Defense Committee Member, Ryan Kearney, Towson University (2024)

Organizer, Special Topic Symposium, Am. Water Works Assoc. WQTC Conference (2023)

External MS Qualifying Committee Member, Ryan Kearney, Towson University	(2023)
Panelist, NSF CAREER Award Workshop, AEESP 2022 Conference	(2022)
External MS Thesis Committee Member, Andrew Psoras, Towson University	(2022)
Symposium Organizer, American Chemical Society National Meeting, ENVR Section	(2020)
PAC Member, Water Environment & Reuse Foundation (Project U3R16)	(2017-2018)
Founder, Stanford Environmental Engineering Program Student Seminar Series	(2015)
Environmental and Water Studies Graduate Student Committee, Stanford CEE	(2014-2016)
Book Chapter Reviewer, *ACS Books*	(2014)

PROFESSIONAL REGISTRATION

Engineer Intern (EIT), State of Ohio	(May 2011)

PRESS/MEDIA

"*Wildfire retardant is laden with toxic metals, USC study finds*" Alex Wigglesworth, Los Angeles Times, November 16th, 2024, https://www.latimes.com/environment/story/2024-11-16/popular-fire-retardant-has-high-levels-of-heavy-metals-usc-study-finds

"*New study raises questions about heavy metals in fire retardants*" Jacob Margolis, LAist, October 30th, 2024, https://laist.com/news/climate-environment/toilet-to-tap-water-southern-california-timeline

"*How Soon Will Southern Californians Be Using Water That's Gone From Toilet To Tap?*" Jacob Margolis, LAist, December 23rd, 2023, https://laist.com/news/climate-environment/toilet-to-tap-water-southern-california-timeline

"From flush to faucet: More places look to turn sewage into tap water" Matt Vasilogambros, Stateline, *December 12th, 2023, https://stateline.org/2023/12/12/from-flush-to-faucet-more-places-look-to-turn-sewage-into-tap-water/*

"This beer is made from recycled shower water" Jacopo Prisco, CNN, August 1st, 2023, https://www.cnn.com/2023/08/01/world/beer-from-recycled-shower-water-epic-cleantec-scn-spc/index.html

"Don't call it 'toilet to tap' — California plans to turn sewage into drinking water" Rachel Becker, CalMatters, August 1st, 2023, https://calmatters.org/environment/2023/08/california-toilet-to-tap-water/

"*Forever Chemicals' Are In Our Water, But The Impact Isn't Yet Clear*" Erin Stone, LAist, July 7th, 2023, https://laist.com/news/climate-environment/forever-chemicals-are-in-our-water-but-the-impact-isnt-yet-clear

"*LA is finding a way to capture water from heavy rains and save it for dry weather*" Caleigh Wells, NPR, *Weekend Edition*, May 21st, 2023, https://www.npr.org/2023/05/21/1177391860/la-is-finding-a-way-to-capture-water-from-heavy-rains-and-save-it-for-dry-weathe

"*LA reuses lots of stormwater, but wants to save more*" Caleigh Wells, KCRW, March 22nd, 2023, https://www.kcrw.com/news/shows/greater-la/drought-hollywood-photography/los-angeles-stormwater

"*What's in your drinking water? If you live in one of these states, it might soon be recycled sewage*" Annika Constantino, CNBC, August 19th, 2022, https://www.cnbc.com/2022/08/19/direct-potable-reuse-why-drinking-water-could-include-recycled-sewage.html

"*Newsom: California must boost water recycling, desalination"* Zarina Khairzada, Spectrum News 1, August 11th, 2022, https://spectrumnews1.com/ca/la-east/environment/2022/08/11/governor-to-speak-about-state-s-water-supply-strategy

"*I Drank Recycled Sewage To Get A Taste Of SoCal's Water Future*" Erin Stone, LAist, June 27th, 2022, https://laist.com/news/climate-environment/recycled-sewage-water-southern-california

"*Recycled Wastewater Could be the Future of Drinking Water*" Melissa Harris-Perry, The Takeaway (produced by WNYC and broadcast nationally on NPR), May 10th, 2022, https://www.wnycstudios.org/podcasts/takeaway/segments/drinking-recycled-wastewater-future-water

"*In The Face Of New Water Restrictions, What Else Should Be Done?*" Erin Stone, KPCC and LAist, April 28th, 2022, https://laist.com/news/climate-environment/in-the-face-of-new-water-restrictions-what-else-should-be-done

"*How safe is LA's water? Environmental group says legal standards still pose health risks*" Carlos Granda, KABC (ABC 7 Los Angeles) November 8th, 2021, https://abc7.com/how-safe-is-los-angeles-water-ladwp-drinking-la-tap-ewg/11213503/

"*Prozac and methamphetamine likely responsible for toxins in tap water."* Katrina Krämer, Chemistry World (Royal Society of Chemistry), March 2nd, 2020, https://www.chemistryworld.com/news/prozac-and-methamphetamine-likely-responsible-for-toxins-in-tap-water/4011268.article

"*There Are Carcinogens in Tap Water, But Don't Freak Out Too Much."* Beth Skwarecki, Lifehacker, Sept. 19th, 2019, https://vitals.lifehacker.com/there-are-carcinogens-in-tap-water-but-dont-freak-out-1838258808